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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. 21,578. Spittoon-Holder. (*Couvre-Crachoir.*)

Benjamin H. Haskins, Mechanicsville, and Webster C. Moriarty, Saratoga Springs, N. Y., U. S., 4th May, 1885; 5 years.

Claim.—1st. A spittoon-case, or a spittoon provided with a hinged cover encircled with a pedal rail, having provisions for engaging with stationary fulcrum points on said case, and capable of depression at all points of its periphery, in combination with mechanism connecting said pedal rail with said hinged cover, adapted to secure the elevation of said cover by the depression of said pedal rail, the whole being constructed and arranged to operate substantially in the manner described and for the purposes set forth. 2nd. A circumambient pedal rail, having provisions for engaging with fulcrum ledges on the spittoon-case, or spittoon, in combination with mechanism connecting said rail with the cover of the spittoon-case, or spittoon, whereby said case or spittoon will be uncovered by the act of depressing said rail at any point in its periphery, substantially in the manner described and set forth. 3rd. A spittoon-case or holder having a chamber for the reception of the spittoon, a hinged cover adapted to be used as an ottoman, or foot-rest, and provided with mechanism whereby said cover may be raised, so as to open said case for use, by the depression of an encircling foot rail, substantially in the manner described and set forth.

No. 21,579. Machine for Extracting Stumps.

(*Machine à arracher les Souches.*)

James Rooney and William Wombwell, Sherbrooke, Que., 4th May, 1885; 5 years.

Claim.—The lever A, with the lever-plate B, and the dogs D₁ and D₂, with the claws F, and the dog C with the chain E, all in combination as and for the purposes hereinbefore described.

No. 21,580. Harvester Binder.

(*Moissonneuse-Lieuse.*)

Robert Aldred, Frederick Aldred and Henry S. Blackburn, Glucoe, Ont., 4th May, 1885; 5 years.

Claim.—1st. A grain receptacle H, located substantially in the same plane as the grain table A, having binding mechanism suspended above the grain receptacle, in combination with elevating forks I, arranged to raise the sheaf from the grain receptacle to the binding mechanism, substantially as and for the purpose specified. 2nd. In a harvester binder, in which the grain receptacle is located substantially in the same plane as the grain table of the harvester, the combination of a hinged butter G, arranged to come in contact with the stubble ends of the grain and assist in sweeping it from the grain table on to the grain receptacle, substantially as and for the purpose specified. 3rd. In a harvester binder, in which the grain is swept from the grain table A, by the action of the rakes, the pivoted lever b, having one end in a line with a track of the arm D, and its other end in proximity to a spring plate C, so that, when the rake arm D shall come in contact with the pivoted lever b, the spring plate C shall be pressed downwardly so as to throw clutch mechanism into action, by which the motion of the revolving axle is communicated to gear leading to the binding mechanism. 4th. The bevelled gear c fastened to the horizontal spindle d, which derives motion from the

main driving axle B, the bevelled pinion e meshing with the gear c, and attached to the spindle f, the half clutch g secured, as specified, in the spindle f, and arranged to mesh with its corresponding half clutch h, which revolves freely on the spindle f and is attached to, or forms part of the disc i, in combination with a spring plate c connected to the clutch g, the pivoted lever d and latch E, arranged substantially as and for the purpose specified. 5th. The disc i deriving motion, as specified, a rod F connected at one end to the crank pin on the disc i, and at its other end to a crank formed on the bottom end of the pivoted spindle of the butter G, in combination with a projection j formed on the periphery of the disc i, for the purpose of actuating the latch E, substantially as and for the purpose specified. 6th. A rod K connected at one end to the rod F, and passing freely through a hole in the crank m, which is pivoted upon the frame J, a dog n fixed to the red K, as specified, in combination with the rod o arranged to connect the crank m to the lever p, pivoted on the frame j, and connected by the rod k to the pivoted rod p, the pivoted end of which presses against the spring plate r, arranged to operate substantially as and for the purpose specified. 7th. A sprocket wheel s revolving freely on the axle B, until actuated by the spring plate r, so as to bring its clutch face into gear with the clutch t, in combination with the chain U arranged to connect the sprocket wheel s to the sprocket wheel v, to which the cam disc L is connected, substantially as and for the purpose specified. 8th. A sliding-plate W held in a groove formed in the side of the frame j, a friction roller z fitted into the cam z, formed on the inside surface of the cam disc L, in combination with the friction roller y, also attached to the sliding-plate W, but passing through a slot made in the pivoted bell-crank M, substantially as and for the purpose specified. 9th. The rod N, connected at one end to the bell-crank M, and its other end to the rock-shaft O on which the arm B is fastened, in combination with the rod Q, arranged to connect the arm P to the lever R, which is attached to the segment gear S, meshing with the segment gear T attached to the shaft U to which the elevating forks I are fastened, substantially as and for the purpose specified. 10th. A sliding plate or head V, working within a vertical groove or guide X, formed in the main frame of the machine, a wrist-pin Q attached to the head V, in combination with the cam z into which the friction roller 2 fits, substantially as and for the purpose specified. 11th. The combination of the rack bar 3 attached to the sliding-plate V and meshing with the segment gear 4 attached to the horizontal shaft 5 to which the needle Y is fastened. 12th. A notched disc 6 keyed to the shaft 5, in combination with an arm 7 fitted loosely on to the said shaft 5, a dog 10 pivoted on the arm 7, and a spiral spring 9 arranged to connect the arm 7 to the bearing box 8, substantially as and for the purpose specified. 13th. The compressor 11, pivoted on the frame of the machine, and connected by the toggle-jointed bars 12 to the pivoted arm 13, the bottom end of which fits below the spring-plate 14, in combination with a rod 15 arranged to connect the joint of the bars 12 to the arm 7, substantially as and for the purpose specified. 14th. The compressor 16, attached to a spindle on which the segment gear 17 is fastened, which segment gear meshes with a rack on the rod 18, the opposite end of which meshes with the segment gear 19, which is attached to the spindle on which the arm 20 is fastened, in combination with a rod 21 passing through a hole in the forked rod 22, the lower end of which is connected to the arm 7, a spiral spring 23, the whole being arranged and operated substantially as and for the purpose specified. 15th. The combination, with the arm 7, of stor O, substantially as and for the purpose specified. 16th. The rod 25, connected at one end to the sliding-plate V, and at its other end to the arm 26, in combination with the pivoted harpoon fork 24, connected to the arm 26 by the segment gears 27 and 28. 17th. The grooved bracket 29, arranged to receive the friction roller 30, attached to a slide 31 on the harpoon fork 24, in combination with the jointed rod 32, arranged to connect the slide 31 to the harpoon points 33, substantially as and for the purpose specified. 18th. The grooved bracket 29, holding the friction roller 30, which is attached to the slide 31, as specified, in combination with the pivoted gate B, actuated by the spring D, arranged substantially as and for the purpose specified. 19th. A finger 34, attached to the slide 31 and projecting below a pivoted bell-crank 35, in combination with a cam wiper 39, fixed to the shaft 37 and arranged to actuate the bell-crank 35, substantially as and for the purpose specified. 20th. The rod 41, connected to an arm 42, having a projection to fit below the dog 10 and having a projecting slotted hub fitting over the shaft 37, in combination with the pin 40 placed in the face of the segment gear 38 and arranged to operate the rod 41, sub-

stantially as and for the purpose specified. 21st. The plunger 44, actuated by the spring 45, and arranged to fit behind the shoulder 43 on the rod *k*, in combination with a rock shaft 46, one arm of which is connected to the plunger 44, and its other arm projecting over the periphery of the cam disc L, upon which the wedge-shaped projection 47 is formed, substantially as and for the purpose specified. 22nd. The spur-pinion 50, fastened to the shaft or spindle 51, upon which the cams for operating the knotting mechanism are attached, and a circular recess 49 formed behind its teeth, in combination with the segment gear 38, having teeth corresponding in number to the pinion 50, and a plain rim 48 arranged to fit into the recess 49, substantially as and for the purpose specified. 23rd. The tucker 54, pivoted at 55 and connected by the rod 85 to the pin 57, attached to a slide fitting in the guide-block 56, in combination with a cam 58 arranged to operate the slide, substantially as and for the purpose specified. 24th. The bell-crank 61, connected at one end to the ratchet pawl 60 and at its other end to the rod 85, of the tucker 54, in combination with the cord-holder 74, and spring 86, substantially as and for the purpose specified. 25th. The combination, with the cord-holder 74, of the spring fork 87 pivoted on the spindle of the cord-holder and arranged to keep the holder clear from the fibres of the cord. 26th. The rod 63 connected to and operated by the cam 62, in combination with a quadrant rack 64, arranged to mesh with teeth formed on the spindle of the bill-hook 66, substantially as and for the purpose specified. 27th. The bill-hook 66, the upper jaw of which is solid with the spindle 67, while the lower jaw is pivoted at 69 to the spindle 67, and connected to the rod 70 which fits into the groove made in the spindle 67, in combination with a friction roller 71, fitting on a cam track 72, formed in the bracket 68, substantially as and for the purpose specified. 28th. The arm 73 pivoted at 75 and carrying the cord-holder 74, in combination with the pivoted rod 77 connected to the cam 76 operating substantially as and for the purposes specified. 29th. The pivoted stripper 59, in combination with the rod 79 arranged to connect it to the cam 78, substantially as and for the purpose specified. 30th. The plate 80 on which the knife 81 is formed, pivoted at 82 and having a slot 83 made in it to receive, the end of the pin 84, in combination with the rod 79 actuated by the cam 78, substantially as and for the purpose specified.

No. 21,581. Combined Header and Thrasher.

(Étêtuse-Batteuse.)

Samuel L. Gaines, Stockton, Cal., U.S., 4th May, 1885; 15 years.

Claim.—1st. A frame adapted for a combined heading and thrashing machine, said frame consisting of the transverse beams D, D', longitudinal beams B, C, E, E', E₂, rearwardly extending beam F and platform H extending at right angles to the line of draft, substantially as described. 2nd. A frame composed of the transverse beams D, D', longitudinal beams B, C, E, E', E₂, and rearwardly extending beam F, in combination with suitable supporting wheels, and driving wheel A mounted in said frame, and connecting gearing consisting of the axle *a*, shafts *d* and *g*, gears *b*, *c*, *e*, *f*, *h*, and *o*, cam K and pivoted connecting rod K₁, substantially as set forth. 3rd. In the combination, with the main frame of a heading and thrashing machine, the heading and conveying frame I I₁ and I₂, roller J₁ having a pivoted shaft for said heading, and conveying frame roller J₂, apron J, cam K, pivoted lever K₁, a cutter mechanism operated by said lever, and suitable driving and adjusting mechanism, substantially as specified. 4th. In combination with the main frame of a heading and thrashing machine, the frame I I₁ and I₂, roller J₁ having a pivotal shaft, conveyor J, cam K, pivoted lever K₁, a cutter mechanism operated by said lever, conveyor O located at the rear of conveyor J, and mechanism for actuating said conveyers and cutting mechanism, substantially as set forth. 5th. In combination with the main frame of a heading and thrashing machine, the heading and conveying frame, substantially as described, pivotally secured at its rear end to the main frame, conveyor J, cam K, pivoted lever K₁, a cutting mechanism operated by said lever, conveyor O located at the rear of conveyor J and at right angles thereto, auxiliary conveyor P and mechanism for operating said conveyor, substantially as shown and described. 6th. The combination of a cutter mechanism conveyor J, conveyor O located at the rear of conveyor J₁, and extending at right angles thereto, auxiliary conveyor P located to one side of conveyor O and being auxiliary thereto, and suitable operating mechanism, substantially as shown. 7th. In combination with the main frame A, conveyor frame pivoted therein at its rear end having a cutting mechanism at its front end, and a suitable vertical adjusting mechanism, and a reel frame pivoted to the main frame and flexibly connected to the conveyor frame, for the purpose set forth substantially as described. 8th. In combination with the main frame, a conveyor frame pivoted therein at its rear end, having a cutting mechanism at its front end, and a suitable vertical adjusting mechanism, a rail frame pivoted to the main frame and flexibly connected to the conveyor frame, and conveyor O located at the rear of conveyor J and extending at right angles thereto, substantially as specified. 9th. In combination with the main frame, a conveyor frame pivoted therein at its rear, and having a cutting mechanism at its front end, and a suitable vertical adjusting mechanism, a reel frame pivoted to the main frame and flexibly connected to the conveyor frame, conveyor O located at the rear of conveyor J and extending at right angles thereto, and vertical conveyor P located at one side of the conveyor O and auxiliary thereto, substantially as set forth. 10th. The combination of the main frame, a conveyor frame pivoted therein, at its rear end a cutting mechanism at the front end of the conveyor frame, windlass G mounted on the main frame, and rope N extending therefrom to the pivoted conveyor frame, for the purpose of vertically adjusting said frame, substantially as shown and described.

No. 21,582. Sectional Ladder. (Echelle Brisée.)

Philemon T. Gates, New York, N.Y., U.S., 4th May, 1885; 5 years.

Claim.—1st. The herein-described means for securing sections of ladders together, consisting in interlocking the ends of the narrow sections A, within the inner sides of the wider sections A₁, by means of slots *c* in the ends of the narrow sections A, fitting into recesses in the rounds *d*₂ of the adjacent wider sections A₁, and slots *c* in the

ends of said wider sections, fitting over projections on the narrow sections A, substantially as and for the purposes set forth. 2nd. The narrow sections A, provided with projecting rounds and slots *c*, in combination with the wider sections A₁, having similar slots *c*, and rounds provided with recesses to receive the slotted ends of the said narrow sections and suitable spring fastening devices, substantially as shown and described. 3rd. In combination with the top section having slots *c*, the roller *e* having journals *f* to fit into said slots and the spring fasteners B, as and for the purpose set forth.

No. 21,583. Dynamo-Electric Machine.

(Machine Dynamo-Electrique.)

Elihu Thomson, Lynn, Mass., U.S., 4th May, 1885; 5 years.

Claim.—1st. The combination, with the field-magnet in a dynamo-electric machine, of a secondary or storage battery in a branch around the field magnet coils, and arranged in the manner described, so that the discharge-current from said battery may circulate through the coils in a direction to preserve the normal polarity of the magnet. 2nd. The combination, in a dynamo-electric machine, of field-magnet coils connected to a commutator brush, a branch taken from a point between the commutator and said coils, and a secondary or storage battery in said branch, as and for the purpose described.

No. 21,584. Band Cutter and Feeder for a Thrashing Machine. (Coupe-Hart et Alimentateur pour Machines à Battre.)

Robert Aikin, Brampton, Ont., 4th May, 1885; 5 years.

Claim.—1st. A feed-box, having a bottom formed by an endless travelling apron A, and adjustable sides F, designed to form the box hopper-shaped, in combination with the revolving saw N, arranged substantially as and for the purpose specified. 2nd. A feed-box, having a bottom formed by an endless travelling apron A, in combination with hinged sides F having slats *b* hinged to their bottom side, substantially as and for the purpose specified. 3rd. The sides F, hinged to the feed-box frame B, in combination with the arm H, fixed to the spindle G and operated by the hand-lever K, substantially as and for the purpose specified. 4th. The combination of the sides F, hinged to the feed-box frame B, the arms H fastened to their spindles G, the chain M arranged to connect the two spindles to the hand-lever K, for operating the same. 5th. The revolving saw N, fixed to and driven by a spindle journaled within the stationary pipe O, in combination with an endless travelling apron A, arranged to operate substantially as and for the purpose specified. 6th. An endless travelling apron A, arranged to convey grain towards the cylinder of the thrashing-machine, in combination with the spreader O having a series of curved fingers D, shaped and fixed to the spreader, substantially as and for the purpose specified. 7th. An endless travelling apron A, arranged to convey grain towards the cylinder of the thrashing machine, in combination with the feeder R having curved fingers, substantially as and for the purpose specified. 8th. An endless travelling apron A, in combination with the revolving saw N, the revolving spreader Q and the revolving feeder R, arranged and operating substantially as and for the purpose specified. 9th. A feed-box having hinged adjustable sides F, and a bottom formed of an endless travelling apron A, arranged to convey grain towards the thrashing cylinder D, in combination with the saw N, spreader Q and feeder R, all arranged and operating substantially as and for the purpose specified.

No. 21,585. Churn Dasher. (Baite à Beurre.)

Jeremiah J. Lanning, Yarmouth, Ont., 4th May, 1885; 5 years.

Claim.—The cross pieces B, B, B, B, including the piece *a*, into which they are fixed, and the wires or strips *c*, *c*, *c*, *c* which are placed upon them, as shown in Fig. 1 on the plan hereto annexed, substantially as and for the purpose hereinbefore set forth.

No. 21,586. Washing Machine.

(Lavuse Mécanique.)

Joseph Cadran, Sorel, Que., 4th May, 1885; 5 years.

Claim.—1st. In a washing machine, the revolving cross D secured to the vertical spindle O, and having the fingers *c*, *c*, *c*, *c* projecting to the vertical spindle O, and having the fingers *c*, *c*, *c*, *c* projecting downward from it at different distances from its centre, substantially as shown and described. 2nd. In a washing machine, the handle *d* attached to the lying shaft E, so as to overhang the side of the machine, substantially as shown and for the purpose set forth.

No. 21,587. Portable Barb Wire Fence.

(Clôture Portative en Fil de Fer Barbelé.)

Newton L. Forster, Trafalgar, Ont., 4th May, 1885; 5 years.

Claim.—A combination of sections A, A, and the manner of bracing and locking the heads of both sections together at once, also the helve property of the bolt E, allowing the sections to adapt themselves to rough and uneven grounds, as and for the purpose hereinbefore set forth.

No. 21,588. Wash Boiler Fountain.

(Puits de Chaudière de Buanterie.)

James R. Berney, Sharbot Lake, Ont., 4th May, 1885; 5 years.

Claim.—A wash boiler fountain, having the hollow base A, subdivided by volutely-curved walls E, E₁, F, F₁, forming spaces H, H₁, and provided with inflow openings C, D, whereby the flow up the tubes G, G₁ is accelerated by the steam from the spaces H, H₁, as set forth.

No. 21,589. Lamp. (Lampe.)

Stillman H. Matthews, Toronto, Ont., 4th May, 1885; 5 years.

Claim.—1st. The combination of the fount B, jacket D and wick-

tube C open at both ends, whereby heat from the burner is cut off from the oil in the fount by a space through which air may ascend, for the purpose described. 2nd. The combination of the fount B, jacket D and double walled wick-tube C, open at both ends, and closed at the bottom by an annular ring D₁, and provided with a tubular feed E opening through the jacket, whereby oil will be taken solely from near the bottom of the fount, for the purpose set forth. 3rd. In combination with the double-walled wick-tube C, open at both ends, having ratchet wheel G, of the surface perforated tubular wick-holder K, as set forth. 4th. The combination, with the double-walled wick-tube C, open at both ends, of the perforated tubular wick-holder K, and ring L for holding the wick, as set forth. 5th. The combination, with the jacket D, and wick-tube C, of the wire M, spring P and spreader O, for extinguishing the flame as set forth. 6th. The basket R, in combination with a tubular wick-tube C, and tubular lamp stand A for catching cinders from the burner, as set forth. 7th. The combination of the hollow stand A, fount B, jacket D, tubular double-walled wick-tube C, centrally open at both ends and extending through the jacket ratchet wheel G, perforated tubular wick-holder K, and depressible extinguisher, consisting of the wire M, spring P and spreader O, as set forth.

No. 21,590. Autographic Telegraph Instrument and Circuit. (*Instrument et Circuit de Télégraphe Autographique.*)

Sylvester P. Dennison and Robert D. Radcliffe, New York, N. Y., U.S., 4th May, 1885; 5 years.

Claim.—1st. An automatic autographic telegraph instrument, having the operating stylus or electrode vibrating over the surface of the substance on which the message is written or to be recorded, attached to or connected with an armature so pivoted or arranged in the field of an electro-magnet fixed to one pole of a permanent magnet, that when the said electro-magnet is placed in a line and actuated by certain changes of polarity introduced into the current on such line, the said armature will oscillate or move from side to side in obedience to the influence of the said changes, substantially as herein described. 2nd. An automatic autographic telegraph instrument, having the operating stylus or electrode vibrating over the surface of the substance on which the message is written, or is to be recorded, attached to or connected with an armature polarized by a helix and so pivoted or arranged in the field of a permanent magnet, or magnets, that when the said armature is placed in a line and actuated by certain changes of polarity introduced into the current on the said line, it will oscillate from side to side in obedience to the influence of the said changes, substantially as herein shown and described. 3rd. An automatic autographic telegraph instrument, having the electrode or stylus which vibrates over the surface of the substance on which the message is written or is to be recorded, attached to or connected with the armature of a hollow electro-magnet, so arranged that when the said electro-magnet is placed in a line and actuated by certain changes of polarity introduced into the current on the said line, the said armature will oscillate in obedience to the influence of the said changes of polarity, substantially as herein described. 4th. The combination of an operating stylus or electrode, a connecting arm, an armature either of a hollow electro-magnet or an electro fixed to one pole, of a permanent magnet or an armature polarized by a helix pivoted or arranged to oscillate in the field of a permanent magnet, or magnets, with a means for reversing the polarity of the line into which the said electro-magnets or polarized armature are placed, substantially as herein set forth and described. 5th. The vibrating stylus or electrode attached to or connected with the armature of a hollow electro-magnet, or of an electro-magnet fixed to one pole, of a permanent magnet, or an armature polarized by a helix and arranged to oscillate in the field, of a permanent magnet or magnets, both the stylus and electro-magnet or polarized armature being placed in the main line circuits, in combination with a means for reversing the polarity of the current, whereby the changes of polarity cause the vibrations of the stylus and the circuit is preserved for the transmission of the message's impulses, substantially as set forth. 6th. The combination of the following parts: means for reversing the polarity of the current of the main line, and the electro-magnet fixed to one pole of a permanent magnet or a hollow electro-magnet, with an armature arranged in either case to oscillate as the said electro-magnets are actuated by the said changes of polarity, or an armature polarized by a helix and pivoted in the field of a permanent magnet, the contact spring J and the relay points *g g* by which the feed mechanism actuated and brought into exact unison with the changes of polarity on the line and the vibrations of the operating stylus or electrode, substantially as described. 7th. The combination of the electro-magnets U, U₁ with the relay points *g, g*, and the contact spring J, operated by the armature attached to the stylus by which the said magnets are alternately energized, and by the connected armatures T, T₁, a rocking motion given to the shaft A, substantially as described. 8th. The combination of the mechanism for feeding either of the two strips of paper under the electrodes, consisting of the electro-magnets U, U₁, the tilting connected armatures T, T₁, the shaft *h*, the rocking lever S, the pawls *k, k*, the connecting levers *u, v*, the escapement V, the ratchet-wheel R, the drums O, O₁, the friction rollers P, P₁ and the cam lever *o* by which one of the said rollers is made to engage with its drum while the other is withdrawn, substantially as herein described. 9th. The pole changer *q*, consisting of three plates on the periphery of a rocking wheel, and two contact rollers, the motion necessary to operate it being imparted by a force other than that of the current passing through it, substantially as herein shown and described. 10th. The combination of the feed mechanism, operated by a local circuit and the pole changer *q* for reversing the current on the main line whereby the said current is not taxed to reverse its own polarity, and at the same time the motions of the various parts, and the action of the main and local circuits is made reciprocal and the operation of the entire machine automatic, substantially as herein set forth and described. 11th. The combination, in one machine, of two electrodes or styluses, with their operating armatures, and magnets, with a single feed mechanism having two feed drums, and friction rollers, the several parts connected by a switch or circuit controlling mechanism, whereby either stylus or electrode may be operated at will,

and the same machine be thus used for transmitting and receiving, substantially as herein set forth and described.

No. 21,591. Wire Strainer for Wire Fences. (*Machine à Tendre le Fil de Fer à Clôtures.*)

Joseph E. Pounds, Kew. (Assignee of Charles O. R. Walker, Coolart.) Victoria, 4th May, 1885; 5 years.

Claim.—1st. A wire strainer, consisting of a metallic roller having a central portion upon which the wire is wound of less diameter than its ends, which latter are provided with openings *a* and recesses *a*₂, extending from said openings, substantially as and for the purpose specified. 2nd. A wire strainer, consisting of a metallic roller, having a central portion upon which the wire is wound of less diameter than its ends, in which latter are formed openings *a*, a recess *a*₂ extending from said openings, and a slot *a*₃ registering with said recess, substantially as and for the purpose specified. 3rd. A wire strainer, consisting of a hollow metallic roller, having a central portion upon which the wire is wound of less diameter than its ends, in combination with a fence post and wire, substantially as and for the purpose specified. 4th. A wire strainer, consisting of a hollow metallic roller, having a central portion upon which the wire is wound of less diameter than its ends, and its hollow axis formed angular in section, substantially as and for the purpose specified. 5th. A wire strainer, consisting of a roller having a central portion of less diameter than its ends, and provided in said ends with radial openings, in combination with a retaining device constructed to bite into or embrace the fence post to which it is applied, substantially as and for the purpose specified.

No. 21,592. Manufacture of Shoes. (*Fabrication des Souliers.*)

William A. Reed, Westborough, Mass., U.S., 4th May, 1885; 5 years.

Claim.—1st. The described method of forming the upper of a shoe, consisting in first cutting a blank in the form shown, then splitting the blank from the heel by an inclined cut to the proper point, and then forming the sides and counter out of the upper and lower sections with the thicker edges at the bottom, all substantially as described. 2nd. A shoe upper, formed of one piece, split in the rear portions, and having the edges of unequal thickness, said split portions constituting the sides and counters with the thicker edges at the bottom, all substantially as described.

No. 21,593. Automatic Shunt for Telephone Lines. (*Commuteur Automatique pour Téléphones*)

George F. Lutringer, (Assignee of Charles D. Wright and Charles A. Fisher), Petersburg, Ill., U.S., 5th May, 1885; 5 years.

Claim.—1st. In a telephone line, an automatic resistance and retardation reducer, consisting of an electro-magnet placed in the line, and connected with the large signalling magnet of a spring, placed opposite the ends of the cores of the electro-magnet, and carrying the armature of said magnet, and of a binding screw against which the end of the spring rests, the binding screw and the spring being connected with the line wires, or wire leading to the line wires at opposite sides of the signalling magnets, substantially as herein shown and described. 2nd. The combination, with a telephone line, of the signalling magnet A, the electro-magnet B, connected with the signalling magnet, the spring D and armature attached thereto, connected by a wire with the line leading from the corresponding magnet A to the next magnet B, and of the screw G against which the end of the spring D rests, which screw is connected with the wire *a*, connecting the corresponding magnet B with the corresponding magnet A, substantially as herein shown and described. 3rd. The combination, with the signalling magnet A, of the magnet B, the spring D, the armature F on the same, the blocks H, the screw G held in the same the wire *k* connecting the block H with a wire leading to one end of the magnet A, and the wire *f* connecting the spring D with the wire leading to the other end of the magnet A, substantially as herein shown and described. 4th. The combination, with a telephone line, of a signalling magnet for each station, and an electro-magnet and a spring for each signalling magnet, which magnet and spring automatically cut out the signalling magnet when the reverse current does not pass through the said electro-magnet by reason of the retraction of its armature against a back stop to close a short circuit around the signalling magnet, and automatically bring the said signalling magnet in circuit when the reverse current of unusual strength passes through the electro-magnet, substantially as herein shown and described.

No. 21,594. Fire-Escape. (*Sauveteur d'Incendie.*)

George H. Downie, (Assignee of Robert E. Downie), Whitewater, Wis., U.S., 4th May, 1885; 5 years.

Claim.—1st. In a fire-escape, a slide composed of the independent parts arranged side by side with their inner faces flat and in contact, in combination with a suspended rope passing in and out through both parts of the slide, a carrier attached to one member of the slide and a lever pivoted at one end to one member of the slide, and having its fulcrum on the other member, substantially as and for the purpose set forth. 2nd. In a fire-escape, the rope A, in combination with a slide member C, provided with apertures *c* and boss *c*₁, the companion slide member D, provided with apertures *d* and bosses *d*₁, and the bail E attached to one member of the slide, substantially as and for the purpose set forth. 3rd. In a fire-escape, suspended rope A, in combination with the slide B, composed of two members C and D, constructed substantially as specified, the bail E attached to one of the members of the slide and the lever C, substantially as and for the purposes set forth.

No. 21,595. Shutter Bolt and Fastening. (*Goupille et Loquet de Contrevent.*)

John Von Hollen, Charleston, S.C., U.S., 6th May, 1885; 5 years.

Claim—1st. The combination, in a shutter bolt, of a catch A, formed of two parts A¹, A², screwed to each other, said part A² having a conical head C, and a sliding latch plate B¹, fitted to the window frame, the wall or shutter, and adapted to engage the catch A behind its head C, substantially as shown and described. 2nd. As a new and improved article of manufacture, a catch for a shutter bolt and with a tubular screw-threaded part A¹, and a screw-threaded and headed part A² adapted to be adjusted on the part A¹ to vary the length of the catch, substantially as shown and described. 3rd. As an improved article of manufacture, a catch for a shutter bolt made with a tubular screw, threaded part A¹ having a head or collar a¹, and a screw-threaded and conically-headed part A², adapted to be adjusted on the part A¹ to vary the length of the catch, and said part A² having the collar D, substantially as herein set forth. 4th. The combination, with the parts A¹, A², of the shutter bolt screwed to each other, and constructed with the collar or head a¹, conical head C and collar D, as specified, of the set screw d, substantially as herein set forth. 5th. The combination, in a shutter fastening and with the bar F, laid over the window shutters, of an extensible catch A formed of two parts A¹, A², screwed to each other, said part A¹ having a head or collar a¹ and the part A² having a conical head C, and a sliding latch plate B² fitted to the window frame or wall and adapted to engage the catch bar behind its head C, substantially as herein set forth.

No. 21,596. Adjustable Clamping Device.

(Appareil d'Assemblage Mobile.)

George W. Zeigler, Washington, D.C., U.S., 6th May, 1885; 5 years

Claim—1st. As a new article of manufacture, an adjustable clamp or lever, provided with a curved projection to engage the under side of a table or shelf, and a straight arm projecting over the top of the article to be clamped, formed at its extremity with lateral pins, and intermediate notches for engaging a clamping wedge, substantially as described. 2nd. The pivoted clamp arm or lever C, having in its side the curved slot c₂, and formed with curved projection C₁, lateral pins c₅ and intermediate notches c₄, in combination with a plate having a wedge flange, substantially as described. 3rd. The pivoted adjustable arm or lever C, having laterally projecting pins c₅, and notches c₄, knob c₆ extending on each side thereof, curved projection C₁ and pins c₅, in combination with pivoted plate D having wedge flange d₁, substantially as described. 5th. The combination, with board B, of arm C and plate D, pivoted to said board at c and d respectively, the arm C having slot c₂, projection C₁ and pins c₅, and the plate D being provided with wedge flanged d₁ to engage pins c₅, as set forth.

No. 21,597. Apparatus for Administering Gas for the Production of Anæsthesia.

(Appareil pour Administrer le Gaz pour produire l'Anesthésie.)

Uriel K. Mayo, Boston, Mass., U.S., 6th May, 1885; 5 years.

Claim—The gas inhalation apparatus, substantially as described, consisting of the condenser gasometer, the flexible eduction pipes and their stop cocks, the sealing bottle and its fluid charge, and internal and inhalation pipes, all being arranged to operate in manner and for the purpose essentially as set forth.

No. 21,598. Wick-Adjusting Mechanism for Burners.

(Appareil pour Ajuster les Mèches des Becs de Lampes.)

Charles P. Goodspeed, Brooklyn, N.Y., U.S., 6th May, 1885; 5 years.

Claim—The combination, with a wick-tube, of a pair of rollers arranged at opposite sides, and having spiral grooves extending in the same direction, substantially as specified.

No. 21,599. Head Protector.

(Enveloppe de Tête.)

Oliver Schlemmer, Cincinnati, Ohio, U.S., 6th May, 1885; 5 years.

Claim—1st. A garment adjusted to the head, ear and neck, which completely covers the ears and back of the neck, substantially as and for the purposes specified. 2nd. The garment, consisting of the parts A, A and B, and having projecting corners b, b, substantially as and for the purpose specified. 3rd. The garment, consisting of the parts A, A and B, and elastic piece, substantially as and for the purposes specified. 4th. The garment, consisting of the parts A, A and B, and rubber D, substantially as and for the purposes specified. 5th. The garment, consisting of the parts A, A and B, and band C, substantially as and for the purposes specified. 6th. The garment, consisting of the parts A, A and B, and elastic band C, substantially as and for the purposes specified. 7th. The combination of the parts A, A and B, corners b, b, and elastic pieces, substantially as and for the purposes specified. 8th. The garment made in one single piece, consisting of the parts A, A, B, having projecting corners a, d and b, b, and having the shirring cord D and the connecting cord C, substantially as and for the purposes specified.

No. 21,600. Cider Press.

(Pressoir à Cidre.)

Jacob Gorgas and George E. Mohler, Ephrata, Penn., U.S., 6th May, 1885; 5 years.

Claim—1st. As an improvement in continuous juice-extracting presses, as described, the fixed imperforate roll D, adjustable imperforate tension-roll E, and movably adjustable perforate roll F, with the porous fabric endless apron G, in combination with the fixed imperforate roll H, and movable adjustable imperforate roller H¹, the non-porous apron L, gear H⁵, pinion B² and crank B₃, substantially as shown and for the purpose set forth. 2nd. In a continuous juice-extracting press, as described, the fixed imperforate roll H, and adjustably movable imperforate roll H¹, with the non-porous endless apron L, in combination with the perforate roll F, apron G, imperforate rolls D, E, gear wheel H⁵, pinion B₂, crank B₃, rolls B, springs I, adjusting-screw J and tightener M, W, substantially as and for the purpose specified. 3rd. In combination with the rolls D, E, F, H and H¹, aprons G, L, the roll M, with its lever N, arms N₂, fulcrum N₁

and weight P, whereby a variable tension is produced upon the apron L, and the pomace held between the aprons G, L, is correspondingly compressed, as and for the purpose specified. 4th. In combination with a juice-extracting press-frame, as described, and the series of imperforate and perforate rolls mounted therein, the movable rails A₃, whereby the aprons G and L may be introduced and applied to their respective rolls without dismantling the machine, in the manner and for the purpose set forth. 5th. In a continuous juice-extracting press, as described, the perforate roll F, with perforations F₂, in combination with a porous fabric endless apron G, and a non-porous endless apron L, so arranged relative to said roll that the aprons G, L shall cover the upper half circumference of said roll, the lower half being free, whereby the juice expressed from the pomace held between said aprons will pass through the porous apron G, and the perforations F₂ within the roll and by the perforations F₁ from the interior of the roll upon the gutter R, and be discharged by pipe S, substantially as and for the purpose specified. 6th. In a press, as described, provided with the rolls H, F and bearing F₁, H₂, the spring stem I₂, in combination with the adjusting screw J, its tenon J₁, hand-wheel J₂, and K, helical or gum spring I and post A, whereby the pressure upon the rolls is adjustable, and unusual strains, provided for substantially as shown and for the purpose hereinbefore set forth.

No. 21,601. Egg-Holder. (Coclière.)

Francis P. Hervey, Brenham, Texas, U.S., 6th May, 1885; 5 years.

Claim—1st. In an egg-holder, the combination, with two hollow semi-ellipsoidal sections, having stems and legs, which stems are hinged together, of a spring for pressing the sections together, substantially as herein shown and described. 2nd. In an egg-holder, the combination, with two hollow semi-ellipsoidal sections A, having downwardly projecting stems B, terminating in legs C, the stems B being pivoted to each other, of the spring D interposed between the lower ends of the stems, substantially as herein shown and described.

No. 21,602. Finishing Machine for Leather.

(Machine à Corroyer les Cuirs.)

George A. Hardy, Old Lenton, Eng., 6th May, 1885; 5 years.

Claim—The combination, in a machine for finishing leather, of a revolving drum carrying fleshing knives B₃, draw rollers C, C, ground-iron roller G and levers D₁, D₂, substantially as set forth.

No. 21,603. Tag for Securing and Shipping Parcels. (Ligature pour Attacher et Charger les Paquets.)

James Castle, Toronto, Ont., 6th May, 1885; 5 years.

Claim—1st. In the shipping tag C, the cord H with knot F, enclosed in the envelope B having holes a, a₁, a₂, a₃ and a₄, as shown and described. 2nd. In the tag envelope B, the flaps D, with apertures and seal d, as shown and described. 3rd. In an envelope, such as described, the holes b, b₁ and cord H, as shown and described and for the purposes set forth. 4th. In a tag envelope, such as described, the cord H, having a knot G enclosed in the envelope B, as shown and described and for the purposes set forth.

No. 21,604. Window Curtain Bar.

(Bâton de Rideau de Fenêtre.)

Ira B. Tripp, Aurora, Ill., U.S., 6th May, 1885; 5 years.

Claim—1st. A window-curtain bar, composed of one or more slotted metallic tubes, substantially as described, for the bottom of slotted curtains. 2nd. In combination with a window-curtain bar, composed of one or more slotted metallic tubes, the spiral B, B, or equivalent means, attached to the edges of a curtain, substantially as and for the purpose set forth.

No. 21,605. Brick Machine. (Machine à Brique.)

Cyrus Chambers, Jr., Philadelphia, Penn., U.S., 6th May, 1885; 5 years.

Claim—1st. The improvement in the means for fitting the socketed thrust plate on to the end of the pugging shaft, consisting in providing the latter with a shoulder and longitudinal indentations, and said thrust plate with a corresponding bearing or shoulder, and internal lugs adapted to register with and enter said indentations in the shaft, the bearing surfaces being trued up, all substantially as and for the purposes specified. 2nd. The screw-case lining, adapted to be rotated to different positions with relation to the case, and the expressing screw, and provided with means, substantially as shown, for securing the same in such different positions, substantially as and for the purpose specified. 3rd. The combination of the screw case, the rotatable lining having the slots R₂, and the fastening lugs r₅, substantially as and for the purposes specified. 4th. The inlet-pipe, having its lower extremity extended into the tempering case in proximity to the circle described by the adjacent knives and of curvilinear form, substantially as shown and for the purpose set forth. 5th. The improvement in the art of making bricks of clay or other plastic substance, which consists in forcing the same through a die in a bar, and cutting the latter into bricks by means of a wire or wires mounted on an endless belt, propelled automatically by the pushing force of the said bar through suitable intermediate mechanism, to move in the same direction as the bar and diagonally across its path, the movement given to the wire or wires with relation to that of the bar being as described, whereby the latter is intersected transversely at right angles and is cut off into brick lengths, substantially as set forth. 6th. The improvement in the art of making bricks of clay or other plastic material, consisting in forcing such material through a suitable die in a continuously moving bar or column, and simultaneously dividing the same into bricks by means of a wire or series of wires, caused to move with the continuous bar, and at the same time across its path, substantially as set forth. 7th. In a machine for making bricks of clay or other plastic material, the following elements, combined and operating substantially as herein-

before described, viz.: mechanism for expressing a body of such material through a die in a bar or column, means for sustaining the latter, and mechanism for severing it into bricks, consisting of one or a series of wires mounted on an endless belt, substantially as described, caused to move with and to carry said wire or wires across the path of the said bar of clay, whereby the latter is divided into bricks. 8th. The combination, in a brick-making machine, with mechanism for forcing the clay through a die in a continuously moving bar, of means for sustaining and preserving the same in line with the die, and a device for severing the bar into bricks, consisting of a wire or series of wires, suitably mounted on an endless flexible belt, arranged and caused to move with and simultaneously across the path of the continuous bar, whereby the same is cut off into bricks, all constructed, combined and operating substantially as described. 9th. In a brick-making machine, the combination, with means for forcing a continuous bar of clay through a die, of an endless belt running over pulleys, and supported in a suitable frame, which belt is located and adapted so as to receive said bar of clay thereon and be by the latter propelled, and mechanism for cutting off the advancing end of the bar into bricks consisting of one or a series of wires suitably mounted over and near the end of the bar on a flexible endless belt inclined towards the bar of clay, and propelled through intermediate connections, by the push or force of one bar impinging upon the first mentioned belt, all constructed, combined and adapted to operate substantially in the manner and for the purpose shown and described. 10th. The combination, with the belt B, adapted to receive and sustain the ejected continuous bar of clay, of the pulley P₂, gears W, W₂, pulleys P₃ and P₄, and the endless carrier running upon the last mentioned pulleys, and having mounted thereon the cut-off wires, whereby the wires are successively carried athwart the moving bar of clay, and whereby the latter is severed into bricks, substantially as shown and set forth. 11th. In that class of brick machines wherein the clay is expressed through a die in the form of a bar, the combination of a movable carrier, a series of cut-off wires secured thereto and held taut by spring-controlled devices, whereby said wires are adapted to yield to hard bodies in the clay and then resume their normal position, together with suitable mechanism for propelling said carrier, and causing the cut-off wires to advance through and sever the bar of clay into bricks, substantially as and for the purpose set forth. 12th. In combination with the endless cut-off belt B₁, the U-shaped bows secured thereto, and adapted to hold the cut-off wires, substantially as shown and described. 13th. The combination, with the endless belt or carrier B₁, of the elastic U-shaped bows secured thereto, the said bows being adapted to hold and by their elasticity keep taut the cut-off wires, yet allow them to yield temporarily to obstructions, substantially as specified. 14th. In combination with the belt B₁, the U-shaped bows, having means substantially as shown, for the ready attachment thereto of the cut-off wires, and for determining and limiting the position of the latter, substantially as and for the purposes set forth. 15th. In combination with the endless cut-off belt, and the described wire-holding bows, the rigid plates D, substantially as shown and for the purposes specified. 16th. In combination with the endless wire, cut-off belt, or carrier, the plates D, when provided with the up-turned flanges d, substantially as and for the purposes specified. 17th. In combination with the bows U, the cut-off belt and its pulleys, the plates D, when secured to said belt at a single point or its transverse line, whereby the belt is at all times permitted to hug closely the said pulleys, substantially as specified. 18th. The combination, with the cut-off belt and its convex-faced pulleys P₃, P₄, and the U-shaped bows, of the plates D, having concave bases to conform to the shape of said pulleys, substantially as and for the purpose specified. 19th. In combination with the flexible endless carrier B₁, wire holders U and pulleys P₃, P₄, of the plates D, when secured to said belt at a single point, or transverse line to the rear of the minor axes of the plates, substantially as and for the purposes specified. 20th. In combination with clay expressing and moulding devices, the belt C and cut-off mechanism and frame F₁, with means, substantially as shown, for adjusting the said frame vertically, for the purpose specified. 21st. In combination with the endless cut-off belt or carrier, having plates D secured thereto, the guide-ways G, substantially as and for the purpose set forth. 22nd. The combination, with the belt B₁, pulley P₄, driving pulley P₅, the series of wires mounted on plates D on said belt in a suitable frame, of the opposed series of rollers r beneath the belt B, all constructed, arranged and adapted to operate substantially in the manner and for the purposes described. 23rd. The endless cut-off belt or carrier, the plates D, with their sides extending beyond the edges of said belt, the bows U and cut-off wires mounted thereon, and the guide-ways G, all constructed, combined and adapted to operate substantially as and for the purposes stated. 24th. The clay expressing and moulding mechanism, the belt B, the cut-off mechanism, consisting of a series of wires transversely mounted on an endless belt or carrier, arranged with relation to said belt B, and the moving bar of clay, substantially as shown, and frictional devices, substantially as shown, for conveying auxiliary motion to the said belt B, all combined, constructed and operating substantially as and for the purposes described. 25th. The following elements in combination, to wit: clay expressing and moulding devices, a belt B running over pulleys suitably journaled in a frame, and adapted to receive thereupon upon the bar of clay issuing from the die of the machine, a pulley, as P₂₀, on the shaft of one of said belt pulleys, a positively driven pulley, as P₈, an idler, as P₉, on a pivoted adjustably weighted lever, as L, a slack or friction belt, as B₃, running over said last mentioned pulleys, together with mechanism for severing the moving bar of clay into bricks, consisting of a series of wires mounted on an endless belt or carrier, arranged with relation to the belt B and bar of clay thereon, as shown, all combined, constructed and adapted to operate and co-operate, substantially in the manner and for the purpose set forth. 26th. In combination with the belt B, its pulleys P₁ and P₂, and the endless belt B₁, bearing the cut-off wires, the pulleys P₃ and P₄ journaled in the vertically adjustable frame F₂, substantially as and for the purposes specified. 27th. In combination with the wire cut-off belt and its pulleys, arranged as shown, with relation to the belt B and the continuous clay-bar X, of the gears W₁, W₂, proportioned as described, whereby the said cut-off belt is caused to advance at a speed having a relation to that of the belt B that is in effect the bar of clay, as set forth, whereby the cut-off wires are caused to be carried squarely through the moving clay-bar. 28th. In

combination with the cut-off belt, and mechanism for driving the same, and rollers r and pulley P₂, of the U-shaped wire holders having the distance between their opposite limbs greater than the width of said rollers and pulley, so as to admit of the cut-off wires being carried below the bar of clay, as specified. 29th. In combination with the belt B, and the off-bearing belt running over pulleys respectively in suitable frames, the independent transfer roller I, located with relation to said belts, substantially as and for the purpose described. 30th. In combination with the belt B, and cut-off mechanism, the independent roller I, having the tapering form, as shown and for the purpose specified. 31st. In a brick machine, of the class recited, the following elements in combination, viz: an endless belt or its equivalent for receiving and sustaining the moving bar of clay issuing from the die of the machine, an endless carrier having cut-off wires suitably mounted thereon, and propelled by mechanism, substantially as described, and an off-bearing belt caused to travel at a greater surface speed than that of the carrier and the bar of clay expressed from the die of the machine, whereby the severed bricks are successively carried away by said off-bearing belt, in time to escape the wire that has just severed the brick from said moving bar of clay, the combination and arrangement being substantially as and for the purpose described. 32nd. The combination, with the belt B and the wires mounted upon the endless cut-off belt running over pulleys above the path of the bar of clay, and propelled by suitable mechanism, substantially as shown, of the off-bearing belt caused to run faster than said belt B, whereby the severed brick is carried away in time to escape the wire which has just cut it from the said bar, substantially as shown and described. 33rd. The combination of the cut-off belt carrying the transverse wires, the pulley P₃, and mechanism for driving the same, of the pulley P₄ journaled in the tightener frame T, whereby said pulley P₄ may be adjusted longitudinally, substantially as and for the purposes stated. 34th. The combination, with the cut-off belt running over pulleys P₃ and P₄, mounted upon the frame F₂, of the frame T sliding upon said frame, and having the pulley P₄ journaled therein, and the adjusting screw t working in said sliding frame, and having its forward end abutting against a projection t₂, located between the said pulleys P₃ and P₄, as and for the purpose specified. 35th. The improvement in scrapers for freeing belt pulleys of clay or other substances, consisting in the combination with said scrapers of deflecting wings, for directing the material scraped from the peripheries of the pulleys, so that the same will fall beyond the belts, substantially as described. 36th. In combination with the pulley P₃, and the deflecting wings j, j, the detachable scraper J adjustably mounted on the latter, substantially as and for the purpose specified. 37th. In combination with the cut-off belt and its pulleys, the scraper J having the detachable wings j, j, as and for the purpose stated. 38th. In the class of brick machines, in which the bar of clay expressed through a die is severed into bricks, by means of a series of wires on an endless moving carrier, the method of adapting the cut-off mechanism for making either bricks or tiles, (in connection with suitable airs consisting in mounting upon said carrier an even number of said cut-off wires whose distance apart is substantially equal to the length of ordinary bricks, and removing alternate wires for adapting the cut-off to make tiles and re-inserting such alternate wires for making bricks, substantially as set forth. 39th. In combination with the off-bearing belt and its frame and rollers, the cap pieces z₂ in proximity to the edges of said belt and rollers, and having their top faces elevated slightly above the belt, as and for the purpose specified. 40th. In combination with the off-bearing belt rollers, the cap pieces z₂ covering the journals of the rollers, and extending over near to the ends of the latter and beyond the bearings thereof, substantially as and for the purpose specified. 41st. The combination with the off-bearing belt-rollers, of the cap-pieces z₂ and corner pieces z₁, the ends of the journals of said rollers being nearing in contact with said corner pieces. 42nd. The combination, with the rollers r₁, of the longitudinally adjustable bearing strips z₂, cap-pieces z₂ and corner-pieces z₁, constructed and arranged as specified.

No. 21,606. Hasp Lock. (*Serrure à Moraillon.*)

Theron S. E. Dixon, Chicago, Ill., U.S., 6th May, 1885; 5 years.

Claim.—1st. As an improved article of manufacture, a lock, the shackle or link of which is provided with a projecting arm, for the purpose as described. 2nd. As an improved article of manufacture, a lock, the shackle or link of which is provided with an arm for the purpose of a hasp, and also a projection on offset upon its rear side, substantially as described.

No. 21,607. Clay Crusher. (*Moulin à préparer l'Argile.*)

Truman D. McKinney and Walter J. Soper, Tecumseh, Mich., U.S., 6th May, 1885; 5 years.

Claim.—1st. In a clay crusher, a pair of polygonally shaped jaws adapted to rotate with a hopper, to break up lumps of clay and deliver the same to a pair of crushing rolls, substantially as and for the purposes described. 2nd. In a clay crusher, a pair of polygonally shaped jaws, adapted to rotate with a hopper, in combination with a pair of crushing rolls, said jaws and said crushing rolls being driven from a main shaft common to both through intermediate gearing, substantially as and for the purpose specified. 3rd. In a clay-crushing machine, a base frame supporting the driving mechanism described, in combination with a pair of conically-shaped crushing rolls, which are supported in suitable boxes upon said frame, substantially as set forth. 4th. In a clay-crushing machine, a base frame carrying the pair of crushing rolls, and the mechanism for giving motion to such rolls, in combination with a frame resting upon the base frame and carrying a pair of rotating jaws, and the mechanism for communicating motion thereto, substantially as described.

No. 21,608. Spring Attachment for Platform Rocking Chairs. (*Manière d'Assujétir les Ressorts des Fauteuils-Plate-formes à Bascule.*)

William I. Bunker, Chicago, Ill., U.S., 6th May, 1885; 5 years.

Claim.—1st. The double brackets A, A, having the spring B, B, as a new article of manufacture, for attachment to platform rocking chairs, substantially as described. 2nd. In a platform rocking chair, the combination, with the rocker and base rail, of double brackets, each bracket having a coil spring, one of said springs being constructed of lighter wire than the other, substantially as described and for the purpose set forth. 3rd. In a platform rocking chair, the combination, with the rocker and base rail, of double brackets, each bracket having a coil spring, one of said springs having a greater number of coils than the other, substantially as described and for the purpose set forth. 4th. The combination, in a platform rocking-chair, of the brackets A, A and coil-wire spring B, said brackets provided with a lug C, substantially as described and for the purpose set forth.

No. 21,609. Perforating Machine.

(Machine à Perforer.)

Edward B. Stimpson, Brooklyn, N.Y., U.S., 6th May, 1885; 5 years.

Claim.—1st. In a punch-holder, the combination, with a bar or body having a rebate in its side, of a plate secured to the under side of the bar or body, and receiving header punches through it, and packing pieces fitted to said rebate and serving to prevent upward movement of the punches, substantially as herein described. 2nd. The combination, with the headed punches, H, of the punch-holder consisting of the plate G¹, and the bar or body G, to the under side of which the said plate is secured, and in the point of which is a rebate of such depth that the punches may be withdrawn entirely from the plate G¹, by an upward movement, and packing pieces fitted to said rebate and serving to prevent the rising of the punches, substantially as herein described. 3rd. The combination, with the punch-holder composed of the bar or body G, having a rebate in the front, and the plate G¹ secured to the bottom of said bar or body, of the punches H, a continuous packing strip fitted to the rebate, and a packing strip or strips fitted between said continuous strip and said plate, and composed of separately removable sections, substantially as herein described. 4th. The combination, with a punch-holder composed of the bar or body G, rebated at the front, and the plate G¹ secured thereto, of the punches H or continuous packing piece fitted in said rebate, and a packing piece or pieces fitted between said continuous piece and the said plate, and composed of separately removable sections of different lengths, substantially as herein described. 5th. The combination, with the punch-holder composed of the bar or body G, and the plate G¹, of the punches H of different lengths, a packing piece *h* provided in its edge with recesses or depressions *h'* opposite the longer punches, and a packing piece or pieces removably fitted between said piece *h* and the punches, substantially as herein described. 6th. The combination, with a punch-holder and stripper capable of being removed together from the perforating machine and inverted, of a support upon which said punch-holder may be secured when inverted, and supports for the inverted stripper capable of adjustment to bring the stripper to a position in which it will serve as a gauge for sharpening the punches, substantially as herein described. 7th. The combination, with the cross-head and vertical guide, of a perforating machine, of a cross-bar connecting said guides at their upper ends, a punch-holder and stripper capable of being together removed from the machine and inverted, the punch-holder being supported on said cross-bar and the latter having supports for the stripper capable of vertical adjustment to bring the stripper into position to serve as a gauge for sharpening the punches, substantially as herein described. 8th. The combination, with the cross-head E, guides D and cross-bar D¹, provided with studs or pins *n* and nuts *o*, of an invertible punch-holder and invertible stripper and stripper-beam provided with eyes *K* removable together from said machine, substantially as herein described. 9th. The combination, with a punch-holder, provided with punches of different lengths, a packing piece provided in its under side with recesses or depressions opposite the longer punches, and a stripper fitted to the punches, and punch-holder and stripper being together removable from the perforating machine, and capable of being inverted, of a support for the punch-holder when inverted, and supports for said stripper capable of adjustment to raise and lower the stripper relatively to the ends of the punches, substantially as herein described.

No. 21,610. Furnace for Heating Water.

(Calorifere à Eau.)

Julius Leduc, Montreal, Que., 7th May, 1885; 5 years.

Claim.—1st. In a furnace, the combination, with the back sides and top containing water chambers, of pipes set in pairs in the fire chamber, as and for the purpose described. 2nd. The combination of the pipes H, secured to the back C, set in pairs obliquely to each other, and connected by bends K, all substantially as herein described.

No. 21,611. Machine for Purifying Middlings.

(Machine à Epurer les Gruaux.)

Andrew Hunter, Chicago, Ill., U.S., 7th May, 1885; 5 years.

Claim.—1st. The combination of the shaker C, and a series of interrupted or open brushes E, E, E, which operate successively upon different parts of the upper surface of said shaker, substantially as described. 2nd. The combination of the shaker C, side bars F and bolts H, and a series of interrupted or open brushes E, E, E, having extension ends adapted to slide on said bars, substantially as described. 3rd. The combination of the shaker C, sectional graded silk D, having the ends fastened to clamps *b*, *b*, and said clamps fastened to the cross piece of the shaker C by bolts *d*¹, substantially as described. 4th. The combination of the shaker C, sectional graded cloth D, the sides of which are fastened to strips *c* and *c*¹, and strip *c*¹ fastened to stationary strip *c*¹¹ by bolt *c*¹¹, substantially as described. 5th. In a middlings purifier, shaker C, suction fan O, the casing and walls forming the space I, tubes *d*, *d* and *m*, *m*, substantially as described. 6th. In a middlings purifier, suction fan O, in combination with shaker C, eccentric P and butting bar P¹, substantially as described. 7th. In a middlings purifier, suction fan O, shaker C, tubes *d*, *d*, and tubes *m*, *m*, valve V and valves N and V¹,

substantially as described. 8th. The combination, in a middlings purifier, of the shaker C, a series of interrupted or open brushes E, E, E, tubes *d*, *d* and *m*, *m*, feed hopper B, graded silk D, eccentric P and butting bar P¹, substantially as described.

No. 21,612. Neck Tie Fastener.

(Agrafe de Cravate.)

Clayton A. Turner, Milwaukee, Wis., U.S., 7th May, 1885; 5 years.

Claim.—1st. As a new article of manufacture, a neck-tie fastener, formed of a single piece of metal having a spiral fastening coil E, adapted to engage in the neck band of a tie, and an upturned hook D adapted to engage beneath the lower edge of a collar, substantially as and for the purpose set forth. 2nd. A neck-tie fastener, consisting of the spiral coil E, upturned hook D and angular bend F, formed of a single piece of wire, substantially as and for the purpose set forth.

No. 21,613. Roller Skate.

(Patin à Roulettes.)

Cadwallader M. Raymond, Boston, Mass., U. S., 7th May, 1885; 5 years.

Claim.—1st. In a roller skate, the combination of the heel plate B, provided with a series of indentations or depressions *p*, *p*, and the toe-plate A, provided with one or more projections *a* adapted to fit in the depressions *p* of the heel plate, as and for the purpose set forth. 2nd. The combination of the toe-plate A, provided with the projections *a*, the slotted heel plate B, provided with the depressions *p*, *p*, and the clamping screw and nut *c* and *d*, substantially as set forth. 3rd. The cap or cover I, in combination with the outer hub K, of the roller F, as and for the purpose set forth. 4th. The roller K, having a turned down edge, in combination with the inner hub of the roller F, as and for the purpose set forth. 5th. The bearing K, provided with the outwardly-extended rim *h*, in combination with the collar K, as shown and described.

No. 21,614. Roller Skate.

(Patin à Roulettes.)

Cadwallader M. Raymond, Boston, Mass., U. S., 7th May, 1885; 5 years.

Claim.—1st. The combination, with the independent heel and toe plates A, B, of the lever C and bar E, as and for the purpose set forth. 2nd. The combination of the independent heel and toe plates A, B, the lever C, bar E and adjustable heel clamp H, as set forth. 3rd. The separable rubber block O, provided with a depression on the upper side, and a groove on the underside, in combination with the plate L, provided with the seat *l* and the hanger Q, substantially as and for the purpose set forth. 4th. The recessed plates M, in combination with the heel and toe plates A, B, as and for the purpose set forth. 5th. The toe plate A, constructed with the curve and slot *d*, in combination with the heel plate A, as and for the purpose specified. 6th. In an extensible skate, I claim the combination, with the toe and heel plates, of means for drawing the two plates together or contracting their length, whereby the shank of the sole of the boot or shoe is arched or increased in curvature so as to constitute a firm support for the shank and instep of the foot.

No. 21,615. Apparatus for Ventilating Railway Carriages, etc.

(Appareil pour Ventilier les Voitures de Chemin de fer.)

Adam Miller, London, Eng., 7th May, 1885; 5 years.

Claim.—For ventilating railway or other carriages, the construction, in or along their roofs, of longitudinal air channels open at the ends, and communicating with the compartments by apertures through their ceilings, these apertures having on each side upwardly inclined cheeks, substantially as and for the purpose herein set forth.

No. 21,616. Stop and Water Valve.

(Robinet de Retenue et d'Eau.)

Patrick Harvey, Chicago, Ill., U.S., 7th May, 1885; 5 years.

Claim.—1st. The combination with a water supply pipe and a wash-pipe, a valve chamber located and affording communication between them, and a valve playing in such chamber and adapted to pass through, and close at one end, the supply port, and at the other end the wash port and longer than the distance between said ports, said valve provided with bearing shoulders, and said chamber provided with bearing seats for said shoulders at the margins of said ports respectively, the distance between said seats being greater than the distance between said shoulders and less than the distance from either shoulder to the opposite end of the valve, substantially as and for the purpose set forth. 2nd. The combination, with water supply pipe and service pipe, and a wash pipe communicating therewith, and a stop and wash valve controlling such communication, of an automatic check valve in the wash pipe beyond the stop and wash valve, substantially as set forth. 3rd. In combination, with the water supply pipe, service pipe and waste pipe, the chamber C communicating between the two, the valve D, playing within said chamber, the supplemental chamber E having the eduction port E¹, and the automatic valve E² closing said eduction port and opening outward, substantially as and for the purpose set forth.

No. 21,617. Manufacture of Malt Liquors.

(Fabrication des Boissons Brassées.)

William T. Jebb, Buffalo, N.Y., U.S., 7th May, 1885; 5 years.

Claim.—1st. The herein-described method of producing a wort suitable for the manufacture of beer or ale, which consists in freeing the starchy portions of the kernels of Indian corn or maize from hulls and germs, by steeping, whipping and sifting, and then mashing the separated starchy material together with barley malt, and draining off the wort, substantially as set forth. 2nd. The herein-described method of producing a wort suitable for the manufacture of beer or

ale, which consists in freeing the starchy portions of the kernels of Indian corn or maize from the hulls and germs by steeping, whipping and sifting, then boiling the separated starch to develop the same and then mashing the developed starch together with barley malt and draining off the wort, substantially as set forth.

No. 21,618. Boiler Injector. (*Injecteur de Vapeur.*)

William R. Park, Taunton, Mass., U.S., 7th May, 1885; 5 years.

Claim.—1st. In combination with an injector, a vacuum relief valve, applied between the steam valve and the discharge of the steam nozzle, and adapted to be opened by the pressure of the atmosphere when the pressure within the steam pipe or chamber falls below that of the air without, substantially as and for the purpose described. 2nd. In combination with an injector, an automatic valve, adapted to remain normally closed against the egress of air or steam from the steam chamber or pipe, and to be opened by the pressure of the atmosphere to admit air from without into said chamber or pipe, when a vacuum occurs therein, substantially as and for the purpose set forth. 3rd. In combination with the injector, and the passage opening into the steam chamber or pipe between the steam valve and nozzle, the automatic valve situated in such passage and adapted to normally close it against pressure from within, and to be opened by the pressure of the air without, to admit air to the chamber or pipe when a vacuum occurs therein, substantially as and for the purpose set forth. 4th. In combination with the passage extending from the steam chamber, and its passage intersecting the outer end of said passage, and closed at its upper end with a suitable recessed plug or cap, the puppet-valve closing the opening into the lower end of the intersecting passage and having its stem fitting in and guided by said lower end of the passage, and the recess in the plug or cap, but so formed as not to close them, substantially as and for the purpose set forth.

No. 21,619. Button or Fastening for Garments. (*Bouton de Hurdas.*)

Alfred J. Heys and Samuel Salkeld, Manchester, Eng., 7th May, 1885; 5 years.

Claim.—1st. In combination with a stud, a slit disc having its flanges adapted to be sprung into a groove in the stud, and a cap G attached at its rim to the rim of the slit disc, the head D of the stud being located between the said disc and said cap, substantially as and for the purpose specified. 2nd. In a button, the combination of a stem C, provided with a groove E at each end, and of caps consisting of the slit disc A, secured to the connex disc G, sprung respectively into each groove, substantially as and for the purpose specified. 3rd. A button head, consisting of the combination of a disc, provided with flanges pointing toward the centre, of a convex cover jointed at its rim to the rim of said disc, and of a cloth or other fabric over the said convex cover and pasted permanently to the same, the said flanges being adapted to be sprung over a comparatively small head of a stud, substantially as described and for the purpose specified. 4th. A button head, consisting of the combination of a disc, provided with flanges pointing toward the centre, and of a convex cover jointed at its rim to the rim of said disc, substantially as herein described and set forth.

No. 21,620. Machine for Scouring Grain.

(*Machine à Nettoyer les Grains.*)

George A. Dawson, Cardington, Ohio, U.S., 7th May, 1885; 5 years.

Claim.—1st. The combination of the horizontal perforated cylinder, a shaft passing through it, and the two sets of scouring devices which are arranged at right angles to each other, substantially as described. 2nd. The combination of the horizontal, perforated cylinder B, the shaft which passes through it, a set of curved, perforated scouring devices, and a set of perforated radial scouring devices which extend at right angles to the curved devices, substantially as described. 3rd. The combination of the horizontal, perforated cylinder, the shaft which passes through it, a set of curved, perforated scouring devices, and a set of perforated radial scouring devices, which extend at right angles to the devices H, and a means for adjusting said sets of scouring devices with respect to each other, substantially as set forth. 4th. The combination of the horizontal, perforated cylinder, a shaft passing through it, the automatically adjusting scouring device, which are attached to the shaft, and a means for permitting said devices an endwise movement towards or from the inner side of the cylinder, substantially as described. 5th. The combination of a horizontal, perforated cylinder, a shaft passing through it, the two sets of perforated scouring devices which are arranged at right angles to each other, and a means for permitting the curved scouring devices to automatically adjust themselves toward or from the inner side of the cylinder, substantially as described. 6th. The combination of the horizontal, perforated cylinder, the shaft which passes through it, the spiders L which are secured to said shaft, and which are provided with hollow arms K, the scouring devices H which are provided with arms H1 for entering the arms of the spiders, said scouring devices being arranged obliquely upon their arms, so as to have one of their ends farther from the cylinder than the opposite end A, means for permitting an endwise adjustment to said scouring devices in the arms of the spiders, substantially as described. 7th. The combination of the horizontal, perforated cylinder, the shaft which passes through it, and which is provided with scouring devices for rotating in said cylinder, cam wheel S, which is secured to one end of the shaft, the vibrating lever X, which is pivoted to the frame, the rod Z and the riddle V, which is secured upon the upper side of the frame above the cylinder, substantially as described.

No. 21,621. Manufacture of Starch.

(*Fabrication de l'Amidon.*)

William T. Jebb, Buffalo (Assignee of John C. Schumann, Akron, N.Y., U.S., 8th May, 1885; 5 years.

Claim.—1st. As a new article of manufacture, the herein-described starch meal, consisting of the reduced starchy portions of the kernels

of Indian corn or maize, from which the hulls and the germs have been removed, substantially as set forth. 2nd. The herein described method of manufacturing starch meal from Indian corn or maize, consisting in first steeping the maize, whereby the starchy portions and the germs are swelled and the hulls are toughened, then detaching the hulls and germs from the starchy portions by whipping or beating without additional water, and then separating the hulls and germs from the starch meal by sifting, substantially as set forth. 3rd. The herein-described method of preparing Indian corn or maize for the separation of the hulls and germs from the starchy portions, which consists in steeping the Indian corn in warm water until the starchy portions and germs are expanded or swelled, and then chilling the Indian corn by cold water, whereby the separation of the hulls and germs from the starchy portions is facilitated, substantially as set forth.

No. 21,622. Manufacture of Distilled Spirits. (*Fabrication des Spiritueux Distillés.*)

William T. Jebb, Buffalo (Assignee of John C. Schuman, Akron, N.Y., U.S., 8th May, 1885; 5 years.

Claim.—1st. The herein-described method of preparing the mash, which consists in steeping the maize, then detaching the hulls and germs from the starchy portions of the kernels, by whipping or beating without additional water, then separating the hulls and germs from the starch meal by sifting, and then mashing the starch meal, substantially as set forth. 2nd. The herein-described method of preparing the mash, which consists in steeping the maize, then detaching the hulls and germs from the starchy portions of the kernels, by whipping or beating without additional water, then separating the hulls and germs from the starch meal by sifting, then boiling the starch meal under pressure to develop the starch, and then mashing the developed starch, substantially as set forth. 3rd. The herein-described method of producing distilled spirits from maize, which consists in steeping the maize, then detaching the hulls and germs from the starchy portions of the kernels by whipping or beating without additional water, then separating the hulls and germs from the starch meal by sifting, then boiling the starch meal under pressure to develop the starch, then mashing the developed starch, fermenting the mash and distilling the fermented beer, substantially as set forth.

No. 21,623. Railway Gate.

(*Barrière de Chemin de Fer.*)

The Copeland Manufacturing Company, New York, (Assignee of David W. Copeland, Lowville,) N.Y., U.S., 8th May, 1885; 5 years.

Claim.—1st. The combination of arms D, D1, pointed to a post or fixture A2 B on opposite sides of a crossing, and having a counterweight E, chain H and windlass C, whereby the arms are simultaneously depressed to a horizontal position, and point towards one another by winding the chain on the windlass, and when released the arms return to a vertical position by the gravitation of the counterweights, as set forth for the purpose described. 2nd. The combination of the post A A2, box B B, arms D, D1, D2, D3 pintled thereto, and provided with counter-weights E, chains H, H, tube K and windlass C, whereby the arms are simultaneously depressed to a horizontal position, and resume a vertical position automatically when the windlass is let go, as set forth. 3rd. The arms D, D1, D2, D3, having weights E, E, the lattier adjustable towards or from the center of gravity, for the purposes set forth.

No. 21,624. Drill Tooth Regulator and Compressor for Seeders. (*Régulateur-Pressur des Dents de Semoirs en Lignes.*)

Romulus P. Luxwig, Saumsville, and Samuel M. Lantz, Edinburgh, Va., U.S., 8th May, 1885; 5 years.

Claim.—1st. The combination, with an earth roller, a pair of horizontal bars supported at their rear ends upon the journal thereof, and a seed drill tooth hung vertically between the forward ends of the said bars on a horizontal pivot, of a brace pivoted at its forward end to an upward arm of the drill tooth, and provided with a series of pin holes at its rear end, a pin to be placed in any one of the said holes to rest upon the horizontal bars, a pair of connecting links pivoted at the rear ends on the same pivot on which the drill tooth is hung, and extending forward to be attached to a seeding machine, and a brace extending forward from the upper arm of the drill tooth, and a pin through the brace adapted to rest on the forward links, substantially as described for the purpose specified. 2nd. The combination, with the roller A, the bars B supported therein, of the drill tooth D pivoted at E between the bars B, the brace F pivoted to the drill tooth at G, and provided with the holes I, and pin H in one of said holes T, engaging the bars B, the links J pivoted at their rear ends at E, and the brace K attached to the tooth D and provided with a series of holes L, and the pin M adapted to engage the said holes and to rest on the links J, as and for the purpose described.

No. 21,625. Treating and Preparing Resin.

(*Traitement et Préparation de la Résine.*)

Albert Kissel, Frankfort on the Maine, Germany, 9th May, 1885; 5 years.

Claim.—1st. The conversion of the acids contained in balsams, resins, and their products, and compounds, or by-products, or in mixtures of resins with other substances, by means of lime or other alkaline earth, into their respective salts, in order to harden such resinous by-products, or resin preparations, substantially as specified. 2nd. A mixture of dry resins, balsams and products, with lime or other alkaline earths, substantially as herein described and for the purposes set forth.

No. 21,626. Manufacture of Anhydrous Oxide of Barium. (*Fabrication de l'Oxide de Barium Anhydre.*)

Leon Q. Brin and Arthur Brin, Paris, France, 9th May, 1885; 5 years.

Claim.—The manufacture of anhydrous oxide of barium or baryta, free from nitric acid, carbonic acid and moisture, by heating nitrate of baryta and then cooling the same, or allowing it to cool in a vacuum or partial vacuum, or in a space or chamber from which moisture and carbonic acid are excluded, substantially as hereinbefore described.

No. 21,627. Chemical Fire Engine.

(*Extincteur d'Incendie Chimique.*)

William Morrison, Toronto, Ont., 9th May, 1885; 5 years.

Claim.—1st. In a chemical fire engine, in which the recharging tank or water reservoir is located above the cylinder, the hollow trunnions C fixed to either end of the divided cylinder B and arranged to support it horizontally, in combination with the discharge pipe D passing through the trunnions into the chambers at either end of the cylinder, and connected at their outer ends to a discharge pipe common to both. 2nd. In a chemical fire engine, in which a recharging tank or water reservoir is located above the cylinder, the hollow trunnions C fixed to each end of the divided cylinder B, and fitting into bearings formed on the main frame of the machine, so that the said cylinder may be revolved on the bearings with the trunnions as pivot-points holes being made in the side of the cylinder leading into each chamber and designed to hold the acid pot L, in combination with pipes K, provided with suitable cut-off valve or valves, through which the contents of the recharging tank are conveyed into the cylinder, substantially as and for the purpose specified. 3rd. In a chemical fire engine, the combination of a horizontal cylinder divided into two chambers, and pivoted in suitable bearings formed in the frame, and arranged to support hollow trunnions fixed to the ends of the cylinder, the discharge pipes D extending to the ends of the cylinder, the discharge pipes D extending through the hollow trunnions C into the chambers formed within the cylinder to a point near the bottom side of the said cylinder, with a discharge pipe E common to both discharge pipes D, and provided with a suitable outlet to which a hose or pipe may be connected, for the purpose of forming the discharge pipe D into syphons, substantially as and for the purpose specified. 4th. In a chemical fire engine, having a horizontal cylinder divided into two chambers, and pivoted in suitable bearings formed in the frame, and arranged to support hollow trunnions fixed to the ends of the cylinder, the discharge pipes D extending through the hollow trunnions C and arranged to connect with the discharge pipe E, in combination with cut off valve or valves, by which the communication between the pipes D and E may be regulated at pleasure. 5th. In a chemical fire engine, the combination of the divided cylinder B, the pipes D connecting with the discharge pipe E and the ends of the cylinder and provided with cut-off valves F, and the horizontal rods G and H supported by the pivoted links I, all arranged substantially as and for the purpose specified.

No. 21,628. Car-Coupling. (*Accouplage de Chars.*)

Joseph McCready, New Brighton, Pa., U.S., 9th May 1885; 5 years.

Claim.—1st. In a car coupling, the combination, with the draw head, of the spring-actuated bumper-case, the link guiding apron pivoted at its rear end to the draw-head, and the connected rods attached at one end to the bumper-case and at their other ends to the apron, substantially as set forth. 2nd. The combination of the draw head having longitudinal slots in its sides, the bumper-case arranged therein and having perforated lugs projected rearwardly from its opposite sides, the transverse shaft placed through the openings in the lugs, and having its ends extended through the slots in and beyond the draw-head, the spring, the apron having its forward end adapted to guide the link and hinged at its rear end to the draw-head and the rods connecting the transverse shaft and the apron, all arranged and operating substantially as and for the purpose specified.

No. 21,629. Sewing Machine Hand and Treadle. (*Table et Marche de Machine à Coudre.*)

Philip Diehl, Elizabeth, N.J., U.S., 9th May, 1885; 5 years.

Claim.—1st. In a sewing-machine stand, a cross-brace having supports for both the band-wheel and the treadle integral with said brace. 2nd. In a sewing-machine stand, a cross-brace having supports for both the band-wheel and the treadle integral with said brace and provided also with means for adjusting and taking up the wear of such band-wheel and treadle. 3rd. In a sewing-machine stand, a cross-brace adapted to connect the legs or side pieces thereof, provided at one side with bearings for the fly-wheel crank-shaft, and having a support at its base for the treadle, substantially as set forth. 4th. The combination with the cross-brace of a sewing-machine stand of a crank-shaft and a treadle, both mounted in the said brace, substantially as set forth. 5th. A cross-brace for sewing-machine stands having at its base a cross-bar, combined with a treadle mounted in said cross-bar, substantially as set forth.

No. 21,630. Button Hole Sewing Machine.

(*Machine à Coudre Faisant les Boutonnieres.*)

James G. Green, Rochester, N.Y., U.S., 9th May 1885; 5 years.

Claim.—1st. The combination, with the reciprocating looper-carrier *g* carrying the loopers *i* and *n*, of the separately-pivoted spreaders *c* and *d*, the latter being provided with notch *e* and arm *r*, substantially as and for the purposes set forth. 2nd. The combination, with reciprocating looper-carrier *g*, provided with looper *l* and *n*, and arranged to operate the spreaders *c* and *d*, of the rock-shaft *f*, arm *c*,

connection, *G*, bent lever *D F* and cam-groove *a*, substantially as described. 3rd. In a mechanism for stitching button-holes, the combination of the horizontally-swinging looper-carrier *g*, provided with the looper *l* and *n*, roller *u* and the pivoted spreaders *c* and *d*, substantially as and for the purpose set forth. 4th. In a mechanism for stitching button-holes, the combination, with the reciprocating looper-carrier, loopers and moveable spreaders, of a single cam-groove and suitable connecting mechanism for operating the looper-carrier from the cam-groove and for operating the spreaders from the looper-carrier, substantially as and for the purposes set forth. 5th. The combination, in a mechanism for stitching button-holes, of the reciprocating looper-carrier *g* having loopers *i* and *n* and roller *u*, with the spreaders *c* and *d*, substantially as and for the purposes described. 6th. The combination in a mechanism for stitching button-holes, of the spreaders *c* and *d*, provided with suitable cam-surfaces adapted to impart the proper motion thereto, with the pin or roller *u* and suitable mechanism for operating the same from the single cam-groove *a*, which also operates the loopers, substantially as and for the purposes set forth. 7th. In a mechanism for stitching button-holes, the combination of the single reciprocating pin or roller *u*, with the pivoted spreaders *c* and *d*, provided with cam-surfaces which actuate the spreaders at each end of the reciprocation of the roller by contact therewith, substantially as and for the purposes set forth. 8th. In a button-hole sewing-machine, a pivoted looper-carrier provided with two loopers, combined with two pivoted loop-spreaders and with mechanism for operating said carrier, substantially as set forth. 9th. In a button-hole sewing-machine, the combination, with two pivoted loop-spreaders, of a looper-carrier having two loopers and adapted to operate both of the said spreaders, and mechanism for operating said carrier, substantially as set forth. 10th. In a button-hole sewing-machine, employing a vertically and laterally reciprocating needle, a pivoted looper-carrier, provided with two loopers, combined with two pivoted loop-spreaders, arranged to vibrate across the line of the path traversed by the needle in its lateral movements, substantially as set forth.

No. 21,631. Ditching Machine.

(*Machine à Fossoyer.*)

Alexander McCamrel, Chesley, Ont., 9th May 1885; 5 years.

Claim.—1st. A ditching machine, constructed with a sloping shovel and sluice way having an elevator of pitched chain, or strap, provided with cups or plates thereon, which move up the sluice way and draws the clay from the mouth of the shovel along the sluice way and dumps it into a transverse spout suitably located to deliver the clay into an outwardly and clear of the ditch, as specified and shown. 2nd. In a ditching machine, constructed as described, with a sloping shovel, sluice way and elevator, the combination of the standards *I*, hinged angular bars *K*, an axle *L*, provided with driving wheels *M* and chain pulleys *N* on the elevator by means of the pulleys *O* on the ends of pulleys *J* of the elevator, a beam *T* hinged on frame *C* provided with two pulleys *U* pivoted on arms *V*, and counter weight *W* to which act as a lightener of the endless pitch chains which connect the pulleys *N* and *O* which drive the elevator, the whole constructed and arranged and operating substantially as and for the purpose set forth. 3rd. In a ditching machine, constructed as described, with a sloping shovel *F*, and sluice way *G* and an elevator, and the same, the combination of the frame *C*, standard *A*, runner *B*, cross bars *S*, wheels *P* on cranked levers *R*, socket *e*, tongue *e*, pulley *e*, seat *E* and foot stands *e*, the plough *e* in front of the shovel, with coupler *e* and rear would boards *e* changeable with the cultivator tooth *e* of the rear ploughs *e* for covering in the tile when laid, the whole constructed and arranged and operating substantially as and for the purposes set forth.

No. 21,632. Letter Box. (*Boite aux Lettres.*)

Abner S. Cook, Burlington, Iowa, U.S., 9th May, 1885; 5 years.

Claim.—A letter box *A*, provided with window *W*, perforated top *T*, lid *L* and bottom *B* hinged by strong springs, substantially as and for the purpose described.

No. 21,633. Wrench. (*Clé à Ecrrou.*)

Stephen D. Greenleaf, Stark, Me., U.S., 9th May, 1885; 5 years.

Claim.—1st. The combination, with the bar *A* and *C*, having recess *D* formed therein, of slide *E* and jaw *E*, (with recess *D*) automatically prevented from slipping, substantially as herein set forth. 2nd. The combination, with the slide *E* and jaw *E*, of the spring *G* carried in recess in bar *A*, as and for the purposes described.

No. 21,634. Hand Grenade for Fire Extinguishers. (*Grenade à Main pour Extincteurs d'Incendie.*)

John J. Harden, (Administrator of the Estate of Henry D. Harden.) Chicago, Ill., U.S., 9th May, 1885; 5 years.

Claim.—A hand grenade for fire extinguishers, consisting of two or more bottles, united into a single structure by suitable connecting devices, substantially as and for the purposes set forth.

No. 21,635. Toy and Model Horses, etc.

(*Chevaux Jouets et Patrons, etc.*)

Moritz Lindner, Berlin, Ont., 9th May, 1885; 5 years.

Claim.—A hollow top or model horse, or other animal, consisting of a flat wooden skeleton with or without ribs, having the bulky portions covered with a shell or skin moulded upon a properly-shaped model made in two halves, and consisting of cemented layers of a stiffened fabric, the slended limbs finished solid and secured to said skeleton, substantially as shown and described and for the purpose set forth.

No. 21,636. Process for Polishing Celluloid, Xylonite, Zynolite, Chrolithium Pyroxylin, etc. (*Procédé pour Polir la Cellulose, Xylonite, Zylonite, Chrolithium Pyroxiline, etc.*)

William C. Zeidler, Toronto, Ont., 11th May, 1885; 5 years.

Claim.—1st. The within-described process for polishing celluloid and like material, which consists in placing the cleaned surface of the celluloid or like material upon a hard polished surface which is heated and the celluloid submitted to pressure against it, substantially as and for the purpose specified. 2nd. The within-described process for polishing and hardening celluloid and like material, which consists in placing the cleaned surface of the celluloid, or like material, upon a hard polished surface which is heated and the celluloid submitted to pressure against it, after which the plate and celluloid are cooled off, substantially as and for the purpose specified.

No. 21,637. Thermostat or Heat Regulator. (*Thermostat ou Régulateur de la Chaleur.*)

John L. Campbell, West Elizabeth, Pa., U.S., 11th May, 1885; 5 years.

Claim.—1st. In a heat regulator, the combination of a wooden bar, with two straps, rods or wires attached to the opposite side thereof, with the lever which is operated by the expansion and contraction of the straps, substantially as shown. 2nd. In a thermostat, the combination of the wooden rod, with the two straps, wires or rods attached to opposite sides thereof, the set screw for springing the rod upon one side, and the lever which is operated by the movement of the strap, spring or rod upon the other side of the wooden bar, substantially as described. 3rd. The combination, in a thermostat, of the wooden bar, the two straps, wires or rods attached to opposite sides thereof, set screw for springing the wooden bar upon one side, a suitable spring which is placed between the wooden bar and the strap upon the opposite side of the bar from the set screw, and a lever which is operated by the movement of the strap which has the spring applied thereto, substantially as set forth. 4th. In a thermostat, the combination of the wooden bar and the two straps, wires or rods attached to opposite edges thereof, one of the straps being provided with a screw and nut for regulating the tension of the strap, substantially as specified. 5th. The combination, in a thermostat of the wooden bar, the two straps, wires or rods attached to opposite sides thereof, a set screw for springing the wooden bar coiled spring which is placed between the side of the bar and the inner side of one of the straps, the pivoted lever, a revolving bar and a mechanism for moving the revolving lever, operating the valve and shutting off and turning on the heat, substantially as shown. 6th. The combination, of the wooden rod or bar, the straps, wires or rods attached to opposite sides thereof, a set screw for springing the bar upon one of its sides, a coiled spring, a pivoted lever and a regulating screw which is connected to the lever, a spring for bearing against the lever upon one side, and revolving lever and the clock-work for operating the valve and turning on or shutting off the heat, substantially as described. 7th. In a thermostat, the combination of the lever which is moved at its lower end by the expansion and contraction of a metallic strap, rod or wire, a spring for bearing against the side of the lever and forcing it towards the strap, wire or rod, a revolving lever, a mechanism for revolving the lever, a valve which is placed in a suitable opening, and a mechanism which is attached to the source of heat, substantially as set forth. 8th. The combination of a lever, which is moved at its lower end by the expansion and contraction of the strap, rod or wire, a spring for bearing against the side of the lever, a revolving lever having arms of different length, a mechanism for revolving the lever and which is provided with a crank, a valve which is connected to the crank and a lever which controls the heat, the valve and the lever being operated at the same time, substantially as specified. 9th. The combination of a thermostat, substantially as shown, a lever which is connected thereto, a revolving lever having arms of different lengths, a mechanism for revolving the lever, and which is provided with a crank connecting rods which are attached to this crank and extending in opposite directions, a valve provided with a crank and a lever which turns on and shuts off the heat, substantially as shown. 10th. The combination of a thermostat and a vertical lever which is connected to and operated thereby, and which has its upper end to project through the opening in the top of the frame, with a pivoted lever Y for controlling the flame, and a suitable connection between the ends of the two levers, whereby the movement of one controls the movement of the other, substantially as set forth. 11th. The combination of a thermostat, a pivoted lever Y and a lamp burner provided with two leaves or reducers, and suitable pivotal wires which are connected together one of which is provided with a counter weight, substantially as set forth.

No. 21,638. Refrigerator Car.

(*Char Frigorifique.*)

Charles F. Pierce, Chicago, Ill., U.S., 11th May, 1885; 5 years.

Claim.—1st. The combination, in a refrigerating car, of an elevated ice-pan and a drip trough located between said pan, with one or more reservoir cooling chambers located within the car, in position to receive the contents of the ice-pan, substantially as described. 2nd. The combination, in a refrigerating car, of an elevated ice-pan and a drip-trough located below said pan, with one or more reservoir cooling chambers connected by a spout or spouts with the elevated drip-trough, where the water from the pan will flow into and accumulate in the cooling chamber, substantially as described. 3rd. The combination, in a refrigerating car, of an elevated ice pan, with a reservoir cooling chamber located alongside the wall of the car, and means, substantially as described for discharging accumulated water from the cooling chamber. 4th. The reservoir cooling chamber D located alongside one of the car walls, in combination with a trap located in the top of the car, as and for the purpose described. 5th. The combination, in a refrigerator car, of an elevated ice-pan, with a

reservoir cooling chamber which receives the drippings from the ice-pan, and the stand pipe I which connects with the cooling chamber, substantially as described. 6th. The combination, with the reservoir cooling chamber and stand pipe, of chamber F1 into which the stand pipe and a spout pass, the cooling chamber being open at its top end, and means being provided for conducting off the water from said chamber F1, substantially as described.

No. 21,639. Apparatus for Filling Bottles.

(*Appareil pour Emplir les Bouteilles.*)

John B. Metzger, Williamsport, Penn., U.S., 11th May, 1885; 5 years.

Claim.—1st. In an apparatus for transferring liquids, the combination, with a reservoir containing the liquid, of the cylinder A provided with an upwardly curved neck c, and the vertical discharge-pipe C detachably secured to said neck, the said pipe C being contracted at its lower end to form a valve-seat and provided therein with a ball valve and cage, substantially as shown and described. 2nd. In an apparatus for transferring liquids, the combination, with the discharge-pipe, of the nozzle D having a flaring hood, provided with the spouts d and slide-valve dt, substantially as shown and described. 3rd. In an apparatus for transferring liquids, the combination of a reservoir for containing the fluid, a cylinder having a piston and base B secured to the lower end of said cylinder, in the manner described, said base provided with the upwardly curved neck c, the pipe C attached to said neck and provided with a ball valve and cage and contracted at its lower end, whereby is formed the valve-seat and the nozzle D secured to the upper end of pipe C, and having one or more spouts, all substantially as set forth. 4th. In an apparatus for transferring liquids, the combination of the reservoir having head 2, and head having the removable portion 3, of the construction, substantially as herein described, the cylinder having a piston and provided with the base B with its respective accessories, the discharge pipe C provided with a ball valve and connected to the base, and the nozzle D terminating in the hood and having one or more spouts, said hood provided with a slide valve, all substantially as and for the purposes set forth.

No. 21,640. Manufacture of Paper Pulp and Apparatus Therefor. (*Fabrication de la Pâte à Papier et Appareil pour cet objet.*)

Isaac S. McDougall, Irk Vale, Eng., 11th May, 1885; 5 years.

Claim.—1st. The process of producing sulphurous acid gas for manufacturing paper pulp, which consists in burning sulphur, spent oxide of iron, or pyrites, in suitable vessels, and forcing air therein or drawing air through in such a manner, so as to drive the gas into vessels containing alkaline solutions, substantially as and for the purpose described. 2nd. In a boiler for manufacturing paper pulp, the combination, with the boiler shell or casing A and lead lining B, of a number of bolts or similar devices C passing through said casing and lining and serving to hold same together, the heads of said bolts or fastenings projecting towards or into the interior being protected by lead coverings b, joined to said lead lining B, for the purpose described.

No. 21,641. Piston Packing.

(*Garniture de Piston.*)

Edmund Suckow, Buffalo, N.Y., U.S., 11th May, 1885; 5 years.

Claim.—1st. In a piston packing, the rings or sections of rings a², having projections b⁴, in combination with one or more valves b², set in grooves a⁷ opposite the inlet openings, for admitting steam to the interior of the piston, and from thence to the perforations b⁴ to the peripheral space c, so as to act as a lubricant to the cylinder and to preserve an equal pressure within the piston, substantially as described. 2nd. A piston packing, consisting of the rings a², a⁴, in combination with a piston follower and connecting bolts, the rings a² being provided with the wave line springs, substantially as specified, and the grooves b⁴, for the purposes described. 3rd. A piston, provided with packing ring openings b³, spring a⁵, a spring or springs for forcing the rings apart when required, and openings for admitting steam or water to the space c, for the purposes described.

No. 21,642. Machine for Sewing Books.

(*Machine à Brocher les Livres.*)

Edward Cheshire and Elizabeth Cheshire, Cincinnati, Ohio, U.S., 12th May, 1885; 15 years.

Claim.—1st. In a book sewing machine, the combination, with a reciprocating signature feed carriage, of a reciprocating needle carriage, both carriages being mounted within a suitable frame in such a manner that they are adapted to advance toward each other, and at the point of meeting perform the sewing operation by means of a shuttle and suitable driving mechanism, the said feed carriage being retracted from each signature as soon as sewered, and leaving it suspended against the previously sewed signature in book form, substantially as herein set forth. 2nd. In combination, with the needle frame O, of needle frames P mounted upon ways or bars within frames O, and adapted to reciprocate alternately therein to form the "kettle" stick at the ends of the signature, substantially as herein set forth. 3rd. The combination with the feed-carriage O, of a toothed or channelled plate J, adapted to support each signature in an open condition, and to receive the needles on the needle-frames between the teeth of said plate during the sewing operation, substantially as herein set forth. 4th. In a book sewing machine, the combination, with the shuttle race-ways 1, of the compression or lock pins 5^r, 6^r mounted upon bars 4 and adapted to catch and hold the shuttle at the ends of its stroke by the pressure of either lever 3, brought to bear against it, by means of plate P on either "kettle" stitch frame, substantially as herein set forth. 5th. In a book sewing machine, the laterally adjustable race-ways 1, 1, having a gap or intervening space between them, which is capable of being lengthened

plate and trace in position, the outer face of buckle plate *c5*, provided with the hooks *c6* and a depression *I* therein, the compound angular loop *D*, with cross bars *d1*, *d2* and an under cross bar *d4*, with prongs *d5* projecting upwardly therefrom, the whole constructed and arranged and operating substantially as and for the purposes set forth.

No. 21,651. Nail Machine. (*Machine à Clou.*)

Porter C. Reed, Kingston, Mass., U.S., 12th May, 1885; 5 years.

Claim.—1st. The combination, with the moving die *C1* and bed-die *F*, of the nepper *L2*, its adjustable base piece, spring lever *L3*, links *L4* and cam lever *L5*, substantially as and for the purpose herein described. 2nd. In a machine for making edge-gripped nails, the combination of a vertical nipper, its adjustable base piece and moving die *C1*, with a single thick die adapted to take the place of a die and back piece, substantially as and for the purpose set forth. 3rd. In a nail machine for making edge-gripped nails, a single thick die *F*, provided with a groove in its working face for holding the blank, and having a portion of its face bevelled, substantially as described.

No. 21,652. Door Holder. (*Arrête-Porte.*)

Frank L. Rosenketer and George Hasinplug, Cleveland, Ohio, U.S., 12th May, 1885; 5 years.

Claim.—1st. In a door holder, the combination of a casing secured to the door near its lower edge, and having a vertical director provided with lateral guides, surfaces made on its floor, with a holding bar provided with arms which lie and move on the guide surfaces of the director, and a lever-arm pivoted on the director, and provided with a cam flange eccentric to its pivot, and adapted to bear against a shoulder on the latch bar when the lever arm is turned and force the holding bar out of the casing, substantially as specified. 2nd. In a door holder, the combination of a casing secured to the door near its lower edge, and having a vertical director provided with lateral guide surfaces made on its floor, with a holding bar provided with arms which lie and move on the guide surfaces of the director, and a lever arm pivoted to the director and provided with a recess eccentric to its pivot, and adapted to engage a pin on the holding bar and retract the said bar within the casing when the lever handle is turned. 3rd. In a door holder, the combination of the casing *A*, provided with the director *B* having the guide surfaces *b*, *b*, with the holding bar *D*, provided with the arms *E*, *E*, shoulder *e*, and pin *c*, and the lever handle *G* made in one piece with the pivoted circular plate *G1*, and provided with the flange *H* and recess *I*, substantially as specified.

No. 21,653. Means for Operating Sewing Machines. (*Moyens de Mœuvrer les Machines à Coudre.*)

Frederick Stromeayer, New York, N.Y. (Assignee of Christian G. Sprengler, Hoboken, N.J.), U.S., 12th May, 1885; 5 years.

Claim.—1st. The combination, with a sewing machine, or like article, of a support for an operator, adapted to descend under the influence of the weight of the operator and transmit motion to the sewing machine or other article. 2nd. The combination, with a sewing machine, or like article, of a support for an operator, adapted to descend under the influence of the weight of the operator, and a train of wheels deriving motion from the support and transmitting it to the sewing machine or like article. 3rd. The combination, with a shaft, adapted to drive a sewing machine, or like article, of a support for an operator, adapted to descend under the influence of the weight of the operator and impart motion to the said shaft in one direction, and a spring for rotating the shaft in the reverse direction. 4th. The combination, with a sewing machine, or like article, of a support for an operator, adapted to descend under the influence of the weight of the operator and transmit motion to the sewing machine, or like article, and an adjustable fan for regulating the speed of the sewing machine, or other article. 5th. The combination, with a sewing machine, or like article, of a support for an operator, adapted to descend under the influence of the weight of the operator, and transmit motion to the sewing machine, or other article, and a lever by which the operator may raise the support when desirable. 6th. The combination, with a sewing machine, or like article, of a support for an operator, of a lever whereby the sewing machine, or like article, may be started and stopped. 7th. The combination, with the wheel *n1*, of the lever *T*, treadle *J*, link *J1* and spring *J*. 8th. The combination, with the wheel *n1*, of the lever *I* having a yielding extensible section. 9th. The combination, with the wheel *n1*, of the lever *I* having a spring actuated extensible section, and a spring for operating the lever in one direction.

No. 21,654. Machine for Pulling Pump and Sucker Rods. (*Machine à Retirer les Tiges de Pompes et de Suction.*)

John Rolston, Sr. (Assignee of John Rolston, Petrolia, Ont., 12th May, 1885; 5 years.

Claim.—The combination of the draw-bar, rocking shafts and piston, with spiral spring, cogged wheels, ratchet wheels and catches, substantially as and for the purpose hereinbefore set forth.

No. 21,655. Machine for Making Wedges. (*Machine à faire les Coins.*)

Joseph R. Bodwell, Hallowell (Assignee of Arthur M. Burnham, Gardiner, Me., U.S., 12th May, 1885; 5 years.

Claim.—1st. In a machine for making wedges, the combination, with two rotary cutters situated in different horizontal planes, and each adapted to be moved toward and away from the other, of a carriage situated between the rollers, and provided with devices for clamping the block therein. 2nd. The combination, with two cutter carriers, pivoted to the machine frame and two revolving cutters, the shafts of which are journaled respectively in the free ends of the carriers, of a reciprocating carriage situated between the cutters,

and provided with devices for holding a block of wood therein. 3rd. The combination, with two cutter carriers pivoted to the machine frame, and two revolving cutters, the shafts of which are journaled respectively in the free ends of the cutter carriers, of a reciprocating carriage running between the cutters and provided with formers, and a single belt for operating the cutters and holding the cutter-carriers in contact with the formers. 4th. In a machine for making wedges, the combination, with two cutter-carriers pivoted to the machine-frame, and cutters journaled respectively in the free ends of said carriers, of a carriage, provided on its opposite faces with formers, against which the cutter's carriers rest, and a belt for holding the cutter-carriers in contact with the formers. 5th. In a machine for making wedges, the combination, with rotary cutters, of a carriage adapted to reciprocate between the cutters, and provided with dogs, which latter automatically engage the block of wood, carry it between the cutters and automatically discharge it. 6th. In a wedge machine, the combination, with a carriage mounted upon ways, and provided with devices for automatically engaging and releasing the blocks, and further provided with formers for regulating the shape of the wedges, of an upper and lower rotary cutter, and devices whereby the cutters are held in vertical adjustment, substantially as set forth. 7th. The combination, substantially as before set forth, of the cutters, the reciprocating carriage, the hopper and a feeding hook secured to the carriage, and adapted to draw a blank from the hopper at each reciprocation of the carriage. 8th. The combination, substantially as before set forth, of the rotary cutters, the reciprocating carriage interposed between said cutters, the hopper and a feeding-hook secured to the carriage, and adapted to draw a blank from the hopper at each reciprocation of the carriage. 9th. In a wedge machine, the combination, with rotary cutters journaled in swinging frames, of a carriage mounted upon ways, and provided with automatic devices for grasping and releasing the blocks, and mechanism whereby the carriage is reciprocated and the cutters rotated, substantially as set forth. 10th. In a wedge machine, the combination of swinging frames having rotary cutters journaled therein, automatically-operated dogs adapted to grasp, feed and release the blocks, and formers for controlling the converging motions of the cutters, substantially as set forth. 11th. In a wedge machine, the combination, with the rotary cutters, driven by a single belt, and having opposite rotary motions, of a carriage adapted to slide upon ways, and provided with an automatic clamping device, a hook adapted to engage the block in the hopper and templates for determining the angle of the wedge and the ways, substantially as set forth. 12th. In a machine for making wedges, the combination, with a suitable frame, a reciprocating carriage and revolving cutters, of a slotted lever pivoted at one end to the frame, a pitman connecting the opposite end of said lever to the carriage, and a crank journaled to the frame and engaging the slotted lever, substantially as and for the purposes set forth. 13th. The combination, with suitable cutters and a reciprocating carriage, the latter provided with an oblong open slot, of sliding bars situated on opposite sides of the slot, and projecting from both ends of the carriage, the said bars being provided with diagonal lugs, and dogs provided with diagonal slots in which the lugs of the said bars rest and move, and the stops secured to the frame against which the bars abut, substantially as set forth.

No. 21,656. Material for Packing Bottles.

(*Matériel pour Empaqueter les Bouteilles.*)

Oliver Long, Brooklyn, N.Y., U.S., 12th May, 1885; 5 years.

Claim.—As an article of manufacture, a packing material for bottles, composed of tubes of paper filled with hay or straw, which are attached to single sheets of paper, substantially in the manner set forth and for the purpose specified.

No. 21,657. Lock for Mail Pouches.

(*Serrure de Valise à Lettres.*)

Gustave Deimel, Hancock, Mich., U.S., 12th May, 1885; 5 years.

Claim.—1st. In a locking device, and in combination with the spring lock bolt *K* and spring pawl *N* thereof, the sliding plate *U* provided with the pin *X* to engage the pawl *N*, substantially as and for the purpose set forth. 2nd. In combination with the notched studs *F*, fastened to the frame of the pouch and constructed to pass through the flap of the same and into the plate *I* secured to the said flap, the spring lock bolt *K* secured to said plate and engaging said studs *F*, and provided with the spring pawl *N*, the sliding plate *U* secured on the face of said lock, and carrying the pin *X* constructed to come in contact with said pawl and bring it within the path of the tooth *R* on the key spindle *Q*, substantially as and for the purpose specified. 3rd. In a pouch lock, and in combination with the spring bolt *K* and spring pawl *N*, the sliding plate *U* upon the outer face of the said lock having an opening to display the post office address, and provided with a pin *X* projecting through the slot *V* in the face of the said lock to control the pawl *N*, the movement of said plate being limited by the studs *V* projecting therefrom and passing through slots in the front of said lock, whereby the said plate serves the double purpose of displaying an address and of throwing said locking mechanism into a fixed position to be operated on by the tooth of the key spindle, substantially as described.

No. 21,658. Harvester Binder.

(*Moissonneuse-Lieuse.*)

John G. Watson, Ayr, Ont., 12th May, 1885; 5 years.

Claim.—1st. In a harvester-binder in which the binding mechanism and binding-table is all connected to the same frame, mechanism arranged to support the said frame to the main frame of the machine, in such a manner that the said frame and its mechanism may be moved bodily from the side of the machine to its rear or front. 2nd. A rod *G* connected to the frame *B* and extending from the side to the rear of the machine, in combination with the hooked brackets *F* and *R* arranged to detachably connect the frame of the binding-table *E* to the main frame of the machine. 3rd. The hooked brackets *F* and *R* near the top side of the frame of the binding-table *E*, the

bracket or brackets H connected near the bottom side to the frame, of the binding-table E and preferably provided with friction rollers, in combination with the rod G and track J, substantially as and for the purpose specified. 4th. The bracket or brackets H, fastened to the frame of the binding-table E, and provided with a friction roller T, arranged to rest upon and roll on the angle-iron track J, in combination with the hook end a arranged to fit over the top edge of the track J, substantially as and for the purpose specified. 5th. The bracket O, main frame of the machine, in combination with the hub d formed end b of the bracket O fits, substantially as and for the purpose specified.

No. 21,659. Material for Packing Bottles.

(*Matériel pour Empaqueter les Bouteilles.*)

Oliver Long, Brooklyn, N.Y., U.S., 12th May, 1885; 5 years.

Claim.—As an article of manufacture, a material composed of two sheets of paper, each sheet having recesses or corrugations secured together with the recesses in the sheets opposing each other, thus forming cavities which are filled with hay, etc., substantially in the manner set forth and for the purpose specified.

No. 21,660. Earth Closet.

(*Sège d'Aisance à la Terre Sèche.*)

William Heap, Owen Sound, Ont., 13th May, 1885; 5 years.

Claim.—1st. A discharge-spout C, connected to the hopper for holding the deodorizing material, and having shelves a, b, arranged substantially as and for the purpose specified. 2nd. A urine separator D having a spout e, in combination with the urine can B, arranged substantially as and for the purpose specified.

No. 21,661. Lantern. (Lanterne)

Luther B. Wood, Omaha, Neb., U.S., 13th May, 1885; 5 years.

Claim.—1st. The combination, with a lantern, of the bent tubes E consisting of the long arms e, extending to the upper end of the lantern, the short arms e' extending above the wick-tubes and the enlargements or chambers e₂, substantially as described, and the being within the oil-vessel, substantially as set forth. 2nd. A lantern, constructed with the bent tubes E, formed with long and short arms e, e' and enlargements or chambers e₂, the bent portions and the enlargements being within the oil-chamber, and the short curved pipes b held to turn on the short arms e, and having flaring mouths c extending over the wick-tubes, substantially as set forth.

No. 21,662. Child's Vehicle. (Voiture d'Enfant.)

John S. Anthes, Berlin, Ont., 13th May, 1885; 5 years.

Claim.—1st. A sleigh knee A having the feet a, a', arm b, slot c and bolt hole d, substantially as herein shown and described. 2nd. The sleigh bench C, provided with the lugs e, nipples f and bolt holes g, D, provided with the bolt hole h, nipple i and hub j, substantially as specified. 4th. The combination of the sleigh knees A, runners B, and sleigh benches C and hub brackets D, substantially as herein shown and described. 5th. The combination of a sleigh having the knees A carriage, substantially as herein shown and described and for the purpose set forth.

No. 21,663. Beater, Concave and Drum for Thrashing Machines. (Batteur, Concave et Tambour pour Machines à Battre.)

Charles Woolnough, Henham, Eng., 13th May, 1885; 5 years.

Claim.—1st. In thrashing machines, the employment of drums and concaves fitted with beaters having continuous working surfaces round the circumference thereof, the inner diameter of such surfaces having a polygonal or circular shape, together with the means employed of fitting and adjusting such beaters in the drum and concave, whereby the working surfaces of the beaters or the drums or concaves, may be rotated when required as they become worn, all substantially as set forth. 2nd. In thrashing machines, the employment of beaters fitted to the drums, and concaves capable of being rotated when required, substantially as and for the purposes set forth.

No. 21,664. Bobbin Winder for Sewing Machines. (Bobineuse pour Machines à Coudre.)

Alexander V. Abercrombie, Bridgeport, Ct., U.S., 13th May, 1885; 5 years.

Claim.—1st. In a device for winding bobbins, the combination, with a revolving spindle adapted to hold the bobbin in a fixed position, of a movable cutter actuated by a spring, a finger connected with said cutter and, located in such relation to the bobbin upon the spindle that the accumulating thread upon the bobbin will act against the finger and release the cutter and by the action of the spring the cutter will descend and sever the thread, substantially as set forth. 2nd. The stand A, the revolving spindle C having forked end a, in combination with the cutter E, finger d connected with said cutter, and spring F having notch or indentation g, all substantially as described and for the purpose as set forth.

No. 21,665. Method and Apparatus for Reproducing Drawings, Letters, etc. (Mode et Appareil de Reproduction des Dessins, Manuscrits, etc.)

Emile H. Klaber, Berlin, Germany, 13th May, 1885; 5 years.

Claim.—1st. The herein-described method for reproducing drawings etc., consisting in perforating a waxed sheet of paper, placing the sheet upon which the drawing, etc., is to be reproduced below the waxed sheet, and then rubbing ink on the waxed sheet, which ink passes through the perforations in the waxed sheet upon the sheet below it, substantially as herein set forth. 2nd. The herein described implement for reproducing drawing, etc., consisting of a ribbed ball or roller pivoted in a rod, substantially as herein set forth. 3rd. The combination, with the handle W, of the rod T and the roller S pivoted on the end of the rod, substantially as herein shown and described.

No. 21,266. Method of Utilizing the Rain-fall and Prevention of Floods. (Méthode d'Utilization des Eaux Pluviales et pour Empêcher les Inondations.)

Antonio Montenegro, Madrid, Spain, 13th May, 1885; 5 years.

Claim.—The formation of the slope of inclined agricultural and other lands, of a dike C, or a series of dikes C and E, at such distances from each other as to prevent the formation of torrents, and of such capacity as to retain the maximum rain-fall accumulating on the gathering area above each dike, substantially as shown and described and for the purpose set forth.

No. 21,667. Apparatus for Copying Letters, etc. (Appareil pour Copier les Lettres, etc.)

Charles A. Thompson, Galveston, Texas, U.S., 13th May, 1885; 5 years.

Claim.—1st. A letter-copying apparatus, composed essentially of two pressure rollers B and A₁, between which the document to be copied is passed along with a continuous sheet of copying paper C, substantially as shown and described. 2nd. An apparatus for copying letters and other documents, consisting essentially of two pressure rollers, between which the document to be copied and a sheet of copying paper are passed, and provided with means, substantially as described, for moistening said copying paper on or before passing between said rollers, as set forth. 3rd. A letter-copying apparatus, composed of two pressure rollers A and A₁, between which the document to be copied is passed, along with a continuous sheet of copying paper C, a roller D from which said sheet is unwound as used, a roller E₁ upon which said sheet is taken up after receiving the impression, and means, of described, for moistening said copying paper as it passes between said rollers A and A₁, the whole constructed substantially as described. 4th. In a letter-copying apparatus, the combination of two pressure rollers A and A₁, a roller D containing a web or sheet of copying paper C, a roller E₁ driven by one of said pressure rollers to receive the paper C after it has received the impression, a trough H in which the roller A₁ is partly immersed, a roller I to express the surplus water and a crank F, the whole constructed as described. 5th. An apparatus for copying documents composed of two pressure rollers between which the document to be copied, and a sheet of copying paper are passed, a trough containing water to moisten the copying paper, and an inclined table or platform for guiding the document to the pressure rollers, as set forth. 6th. In a letter-copying press, the combination of the pressure rollers A and A₁, trough H and roller I, as and for the purpose set forth.

No. 21,668. Portable Fence. (Clôture Portative.)

Joseph DuBois, Waverly, N.Y., U.S., 13th May, 1885; 5 years.

Claim.—1st. In a portable anchor fence, the combination of the posts A, raised above the ground by means of the metallic anchoring rods C, bent and secured to said posts, substantially as shown, the protecting plates K on the bottom of the posts and the rails a, all constructed and arranged substantially as and for the purpose described. 2nd. In a portable anchor fence, the posts A, raised above the ground by means of the metallic anchoring device, constructed as shown, the protecting plates K on the bottom of the posts and the transversely placed anchoring wires D, all combined and arranged substantially as and for the purpose described.

No. 21,669. Grate Bar. (Barreau de Grille.)

James Elliott, Montreal, Que., 13th May, 1885; 5 years.

Claim.—1st. A grate bar formed of the body A, side webs B, B and partitions C, C, said body and webs being perforated, substantially as and for the purpose specified. 2nd. A grate bar, composed of body A having vertical perforations c, c, and channelled ends a, a, with side webs B, B provided with exits b, b and partitions or webs C, C, substantially as and for the purpose specified.

No. 21,670. Nut Lock. (Arrête Ecrou.)

Aretus A. Wilder and Corydon B. Palmer, Detroit, Mich., U.S., 15th May, 1885; 5 years.

Claim.—1st. The combination, with the ordinary railway fish-plates, of a screw bolt having a slot through its threaded portion, means for preventing the bolt from turning on its axis, a nut fitting upon said threaded portion, and a wedge-shaped key fitting vertically within the slot in the bolt, with its wider end uppermost, whereby it is adapted to slide and take up the space vacated by the nut in tightening the same upon the bolt, substantially as described. 2nd. The combination, with the ordinary railway fish plates, of a screw bolt flattened or squared under the head to enter a corresponding hole in one of the fish-plates, and having a slot formed through its threaded portion, a nut to fit upon said threaded portion and a wedge-shaped key to fit vertically within said slot with its outer end uppermost, whereby it is adapted to slide to take up the space vacated by the nut in tightening the same on the bolt, substantially as described.

No. 21,671. Horse Shoe. (*Fer à Cheval.*)

David J. Pryor, Roxbury, and Edward J. McArdle, Boston, Mass., U.S., 15th May, 1885; 5 years.

Claim.—A horse shoe, composed of an upper plate A, having slots B, B', B'', and thinner portions *b, b'* and elastic washer E, in combination with the lower plate A' having lugs F and loops C and wedge-shaped pieces D, provided with nuts *d*, as described and for the purposes set forth.

No. 21,672. Car-Coupler. (*Accouplage de Chars.*)

George D. Pearson, John Wallace and Peter Wallace, Montreal, Que., 15th May, 1885; 5 years.

Claim.—1st. The combination of the bunters E, provided with extensions F, pins I and K, hook L arranged to be vertically placed, as described, the whole substantially as and for the purposes set forth. 2nd. The combination of a bunter E having projections F, pins K and I and hook L, with link M, of any ordinary link coupling, substantially as described.

No. 21,673. Sink. (*Évier.*)

Jean B. G. Lecompte, Jr., Montreal, Que., 15th May, 1885; 5 years.

Reclame.—Dans un évier le tamis D muni d'un rebord *dt*, des trous *d3*, d'un fond *d*, et d'un anse E, en combinaison avec le fond de l'évier A, le rebord B et le tuyau C, le tout tel que ci-dessus d'écrivit et pour les fins sus mentionnées.

No. 21,674. Whiffletree. (*Palonnier.*)

James Whitcomb, Vancouver, T.W., U.S., 15th May, 1885; 5 years.

Claim.—1st. In a whiffletree having a continuous spring bar, the fixed band G provided with a set-screw which by tightening or loosening causes the spring-bar to act with a greater or less resilience, substantially in the manner as herein set forth and specified. 2nd. The combination and arrangement of the bevelled wooden bar continuous spring-bar, angle-irons or fulcrum, and the fixed band provided with the adjusting set-screw, constructed and operating substantially in the manner as herein set forth and specified.

No. 21,675. Pump. (*Pompe.*)

Alexander Porteous and George S. Fairgrieve, Galt, Ont., 15th May, 1885; 5 years.

Claim.—1st. The combination, with the pump stock A and plungers B, C, of the pump rods D, E, plate F, connecting rods G, G', oscillating beam H and rock shaft I, whereby the pump is worked by either an oscillating or a vibrating motion of a lever or lever J, J' outside the pump head, as set forth. 2nd. The oscillating beam H, provided with holes H' for connecting with rods G, G', to lengthen and shorten the stroke of the plungers, as set forth. 3rd. The plunger B, having an inclined forked connection E' with the pump rod E working through plate F, provided with stuffing boxes F', both pump-rods have a parallel endwise motion in the pump stock, as set forth.

No. 21,676. Steam Engine. (*Machine à Vapeur.*)

William Golding, New Orleans, La., U.S., 15th May, 1885; 5 years.

Claim.—1st. In expansion, steam and other engines, the combination, with an intermediate driving shaft, of a series of independent expansion reciprocating-piston engines arranged in pairs on opposite sides of said shaft, and geared or connected with it to rotate the same; the cranks in each pair of said engines being set at right angles with one another, and the cranks of the several engines being arranged progressively and uniformly, one in advance of the other, substantially as and for the purposes specified. 2nd. The combination, in the one expansion engine, of the intermediate driving-shaft E, the duplicate parallel crank-shafts D, D' on opposite sides of said shaft, the gears *f, f', g*, connecting the several shafts, a duplicate series in pairs of reciprocating piston expansion engines, having their cranks arranged, as described, progressively and uniformly, one in advance of the other, and a valve mechanism common to all the engines for simultaneously and similarly controlling them, essentially as described.

No. 21,677. Insulating Material.

(*Corps Isolant.*)

Daniel H. Dorsett, Chicago, Ill., U.S., 15th May, 1885; 5 years.

Claim.—1st. The herein-described insulating compound, composed of coal-tar, paraffin silicious sand, and pulverized coal ashes and cinders, in the proportions substantially as set forth and for the purpose specified. 2nd. The above-described compound, composed of coal-tar, paraffin silicious sand, pulverized coal ashes and cinders, black oxide of manganese and ammonia chloride, in the proportions substantially as set forth and for the purpose described.

No. 21,678. Machine for Sawing Logs.

(*Machine à Scier les Billots.*)

Thomas Spedding, Dunn., Ont., 15th May, 1885; 5 years.

Claim.—1st. A portable hand-power log sawing machine, consisting of frame A, lever B, B', saw-arm C to which is attached saw-blade D, guide-arm E, and guide pieces G, G, all constructed and operating substantially as described. 2nd. The guide-arm E, having the guides *e, e*, and dogs *f, f*, and working in combination with saw, as specified.

No. 21,679. Car-Coupling. (*Accouplage de Chars.*)

William H. Knight, Portland, Me., U.S., 15th May, 1885; 5 years.

Claim.—1st. A draw-link E, having parallel barbs 2, 2 and 3, 3 at the ends, as set forth. 2nd. The draw-head A, having vertical slots

A₁, A₂ at the sides, as set forth. 3rd. A block or cross-piece C, which moves vertically in slots in the sides of the draw-head A, as set forth. 4th. A coupling-block, consisting of shank B and cross-piece C, combined as set forth. 5th. A web 6, introduced between barbs or draw-links, as set forth. 6th. The combination, with the draw-head A, having vertical slots A₁, A₂ in its sides, of the block C, as set forth. 7th. The combination, with the draw-head A, having vertical slots A₁, A₂ in its sides, of the coupling block G consisting of shank B and cross-piece C, as set forth. 8th. The combination, with the draw-head A having vertical slots A₁, A₂ in its sides, of the block C, with or without the shank B, and the slotted draw-link E having barbed ends, with or without the intervening web 6, as set forth.

No. 21,680. Furnace Grate. (*Grille de Fourneau.*)

Fred. V. Medynski, Des Moines, Iowa, U.S., 15th May, 1885; 5 years.

Claim.—A furnace grate composed of a series of bars, or sections, having broad, flat and perforated top surfaces A, lateral and downward projections B, tapering flanges C, extending along their under sides and centers, and cup-shaped openings or cells in the entire undersides, substantially as shown and described, to operate in the manner set forth for the purposes stated.

No. 21,681. Bottle Stopper. (*Bouchon de Bouteille.*)

Frederick B. Thatcher and Lyman B. Goff, Pawtucket, R. I., U.S., 15th May, 1885; 5 years.

Claim.—1st. As an improved article of manufacture, an elastic bottle stopper plug having a socket for a stem, valve ports, and a valve re-enforced by a rigid material supported by the valve, all substantially as described. 2nd. As an improved article of manufacture, an elastic bottle stopper plug having a socket for a cap-plate stem, also a series of grooves in the inner walls of the plug that open in ports near the lower side of the plug, and a valve supported by the strops between the grooves, all substantially as described. 3rd. As an improved article of manufacture, an elastic bottle stopper plug having a central socket for a cap-plate stem, inner grooves terminating in ports, and a valve reinforced by a disk of rigid material, supported by the valve, all substantially as described. 4th. In combination, an elastic bottle stopper plug having a stem socket, and a valve and a reinforce of rigid material cast within the valve, all substantially as described. 5th. In combination in a bottle stopper, a cap-plate having a stem tapered below the shoulder, an elastic plug having a socket, whose wall conforms to the outline of the stem, grooves in the walls that terminate in ports, and a reinforced valve closing the bottom of the stem, all substantially as described.

No. 21,682. Changing the Draft in Coal ParLOUR Cook Ovens. (*Manière de Changer le Tirage des Fourneaux de Salen à Charbon.*)

Thomas Rose, Georgetown, Ont., 15th May, 1885; 5 years.

Claim.—The combination of the dampers A, A and the drafts *c, c*, substantially as and for the purpose hereinbefore set forth.

No. 21,683. Churn. (*Barratte.*)

Franklin T. Morrelle, John H. Redstone and John A. Obermuller, San Francisco, Cal., U.S., 15th May, 1885; 5 years.

Claim.—1st. The revolving cylinder B, with the reverse curved arms C, for the purpose of effecting counter currents, as described, in combination with the air retainer and milk atomizer L, for the purpose of retaining the air and thoroughly mixing the same, constructed and operated substantially as and for the purposes set forth. 2nd. The cylinder B, in combination with the reverse curved arms C, for the purpose of producing counter currents, as described, constructed and operated substantially as and for the purpose set forth.

No. 21,684. Saw Sharpening Machine.

(*Machine à Aiguiser les Scies.*)

William R. Hibbard and William C. Hibbard, Montreal, Que. (Assignees of Danford Willey, Saint Johnsbury, Vt., U.S.), 16th May, 1885; 5 years.

Claim.—1st. In a machine for sharpening circular saws by means of an emery wheel, the combination of a saw rest having a vertically projecting spindle, which is concentric with the circular sides of said rest, to which are threaded two cone-shaped nuts, one being large enough to cover the other, and a tilting table upon which said parts are placed and rendered capable of rotary motion, said tilting table being hinged to a sliding carriage connected with, and operating upon a suitable base, substantially in the manner described and for the purpose set forth. 2nd. In a machine for sharpening circular saws by means of an emery wheel, the combination of a saw rest having a vertically projecting spindle, which is concentric with the circular sides of said rest, to which are threaded two cone-shaped nuts, one being large enough to cover the other, a tilting table upon which said parts are placed and rendered capable of rotary motion, and means, substantially as described, for gaging the rotation of said parts, said tilting table being hinged to a sliding table connected with, and operating upon a suitable base, all arranged and operating as and for the purpose set forth. 3rd. In a machine for sharpening circular saws by means of an emery wheel, having an iron base, to which may be attached a sliding carriage, the tilting table D hinged to said carriage, and provided with a spring catch S, in combination with a revolving saw-rest E, having flange *f* and teeth *f*, and the spindle G to which are threaded the nuts H, I, operating substantially as and for the purpose specified.

No. 21,685. Harvester Cutting Apparatus.

(*Appareil Coupeur de Moissonneuse.*)

Patrick Dowling, Toledo, and Alonzo P. Fisher, Wansoon, Ohio, U.S., 16th May, 1885; 5 years.

Claim.—The combination of the guard-finger *a*, having the slot or opening *a*, and the dovetail rib or tenon *a*² projected into the slot, with its outer end abutted against the end wall *a*³ of said slot, and the truncated blade *B* having the dovetail slot *b* extending from its smaller end or point rearward along its central line, and having its ends *b*¹ abutted snugly against the end wall *a*³, on opposite sides of the rib *a*², substantially as set forth.

No. 21,686. Apparatus for Operating Railway Danger Signals. (*Appareil pour Manœuvrer les Signaux des Chemins de Fer.*)

Henry A. Buck, Boston, Mass., U.S., 18th May, 1885; 5 years.

Claim.—1st. In a device for operating railway signals, the combination, with a chamber, of a connecting cam or lever by which the said chamber and actuate the signals, substantially as herein stated. 2nd. In a device for operating railway signals, the combination, with a vacuum upon the passage of a train over and upon a cam or lever, substantially as and for the purposes set forth. 3rd. In combination passing train is caused to actuate said piston, and form a vacuum with a pipe or series of pipes connected with said chamber, substantially as herein described. 4th. In a signal operating device, the combination, with a chamber in which a vacuum is to be formed by and connecting with the signals to be operated, substantially as described. 5th. An expansive disk, substantially as described, adapted to be operated within a chamber by co-operative mechanism connected with, or adjacent to the track, and actuated by a passing train to produce a vacuum, substantially as stated. 6th. The combination with the chamber *B* and a piston, of the lever *F* actuated by piston is effected, substantially as set forth. 7th. In combination lever are locked upon the passing of a train, of the slotted rod *K* and the throw-off lever *L* operating to release said pawl, substantially as herein described. 8th. In combination with a railroad signal gate or switch, a metallic piston supported by two or more bearings and operated by a spring to produce a vacuum upon the passage of a train, substantially as stated. 9th. The combination, in railway signals, of rendered active upon the passage of a train, and so maintained to actuate a piston until a vacuum is produced, as and for the purposes herein stated. 10th. The combination, with the reciprocating piston with the arm *kt*, by which release of the pawl is effected, as and for a chamber supported as described, and in which a vacuum is produced by the passage of a train, substantially as set forth. 12th. In vertical web and horizontal base plate, the standard formed with a vacuum chamber supported thereby, and operative mechanism, all co-operating to produce a vacuum by the passing of a train, as and for the purposes herein set forth.

No. 21,687. Pneumatic Block Signal System. (*Système Pneumatique pour Couvrir la Voie.*)

Edward M. Chase, Boston, Mass., U.S., 18th May, 1885; 5 years.

Claim.—1st. In single track railway block signal apparatus, the method of operating the signals by a column of air, substantially as described. 2nd. In single track railway block signal apparatus, means for driving a column of air to operate the signals, substantially as explained. 3rd. In single track railway block signal apparatus, means for driving a column of air in two or more directions, to operate different signals or parts of signals, substantially as described. 4th. In a pneumatic block signal, the method whereby the air is sent in both directions at the same time along the track, to operate visual signals, both in the front and rear of said train, substantially as described. 5th. In a pneumatic block system, the method, rate signals, both at the rear and front of the train, with the operative parts so arranged as to permit an impulse of air to pass actively along in one direction, to operate its own signals, but in an impulse of air proceeding in the opposite direction, for the purposes substantially as stated. 6th. In a pneumatic block signal for railways, the combination, with the primary bellows and operated by the locomotive, substantially as explained, of the visual signals located upon both sides of the track and united by a single line of pipe and actively operated by an impulse of air from said bellows through a system of pipes, distributor boxes provided with valves, and the expansion cups with their operative mechanism, by which a section of track is blocked and a train is effectually guarded both at the rear and in front, substantially as and for purpose herein set forth and described. 7th. In combination with the primary bellows, of the lever to exhaust the bellows, and the lever composed of two arms united by a long fulcrum rod, the distributor boxes provided with double valves which are operated by diaphragm cups, whereby the air column from the bellows is permitted to pass by impulse in signals, substantially as stated. 8th. The combination with the primary bellows, the actuating lever and the springs adapted to transmit the power of the lever to exhaust the bellows, and the lever composed of two arms united by a long fulcrum rod, the distributor boxes provided with single valves operated by diaphragm cups, whereby the air column from the bellows is subdivided and changed in direction to operate the visual signals from the sides of the track, substantially as and for purposes set forth. 9th. A pneumatic block system for railways, provided with two pairs of bellows and their operating levers and springs, in combination with visual danger signals to be turned by means of an expansive cup and its co-operating

mechanism to "danger" by one of said bellows, and restored to "safety" by the other, substantially as and for the purposes stated. 10th. The disk signal arranged to be turned either to "safety" or "danger," in combination with a primary lever and bellows, an air pipe distributor box provided with a valve, and expansive diaphragm cup for operating the latter, together with a second expansive diaphragm cup, located above and operating suitable intervening mechanism, substantially as described, to turn said signal into the "safety" position, and a second lever, bellows, air-pipe, distributor box with its slide valve and expansive diaphragm cup to operate the latter, together with a second expansive diaphragm cup and suitable intervening mechanism operating to turn said signal and return it to "danger" position, all operating substantially as herein set forth. 11th. The combination, with the visual signal arranged to be operated in an arc of ninety degrees, either to "danger" or "safety," by air impulse from the primary bellows *B*, of the expansive air cups or valves *a*², *a*³, the posts *N*, *N*¹ of such valves, the gravity latches *o*, *o*¹, the two arm levers *P*, *P*¹, pivoted upon the shaft *O*, and the bars *u*, *u*¹, to alternately engage the studs *v*, *v*¹, and rock the plate *T* in which they are secured, the sectoral rack *r* and the pinion *t* affixed to the lower end of the signal rod *s*, with the circular plate or disk *T* provided with the slots *R*, *S*, and the locking arms *r*, *r*¹ engaging therein, substantially as stated and for purposes described. 12th. The distributor box *C*₃, provided with the chambers *c*₂, *c*₃, *c*₄, *c*₅, *c*₆, placed in communication with each other by the ports *d*₇, *d*₈ of the valve *d*₆, in combination with the expansion cup-valve *E*₂, its port *e*₂, and catch to engage the arm *e*₃ and forked lever *e*₅, whereby said valve is operated to subdivide the air column, substantially for purposes stated. 13th. In a pneumatic block signal system, the combination, with the primary bellows, of a series of distributor boxes formed with chambers, and provided with valves so constructed and arranged that air entering at one end shall operate an expansive cup to slide the valve, whereby the air column is divided, as herein described, while air entering at the other end shall not effect the expansion cup and valve, but will pass permissively through said distributor box, substantially as described. 14th. In a pneumatic block system, the combination, with the primary bellows, of the double distributor box provided with an expansive diaphragm cup and sliding valve, whereby an impulse of air entering at one end shall distend the diaphragm to move the valve and divide and distribute the air column, substantially as stated. 15th. In a pneumatic block system, the combination, with a pair of bellows, of the double distributor box provided with an expansive diaphragm cup and sliding valve, whereby an impulse of air entering the end opposite said diaphragm cup shall not effect the latter nor move the valve, and the air column is stopped at that station, substantially as herein described. 16th. In pneumatic block system, the combination, with the bellows of two single distributor boxes provided with expansive diaphragm cups and slide valves, so arranged that an air column shall pass permissively through the first distributor box it reaches, without operating the parts belonging to said box, thence shall enter at the opposite end of the other adjacent distributor box to distend its diaphragm cup, whereby the air column is divided and distributed, substantially as and for purposes herein set forth. 17th. The combination, with the visual signals arranged to be operated in an arc of 90 degrees, either to danger or safety, by an air column from the primary bellows, of the expansive air cups or valves with their posts and gravity latches, the latter so arranged as to lift the levers and operate the signal when they are immediately disengaged therefrom, to permit gravity, to maintain said levers in contact with the locking disk, substantially as herein described.

No. 21,688. Apparatus for Compressing Ensilage. (*Appareil pour Presser les Fourrages en Silos.*)

Edward T. Blunt, Blaby Hill, Eng., 18th May, 1885; 5 years.

Claim.—1st. The combination, with lever *H*, of one or more screwed rods *B*, for the purpose of adjusting the bearing of the short arm of the lever. 2nd. The combination of the screwed rods *B* and lever *H*, with the central post *E*, substantially as and for the purpose set forth. 3rd. The combination, with the screwed rods *B*, of the cross-bar *D*, substantially in the manner and for the purpose specified. 4th. The herein-described construction of lid or cover for silos, consisting of (a) the lid proper composed of a number of separate pieces *L*, placed side by side upon the crop to be compressed, in combination with (b) the frame, consisting of the cross *G*, which distributes the pressure, cross beams *G*¹, connecting the ends of the cross *G*, and further distributing the pressure to the ends of the pieces *L*, not otherwise covered struts *F* and pillar *E*, the whole substantially as and for the purpose set forth. 5th. The combination, with the lever *H*, of the separate weight box *K* arranged to be loaded on the ground and run up to its place by a rope and pulley, substantially as set forth. 6th. In an apparatus for compressing ensilage, the combination, with a weighted lever *E* fulcrumed upon a fixed support *F*, of a rod *D*, the length whereof is adjustable, substantially as and for the purpose specified. 7th. In an apparatus for compressing ensilage, the combination of two weighted levers *E*, connected by screw-rods *D*, with the lid *B* fulcrumed upon fixed supports *F* and crossing each other approximately midway between said supports, substantially as specified and shown in Fig. 1 of the accompanying drawings. 8th. In an apparatus for compressing ensilage, the combination of two weighted levers *E* connected by screw-rods *D*, with the lid *B*, fulcrumed upon fixed supports *F*, located near together and extending in an upward and outward direction, substantially as specified and shown in Fig. 2 of the accompanying drawings. 9th. In an apparatus for compressing ensilage, the combination of four weighted levers *E* arranged in pairs, one pair on each side of the chamber or stack, each lever being independent of its fellows, but the whole adapted to act together upon the lid *B*, substantially as specified.

No. 21,689. Quilting Frame and Table.

(*Méier et Table à Piquer.*)

Jacob F. Rickenbrode, Westfield, N.Y., U.S., 19th May, 1885; 5 years.

Claim.—1st. The combination, with the cross-bars A having openings A', and the top beam having its end rested on said cross-bar, of the screw passed through the cross-bar and having its upper end connected with the top beam, and the leg turned on said screw up against the cross-bar, substantially as set forth. 2nd. The combination of the cross-bar A, having opening A' elongated in the direction of length of the said bar, the screw D' inserted through said opening A', and provided above bar A with an eye D, the top beams E inserted within and adjustable longitudinally through the eye D, and the leg turned on the screw D' up against the under side of bar A, substantially as set forth.

No. 21,690. Neck Tie Fastener.

(*Agrafe de Cravate.*)

Adelbert L. Gilbert, Milwaukee, Wis., U.S., 19th May, 1885; 5 years.

Claim.—1st. In a neck tie fastener, a collar button provided with a socket or shank-retaining recess, in combination with a tie-retaining shank, provided with means for affixing it to a neck tie, substantially as and for the purpose set forth. 2nd. In a neck tie fastener, the combination, with a collar button, provided with a shank-retaining socket, of the shank C provided with spring catch D adapted to engage in the head of the collar button, and a safety or other form of pin or fastener for affixing said shank to a tie, substantially as set forth. 3rd. The combination of a collar button having a shank-retaining recess, a tie-retaining shank provided with a pin, and a neck tie affixed to said shank by said pin, all substantially as and for the purpose set forth.

No. 21,691. Railway Passenger Tariff and Distance Guide Book.

(*Guide du Tarif des Passagers et des Distances pour Chemins de Fer.*)

Samuel F. Stevens, North Adams, Mass., U.S., 19 h May, 1885; 5 years.

Claim.—A railway passengers conductors guide-book, consisting of leaves cut with flys to form an index of the stations in successive order, each leaf or page containing one or two stations with or without the station number, and the distances and fares to each station from the station or stations, shown at the top of each page, shown opposite each station upon the inner margin or margins of the pages, substantially as shown and described and for the purpose set forth.

No. 21,692. Belt Fastener. (*Joint de Courroie.*)

William Smith, Eaton Rapids, Mich., U.S., 19th May, 1885; 5 years.

Claim.—A metallic belt fastener consisting of the clasp B, having the slanting or circular corners *m, n*, the annular ribs *s, s'* and the points *e, n*, in combination with the covering A, provided with the brads *e, e'*, all substantially as described and for the purpose set forth.

No. 21,693. Machinery for Manufacturing Waxed Tapers and Coated Strings.

(*Machine pour Fabriquer les Cierges et les Pains de Bougie.*)

George M. Coddington, Middleton, Ohio, U.S., 19th May, 1885; 5 years.

Claim.—1st. A machine for manufacturing waxed strings or tapers, by the aid of which machine said strings are waxed, and automatically cut to the required length, substantially as and for the purposes specified. 2nd. A machine for coating strings with wax, consisting of a pan B in which to melt the wax, and mechanism, substantially described, for retaining the strings in said pan, and drawing them horizontally through the same, substantially as and for the purpose specified. 3rd. The combination of the vessel for holding the cord-coating material, devices for immersing the cord therein, drum or roller C and feed rollers *d* and *d'*, all supported in an appropriate frame, and mechanism, substantially as described, for causing said rollers to revolve, substantially as and for the purpose specified. 4th. The combination of a vessel for holding the cord-coating material, staples or guiding devices, having openings *d₁* and *d₂*, and means for drawing the strings through the staples or guides *d₁* and *d₂*, substantially as and for the purpose specified. 5th. In a machine for coating the cords or strings, the combination of a vessel for holding the liquid cord-coating material, and devices for drawing the cord through the vessel and keeping the cord at the bottom of the cord during a part of the immersion of said cord, substantially as and for the purpose specified. 6th. In a device for coating the cord and for the purpose specified. 7th. In a device for coating the cord and for the purpose specified. 8th. In a device for coating the cord and for the purpose specified. 9th. In a device for coating the cord and for the purpose specified. 10th. In a device for coating the cord and for the purpose specified. 11th. In a device for coating the cord and for the purpose specified. 12th. 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ism, substantially as described, for drawing the strings to be waxed through said hooks or guides and against the edge of said plate, substantially as and for the purposes specified. 13th. The vessel B, constructed substantially as described, and rollers C and feed-rollers *d, d'* for drawing the strings through the vessel, in combination with the revolving fan E' located above said vessel, substantially as and for the purposes specified. 14th. In a machine for coating strings, the roller C, provided with a porous exterior, substantially as and for the purposes specified. 15th. In a machine for coating strings, the roller C, provided with a soft porous exterior, substantially as and for the purposes specified. 16th. In a machine for coating strings, the roller provided with a soft porous material located between the devices for applying the liquid coating to the string, and devices for cutting the coated cords into lengths and means for keeping said soft porous material saturated with water or suitable liquid, substantially as and for the purposes specified. 17th. The combination of suitable immersing devices, and the grooved roller covered with a soft fibrous porous material, substantially as and for the purposes specified. 18th. In combination with suitable immersing devices, the wet roller C grooved having a soft porous exterior, and subsequent cord-feeding devices intermediate between said roller and the cord-cutting devices, substantially as and for the purposes specified. 19th. In combination with suitable cars immersing and cutting devices, the roller C positively operated by belt or equivalent power to aid the feed rollers *d, d'* in feeding forward the coated cord, substantially as and for the purposes specified. 20th. In combination, the feeding rollers *d, d'*, covered with felt, or other soft fibrous porous material, for feeding forward the cord-coated material and suitable cutting devices, substantially as and for the purposes specified. 21st. The drum C, provided with grooves, and guide-bar 3 provided with notches 4 at less distance apart than the grooves of roller G, for enabling the cords to converge without coming in contact with one another to the feed-rollers *d, d'*, substantially as and for the purposes specified. 22nd. The combination of mechanism, substantially as described, for coating strings with wax and mechanism for automatically cutting the strings into the desired lengths after being coated, substantially as and for the purposes specified. 23rd. In combination with suitable feeding devices, the cutting knife having a straight or chisel edge, and having a chisel cutting action, that is to say an action whereby the movement of the knife is at right angles to the line of its edge, and suitable means for imparting such action to said knife, substantially as and for the purposes specified. 24th. The block F₃ secured to a sliding bar *f₂* and adapted to strike against a block F₄, in combination with a spring, as G, having a tendency to press the knife toward said block, and a pivoted lever G₃, connected at one end to said sliding bar, the other end of said lever resting against a cam-pulley *g* on the driving shaft C, substantially as and for the purposes specified. 25th. The frame F₁ secured to the posts D and provided at one side with a block F₄, in combination with a knife F₃ secured to a sliding bar *f₂*, secured and capable of sliding in said frame, and operated by a spring C, and a pivoted lever C₃ connected at one end to the bar *f₂*, the other end of said lever bearing against a pulley *g* on the driving shaft C, said pulley being provided with notches *g'* into which the end of the lever drops as the shaft is revolved, substantially as and for the purposes specified. 26th. The sliding bar *f₂*, provided with knife F₃ and cross-head *f₁* capable of sliding in the frame F, the cross-head being provided with studs or blocks *g₃*, in combination with the block F₄ and the springs-studs *g₂*, against which the blocks *g₃* strike as the knife approaches the block F₄, substantially as and for the purposes specified. 27th. The combination of the feed rollers *d, d'*, operated substantially as described, and the knife F, and connecting mechanism, substantially as described, by the aid of which the knife is caused to cut the waxed strings at each and every revolution of the feed roller, substantially as and for the purposes specified. 28th. The tray H₁, located below the cutter herein described, in combination with the follower *h*, located at one side of said tray, and provided with means for causing it to move forward in said tray at each revolution of the feed roller *d*, substantially as and for the purposes specified. 29th. The tray H₁, provided with a follower *h*, located at one side thereof, in combination with the driving shaft C, having a cam pulley H₃ and a pivoted lever H₄, one end of said lever engaging with the cam pulley, and the other end connected to the follower *h* by a rod *h₄*, said cam pulley being shaped to move the end of the lever and the follower back and forth, substantially as and for the purposes specified. 30th. The tray H₁, provided with a follower *h*, located at one side thereof, in combination with the driving shaft C, having a cam pulley H₃ and a lever H₄ pivoted to the frame of the machine, one end of said lever engaging with the cam pulley, and the other end connected to the follower *h* by a rod *h₄*, said cam pulley being shaped to move the end of the lever and the follower back and forth, substantially as and for the purposes specified. 31st. The tray H₂, provided with a movable follower K₂, connected to a sliding bar K₁ moved by a lever K, in combination with the gear-wheel L, provided with inclined planes *l* adapted to engage the lever K, said gear wheel being caused to revolve by suitable means, substantially as and for the purpose specified. 32nd. The tray H₂, provided with a movable follower *k₂*, connected to a sliding bar K₁, moved by a lever K, in combination with the gear wheel L, provided with inclined planes *l*, adapted to engage the lever K, said gear wheel being caused to revolve by the feed-roller *d*, substantially as and for the purposes specified. 33rd. The lever K, sliding bar K₁ and follower K₂, in combination with a spring as K₂, gear wheel L, provided with one or more inclined planes *l* and the spur wheel L₁, connected to the feed roller *d*, and provided at one side with teeth or gear to engage with the gear wheel L, substantially as and for the purposes specified. 34th. The combination of the vessel B, cooling-fan E', drum or roller C, feed rollers *d, d'*, and cutting and counting mechanism, all constructed and operated substantially as and for the purposes specified. 35th. The drum C, covered with cloth, in combination with the trough F and siphon-strips *s*, substantially as and for the purposes specified. 36th. The combination of the trays H₁, H₂, provided with the movable followers *h* and *k₂*, each follower being provided with mechanism for causing it to move independently of the other, substantially as and for the purposes specified. 37th. As an article manufacture, lengths or cuttings of wax-covered cord arranged parallel to each other in boxes, substantially as and for the purposes specified.

No. 21,694. Fire-Place. (Foyer.)

Reuben R. Jones, Sprague, W.T., U.S., 19th May, 1885; 5 years.

Claim.—1st. A fire-place, provided with two fire-boxes, and provided with dampers for conducting the heat from either fire-box into the space over the other fire-box, substantially as herein shown and described. 2nd. A fire-place, provided with two fire-boxes, and two separate flues, and with dampers for conducting the products of combustion of the fire in either fire-place into the flue of the opposite fire-box, substantially as herein shown and described. 3rd. The combination, with a fire-place having two separate fire-boxes, of the damper valves L, L², M and N, substantially as herein shown and described. 4th. The combination, with a fire-place having two separate fire-boxes, of the swinging fenders H¹, H² adapted to close the openings in the two faces of the fire-place, and of the damper-valves L, L², M and N, substantially as herein shown and described.

No. 21,695. Portable Barb Wire Fence. (Clôture Portative en Fil de Fer Barbelé.)

Newton L. Forster, Trafalgar, Ont., 19th May, 1885; 5 years.

Claim.—1st. The mechanical construction of the sections A, A². 2nd. The manner of locking the section together with the lockings J, J, Fig. 2, as and for the purpose hereinbefore set forth.

No. 21,696. Egg and Cake Mixer. (Vergette de Cuisinier.)

Alfred C. Rex, Philadelphia, Pa., U.S., 19th May, 1885; 5 years.

Claim.—1st. A cake or egg beater, consisting of a closed vessel, combined with rotary beaters having vertical shafts and radiating arms, the arms of one beater passing between the arms of the other during their rotation, said beaters being located and journaled therein, the purpose specified. 2nd. The combination of vessel A, removable cover D and rotary beaters G, H, journaled in said cover, substantially as and for the purpose specified. 3rd. The combination of said spout, and rotary beaters G, H journaled in said cover, substantially as and for the purpose specified. 4th. The combination of vessel A, removable cover D and beaters G, H, journaled in said cover, substantially as and for the purpose specified. 5th. The beater for with radiating arms H and vertical arms H between said cross arms, substantially as and for the purpose specified.

No. 21,697. Blanket. (Couverture de Lit.)

Joseph Broadhead, Cornwall, N.Y., U.S., 19th May, 1885; 5 years.

Claim.—The blanket, having a woven jute foundation of different colors, and a back of wool felted into the jute foundation, the wool showing upon the face and mingling with the colours of the jute, to form the outside or face of such blanket, substantially as set forth.

No. 21,698. Window Screen. (Ecran de Fenêtre.)

Thomas W. Dowling, Detroit, Mich., U.S., 19th May, 1885; 5 years.

Claim.—A screen-frame, constructed of two duplicate parts, the top and bottom pieces of said parts being each provided with a dovetail socket at one end, and a dovetail tenon at the other end, said socket being limited in extension to the length to which the frame may be extended, and having a side orifice *aux* communicating therewith at one extremity, the construction being such that the two frames may be readily united upon one side and the opposite sides be united by springing the same sufficiently to engage the dovetail tenon of the one with the dovetail socket at the other, substantially as described.

No. 21,699. Method and means for Producing Artificial Respiration. (Méthode et Moyens pour Produire la Respiration Artificielle.)

Joseph Ketchum, Brooklyn, N.Y., U.S., 19th May, 1885; 5 years.

Claim.—1st. The method of restoring natural respiration, consisting in placing a patient in an air-tight chamber, and in alternately increasing and reducing the pressure of air therein relatively to normal atmospheric pressure, substantially as specified. 2nd. The combination, with an air-tight chamber suitable for accommodating a patient, of a mechanism whereby the air within the chamber may be alternately increased and reduced, substantially as specified.

No. 21,700. Mining Machine. (Machine de Mine.)

Joseph A. Jeffrey (Assignee of Benjamin A. Legg), Columbus, Ohio, U.S., 19th May, 1885; 5 years.

Claim.—1st. In a mining machine, the combination of the stationary bed frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame and provided with inwardly projecting ribs, the cutter bar and cutters mounted across the front end of the sliding frame, means connecting the cutter bar with the engine shaft for drawing the cutters, cogged racks projecting inwardly from the upper edges of the side pieces of the bed frame, a horizontal shaft provided with pinions upon its shaft attached to the inwardly projecting ribs of the sliding frame, an engine shaft and means for connecting the ribs of the sliding frame, horizontal shaft for advancing the cutters into the coal, substantially as set forth. 2nd. In a mining machine, the combination of a frame having its side bars fitted to slide in the side pieces of the bed-frame, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported at its ends in bearings which are attached to and project inwardly from the side bars of the sliding frame, the

pinions mounted on the ends of the horizontal shaft between its bearings and the side pieces of the main frame and openings in the side pieces of the sliding frame to receive the pinions, substantially as set forth. 3rd. In a mining machine, the combination of a stationary bed-frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame, the cutter bar mounted across the front end of the sliding frame, means connecting the cutter bar with the engine shaft for driving the cutters, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported between the side bars of the sliding frame and in the same horizontal plane, or thereabout, pinions mounted on the ends of the horizontal shaft, a continuously rotating cogged gear mounted loosely on the horizontal shaft, and a clutch adapted to connect the continuously rotating gear with the horizontal shaft, substantially as set forth. 4th. In a mining machine, the combination of a stationary bed-frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame, the cutter bar mounted across the front end of the sliding frame, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported between the side bars of the sliding frame, two wheels mounted loosely on the horizontal shaft and rotating in opposite directions, and clutches adapted to connect the oppositely rotating wheels with the horizontal shaft alternately, substantially as set forth. 5th. In a mining machine, the combination of a stationary bed-frame, a sliding frame carrying a cutter bar and having its side bars fitted to slide on the bed-frame, cogged racks attached to the bed-frame, a horizontal shaft mounted on the sliding frame and carrying pinions which mesh with the cogged racks, two rotating wheels loosely mounted on the pinion shaft, devices connecting one of the loosely mounted wheels with the engine shaft and adapted to advance the cutter bar slowly into the coal, and devices connecting the other loosely mounted wheel with the engine shaft for withdrawing the cutter bar from the coal at a higher rate of speed, substantially as set forth.

No. 21,701. Dredge Dipper. (Louchet de Dragueur.)

John B. Pike, Chatham, Ont., 20th May, 1885; 5 years.

Claim.—1st. The combination, with a dredge dipper, of a door E provided with openings or perforations F, substantially as and for the purposes hereinbefore set forth. 2nd. The combination with a dredge dipper, the hinged bolt D passing through the tapering sides of the shell A, the hinge bars H and bars E occurring between the hinge bars H, substantially as described. 3rd. A dredge dipper, in which the back or rear side is open and secured to the shank C by the tapering sides of shell A, and straps J, J, and in which the tapering sides and straps are provided with slotted holes, to permit angular adjustment between the shank C and shell A, substantially as described. 4th. The combination, in the dipper of dredging machine, of the door provided with openings or perforations, the inclined or bevelled bottom of shell A and the tapering form of shell A, substantially as and for the purposes hereinbefore set forth.

No. 21,702. Car Axle Box. (Boîte à Graisse.)

David S. Stimson, Concord, N.H., U.S., 20th May, 1885; 5 years.

Claim.—1st. A dust-guard for axle-boxes, composed of sections separable in a horizontal direction, the inner ends of which are provided with semicircular or concave recesses adapted to fit around the axle, and the vertical outer ends with flanges adapted to shut over slots in the sides of the axle-box when the dust-guard is in position, substantially as set forth. 2nd. A dust-guard for axle-boxes, composed of sections separable in a horizontal direction, the inner ends of which are provided with semicircular or concave recesses adapted to fit around the axle, and the vertical outer ends with flanges adapted to shut over slots in the sides of the axle box, said flanges having suitable packing, substantially as set forth. 3rd. The combination, substantially as set forth, of an axle-box, provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction and adapted for insertion and removal from said side slots, said sections being provided with flanges at their outer ends adapted to shut over said side slots, and means for retaining said dust-guard in position in the axle-box. 4th. The combination, substantially as set forth of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction and adapted for insertion and removal through said side slots, said sections being provided with packed flanges at their outer ends adapted to shut over said side slots, and means for retaining said dust-guard in position in the axle box. 5th. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction adapted to shut over said side slots, and spring-fastening devices at the sides of said axle-box for holding said dust-guard in place. 6th. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction, and adapted for insertion and removal through said side slots, sections being provided with packed flanges at their outer ends adapted to shut over said side slots, and spring fastening devices at the sides of said axle-box for holding said dust-guard in position. 7th. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, and with laterally projecting lips above said slots, and a sectional dust-guard having flanges adapted to shut over said slots and under said lips. 8th. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides, opening into the dust-guard chamber, and with laterally projecting lips above said slots, and a sectional dust-guard having flanges adapted to shut over upper ends of said dust-guard, said lips being recessed to receive the ends of said dust-guard. 9th. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, and with laterally projecting lips above said slots, the sectional dust-guard having flanges adapted to shut over said slots and under said lips, and fastening devices at the sides of the box for holding said dust-guard in place.

No. 21,703. Steam Engine. (Machine à Vapeur.)

James Clark, Medina, N.Y., 20th May, 1885; 5 years.

Claim.—1st. The combination of the frame having the cylindrical steam chest, with the shaft, the crank, the piston and rod, and the cylinder having a closed end which is pivoted on the steam chest, said cylinder having a single central port in its closed end, and said steam chest being provided with an inlet and an exhaust port, with which the cylinder port registers alternately when the engine is in operation, substantially as described. 2nd. The combination of the frame having the cylindrical steam chest, with the shaft, the crank, the piston and rod and cross-head, and the cylinder having a closed head that is pivoted upon the steam chest and having guide-ways for the cross-head, substantially as described.

No. 21,704. Hotel Car. (Char Buffet.)

Joseph J. Strong, St. Paul, Minn., U.S. 20th May 1885; 5 years.

Claim.—1st. A restaurant or hotel railway car having a lobby B, provided with a heater and wash stand, a dining saloon, provided with movable folding chairs and tables, a transverse passage D, a lunch room and a kitchen, arranged substantially as described. 2nd. A restaurant or hotel railway car, having a lunch room at or near the middle of the length of the car, a dining saloon on one end, a kitchen on the other end communicating with each other, substantially as described. 3rd. A restaurant or hotel car, having a pantry and a wine or smoking room on one end of a lunch room, in combination with the side hall F and a dining saloon, arranged substantially as described. 4th. The combination and arrangement in a hotel railway car, of a lunch room midway of the car, having a longitudinally arranged counter, windows at each end of the space behind the counter, the transverse passage D, the dining saloon, the wine room, the hall F and the outlet door J, substantially as described. 5th. In a restaurant railway car, the arrangement of the lunch room, the pantry and the kitchen with relation to the hall F and the outlet door J, substantially as described. 6th. In a restaurant railway car, the combination of a lunch room at or near the middle of the car, a kitchen at one end thereof, a side communicating hall F and a dining saloon at or near the opposite end of the car, all arranged substantially as described. 7th. A railway car, having a lobby B, a dining saloon C, a cross hall D, a lunch room, E, a side hall F, a wine room G, a pantry H and a kitchen I, all furnished and arranged substantially in the manner and for the purposes specified. 8th. A hotel car, having a room provided with folding tables and folding chair seats, substantially as described.

No. 21,705. Knitting Machine.

(Machine à Tricoter.)

George E. Nye and Edward Trediak, Bristol, Penn., U.S., 20th May, 1885; 5 years.

Claim.—1st. In a knitting machine, the dial needles and retracting cams therefor, in combination with the adjustable needle projecting cams, the pattern chain and the lever and devices, substantially as described, connecting the pattern chain and projecting cams, whereby the needles are automatically thrown into and out of action to secure the production of a welt. 2nd. In combination with the revolving dial and its needles, the cam acting to retract said needles, the central expansible cams c, c, to project the needles, the rotary plate connected with and controlling said cams, the lever connected with the plate and the pattern chain acting to adjust the lever, substantially as described. 3rd. In a knitting machine, the combination of the needle cylinder and its needles, the needle depressing cam adjustable in a vertical direction, a pattern chain and the lever, and mechanism, substantially as described, connecting said chain with the adjustable cam, whereby the needles are automatically depressed below their normal positions to produce a slack course. 4th. The needle cylinder and its needles, in combination with the adjustable cam D, the rock shaft and its two arms, the lever L and the pattern chain M. 5th. The adjustable yarn guide, consisting of the plate K, and bracket plate N, constructed as described, for adjustment with respect to each other and to the frame.

NO. 21,706. Means for Excluding Oil and Grease from Condensers, Boilers and Pumps of Steam Engines.

(Moyens d'Exclure l'Huile et la Graisse des Condensateurs, Chaudières et Pompes des Machines à Vapeur.)

Sinclair Stewart, Plainfield, N.J., U.S., 20th May, 1885; 5 years.

Claim.—1st. The combination, with the exhaust pipe or passage of a steam-engine, of catch-plates and conductors arranged therein for intercepting oil and grease and conducting it to the exterior of such pipe or passage, substantially as herein described. 2nd. The combination, with the exhaust pipe or passage of a steam-engine, of inclined catch-plates D, arranged on opposite sides thereof alternately, collectors or gutters at the lower edges of such plates and conductors or pipes leading therefrom to the exterior of the pipe or passage, substantially as and for the purpose herein described. 3rd. The combination, with the exhaust-pipe or passage of a steam-engine, of catch-plates and conductors arranged therein for intercepting oil and grease and conducting it to the exterior of the pipe or passage, a receiver into which the oil and grease with water are delivered, a pipe leading from the receiver to the exhaust or condenser and provided with a valve, and a cock for drawing oil from the receiver, substantially as herein described. 4th. The combination, with the pipe or passage C and the receiver E, provided with a gauge d and one or more of the cocks e, of the system of catch-plates D in the pipe or passage C, the pipe b₁ delivering into the receiver, and the pipe and valve c, et for controlling the escape of water from the receiver, substantially as herein described.

No. 21,707. Car Brake. (Frein de Char.)

Charles E. Currie, Butte City, M.T., U.S., 20th May, 1885; 5 years.

Claim.—1st. The combination, with a vertically journalled chain-shaft for a car brake, and a disk fixed thereon above the car platform, and ratchet teeth in the underside of the disk, of a detent fitted below the disk to play vertically into the teeth thereof, and a spring to raise the detent, substantially as shown and described. 2nd. The combination, with a vertically journalled chain-shaft, a disk fixed thereon having ratchet teeth in its under face, of a base piece fitting around the shaft, a detent fitted to play vertically in the base piece to engage the disk teeth, a spring for said detent, a stud of the detent rising through the base piece, and a disk-shaped pedal secured upon the said stud to project at all sides over the stud hole, substantially as shown and described. 3rd. The combination, with a vertically journalled chain shaft and a detent fitted to play vertically, of a disk upon the chain shaft, provided with a circle of ratchet teeth in its under side, and a rim projecting downward around the teeth, substantially as shown and described. 4th. The combination of the vertical chain shaft C, the disk E fixed thereon and provided with the teeth G in its under side, the base K, the detent H provided with the downward stud I and upward stud J fitted to play vertically in the base, the spring around stud I and the pedal L upon stud J, substantially as shown and described.

No. 21,708. Sanitary Appliance for Children, etc. (Appareil Sanitaire pour Enfants, etc.)

Edwin H. Booth, Preston, and Frederick N. Dyer, Macclesfield, Eng., 20th May, 1885; 5 years.

Claim.—1st. The improved sanitary appliances, substantially as hereinbefore described and represented by the annexed drawings, consisting of a water and air proof bag or vessel, in combination with a ventilated scutum or receptacle so formed and constructed as to oppose a steep acclivity against the return of the discharged matter in whatever posture the wearer may be, both the bag and the scutum being readily removable and reversible. 2nd. We claim the combination, with such a sanitary appliance, of a napkin perforated and stitched, substantially in the manner hereinbefore described.

No. 21,709. Car Step. (Marche-pied de Char.)

George C. Hadley, Rochester, N.Y., U.S., 20th May 1885; 5 years.

Claim.—1st. The combination, with the steps, of a railway-coach, the supporting-rods f, f and guides g, g secured to the coach, the adjustable step G with suspenders h, h and braces k, k for supporting said step, substantially as shown and described. 2nd. In combination with adjustable step G of a railway coach, the suspension-rods h, h, each connected by a movable joint with said step, and the braces k, k attached by movable connections with the step, the said braces being connected at their upper ends with the suspension-rods h, h, by sliding loops or joints o, substantially as and for the purpose set forth. 3rd. In combination with the fixed step d₂ of a flight of steps, of a railway coach, the suspension-rods h, h and braces k, k for supporting the adjustable step G, the said suspension-rods being provided at their lower ends with the downward projecting points or studs i, i, substantially as and for the purpose set forth. 4th. In combination with the fixed steps of a railway coach and the adjustable step G, therefore, the lever-rods f, f, guides g, g, suspension-rods h, h and braces k, k, the rods h, h being connected with the lever-rods by movable joints at points within the guides, substantially as shown. 5th. The combination, in car-steps, of the suspension-rods h, h, braces k, k and step G, the said rods and braces being joined to the step by movable joints, the braces connected with the rods by sliding loops o, o and burrs u, u on the rods to form stops for the braces to rest against substantially as described. 6th. A railway coach having the usual series or flight of fixed steps F at the end thereof, provided with an adjustable or movable step, suspended from the coach in front of and below the lower rigid steps of said series, in relative position to form with said series a continuous flight of steps, substantially as described.

No. 21,710. Water Closet. (Cabinet à l'Eau.)

James N. O'Neil, Toronto, Ont., 20th May, 1885; 5 years.

Claim.—1st. In a water-closet, the combination of the auxiliary flushing pipe D, with the pipe B and main-pipe C, as shown and for the purpose specified. 2nd. In a water closet, the combination of the collar E, with the pan B₁ and pipe C, as shown. 3rd. In a water-closet, the standard G, in combination with the pan B₁ and pipe C, as shown and for the purpose specified.

No. 21,711. Harness. (Harnais.)

Allen Sherwood, Auburn, and Charles R. Jones, Spracuse, N.Y., U.S., 20th May, 1885; 5 years.

Claim.—1st. The combination of the bands A traces C suitably connected to the hames, and the bands B connected to the traces and pivotally mounted upon the spring, tempered arched steel yoke E, provided at its apex with means for connecting the draft chain F, all constructed substantially as shown and described. 2nd. As an improved article of manufacture, the spring tempered steel yoke E, arched upward in the centre of its length, and provided at that point with a perforated plate for connection with a chain, and a perforation at each end, substantially as and for the purpose described. 3rd. The combination of the segmental band B, and the hook b₁ secured to one end thereof, with the eye a₁ pivoted thereto and adapted to project within the hook, substantially as and for the purpose described. 4th. The combination of the segmental band B, the hook b₁ secured to one end thereof and the eyes 2, with the back-strap A and the clamp A₁ provided with transverse bars a₂ and a₃, and bar a₄ provided with spurs a₅, substantially as and for the purpose set forth.

stantially as specified. 5th. In an apparatus for propelling vessels, the combination of air compressors A, pipes a5, cock a11, chamber B, pipes Br, valves b, chambers C, pipes c2, valves c, chamber D, pipes F, combustion chambers E, valves E1, valves G1, conduits H, valves E2, substantially as specified. 6th. In an apparatus for propelling vessels, the combination of a combustion chamber E, valve E1, vessels, the combination of a combustion chamber E, valve E1, toothed sector e, toothed rack-bar e1, toe e3, rocker e4, valve e2, toothed sector e6, toothed rack-bar e7, toe e9, pipe G, valve G1, pinion g, toothed gear wheel g1, shaft g2, ratchet wheel g3 and arm g4 carrying pawl g5, substantially as specified.

No. 21,717. Railway Car Wheel.

(*Roue de Char de Chemin de Fer.*)

The Hagan Steel Car Wheel Company, (Assignee of James F. Thoms, Administrator of the estate of John A. Hagan,) Three Rivers, Mich., U.S., 22nd May, 1885; 15 years.

Claim.—1st. The combination, with a car wheel tire, of two inserted sectional rings on its inner face near its edges where least wear occurs, substantially as and for the purpose set forth. 2nd. The combination, in a car wheel, of a tire having two inserted sectional rings near its edges, and side plates or disks with inwardly projecting flanges placed inside of the rings, substantially as set forth. 3rd. In a car wheel, the combination, with the tire having the two inserted sectional rings placed outside of the flanged disks or side plates of the distance pieces, and the bolts passing through them, substantially as set forth. 4th. In a car wheel, the combination, with the hub tire and side plates or body portion of the wheel, of two rings on the inner face of the tire at least one of which is inserted in sections and to which rings the body portion of the wheel is secured, substantially as set forth.

No. 21,718. Nut Lock. (*Arrête-Ecrou.*)

Eli F. Campbell, Leroy C. Noble and Milton G. Howe, Houston, Texas, U.S., 22nd May, 1885; 5 years.

Claim.—1st. An elongated spring washer plate having bolt openings a and lips or spurs A2, projecting above the face of said plate in proximity of the bolt openings and adapted to engage with the under side of the nuts, substantially as described. 2nd. A torsional spring washer consisting of a flat elongated metal plate slightly twisted in opposite directions from its centre toward its ends and provided with bolt openings at the ends of said plate, substantially as described.

No. 21,719. Device for Setting Planer Knives. (*Appareil pour poser les Burins des Machines à Raboter.*)

William R. Hibbard and William C. Hibbard, Montreal, Que., (Assignees of Danford Willey, St. Johnsbury, Vt., and James B. Thurston, Concord, N.H., U.S.) 22nd May, 1885; 5 years.

Claim.—1st. A clamp for cutter-heads having setting mechanism operated by a screw, which registers upon an index or dial any given distances, which may be required to set the cutters over or beyond the edge of said cutter-head, substantially as described and for the purpose set forth. 2nd. A clamp for cutter-heads having setting mechanism operated by a screw which registers upon a movable dial or index any given distances, which may be required to set the cutters over or beyond the edge of said cutter-head, substantially as described and for the purpose set forth. 3rd. A clamp for cutter-heads, composed of two parts, one of which is provided with setting mechanism, operated by a screw which registers upon a dial or index any given distances, which may be required to set the cutters over or beyond the edge of said cutter-head, substantially as described and for the purpose set forth. 4th. A clamp for cutter-heads composed of two parts, one of which is provided with setting mechanism, operated by a screw which registers upon a movable dial or index any given distances required to set the cutters over or beyond the edge of said cutter-head, substantially as and in the manner described and set forth. 5th. A clamp for cutter-heads composed of the parts C, Cl, provided with the screw H, rod I and screw I1, the part C having setting mechanism consisting of the sliding nut D, operated by a screw E threaded both to the part C and said nut D, and a fixed or movable dial or index G, all constructed and operating substantially as described and for the purpose set forth. 6th. A clamp for cutter-heads having setting mechanism consisting of a sliding nut D, operated by a screw E threaded both to the said clamp and the nut D, all constructed and operating substantially as described and for the purpose set forth.

No. 21,720. Thill Coupling.

(*Armon de Limonière.*)

Alexander O. Bonsteel and Oscar S. McChesney, Wilson, N.Y., U.S., 22nd May, 1885; 5 years.

Claim.—The combination, with a clip constructed with a recess in its forward jaw, said recess being formed with projections at the upper and lower ends of the openings leading thereto, of a flexible cushion adapted to be forced laterally into said recess and a thill-iron provided with an eye, the end bar of which engages the inner side of the cushion while the sides of the eye engage the edges of the cushion and prevent its lateral displacement substantially as set forth.

No. 21,721. Can-Opener.

(*Machine à Ouvrir les Boîtes Métalliques.*)

Caleb S. Lobbell, Stormville, Miss., U.S., 22nd May, 1885; 5 years.

Claim.—1st. The combination, with the supporting frame provided with an operating shaft and gear wheel, of the shaft K provided with a cutting-blade at its lower end, gear wheel I through which shaft K freely slides but within which it cannot rotate, and a locking device secured to the frame and adapted to engage the shaft K to hold it at various heights, substantially as set forth. 2nd. The combination,

with the shaft K having annular grooves K1, K1, of means for revolving the said shaft, the latch L pivoted on the bar C, the block N, the bar O and the blade P on the bar O, substantially as herein shown and described. 3rd. The combination, with a revolving shaft carrying means for cutting a can top, of the fixed stepped blocks R, the movable step block R1 and the lever S, to which the block R1 is pivoted, substantially as herein shown and described.

No. 21,722. Car-Coupling. (*Accouplage de Chars.*)

Hugh Graham, Dartmouth, N.S., 22nd May, 1885; 5 years.

Claim.—1st. In a car-coupling, the combination, with the draw-head A, of the coupling pin D having a shoulder or off-set E, of the rod F projecting upward from the pin and having its upper part squared, and of the guide arm G, substantially as herein shown and described. 2nd. In a car-coupling, the combination, with the draw-head A, of the coupling-pin D, the rod F, the arm G, the shaft H, the arm K and the chain L, substantially as herein shown and described.

No. 21,723. Horse Collar Pad.

(*Collier de Cheval.*)

Edward L. McClain, Greenfield, Ohio, U.S., 22nd May, 1885; 5 years.

Claim.—1st. As means of attaching a pad to a horse collar, a hook or clasp adapted to be adjustably attached to the fore roll of the collar, and having provision for swivelling at the place of attachment to the pad. 2nd. In combination with a collar pad, means of attaching a pad to a horse collar, consisting of a hook or clasp adapted to be adjustably attached to the fore roll of the collar, and having provision for swivelling at the place of attachment to the pad. 3rd. A hook or clasp composed of one section adapted to be attached to the pad, and another section provided with the curved spring hook adapted to clasp the fore roll of a horse collar and thus secure the pad to the collar, the two sections being hinged, substantially as set forth. 4th. In combination with a horse collar pad, a hook or clasp composed of one section adapted to be attached to the pad, and another section provided with the curved spring hook adapted to clasp the fore roll of a horse collar and thus secure the pad to the collar, the two sections being hinged, substantially as set forth.

No. 21,724. Flying Target. (*Cible Volante.*)

Nathan G. Moore, Chicago, (Administrator to the estate of Charles F. Stock, Peoria,) Ill., U.S., 22nd May, 1885; 5 years.

Claim.—1st. The within described flying target, provided with two or more notches or lugs on its periphery, substantially as and for the purpose specified. 2nd. The flying target consisting of the concavo-convex face F, and the annular rim D formed of fragile material, and having the ledge C at the conjunction of said face and rim, as set forth and for the purpose specified. 3rd. The flying target consisting of the concavo-convex face F, and the annular rim D formed of fragile material, and provided with the ridges E upon more or less of said face F, as and for the purpose set forth. 2nd. The fragile flying target A, when provided with the lugs or notches B on the periphery thereof, the ledge C and the ridges E, as and for the purpose specified.

No. 21,725. Cake Griddle. (*Gril de Pâtissier.*)

Jonathan V. Taylor, Boston, Mass., and Murch Judd, Everett, Mass., U.S., 22nd May, 1885; 5 years.

Claim.—1st. The hinged wing-piece E, having the straight rib R arranged so as to fall inside of the rib of the main portion, when folded together, substantially as shown and described as and for the purposes set forth. 2nd. The handle H having spring side portions L, provided with eyes K, in combination with the wing piece E, provided with the notches N and pivots M, substantially as described as and for the purposes set forth. 3rd. The hinged wing-piece E provided with notches N, and short pivots M adapted to engage with the eyes K of the handle, substantially as described as and for the purposes set forth.

No. 21,726. Portable Shield for Skirmishers.

(*Bouclier pour Travailleurs.*)

Robert Larmour, Stratford, Ont., 22nd May, 1885; 5 years.

Claim.—1st. A portable shield formed by a light steel plate A, bent angularly, as described, and provided with a hole a and supports D, substantially as for the purpose specified. 2nd. A portable shield formed of the plate A, bent angularly and having the holes b pierced through it, as specified, in combination with the strap B and handle C, substantially as and for the purpose specified.

No. 21,727. Horse Shoe. (*Fer à Cheval.*)

Alfred L. Stevens, Darien, Ct., U.S., 26th May, 1885; 5 years.

Claim.—1st. A horse shoe, having at the top a slot and a lug, in combination with a removable calk having a lug adapted to engage said slot, and a depression corresponding with the lug upon the shoe, and an attaching screw adapted to be turned in from the back to hold the calk in place, substantially as set forth. 2nd. A horse shoe, having at the toe a lug and a slot with shoulders projecting into it, in combination with a removable calk having a depression at the toe corresponding with the lug upon the shoe, and a lug corresponding with the slot, and having notches in which the shoulders fit and an attaching screw, substantially as set forth. 3rd. The body of the shoe having a cut-away portion at the toe, which is provided with a lug and a slot, in combination with a calk adapted to fit in said cut-away portion, and having a depression and lug to engage the corresponding parts of the shoe, and an attaching screw which enters from the back to hold the calk in place, substantially as set forth. 4th. The body of the shoe having cut-away portions K at the ends which are provided with inclined recesses O and lugs N, in combination

with heel calks having lugs O which engage recesses O, lugs P which cover the ends of the shoe, and depressions N₁ which receive lugs N, substantially as set forth. 5th. The body of the shoe having cut-away portions K, with shouldered L, recesses O and lugs N, in combination with calks adapted to fit in said cut-away portions, and having notches which receive the shouldered and lugs O¹ and P, depressions N₁ and attaching screws, substantially as and for the purposes set forth. 6th. The body of the shoe having cut-away portions C and K, provided with suitable slots, depressions and lugs, in combination with calks which fit in said cut-away portions, and are provided with lugs and depressions corresponding with the shoe, and at each screw which enter from the back and engage said lugs, whereby the calks are held in place, substantially as and for the purpose set forth.

No. 21,728. Parturition Shears.

(*Forceps de Vétérinaire.*)

Andrew Culton, Lindsay, Ont., 26th May, 1885; 5 years.

Claim.—The parturition shears, composed of shears *a, a*, springs *b, b*, rod *c*, screws *d*, box *d*, tube *e*, head *f*, socket *g*, screw *h*, annular groove *i*, screws *j, j*, the whole combined and to be operated as described and shown.

No. 21,729. Type Writer.

(*Machine à Ecrire en Types.*)

Samuel S. Burt, Chicago, Ill., U.S., 26th May, 1885; 15 years.

Claim.—1st. In a type writer, the combination, with a type disk having upper and lower case letters alternately represented in types placed in a continuous series thereon, of an indicator having the upper and lower case letters alternately arranged, but in different series, and a printing lever adapted to said indicator, substantially as described and for the purpose set forth. 2nd. In a type writer, the combination, with a pivoted printing key or lever, of a disk lying under the lever, a rod carrying an arm and adapted to be rocked by the lever, a plunger, and means, substantially as described, for controlling the rod and plunger, all constructed and operated substantially as described and for the purposes set forth. 3rd. In a type writer, the combination, with a printing lever, of a rotating stud having fixed pins, and a type disk adapted to slide up and down on said pins and to be rotated thereby, substantially as and for the purposes set forth. 4th. In a type writer, the combination, with a printing lever and rocking bar provided with a crank and a fixed arm, and means, substantially as described, between the crank and lever, of an escapement lever constructed and arranged, substantially as described, so that pressure on the printing lever will operate the escapement, for the purpose set forth. 5th. In a type writer, the combination, with a feed roller, of a paper holder having a down-hanging skirt and a rolling bar, said holder being pivoted to said bar in such a manner that it holds the paper upon said roller by its own weight, substantially as described.

No. 21,730. Rotary Excavator for Snow, etc.

(*Excavateur Rotatoire pour la Neige, etc.*)

Edward Leslie, Orangeville, Ont., 26th May, 1885; 5 years.

Claim.—1st. In an excavator, a revolving head or wheel formed of segments or sections separated by openings, and provided with independent cutting blades covering the openings, substantially as shown and described. 2nd. In an excavator, a revolving head formed of segments or sections separated by openings and provided with cutting blades covering the openings, and adjustable to cause the cutters to act in either direction desired, substantially as described. 3rd. In an excavator, the combination of the adjustable cutting blades, with the head or wheel, substantially as shown and described. 4th. The projecting hood, in combination with the head or wheel, substantially as shown. 5th. The combination of the delivering wheel D, the revolving head B, provided with cutters *f* and the case A, substantially as described. 6th. The combination of the revolving head B, the delivering wheel D, the shaft *b*, shaft *i* and the compound gearing E, substantially as described for operation as set forth. 7th. The hub *e*, arms *g*, cutters *f*, notched plates *o* and sliding disk *q*, combined for operation for the purpose specified. 8th. The combination of the cutter arms *g*, notched plates *o*, disk *q*, provided with lugs *q*, dogs *p*, tumblers *s* having the lugs *el*, the disk *t* and arms *u*, substantially as described for operation as set forth. 9th. The combination of the piece *v* and lever *u*, with the disk *t*, tumblers *s* and disk *q*, substantially as and for the purpose specified. 10th. The combination, with the case, of an adjustable gate or cap, operated substantially as shown and described, whereby the material can be discharged upon either side of the machine, as set forth. 11th. The arrangement, substantially as described, with the case and its delivering wheel, of the swinging gate or cap. 12th. In an excavating machine, the combination of the following instrumentalities, namely: a revolving head provided with adjustable cutting blades, and a mechanism for changing and adjusting the position of the blades, substantially as shown and described. 13th. The combination of the arms *vi* having bent ends, the notched disk *t*, piece *v* and lever, substantially as described, for retaining the parts in operative position and automatically releasing them after the cutters are shifted. 14th. The combination, with the recessed hub *e*, of the tumbler *s* entered in the recess, so as to exclude snow or other material, substantially as described. 15th. The fan or delivering wheel, constructed with a back plate, substantially as described, whereby the impact of the snow will be resisted by the back plate and transferred to the shaft of the fan wheel, as set forth. 16th. The cutting wheel, constructed with a circumferential band, substantially as described, whereby the staves or arms of the cutting blades and the segments will be connected and strengthened, as set forth.

No. 21,731. Railway Car Truck.

(*Chassis de Char de Chemin de Fer.*)

John McEwen, Laurence, Ks., U.S., 26th May, 1885; 5 years.

Claim.—1st. A railway car truck, constructed substantially as herein shown and described, and consisting of the wheels and axles, side bars and inclined standards carried by the said axles, a top frame connected with the said inclined standards by cross bars, springs and bolts, and with the side bars by hinged inclined brace bars having cross heads, springs and bolts, as set forth. 2nd. In a railway car truck, the combination, with the wheels and axles A, B, and the top frame F having slotted projecting lugs F¹, of the side bars C and inclined standards D, the cross bars E and the bolts and springs G, H, substantially as herein shown and described, whereby an elastic support is provided, and the said top frame is held from forward or rearward movement, as set forth. 3rd. In a railway car truck, the combination, with the wheels and axles A, B, the top frame F, the side bars C, the inclined pivoted standards D and their guide lugs, bolts and springs E, G, H, of the inclined hinged braces L, having cross heads M and the bolts and springs N, O, substantially as herein shown and described, whereby the said top frame is held from lateral movement while being allowed to move up and down freely, as set forth.

No. 21,732. Device for Varying the Gauge of Carrying Wheels. (*Appareil pour varier l'Ecartement des Roues de Voitures.*)

Frederick Mackinlay, London, Eng., 26th May, 1885; 5 years.

Claim.—1st. The alternative methods of effecting a change of gauge in carrying wheels. (a) The rotation, when unlocked, of the wheels with internally screwed hubs upon a right and left-handed screwed axle, when the latter is seized by a brake and the wheels run upon a trough girder or plate rail. (b) By the rotation, when unlocked, of the wheels with internally screwed hubs upon a right and left-handed screwed axle, or by the rotation of the axle relatively to the fixed wheels when the truck or vehicle is suspended upon flanged disc keyed to the axle running upon elevated rails, the wheels being revolved by hand when the truck or vehicle is stationary or held by a sliding brake, or by a chain, whilst the truck is caused to move forward on the axle discs. (c) By the wheels being slid, when unlocked, laterally upon the smooth turned ends of the axles by hand tools when stationary, or by converging, or diverging guide rails as the truck or vehicle is travelled, suspended by flanged axle disc upon elevated rails, the wheels after either method of change being locked in place by toothed clips, or horizontal, or vertical bolts or keys, substantially as described. 2nd. In a truck or vehicle fitted for effecting change of gauge, the combination of a right and left-handed screwed axle and wheels with screwed hubs thereon, with locking toothed clips and with an axle brake, or alternatively with sliding main wheel brakes, substantially as described. 3rd. In a truck or vehicle fitted for effecting change of gauge, the combination of wheels sliding laterally upon the axles, with locking clips thereon, and axle auxiliary discs to lift the truck or vehicle from the main track, substantially as described. 4th. The combination, with the truck or vehicle, as claimed in Claim 2, of a pair of trough or plate rails laid so as to connect the different gauges of rails to allow the change of gauge to be effected, substantially as described. 5th. The combination, with the truck or vehicle, as claimed alternately in Claim 2, of a pair of elevated parallel rails connecting the different gauges, to suspend the truck or vehicle to allow the change of gauge to be effected, substantially as described. 6th. The combination, with the truck or vehicle, as claimed in Claim 3, of a pair of elevated parallel rails connecting the different gauges to suspend the truck or vehicle to allow the change of gauge to be effected, substantially as described.

No. 21,733. Plough Fender. (*Défense de Charrue.*)

Gilbert C. Miller, Foot Wayne, Ind., U.S., 26th May, 1885; 5 years.

Claim.—1st. A fender for cultivator ploughs, consisting of a plate which projects over the plough shovel, and has one side elongated to pass rearward on one side of the plough beam, the said plate being adjustably connected to the said plough beam, substantially as and for the purpose set forth. 2nd. A plough fender for cultivator ploughs, consisting of a plate which projects over the plough shovel, and having one side elongated, in combination with a plough beam having a stop secured to it above the shovel, the fender plate being adjustably secured to the said beam, and the parts operating, substantially as and for the purposes set forth. 3rd. A plough fender, consisting of a plate with an elongated side, and having two or more bolts secured to it, having between their rear ends a bearing secured to the fender plate and their free ends passing through a bearing plate, in combination with a plow beam having a stop on it above the plough shovel, the several parts operating substantially as and for the purposes set forth. 4th. A plough fender, consisting of a plate, one side of which is elongated, the said plate having two or more bolts secured to it, having between their rear ends a bearing, and their other ends passing through a plate which bears against a plough beam, the whole being adjustable thereon and operating, substantially as and for the purposes set forth.

No. 21,734. Metallic Railway Tie.

(*Traverse Métallique de Chemin de Fer*)

Miguel A. Glynn, Havana, Cuba, 26th May, 1885; 5 years.

Claim.—The combination of a metallic tie, provided with fastenings that receive and lap over the rail flanges, and a rail having flanges notched, substantially as described.

No. 21,735. Ticket Holder for Railroads, etc. (*Casier pour Billets de Chemin de Fer, etc.*)

Shuburn E. Cilley, Tunbridge, Vt., U.S., 26th May, 1885; 5 years.

Claim.—1st. A ticket-holder, consisting of a casing adapted to be attached to the coat, or other article, and provided with a hinged glass front having a spring-catch, and a lock for locking the spring-catch, so as to prevent opening the casing, substantially as herein shown and described. 2nd. In a ticket-holder, constructed substan-

tially as set forth, the combination with the casing having a hinged front, of the link piece N, and the piece O having a pin P, substantially as herein shown and described. 3rd. In a ticket-holder, constructed substantially as set forth, the combination, with the casing A and its hinged front B, of the spring-strip J secured transversely on the inner surface of the casing, substantially as herein shown and described. 4th. In a ticket-holder, the combination, with the casing A and its hinged front B, of the spring-strip J and the pin L held in the back of the casing, substantially as herein shown and described.

No. 21,736. Screw Propeller for Vessels.
(*Propulseur à Hélice pour Vaisseaux.*)

Elias S. Hawley, Buffalo, N.Y., U.S., 26th May, 1885; 5 years.

Claim.—1st. A vessel having its bow and stern of like tapering configuration, and being provided with three propeller screws at each end, one screw being located in the deadwood in the line of the keel, and the other two being twin screws located, substantially as shown, and the six screws having their combined working area at least equal to or somewhat greater than the maximum immersed transverse section of the vessel, substantially as shown and described. 2nd. A vessel, having its bow and stern of like tapering configuration, and provided with twin screws in both bow and stern, the shafts of which are inclined in an upward direction, substantially as shown and for the purpose stated. 3rd. A vessel, having its bow and stern of like tapering configuration, and provided with twin screws in both bow and stern, the shafts of which are inclined in an upward direction and converge toward the bow and stern, substantially as shown and for the purpose stated. 4th. The sheath for the protruding ends of the shafts of the twin screws g, g', g'', g''' , consisting of the cylindrical portion h and the extension h' , having the sharp edge h_2 between the end of the shaft and the side of the vessel, substantially as shown and described.

No. 21,737. Radiator. (*Calorifère.*)

William H. Harris, Buffalo, N.Y., U.S., 27th May, 1885; 5 years.

Claim.—1st. In a radiator, the horizontal corrugated conduits A, composed of upright, elongated radiating spaces c , connected by upright elongated openings c' , substantially as set forth. 2nd. In a radiator, the combination of horizontal corrugated conduits A, composed of upright elongated radiating spaces c connected by upright elongated openings c' , and upright cylindrical end chambers B cast with the conduits A, and provided with inlet and outlet openings, substantially as set forth. 3rd. In a radiator, the combination of a series of horizontal radiating sections, each composed of a horizontal chamber A and two vertical end chambers B, the end chambers of one section resting upon the corresponding end chambers of the next lower section, and the contiguous faces f of said chambers being provided with interlocking concentric ribs f' and vertical tie rods e passing through the end chamber B, substantially as set forth. 4th. In a radiator, the combination, with the radiator chambers B, B, of the tubular tie rod e open to the outer air, screw-nut l and rubber ring m , substantially as set forth. 5th. In a radiator, the combination, with the radiator chambers B, B, and top plate H, of the tubular tie rod e , screw-nut l and perforated screw-nut h , substantially as set forth. 6th. In a radiator, the combination, with a series of radiator sections, provided with vertical end chambers B, B, arranged side by side of a common discharge chamber P, upon which the last chambers B of all the series rest, and with which said chambers B communicate by openings formed in the lower ends of said chambers B and the top plate of the chamber P, substantially as set forth.

No. 21,738. Steam Cooking Utensil.

(*Ustensil de Cuisine à Vapeur.*)

Benjamin Fletcher, Toronto, Ont., 27th May, 1885; 5 years.

Claim.—1st. A shallow steam generator, provided with a funnel leading into a steaming kettle, in combination with a hermetically-sealed water reservoir, connected to the steam generator by the supply pipe, substantially as and for the purpose specified. 2nd. A hermetically-sealed water reservoir, provided with a pipe having its upper end leading into the reservoir open, while its lower end is provided with a small hole d , in combination with the steam generator arranged to receive the lower end of the pipe, and having an opening in its top, substantially as and for the purpose specified. 3rd. A water reservoir connected by a pipe with a steam generator, from which steam generator the said reservoir is supported, as specified, in combination with a steamer having a perforated ring g to support said kettle away from the reservoir, substantially as and for the purpose specified.

No. 21,739. Steam Pipe Joint for Hollow Revolving Journals. (*Joint de Tuyau à Vapeur pour Tourillons Creux.*)

Michael J. Roach, Lockport, N.Y., U.S., 27th May, 1885; 5 years.

Claim.—1st. In a steam pipe joint for a hollow revolving journal, the gland a attached to the journal c and having a conical, oval, or equivalent valve seat b , in combination, with a valve f of corresponding form on the steam pipe e , substantially as shown and described. 2nd. The combination, with the journal, of a hollow revolving cylinder having its end partly closed to form a valve seat, of a steam pipe passing into said journal and having a valve formed upon it fitting the valve seat on the end of the journal, and said valve having a rear surface of sufficient area to insure its being seated by the steam pressure, substantially as shown and described.

No. 21,740. Roller Mill. (*Moulin à Cylindres.*)

William H. B. Morgan, Ridgetown, Ont., 28th May, 1885; 5 years.

Claim.—The right and left action of sprial roller J, for the purpose above referred to, centriek H and reducing sprial i and the perforated concave c , substantially as and for the purpose hereinbefore set forth.

No. 21,741. Furnace for Manufacturing Illuminating Gas. (*Fourneau pour Produire le Gaz d'Éclairage.*)

Frederick Egner, St. Louis, Mo., U.S., 27th May, 1885; 5 years.

Claim.—The combination, with a furnace for the manufacture of illuminating gas, of the tuyere pipes l, air chamber J having the air pipe j and valve ji , the exit pipe K situated at a suitable distance above said tuyere pipes, the hydraulic seal L and an exhauster for removing the manufactured gas from the upper part of the furnace, and promoting combustion in the lower part of the furnace by creating an indraft of air, substantially as shown and specified.

No. 21,742. Car Axle Box. (*Boîte à Graisse.*)

Samuel A. Bernis, Springfield, Mass., U.S., 27th May, 1885; 5 years.

Claim.—1st. The box D having the tubular projection o thereon, the cap h secured to the box, as described combined with the car wheel A, the projection c bolted thereon and the flexible washer e , substantially as set forth. 2nd. An improved journal brass, having curved sides or wings extending below the journal-bearing thereon, the inner sides of said wings standing away from and not in contact with the journal. 3rd. The combination, with the axle-box and journal, of the brass b and the saddle a , said brass and saddle having interlocking projections and depressions thereon, substantially as set forth. 4th. The combination, with the axle-box, the journal B and the journal brass, of the waste box v adapted to hold absorbent material in contact with the journal, substantially as described. 5th. A car-axle box having a lip thereon for the engagement therewith of the upper edge of the cup, and having a vertical bolt-socket at its front end, a bolt extending through said socket and projecting beneath the box, a cap having its upper edge engaging with the lip on the box, and means, substantially as described, on its inner side, whereby the head of said bolt is engaged with the cap, combined and operating substantially as set forth. 6th. A car-axle box having a lip thereon for the engagement therewith of the upper edge of the cap, and having a vertical bolt-socket at its front end, a bolt extending through said socket and projecting below the box, a cap having its upper edge engaging with said lip on the box and brackets with which the head of said bolt engages, combined and operating, substantially as described. 7th. The combination, the box D, bolt b and the cap h having the brackets 8 thereon, substantially as set forth.

No. 21,743. Machine Convertible into a Wire Strainer or Auger. (*Machine Pouvant servir de Tendeur de Fil de Fer ou de Tarière.*)

William Creed, Warmatta, N.S.W., 27th May, 1885; 5 years.

Claim.—1st. A wire stretcher, composed of a brace made in two sections detachably connected together, and retaining or clamping devices secured to the crank arms thereof for holding the end of two adjacent wires, said retaining or clamping devices being detachably connected with the crank arms, and operating to draw the wires together when the brace is rotated in the proper direction, as described. 2nd. A wire stretcher composed of a brace, having its crank arms screw-threaded in reverse directions, and a nut for each of said arms, provided with retaining or clamping devices to hold the ends of adjacent wires, whereby said wires are moved towards each other and stretched on rotating the brace in the proper direction, as described. 3rd. A wire stretcher convertible into an auger, composed of a brace, a retaining or clamping device connected with each crank-arm thereof to hold the ends of adjacent wires, said retaining or clamping devices operating to draw said wires together when the brace is rotated in the proper direction, and in combination therewith, of a breast plate and bit stock adapted to be secured to said crank arms, whereby the wire stretcher may be used as an auger, as described. 4th. A wire stretcher, convertible into an auger composed of a brace, a retaining or clamping device detachably connected with each crank-arm thereof to hold the ends of adjacent wires, and operating to draw said wires together when the crank is rotated in the proper direction, and a breast plate and bit stock, said retaining or clamping devices and breast plate and bit stock respectively being constructed to be interchangeably connected with the crank arms of the brace, as described. 5th. A wire stretcher, convertible into an auger, composed of a sectional brace, detachably connected, a retaining or clamping device for each crank arm of said brace detachably connected therewith, and constructed and operating to hold the end of adjacent wires, and draw said wires together when the crank is rotated in the proper direction, and a breast plate and bit stock, said retaining or clamping devices and breast plate and bit stock respectively being constructed to be interchangeably connected with the crank arms of the sectional brace, as described for the purpose specified. 6th. A wire stretcher composed of a brace, a retaining or clamping device for each of the crank arms thereof, constructed to hold the ends of adjacent wires and operating to draw said wires together when the brace is rotated in the proper direction, and a fulcrum bar or resistance for the brace, as described for the purpose specified. 7th. A wire stretcher, composed of a brace, a sleeve for each of the crank arms thereof, provided with a gripping saw and a gripping lever operating in conjunction with the jaw pivoted to said sleeve, said devices being constructed and operating to hold the ends of two adjacent wires and draw the same together when the crank is rotated in the proper direction, as described for the purpose specified. 8th. A wire stretcher composed of a brace, a sleeve for each crank arm thereof provided with a gripping jaw, a gripping lever operating in conjunction with the jaw pivoted to said sleeve, and an articulated fulcrum bar connecting the two levers, said parts being constructed and operating to hold the ends of adjacent wires and draw them towards each other when the brace is rotated in the proper direction, the fulcrum bar serving as a fulcrum for the brace, substantially as described for the purpose specified. 9th. The combination, substantially as herein described, with the brace A and its crank arms B, C, sleeves B₁, C₁, having clamping ledges b, c , the clamping levers B₂, C₂, said sleeves and levers operating with the arms to hold the ends

of adjacent wires and draw them together when the brace is rotated in the proper direction, and the retaining devices D, D', said parts being arranged for operation, as set forth. 10th. The combination, substantially as herein described, with the brace A and its crank arm B, C, of the sleeves B', C', constructed to operate in conjunction with the crank arms to hold the ends of adjacent wires, and draw them together when the brace is rotated in the proper direction, fulcrum bars G, G', H, and the retaining devices D, D', said parts being arranged for operation, as set forth.

No. 21,744. Feed Water Heater.

(*Réchauffeur de l'Eau d'Alimentation.*)

William H. Wood, New York, N. Y., U. S., 27th May, 1885; 5 years.

Claim.—1st. In a feed water heater, the combination of the expansion ring A, for placing between the exhaust pipe D, and the pipe plate C, substantially as for the purpose shown and set forth. 2nd. In a feed water heater, the combination of the expansion ring B riveted to the casing E, with the pipe plate C' and casing E, substantially as for the purpose shown and set forth. 3rd. In a feed water heater, the combination of the pipe plates C and C', with the casing E, expansion rings A and B and the exhaust pipe D, substantially as shown and set forth. 4th. In a feed water heater, the combination of the casing E, expansion ring B and pipe plates C and C', steam pipes P, expansion ring A, the cast iron base with exhaust pipe cast in it, having angular bottom for directing the sediment to the blow-off pipe L, substantially as for the purpose specified and set forth.

No. 21,745. Steam Boiler. (*Chaudière à Vapeur.*)

John Mitchell, Louisville, Ky., U. S., 28th May, 1885; 5 years.

Claim.—A tubular steam boiler having a combustion chamber dividing the tubes transversely between the fire-box and uptake, in combination with a perforated pipe through which steam is admitted to said combustion chamber, substantially as and for the purpose set forth.

No. 21,746. Vendor's Vehicle.

(*Voiture de Colporteur.*)

Irenias M. Hoffman, Indianapolis, Ind., U. S., 27th May, 1885; 5 years.

Claim.—1st. A vendor's vehicle or sales wagon, provided with a closed body having one or more doors, glass sides and back shelving arranged in proximity to said sides and back, and a chamber X adjacent to the shelving and to the door, substantially as set forth. 2nd. A vendor's vehicle or sales wagon, provided with a closed body having glass sides, doors and back shelving adjacent to the glass sides, and back chamber X, and a front casing D, substantially as set forth. 3rd. A sales-wagon, provided with two compartments X, Y, separated by a transverse partition having a door therein, the rear compartment having shelves revolving upon a vertical axis, and provided at the corners with ice boxes F, substantially as set forth. 5th. A sales-wagon, divided by a transverse partition, provided with a door and having doors at the sides and end, in combination with a series of revolving shelves and with ice boxes arranged in proximity to the shelves and between the doors, substantially as set forth. 6th. A sales-wagon, provided with a driver's compartment X and a refrigerating compartment T, divided by a partition and containing shelves and vertical ice boxes F in the lower portion, and an ice box in the upper portion, substantially as set forth. 7th. A sales-wagon, provided with a refrigerating compartment having an opening at the top, and a detachable cover H, a removable partition d and shelves and ice boxes below said partition, substantially as and for the purpose set forth.

No. 21,747. Wheel Hoe. (*Houe à Roues.*)

Solomon Fuller, Danvers, Mass., U. S., 27th May, 1885; 5 years.

Claim.—1st. The combination of the wheeled frame, the independent rocking rods mounted in bearings on the frame, and the weeders or hoes secured to the rods, said rods having means whereby they can be independently or simultaneously rocked in their bearings to adjust the hoes laterally while traversing the ground, substantially as described. 2nd. The combination of the wheeled frame, the independent rocking rods mounted in bearings on the frame, and provided with handles at their ends, and the weeders or hoes secured to the rods, said handles serving to propel the wheeled frame and to independently or simultaneously rock the rods to adjust the weeders or hoes laterally while traversing the ground, substantially as described. 3rd. In a wheel hoe, the wheeled frame and its laterally adjustable and movable weeders d, d', adapted to be moved to and from each other while the hoe is being propelled, in combination with the stationary wedges e, e, as and for the purpose set forth and described.

No. 21,748. Vehicle Spring. (*Ressort de Voiture.*)

James Percy, Chicago, Ill., U. S., 28th May, 1885; 15 years.

Claim.—In a vehicle spring, the variably curved reaches A, A', having opposite parallel lateral inclinations curved inwardly at their ends a and continued integrally through short reverse curves a' into a bow-shaped curved A'', to be centrally connected to the side bars, and thereby arranged for operation throughout its entire body, substantially as specified and for the purpose hereinbefore set forth.

No. 21,749. Lamp with Air Heating Apparatus. (*Lampe avec Appareil à Réchauffer l'Air.*)

Julius Schulke, Berlin, Germany, 28th May, 1885; 15 years.

Claim.—1st. In regenerative gas lamps, the combination of a multiple gas burner a having oblique slits or jet openings, with a hood d placed over the burner, an air-heating apparatus forming separate

flues for the air and for the products of combustion, and having longitudinal heating ribs or folds in contact with the air and gases, and a glass globe c connected with the heating apparatus by an elastic joint, s, substantially as described. 2nd. In regenerative gas lamps, the combination of multiple gas burner a, with hood d having slots corresponding to those of the burner, cylindrical partition C, hood d, air-heating apparatus g and glass globe c, substantially as described. 3rd. In regenerative lamps, a heating apparatus g forming separate flues for the air and for the products of combustion and having longitudinal heating folds, with a recess or chamber f or f' and packing p, substantially as described. 4th. In regenerative lamps, the combination of a heating apparatus g, forming separate flues for the air and the gases of combustion, and having longitudinal folds and packing p, with a casing or jacket w surrounding the said heating apparatus, and having a recess m for increasing the area of the air flue, substantially as described. 5th. In regenerative lamps, the modified form of heater g, illustrated by Fig. 2, the said heater having a star-shaped downward extension y of smaller diameter than the upper part or body of the heater, substantially as described. 6th. In regenerative lamps, an air-heater g forming separate flues for the air and the gases of combustion, and having longitudinal folds pointed or sharpened at the lower end for the purpose of increasing the area for the passage of air, substantially as described and illustrated by Fig. 1a. 7th. In single frame lamps, the combination of an air heater p, with a glass partition C, and a glass chimney or cylinder c, substantially as described and illustrated by Figs. 3, 4, and 5.

No. 21,750. Cream Tester. (*Eprouvette à Crème.*)

Wyman L. Edson, Union Centre, N. Y., U. S., 28th May, 1885; 5 years.

Claim.—A cream-tester, substantially such as herein described, consisting of a frame having one or more scale bars, placed apart between the end pieces of the frame, a series of test tubes placed within the frame, each scale-bar partially enclosing the tubes, and serving to protect them from breakage, as set forth.

No. 21,751. Abdominal Truss.

(*Bandage Abdominal.*)

David L. Snediker, Emporia, Ks., U. S., 28th May, 1885; 5 years.

Claim.—1st. An improved body spring A for a truss, bent to conform to the body, as described, and being of a single piece of spring metal flattened and separated at the ends and rounded in other parts and provided with strain-holes, all substantially as set forth. 2nd. In combination, with the body-spring A flattened and separated at the ends and rounded in other parts, as described, the removable sheaths D, substantially as set forth.

No. 21,752. Carriage Top.

(*Couverture de Voiture*)

Joseph Parizenu, St. Jean Baptiste, Que., 28th May, 1885; 5 years.

Claim.—In a carriage-top, the piece F provided with the button hole a, in combination with the hind quarters A, stud g and easy back E, all as above described and for the purposes set forth.

No. 21,753. Device for Cutting, Ploughing, Harrowing and Marking Ground. (*Appareil pour Tailler, Labourer, Herser et Marquer le Sol.*)

Jesse W. Alderson, Washburn, Mo., U. S., 28th May, 1885; 5 years.

Claim.—1st. In an improved machine for cutting, ploughing, harrowing and marking ground, a harrow G, having the parts g₁, g₂, g₃, slots g₄, and two or more rows of teeth g, said harrow having adjustable supports H connecting it with a frame S, hinges h₁ having shoulders s₁ to connect the frames L, S upon the axle, and wheels B, A, a lever I having attachments n₁, r₂, supports H having rollers h₁, h₂, and attachments for moving the said harrow back and forth, all substantially as shown and described. 2nd. In a device for cutting, ploughing, harrowing and marking machine, a revolving shaft m₁ and ploughing composed of disks M attached to a revolving shaft m₁ having bearing in an adjustable support T, said support having hinges t₁ with shoulders t₅, arms n₁ having bearing between the disks, and attached to a movable rod n₅, narrow ploughs N having a sharp edge n₇ and a supporting-bolt n₆, and holes n₃ for safety pins, an adjustable support U having a horizontal slot u₂, a frame L resting upon an axle, and wheels B, A, all substantially as and for the purpose set forth.

No. 21,754. Ditching Machine.

(*Machine à Fossoyer.*)

William Ansley, Warwick, Ont., 28th May, 1885; 5 years.

Claim.—1st. In a ditching machine, the horizontal guide-wheel E, movably attached to frame by its axis passing through slotted blocks or plates a on or between said frame B, and secured by bolts or nuts c so as to allow freedom of adjustment, substantially as shown and specified. 2nd. In a ditching machine, the combination of beam A, frame B, C, front wheel D, rear wheel F, horizontal wheel E, slotted blocks or plates a, with handles G and coulters I, substantially as shown and specified.

No. 21,755. Machine for Washing, Wringing, Mangling and Churning. (*Machine à Laver, Essorer, Calandrer et Baratter.*)

James Harriman, Thorold, Ont., 28th May, 1885; 5 years.

Claim.—The combination, with the frame A, of the spring D equalizing bar C, rollers B, B, gear wheels G, G', H, H', power wheel I, octagonal end box K having bars L, gear wheels O, P and power wheel Q, the whole constructed and operating as set forth.

No. 21,756. Apparatus for Separating Substances of different Sizes or Specific Gravities. (*Machine à Séparer les Corps de Grosseur ou de Poids Spécifique différents.*)

Thomas W. B. Mumford and Robert Moodie, Victoria Docks, Eng., 28th May, 1885; 5 years.

Claim.—1st. In apparatus for separating substances of different sizes or specific gravities, the combination of a fan in proximity to contracted spaces, and enclosed in a casing within which a circulation or current of air is created by the fan, so as to separate the finer or lighter from the coarser or heavier portions of the substances and cause them to be deposited separately, substantially as hereinbefore described. 2nd. The arrangement and combination of parts constituting the apparatus for separating substances of different sizes or specific gravities, substantially as hereinbefore described and illustrated in the accompanying drawing.

No. 21,757. Bib for Children. (*Bavette.*)

George E. Kimball, Franklin, Mass., U.S., 29th May, 1885; 5 years.

Claim.—1st. A bib, provided with a pocket at about the middle of its front, for receiving and securely holding a nursing bottle, substantially as herein shown and described. 2nd. A bib provided with a pocket, for receiving and holding a nursing bottle, which pocket is provided at its top with a button and button-hole, or other device, for holding the top of the pocket closed on the bottle, substantially as herein shown and described. 3rd. A bib provided with a pocket B, neck-bands C and body-bands D, substantially as herein shown and described.

No. 21,758. Insulator for Telegraph Wires.

(*Isoloir de Fils Télégraphiques.*)

Luther C. Baldwin and John C. Thurston, Manchester, N. H., U. S., 29th May, 1885; 5 years.

Claim.—1st. A cup of non-conducting material, having its interior shaped, substantially as described, in combination with a pin which, when partially inserted, allows the cup to turn, and when fully inserted, forms a bearing for, and prevents the cup from turning, substantially as set forth. 2nd. A cup of non-conducting material, having its interior formed into an upper chamber with flat sides, a midling circular chamber and a lower tapering chamber, oval at one end and circular at the other, in combination with a supporting pin having a knob with flat sides at one end, its other end being adapted to be secured to an arm or post, and a cylindrical tapering part between these ends, substantially as and for the purpose set forth.

No. 21,759. Horse Hay Fork. (*Fourche à Cheval.*)

Aaron J. Nellis, Pittsburg, Pa., U.S., 29th May, 1885; 5 years.

Claim.—1st. In a horse hay fork, the combination of a sheath, a barb pivoted thereon, a hand lever pivoted thereon, a connecting or barb lever pivoted at one end to the barb, and at the other to the hand lever, a tripping dog pivoted on the sheath and adapted to act on the connecting or barb lever to force the same off its centre, substantially as and for the purposes specified. 2nd. In a horse hay fork, the combination of two or more sheaths, each provided with a barb and a hand lever pivoted on the sheath, a connecting or barb lever pivoted at one end to the hand lever, and at the other to the barb, a trip dog pivoted on the sheath and acting on the connecting or barb lever, to force it off its centre, with a cross or brace bar provided with a central guide hole for the several ropes of the trip dogs, substantially as and for the purposes specified.

No. 21,760. Rubber Shoe Fastener.

(*Agrafe de Claque.*)

John A. Kessel, Buffalo, N.Y., U.S., 23rd May, 1885; 5 years.

Claim.—1st. A rubber shoe holder, consisting of the elastic portion a_2 , provided at one end with a clasping portion a_3 having the sharp joints c_1, c_2, c_3 adapted to fasten to the heel of a rubber shoe, as specified, and at the opposite end a loop adapted to catch over a button on a shoe or boot, for the purposes described. 2nd. A rubber shoe holder, consisting of a strap of elastic provided at one end with a clasping portion, adapted to be readily secured to the heel of a rubber shoe, and a loop at the opposite end adapted to be secured to a button on the heel of a shoe or boot, substantially as described.

No. 21,761. Cock and Faucet. (*Robinet et Canule.*)

John Maloney, Pittsburgh, Pa., U. S., 29th May, 1885; 5 years.

Claim.—A cock, consisting of a barrel A having openings α_1 and α_2 , with strainer having screw-threaded opening c_1 , and attached to the end α of said barrel, a stem extending from end to end of the barrel, and having screw-threaded end inserted in screw-threaded opening c_1 , and the opposite end extending through opening α_2 , and provided with means on its outer end for turning the stem, and a valve on said stem at a point within the strainer and having a seat on the end of the barrel, substantially as described.

No. 21,762. Counter-Shaft for Machinery.

(*Contre-Arbre pour Machinerie.*)

Charles H. Russom, Springfield, Ill., U.S., 29th May, 1885; 5 years.

Claim.—1st. The combination, with the hanger-pin provided with the branch arms, and means, as described, for connecting the same to the shaft H, of the oil-box, miter-gears arranged within the same, and the sleeve L upon the said shaft having vertical apertures, whereby the oil may be caught and distributed to various parts of the shaft, after being carried to the upper horizontal gear by the vertical gears, substantially as specified. 2nd. The combination,

with the shaft H, carrying the pulleys D, E and F, of the oil-box connected with the sleeve of the said shaft by means of the transverse bolts, and the oil-box supported by means of the hanger-pin, substantially as specified.

No. 21,763. Roller Skate. (*Patin à Roulettes.*)

Frank L. Crocker, Minneapolis, Minn., U. S., 29th May, 1885; 5 years.

Claim.—1st. In a roller skate, the combination, with inclined hangers having coupling-eyes, cushion seats and pivot holes, of axle-boxes carrying outward arms pivoted in said coupling-eyes, and inward arms arranged to bear against the lower projections of said hangers, and rubber cushions held on said cushion seats by screws inserted through said cushions, and pivot-holes into said axle-boxes, whereby said parts are coupled together, substantially as and for the purpose set forth. 2nd. In a roller skate, the combination, with the hanger B, cushion i and screw s , of the axle-box D carrying the frame d and oil cup h , substantially as and for the purpose set forth. 3rd. The roller skate foot-plate A, having cast of a piece therewith the hangers B, the stiffening ribs a and a' , the latter of which being provided with a slot α_2 for the clamp screw, the clamp guides n and the heel guards α , substantially as shown and described.

No. 21,764. Button. (*Bouton.*)

Nelson C. Newell, Springfield, Mass., U.S., 29th May, 1885; 5 years.

Claim.—1st. In a button, the combination of a central face-piece of rigid material, a rim-plate, a , surrounding the same and covered with textile material, a back-plate and an eyelet connecting all the parts. 2nd. In a button, the combination of a central face-piece of rigid material, a surrounding rim of textile material suitably supported, a back-plate, a filling-piece, substantially as described, and a securing eyelet, all relatively arranged substantially as shown and described.

No. 21,765. Ventilator. (*Ventilateur.*)

Adolph Olsen, Boston, Mass., U.S., 29th May, 1885; 5 years.

Claim.—The herein-described ventilator, consisting of the frame a, a_1 , and cover C hinged together, in combination with a series of overlapping and pocket-jointed side pieces c, c_1 , and their perforated or netted tops c_1, c_1, c_1 , as and for the purpose set forth.

No. 21,766. Road Machine. (*Grattoir de Chemin.*)

Samuel Pennock, Kenneth Square, Pa., U.S., 29th May, 1885; 5 years.

Claim.—1st. In a road machine, the combination, with a supporting frame, a scraper vertically movable, guiding posts for holding the scraper against endwise movement, and means for imparting independent vertical adjustment to its ends, of front running gear and a frame connecting the supporting frame with the said running gear, and arranged to permit the same to be turned to coincide with the central line of draft, or to form any angle therewith, substantially as set forth. 2nd. In a road machine, the combination, with a supporting frame, a scraper bar located diagonally to the line of draft, and devices for imparting vertical adjustment to the ends of the scraper-bar, of a goose neck connected with the forward end of the supporting frame, and a fifth-wheel supported on the forward axle and extending in front and rear thereof and supporting the forward end of the goose-neck thereon, the parts being constructed and arranged to allow the forward wheels to be turned at any angle to the central line of draft, substantially as set forth. 3rd. In a road machine, the combination, with a frame mounted on wheels, of an oblique scraper suspended therefrom, and a removable runner located forward of the rear end of the scraper, substantially as set forth. 4th. In a road machine, the combination, with a frame mounted on wheels, of an oblique scraper suspended therefrom, and a skeleton runner located forward of the rear end of the scraper, substantially as set forth. 5th. In a road machine, the combination, with a frame mounted on wheels, of an oblique scraper suspended therefrom, and a removable runner arranged to be mounted on the axle of the rear running gear of the frame, and arranged to replace the wheel located forward of the rear end of the scraper, substantially as set forth. 6th. In a road machine, the combination, with a frame mounted on wheels, of a scraper suspended therefrom, a runner located forward of the rear end of the scraper and supported solely by the axle of the rear running gear of the machine, and by a beam attached to the frame of the machine located in front of the said axle, substantially as set forth. 7th. In a road machine, the combination, with an elevated supporting frame, of an adjustable scraper suspended therefrom, and a runner located forward of the rear end of the scraper and arranged so as not to interfere with the escape of the accumulations thereof, substantially as set forth. 8th. The combination, with an elevated supporting frame, of a vertically-adjustable scraper bar suspended therefrom, and provided with removable and interchangeable cutting edges and guide bars and frames, substantially as described, to retain the scraper against lateral and longitudinal displacement, substantially as set forth. 9th. In a road machine, the combination, with a scraper, of means for imparting independent vertical adjustment to its ends, and guides pivoted to the scraper and arranged to hold it rigidly in place, except as to vertical adjustment, substantially as set forth. 10th. In a road machine, the combination, with a scraper bar, of a series of interchangeable and reversible plates secured thereto, and forming a continuous straight cutting-edge, substantially as set forth. 11th. In a road machine, the combination, with a scraper bar, of a series of interchangeable and reversible plates secured to the scraper bar, and forming a continuous cutting edge, substantially as set forth. 12th. In a road machine, the combination, with a scraper bar suspended from the machine by rigid supports, of a series of interchangeable and reversible plates secured to the bar and forming a continuous cutting edge, substantially as set forth. 13th. In a road machine, the combination, with an oblique scraper dependent from the frame of the machine by rigid supports, of devices for imparting independent vertical adjustment to the ends of the scraper, and cutting plates adapted to be rigidly secured to the

scraper, and to be interchanged plate for plate and to be reversed edge for edge, substantially as set forth. 14th. In a road machine, the combination, with an oblique scraper suspended under the frame of the machine, of vertically adjustable extensions respectively secured to the forward and rear ends of said scraper, and means to independently elevate and depress said extensions and to hold them in any desired adjustment, substantially as set forth. 15th. In a road scraper, the combination, with the supporting frame, the scraper bar, the forward axle and a goose-neck connected with forward end of the supporting frame, of a king-bolt connecting the forward end of the goose-neck with the front axle, and broad turning bearings on either side of the king-bolt and interposed between the front axle and forward end of the supporting frame, substantially as set forth. 16th. In a road machine, the combination, with a scraper-bar, of a vertically adjustable extension secured to its rear end, and a block secured to the rear face of the extension and bearing upon the working face of the scraper-bar, whereby the extension is braced and the desired angle between it and the said bar maintained, substantially as set forth. 17th. In a road machine, the combination, with a supporting frame mounted on wheels, and an oblique scraper suspended beneath the same, and earth carrier located forward of the rear end of said scraper, and means to vertically elevate or depress it, substantially as set forth. 18th. In a road machine, the combination, with an elevated supporting frame, and an oblique scraper suspended therefrom, of an earth carrier located forward of the rear end of the scraper, and means to elevate or depress it, substantially as set forth. 19th. In a road machine, the combination, with a supporting frame of an oblique scraper suspended beneath the same, of an earth carrier located forward of the rear end of the scraper, and means to elevate and depress it and lock it above the cutting edge of the scraper, substantially as set forth. 20th. In a road machine, the combination, with a supporting frame and an oblique scraper suspended beneath the same, of an earth carrier located forward of the rear end of the scraper, and means to elevate and depress it and to prevent its lower edge from falling below that of the scraper, substantially as set forth. 21st. In a road machine, the combination, with an elevated frame and an oblique scraper suspended therefrom, of an adjustable earth carrier located forward of the rear end of the scraper and pivotally secured to the elevated supporting frame, substantially as set forth. 22nd. In a road machine, the combination, with a supporting frame and an oblique scraper suspended beneath the same, of an earth-carrier located forward of the rear end of the scraper, and rods attached to it and forming both the means of bracing it and of attaching it to the frame of the machine, substantially as set forth. 23rd. In a grading machine, the combination, with a supporting frame, an oblique scraper and curved arms attached to each side of the front end of the frame, and forming an arched front frame of the forward axle, and a fifth wheel interposed between the forward axle and the forward ends of the curved arms, substantially as set forth. 24th. In a grading machine, the combination, with an elevated supporting frame, an oblique scraper suspended from said frame, and means for imparting independent vertical adjustment to the ends of the scraper, and devices for locking the ends of the scraper in any desired vertical adjustment, of upwardly-curved arms connected to the forward end of the supporting frame, and a fifth wheel interposed between the front axle and forward end of said curved arms, substantially as set forth. 25th. In a grading machine, the combination, with the main supporting frame and a vertically adjustable scraper bar, and means for supporting the same against deflection for direct resistance, of guides attached to the main frame and arranged to embrace said supporting device, whereby said scraper bar is held against forward endwise movement and horizontal vibratory movement, substantially as set forth. 26th. In a grading machine, the combination, with an oblique scraper bar and a carrying frame, of an earth carrier or stop located in front of said scraper bar, and so arranged as to stop the earth which is being acted on by said scraper, and carry it ahead, and means to elevate said stop above the upper edge of said scraper, and means for adjusting and locking said stop between the lower edge of said scraper and its upper edge, substantially as set forth.

No. 21,767. Hoop for Vessels.

(*Cercle de Futaille.*)

Francois Roy, Aylmer, Que, 29th May, 1885; 5 years.

Claim.—1st. The hoops B, provided with the spring C, substantially as shown and for the purpose set forth. 2nd. The combination, in a disk or vessel, of the staves A, with the hoops B provided with the springs C, substantially as shown and described. 3rd. In a wooden tank or vessel, the combination of the staves A, with the hoops B attached to the springs C, and the pins or staples a arranged to hold said hoops against the staves A, substantially as herein shown and described. 4th. In a wooden pail or vessel, the combination of the hoops B, provided with the springs C, with the lugs b for the attachment of the bail, substantially as shown and described.

No. 21,768. Roller Skate. (*Patin à Roulettes.*)

Martin Nickerson, Fort Recovery, Ohio, U.S., 1885; 5 years.

Claim.—1st. In a roller skate, the rubber cushion D placed on the outside of the truck body B¹, and between it and the head of the holding bolt f, substantially as shown and described. 2nd. In a roller skate, the rest B provided with the standards b and c, in the latter of which an open or slotted bearing is made, as shown, for the trunion g of the truck body b, substantially as described. 3rd. In a roller skate, the combination of the rest B having a slotted bearing in the standard b, the truck body B¹ and the outside rubber cushion D, all substantially as shown and for the purpose set forth.

No. 21,769. Attachment to Oven Doors.

(*Disposition aux Portes des Fourneaux.*)

Isaac A. Abbott, Denver, Col., U.S., 29th May, 1885; 5 years.

Claim.—1st. The combination, with an oven door, of a thermometer hinged on the same, substantially as herein shown and described.

2nd. The combination, with an oven door having an opening, of a frame secured on the door and holding a pane of glass or mica, and of a thermometer hinged on the frame, substantially as herein shown and described. 3rd. The combination, with an oven door having an opening, of a frame secured on the door and holding a pane of glass or mica, a thermometer hinged to the frame inside of the glass, and a spring for holding the thermometer parallel with the glass, substantially as herein shown and described.

No. 21,770. Pocket for Clothing.

(*Poche de Harges.*)

Joseph Green, Hamilton, Ont., 29th May, 1885; 5 years.

Claim.—1st. In combination with a pocket proper A, of an inner bottomless pocket or safety shield C attached thereto, and having a corresponding opening to conform to the outer pocket opening, substantially as and for the purpose specified. 2nd. In a pocket for garments, the combination of the outer pocket A, and the inner bottomless pocket or shield C, substantially as and for the purpose specified. 3rd. In a pocket for garments, the combination of the outer pocket A, and the inner bottomless pocket or shield C, and elastic band f, substantially as and for the purpose specified.

No. 21,771. Oven. (*Fourneau.*)

Ronald McDonald and Cameron Fraser, Port Hawkesbury, N.S., 29th May, 1885; 5 years.

Claim.—1st. The oven, having the perforated bottom and deflecting plates interposed between the bottom and the baking pan, at a slight distance from each other, substantially as described. 2nd. The oven, having the door, the glass pane, the perforated bottom, the plate E above the perforated bottom, the tray F supported above the plate E, and having a false bottom, for the purpose set forth, substantially as described.

No. 21,772. Device for Checking Horses.

(*Appareil pour Contrôler les Chevaux.*)

Edmund B. Taylor, Medford, Mass., U.S., 29th May, 1885; 5 years.

Claim.—1st. The combination, with the wheel of a vehicle, of a connected winding device provided with line engaging portions, and a line and line-controlling mechanism, whereby the line is held in and out of engagement with the winding device, substantially as described. 2nd. The combination, with the wheel of a vehicle and a winding device attached thereto, provided with teeth, substantially as shown, of a line and line-controlling mechanism which may be moved and held in one of two positions, so that the line may be caused to shorten when the vehicle advances, or may be held away from the shortening mechanism and be unaltered in length when the vehicle moves, substantially as described. 3rd. A shifting mechanism adapted to control and hold a line in one of two positions, consisting of the combination of a stationary frame and shifting-rod adapted to control the said line, substantially as described. 4th. The combination, with a stationary frame, of a spring-actuated shifting-rod, and a catch device adapted to control the position of the said rod, and a line controlled by said shifting-rod in relation to a winding device, substantially as described. 5th. The combination of a winding device, provided with engaging teeth, and a line attached at its rear end to the axle in such manner that the line will not wind thereon and which line at the other end forms connection with the horse's bit, substantially as described. 6th. The combination of a frame, a bit, substantially as described, and means for moving the shifting-rod so that the catch may be brought into action to hold the shifting-rod in one position while the spring may be used to hold it in the other position, substantially as described. 7th. The combination of a winding device, provided with teeth adapted to catch upon a line and shorten the same when the vehicle advances, by winding the line upon the exterior surface of or be free from the said teeth, substantially as described. 8th. A winding device adapted to be attached to the wheel, of a vehicle having an exterior surface adapted to hold a line when wound thereon, and teeth which on one face are adapted to catch the line and on the other face are bevelled so that the line can slip past the teeth, substantially as described. 9th. The combination of a catch or winding device attached to a wheel, of a vehicle provided with teeth, as shown, which will hold a line when rotated in one direction, but will not hold it when rotated in the opposite direction, a line, one end of which leads to the horse's bit, and the other end of which is so attached to the axle that it will not wind thereon, and a shifting mechanism controls the position of the line with regard to the winding device, substantially as described. 10th. A winding device attached to a vehicle wheel by clips which embrace the spokes of the wheel, said device being provided with teeth to engage with a check-line, substantially as described, with a shifting mechanism adapted to control the position of the said line, said shifting mechanism being attached to the axle by means of clips, substantially as described. 11th. The combination of a vehicle-wheel carrying an attached winding device, a shifting mechanism attached to the axle and a line controlled thereby, one end of which is attached to a ring surrounding the axle between the hub and the shifting device, substantially as described. 12th. The combination of the frame, of the shifting mechanism provided with a notch, as c, and a sliding rod moved in one way by a spring, as E, said rod carrying an arm, as d¹, adapted to engage with the notch c, substantially as described. 13th. A shifting-rod moving in a stationary frame, said rod being provided with an arm, as d¹, which is adapted to have attached thereto the operating-cord leading to the driver, in combination with a line controlled by the position of the shifting-rod, substantially as described. 14th. A line-shifting device consisting of a frame, as C, a shifting-rod, as D, provided with an eye, as d, and device for holding the shifting-rod in one of two positions, in combination with a line passing through the eye, and a device adapted to shorten the said line, substantially as described.

No. 21,773. Journal Bearing for Car Axles, etc. (*Coussinet de Fusée d'Essieu pour Chars, etc.*)

Richard Beddall, Malden, Mass., U.S., 29th May, 1885; 5 years.

Claim.—The improved journal-bearing herein described, the same consisting of the body A, provided with the depressions C, flanges m, grooves t, r and oil-duct b, the auxiliary bearing B, provided with the flange d, grooves l and holes i, and the metallic fastenings a, u, constructed, combined and arranged to operate, substantially as set forth.

No. 21,774. Hay Elevator. (*Monte-Foin.*)

Neven McConnell, Brampton, Ont., 29th May, 1885; 5 years.

Claim.—The combination of the shaft B, Bi, provided with ropes C and carrying reels E, Bi, connected by rope F, winding and unwinding to simultaneously rotate the shafts, shaft B having a drum G provided with a winding rope H to which the draft is attached, and a ratchet wheel K to engage with a pawl J, to prevent back action, the whole operating as set forth for the purpose described.

No. 21,775. Combined Trestle Socket and Clamp. (*Tréteau à Douille et Sergent Combinés.*)

George W. Zeigler, Washington, D.C., U.S., 29th May, 1885; 5 years.

Claim.—1st. The combination, with the legs or braces, of a socket clamp formed of two sides inclining toward each other at the top, and lateral brackets extending at right angles thereto, substantially as described. 2nd. The combination, with the legs or braces, of a socket clamp formed in one piece, and consisting of two tapering sides inclining toward each other at the top, and lateral brackets extending at right angles thereto, substantially as described. 3rd. The combination, with the legs or braces, of a socket clamp formed of two sides inclining toward each other at the top, and having lateral brackets extending therefrom, said sides extending above the brackets to form lateral supports for a tie-beam, substantially as described. 4th. The combination, with the legs or braces of a socket clamp formed of two sides inclining toward each other at the top, and extending inward at opposite points, as at a, and terminating at each end with a bracket for the support of a tie-beam, substantially as described. 5th. The combination, with the legs or braces, of a socket clamp formed of two sides inclining toward each other at the top, and extending inwardly at opposite points, as at a, and terminating at each end with a lateral extension or bracket for the support of a tie-beam, and sides proper extending above the top of the brackets for the lateral support of said beam, substantially as described. 6th. The combination, with the legs or braces, of a socket clamp formed of two sides inclining toward each other at the top, and terminating with end brackets or extensions, and sides having each an elongated slot whereby the lugs may be adjusted and secured by a screw, substantially as described. 7th. The combination, with the legs or braces, of a socket clamp, formed of two sides inclining toward each other at the top, extending inward, as at a, to form sections a1), and terminating at each end with brackets b, said brackets having sides b1) inclining toward their point of intersection with a1), substantially as and for the purpose described. 8th. The combination, with the legs or braces, of a socket clamp formed of two sides inclining towards each other at the top, and having brackets b, b1) and the inward extensions a1), a1), said sides rising above the brackets and the webs c, c1) cutting the sides at a point outside of the inward extensions, substantially as described. 9th. The combination, with the socket clamp, constructed substantially as described, of legs or braces having bevelled sides and edges, whereby they may be placed within the socket at various angles or degrees of pitch, as set forth. 10th. The combination, with the socket clamp, formed substantially as shown and described, of levers having bevelled sides or edges whereby they may be secured within the socket at an angle or incline, as set forth.

No. 21,776. Grate Bar. (*Barreau de Grille.*)

Thomas Kirkwood, Chicago, Ill., U.S., 29th May, 1885; 5 years.

Claim.—1st. The plates C, provided with downwardly projecting lugs G and adapted to fit over bars D, in combination with the bars and means for holding them in position, as described. 2nd. The combination, with bars and plates secured thereto, of a bent inclined and slotted arm and suitable means for operating the parts, as described.

No. 21,777. Machinery for Spinning and Twisting Fibrous Material. (*Machine à Filer et Retordre les Matières Fibreuses.*)

John Ballantyne, Almonte, Ont., 29th May, 1885; 5 years.

Claim.—1st. The combination, with the wharves A on spindles of spinning and twisting machines, slack bands c, c1) driven by a cylinder d, of pulleys e leading the bands c, c1) to the wharves A, at a right angle or nearly so to the axis of the spindles. 2nd. The combination of the wharves A, slack bands c and cylinder d, of a grooved pulley e pivoted to rotate freely on a swinging arm f, and engaging the band c and leading it to the wharves at a right angle or an approximately right angle to the axis of said wharve A. 3rd. The combination of the wharves A, slack bands c1) and cylinder d, of a grooved pulley e pivoted to rotate freely on a pivoted counterweighted arm f1), and engaging the band c1) and leading it from the wharve at a right angle or an approximately right angle to the axis of said wharve. 4th. In a spinning or twisting frame having spindles driven by a cylinder d, the bands c, c1) running from the wharves A at a right angle or an approximately right angle with the spindles pulleys e pivoted to ends of arm or f1) rods g, supporting said arms pivotally, all substantially as shown and described and for the purpose set forth.

No. 21,778. Means for Supporting the Coupling Links of Railway Cars. (*Moyens de Supporter les Chaînes d'Attelage des Chars de Chemins de Fer.*)

John C. Yeiser, Junction City, and William F. Evans, Danville, Ky., U.S., 30th May, 1885; 5 years.

Claim.—1st. In combination with a car coupling link, the link supporting arm E having the oblong hole or slot a, and the arm D extending beyond the face of the draw-head and provided with the lug or shoulder e, substantially as herein described. 2nd. The combination, with a railway-car draw-head, of the arm D fastened to its side and having the rounded extension d provided with the lug or shoulder c and nut or head f, and the link supporting arm E having the oblong hole or slot a, substantially as and for the purpose set forth.

No. 21,779. Connecting Link.

(*Chaînon Brisé.*)

Donald Munro and Andrew Hislop, Picton, N.S., 30th May, 1885; 5 years.

Claim.—1st. A connection link A, having a gap or opening B at one side, and a sleeve c screwing on the divided portions of the link, so that by turning the sleeve the cap will be exposed and closed, as set forth for the purpose described. 2nd. A connecting link A, subdivided transversely and connected by screw sleeves C, D, whereby one section of the link turns in sleeve D and sleeve C retains both sections connectedly, as set forth.

No. 21,780. Vent Faucet for Bottles.

(*Fausset pour Bouteilles.*)

Michael H. Hagerty, (Assignee of George W. Clark,) Brooklyn, N.Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. A vent faucet, having a pouring spout controlled by a reciprocating valve operated by an outside plunger, and a stationary bent pipe controlled by a valve that is operated by an outside vibrating lever, substantially as described. 2nd. In a vent faucet, the combination, with an ejection opening or pouring spout and its reciprocating controlling valve, of a vent pipe, the valve whereof is controlled by a vibrating lever, and means whereby the reciprocating valve actuates said lever to open the vent pipe valve, substantially as described. 3rd. In a vent faucet, the combination, with a spring seated valve controlling the pouring spout, of a valve operated by an independent lever for controlling the vent pipe, and means whereby the said lever locks both valves open, substantially as described. 4th. In a vent faucet, the combination, with the spring seated plunger of the reciprocating valve that controls the pouring spout, and with the spring seated lever of the valve that controls the vent pipe, and means whereby said lever locks both valves open, and when tripped permits their closing movement, substantially as described. 5th. A faucet consisting of the case A, pouring spout S, spring seated reciprocating valve Q, cam 11, a vent pipe 6, and a valve 18 carried by a spring seated lever valve L having a cam end, substantially as described. 6th. A faucet, consisting of the case N, pouring spout S, spring seated reciprocating valve 2, catch 13, a vent pipe 6, valve 18, lever L and latch 12, substantially as described. 7th. A faucet, consisting of the case A having spout S, spring seated reciprocating valve 2, cam 11, catch 13, a vent pipe 6, valve 18, lever L, with cam end and latch 12, substantially as described.

No. 21,781. Elevator and Conveyor.

(*Ascenseur à Coulisse.*)

Meikel Barnikel and Joseph Girard, Burlington, Iowa, U.S., 30th May, 1885; 5 years.

Claim.—1st. In an elevator, the combination of the trough A having chutes S and slides T, with the slotted arms B having movable boxes and journals set in slots D and operated by set screws E holding pulleys F, and an endless belt consisting of long flat links with rounded points K, held and swivelled together by rods H at some distance back of the points, substantially as and for the purpose above set forth. 2nd. An elevator-belt, consisting of long flat links with points K held and swivelled together by rods H at some distance back of the points, the latter provided with perforations and the blade M, all connected together and operating substantially as described. 3rd. The combination, with an endless belt consisting of long flat links having points K, held and swivelled together by rods H at some distance back of said points, which latter are provided with perforations, of blades M, adjustable pulleys F, trough A, chutes and slides T, substantially as described.

No. 21,782. Punch. (*Poinçon.*)

Solomon Coons, John B. Barnwell and William C. Ward, Orbisonia, Pa., U.S., 30th May, 1885; 5 years.

Claim.—1st. In a punch, the combination, with a block or frame and a sliding die held in the same, of a spindle provided with a head having a spiral end surface for acting on the end of the said spindle, and means for revolving the said spindle, substantially as herein shown and described. 2nd. In a punch, the combination, with a block or frame and a sliding die held in the same, of a spindle having a spiral end surface, sliding bar operated by the spindle for raising the die and means for operating the spindle, substantially as herein shown and described. 3rd. In a punch, the combination, with a block or frame, of a sliding die, a spindle having a spiral groove, and also a spiral end surface adapted act on one end of the die and a sliding rod connected with the die and having a prong or pin projecting into the spiral groove in the spindle, substantially as herein shown and described. 4th. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L having a head or nut M provided with a spiral end surface, and the roller G2 against which the top of the nut M works, substantially as herein shown and described. 5th. In a punch, the combination, with the block or

frame A, of the sliding die E, the spindle L, having a nut or head M provided with a spiral groove M₁ and a spiral end surface, the sliding bar G having a forked end F holding the die E and the prong M projecting from the sliding bar G into the groove M₁, substantially as herein described. 6th. In a punch, the combination, with the block or frame A, of the spindle L, a die adapted to be acted on by the spindle, the block W, the band or frame J and the screw J₁, substantially as herein shown and described. 7th. In a punch, the combination, with the block A having recesses B, C, forming a prong D, of the die E having the rounded top E₁ and fitted to slide freely in said prong, and the spindle L provided with a head M having a spiral end surface for acting on the rounded end of the spindle, substantially as herein shown and described. 8th. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L having a squared head L₁ and a head or nut M adapted to act on the die, the key S fitting on the head L₁, and the handle S₁ in the said key, substantially as herein shown and described. 9th. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L having a nut or head M adapted to act on the die, the adjustable gage plate P having a lug P₁, the gage-plate Q, and the adjustable gage Q₂ on the same, substantially as herein shown and described.

No. 21,783. Brake Shoe for Railways.

(*Sabot de Frein de Chemin de Fer.*)

George N. Soeets, Evansville, Ind., U.S., 30th May, 1885; 5 years.

Claim.—1st. The combination, with the body or shoe having a recessed front face, of a series of friction rollers set into said recessed face, and adapted to simultaneously bear against the wheel, and the axles or arbors E, the opposite ends of which are secured in the side walls of the shoe, substantially as set forth. 2nd. The combination, with the body or shoe having a series of cavities formed in the front face thereof, of a friction-roller for each cavity and an axle for holding the roller within its cavity, the ends of the said axles being secured in the side walls of the shoe, substantially as set forth.

No. 21,784. Take-up Mechanism for Looms.

(*Mécanisme d'Eurolage pour Métiers.*)

Friederich Kesseling, Athenia, Pa., U.S., 30th May, 1885; 5 years.

Claim.—1st. The combination of the cloth-beam M, worm-wheel M₁, worm M₁₁, ratchet-wheel Q, pawl P, collar N and hooked arm R having stud R₁, with the lay and reed frame of a loom, the reed frame being pivoted on the lay and having a device to hold it in position, and an arm S adapted to take against the stud R₁, and the lay being adapted to take against the hook of the arm R, and substantially as and for the purposes set forth. 2nd. The combination, with the cloth-beam M, worm-wheel M₁, worm M₁₁, ratchet-wheel Q, pawl P, collar N and hooked arm R having stud R₁, with spring S₁₁₁, plug S₄, and the arm S, substantially as and for the purposes set forth. 3rd. The combination of the cloth-beam M, worm-wheel M₁, worm M₁₁, shaft M₁₁₁, ratchet-wheel Q, pawl P, collar N and hooked arm R having stud R₁, with the lay and reed frame of a loom, the arms S₁, tube S₇, torsional spring S₁₁, plug S₄, ratchet S₈, pawl S₆ and the arm S, substantially as and for the purposes set forth.

No. 21,785. Cement Composition for Moulding Brick, etc. (*Ciment pour faire la Brique, etc.*)

Richard B. Eason and John J. McGiveny, New York, N.Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. The herein described cement composition, consisting of gypsum and ashes in about the proportions specified. 2nd. The process, herein described, of treating gypsum and ashes to form cement, consisting in boiling the same in water and continuing the heat until the mass is dry, substantially as specified.

No. 21,786. Furnace for Steam Boilers.

(*Foyer de Chaudière à Vapeur.*)

Lewis Metesser, Indianapolis, Ind., U.S., 30th May, 1885; 5 years.

Claim.—1st. The distributing-pipe a p, with supply-pipe p connected therewith, and adapted to discharge air into the fire-chamber through fire-space a c₁, the latter communicating with the ash-pit described. 2nd. The distributing-pipe a p, with supply pipes connected therewith and adapted to discharge air into the fire-chamber, the steam-pipe a p with means for connecting the same with pipe a p, or in the wall between them, all combined substantially as described. 3rd. The nipple n, connected with the steam-pipe a p and provided with nozzle l, the latter entering the distributing-pipe a p, the front end of the pipe a p passing through the front F, with means for closing for steam-boilers, the front fire-chamber, the bridge-wall b w provided with air-flue a f, the chamber c h, the wall W, the secondary chamber c h₁, the boiler B and stack S, all combined substantially as described. 4th. In a furnace for steam-boilers, the front fire-chamber, the bridge-wall b w provided with continuous air-space a c between front wall 1, inner b w, expansion-chamber c h, wall W, chamber c h₁, boiler B and stack S, all combined substantially as described. 5th. In a furnace for steam-boilers, inner wall 2 having top 2 with space h a between it and 2, with continuous space a c between walls 1 and 2 on sides rear end, and discharging ports, chamber c h, wall W, chamber c h₁, boiler B and stack S, all combined substantially as described. 6th. In a furnace for steam-boilers, a front fire chamber enclosed in outer and inner walls with air-space a c between and backed by a bridge wall b a, provided with air-flue a f having receiving and discharging ports above and below the grate-bars, the pipes a p for distributing, and pipes p

for supplying air to the fire-chamber, the steam-pipe w with its connections, for forcing a current of air through pipes a, p and p, the chamber c h, wall W, chamber c h, boiler B and stack S, all combined substantially as described.

No. 21,787. Water Heater. (*Réchauffeur d'Eau.*)

John Foster, Montreal, Que., 30th May, 1885; 5 years.

Claim.—1st. The combination of gas mixed with atmospheric air, as a fuel, with a system of inclined surfaces or passages acted upon by the heat of the gas, and air ignited for insuring a continuous forced circulation of hot water, substantially as described. 2nd. The combination of the casing A, having opening K, water tubes, as described, casings D and E, branch pipes F having jets G and stop-cocks H, as described, and provided with gas, also with a system of water circulating pipes connected with the casings D and E, as described, the whole constructed and arranged substantially as described, for the purposes set forth.

No. 21,788. Harvester and Grain Binder.

(*Moissonneuse-Lieuse à Grain.*)

Henry A. Howe, Albion, N.Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. In a harvester and grain binder, the combination of a quadrant table rigidly secured to the finger-bar, and a binder table at the discharge end of the quadrant, as shown and described and for the purpose specified. 2nd. In a harvester and grain binder, the combination of a quadrant grain table attached to the finger-bar, and a binder table at the discharge end of the quadrant, hinged at the front to the finger-bar, and at the side to the quadrant, the binder table standing in position to receive the grain endwise from the quadrant, and then carry it back at right angles to its passage over the quadrant to a point back of, and in the rear of the quadrant as set forth. 3rd. In a harvester and grain binder, the combination, with the binder table hinged at the front to the finger-bar, and at the side to the quadrant, of the two castor wheels on the underside of the binder table, standing one in advance of the other, as and for the purpose specified. 4th. In a grain binder, the combination, with the binder table, of endless carriers or chains extending longitudinally of the table, and provided with pivoted spurs and ways arranged to rise and fall by suitable mechanism, and to produce intermittent projection of the spurs by such rising and falling action of the ways, as set forth. 5th. In a grain binder, the combination of endless carriers, provided with pivoted spurs, ways capable of vertical movement up and down over which the carriers pass, cranks attached to the ways for producing the vertical movement, a connecting rod attached to one of the cranks, and operated by mechanism connected with the wheel that drives the rakes and springs attached to the ways, to produce reaction of the ways, as set forth. 6th. In a grain binder, the combination, with the ways J, J, of the connecting rod N, the elbow M, provided with the double cranks m, m₁, and the cam d on the rake wheel for operating said elbow, as set forth. 7th. In a grain binder, the combination of the endless carriers I, I, the ways J, J, the springs j, j, the crank k, k, the connecting rod N, the double cranked elbow M, and the cam d on the rake wheel G, all arranged to operate in the manner and for the purpose specified. 8th. In a grain binder, the combination, with the binder table, of a gauge board O on the outer edge of the table, capable of adjustment forward and back to adapt the table to grains of different lengths, as set forth. 9th. In a grain binder, the combination, with the binder table, of an endless carrier P, located at the junction of the quadrant with the binder table, and capable of a swinging movement, as and for the purpose specified. 10th. The combination of the endless carrier B, provided with a journal n extending through the table, the pitman v attached to said journal, and the crank k to which the opposite end of the pitman is attached, the crank being connected with the ways J, J, so that the carrier receives a movement simultaneous with the movement of the ways, as specified. 11th. The combination, with the binder table, of the adjustable gauge board O on one side of the table, and the swinding carrier P on the other side of the table, as and for the purpose specified. 12th. In a grain binder, the combination, with the binder table C, of the shaft Q at the rear of the table, having heads provided with eccentrically-pivoted packer arms x, z, as shown and described and for the purpose specified. 13th. In a grain binder, the combination, with the stops c₂ and inclined trip b₂, of the sliding rod R, provided with stud a₂ which rests under the trip and the double armed crank y with which the rod is connected, as herein shown and described. 14th. The combination with the outer divider X, the endless carrier S, driven by any suitable means, the upper length of the carrier following the curve of the top of the divider, as shown and described and for the purpose specified. 15th. The combination of the endless carrier S, the curved way u₂ and the sprocket wheels h₂, i₂, k₂ and b₂, the wheel u₂ being attached to the grain wheel, and the wheel b₂ being attached to a spring m₂, which allows vertical movement as the grain wheel rises and falls, as herein shown and described. 16th. In a grain binder, the combination, with the binding table C, of the segmental casing T on the underside of the table, for the purpose of inclosing and shielding the binding mechanism, as set forth. 17th. In a grain binder, the combination, with the quadrant table A₁ and binder table C, of the shaft V extending outward beyond the side of the binder table, and provided with a gear or sprocket wheel, which operates the gearing at the side of the binder table, as set forth. 18th. In a grain binder, the combination, with the binder table, of the shaft V, extending beyond the table, the gears p₂, r₂, drive chains t₂, v₂ and sprockets n₂, n₂, c₂ and z₂, as shown and described and for the purpose specified.

No. 21,789. Fertilizer. (*Engrais.*)

Walter S. Pierce, New York, U.S., 30th May, 1885; 5 years.

Claim.—1st. The process of manufacturing a fertilizer from the insoluble phosphates of alumina, iron, lime and other bases, consisting of, first, drying and pulverizing the raw material, mixing with it a certain quantity of sulphate of ammonia, treating the mixture with strong sulphuric acid, and, finally, drying the product, substantially as herein described and set forth. 2nd. The process of manufactur-

ing a fertilizer, consisting of, first, drying and pulverizing the phosphates of alumina, mixing with it a certain quantity of sulphate of ammonia, treating the mixture with strong sulphuric acid, and, finally, drying the product, substantially in the manner and proportions herein described and specified.

No. 21,790. Mixed Paint. (*Peinture Mêlée.*)

Samuel Roebuck, (Assignee of John B. Wood,) Brooklyn, N. Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. The above described composition for paint, consisting of creosote or dead oil, coal tar, spirits of turpentine and plumbago, in the proportions substantially as set forth. 2nd. The above described composition for paint, consisting of creosote or dead oil, coal tar, spirits of turpentine and plumbago, in the proportions substantially as set forth, and an alkali to neutralize such acid as the said composition may contain.

No. 21,791. Automatic Vacuum Brake Apparatus for Railway Brakes. (*Appareil de Frein Automatique à Vide pour Chemins de Fer.*)

The Vacuum Brake Company, London (Assignee of James Gresham, Salford), Eng., 30th May, 1885; 5 years.

Claim.—1st. The improved automatic vacuum brake apparatus, constructed and working substantially as herein described, and consisting of a brake cylinder open at one end, and enclosed within a vacuum chamber, the piston being provided with a rolling packing, and being operated by means of ball valve apparatus in connection with the steam-pipe, and communicating directly with one end of the brake cylinder and with the vacuum chamber respectively. 2nd. In vacuum brake apparatus, the combination, with a brake cylinder *c*, open at one end, closed at the other, and provided with a brake piston *d*, of a vacuum chamber mounted on trunnions *e* surrounding the brake cylinder and enclosing the open end of the latter, substantially as herein described. 3rd. The use in automatic vacuum brake apparatus, of a ball valve mounted in a moveable carrier having chambers of three diameters respectively, smaller, slightly larger and considerably larger than that of the ball-valve, the chamber having the largest diameter being provided with an inclined surface, for the purpose of causing the valve to roll towards its seating, against which it closes with a very slight, if any, lift, substantially as described. 4th. The improved means, substantially as described, for normally releasing the valve from its seat, the same consisting of a tubular carrier having a part beyond the valve of contracted diameter, the said carrier being attached to a flexible diaphragm, or equivalent device, whereby the valve is enabled automatically to resume its working position on vacuum being re-created. 5th. The improved means, substantially as described, for rapidly admitting air from the train pipe direct to the vacuum chamber, without passing around the ball-valve, such means consisting of the internally-grooved carrier, and parts employed in conjunction therewith, and being so arranged that, on vacuum being re-created, the direct communication is automatically closed and the action of the ball-valve restored.

No. 21,792. Sulky Frame for Ploughs.

(*Siège de Charrue.*)

Solomon Mercer, Bird's Run, Ohio, U.S., 30th May, 1885; 5 years.

Claim.—The combination of a wheeled frame having a transverse end piece, a disk pivoted upon the middle of the said end piece in a vertical plane, and having a series of perforations near its edge, a bolt fitting the perforations in the disk, and in a perforation in the rear end piece, an arm projecting laterally from the disk, and having a number of perforations near its outer end, and a chain secured at one end to the arm, and at the other end to the wheeled frame, in the centre line of the same, as and for the purpose shown and set forth.

No. 21,793. Journal Bearing.

(*Coussinet de Tourillon.*)

Herbert H. Hewitt, New York, N. Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. A journal bearing of brass or hard metal, the bearing side of which consists of taper projections integral therewith, in combination with a soft metal lining surrounding the said projections, substantially as and for the purpose set forth. 2nd. A journal bearing of hard and soft metal, the bearing surface of which is composed of the soft metal, and projecting points or edges forming part of, and projecting from, the hard metal entirely through the soft metal, substantially as and for the purpose set forth. 3rd. In a journal bearing, a hard metal bearing block provided on its bearing side with a series of conical projections integral therewith, in combination with a soft metal lining covering the said conical projections, substantially as described.

No. 21,794. Wood Flooring, Ceiling and Dados. (*Parquet, Plafond et Dé de Colonne en Bois.*)

Alfred Putney, London, Eng., 30th May, 1885; 5 years.

Claim.—1st. The described improvement in wood flooring, consisting in forming one edge of the boards with a tongue *b* and inwardly-inclined surface *d*, adapted to take into and against the groove *e*, and inclined surface *f* on the edge of the next board, as and for the purposes set forth and represented in Figs. 1 and 2 of the drawing. 2nd. The described joint for ceiling and dados, consisting in forming one edge of the boards with a tongue *b*, adapted to take into the groove *c* on the edge of the next board, and an outwardly inclined surface *d*, the next board being also formed with an outwardly-inclined surface *A*, as and for the purpose set forth and represented in Fig. 3 of the accompanying drawing.

No. 21,795. Grain Elevator. (*Élévateur a Grain.*)

Cornelius Hayes, Oswego, N. Y., U.S., 30th May, 1885; 5 years.

Claim.—1st. The combination, with the elevator legs *A, A1*, of a ventiduct extended from the foot of said elevator to the upper part thereof, and a hose or pipe extension detachably connected with the upper end of the ventiduct, as and for the purpose specified. 2nd. In combination with the elevator legs *A, A1*, the pipe *p* secured between said legs, and having its receiving end near the foot of the same, and its discharge end extending toward the top of the elevator, a hose or piece extension detachably connected with the pipe *p* at the upper part of the elevator, and an exhaust fan connected with said pipe extension, substantially as and for the purpose set forth. 3rd. In combination with the elevator legs *A, A1*, the pipe *p* arranged between said legs, and having its receiving mouth near the foot of the same, the plate *a* secured between the elevator legs near the upper end thereof, a pipe coupling on said plate, having the upper end of the pipe *p* connected with it, a hose or pipe extension connected with said coupling, and an exhaust fan connected with the pipe extension, substantially as described and shown. 4th. In combination with the elevator legs *A, A1*, the pipe *p* arranged between said legs and having its receiving mouth near the foot of the same, the plate *a* secured between the elevator legs, near the upper end thereof, the plate *b* attached to plate *a* and having an opening, with a collar *c* connected to the upper end of the pipe *p*, guides *d, d* on the plates *b*, the plate *c* sliding between said guides, and provided with an opening and a collar *e1* around said opening, and the pipe extension *p1* connected with the collar *e1*, substantially as described and shown. 5th. The combination, with the elevator legs *A, A1*, of the troughs *B, B* extended from the foot of the elevator, substantially as and for the purpose set forth. 6th. The combination, with the elevator legs *A, A1*, of the ventiduct *p* having its receiving mouth at or near the foot of the elevator, and the discharge end extending toward the top of the elevator, and the troughs *B, B* extending from the foot of the elevator, substantially as described and shown for the purpose set forth.

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

- | | |
|--|---|
| <p>367. W. W. LAKE and A. S. WOOD, 2nd 5 years of No. 11,218, from the 7th day of May, 1885. Improvements on Grinding and Polishing Hollow Ware, 4th May, 1885.</p> <p>368. B. RAYMOND, 2nd 5 years of No. 11,212, from the 7th day of May, 1885. Improvements on Bobbins Winders, 4th May, 1885.</p> <p>369. F. W. ANDREWS, 2nd 5 years of No. 11,223, from the 7th day of May, 1885. Improvements on Clothes Dryers, 4th May, 1885.</p> <p>370. W. H. ROGERS, 2nd and 3rd 5 years of No. 11,271, from the 20th day of May, 1885. Improvements on Fish Ladders, 5th May, 1885.</p> <p>371. M. LESSER, 3rd 5 years of No. 4,751, from the 19th day of May, 1885. Improvement on the Manufacture of Cigars and the Moulds for Making the Same, 6th May, 1885.</p> <p>372. M. LESSER, 3rd 5 years of No. 4,760, from the 19th day of May, 1885. Improvement on Cigars, 6th May, 1885.</p> <p>373. T. WILSON, (assignee) 2nd 5 years of No. 11,301, from the 15th day of June, 1885. Improvements in Reaping Machines, 7th May, 1885.</p> <p>374. B. and A. TOLTON, 3rd 5 years of No. 4,727, from the 18th day of May, 1885. Improvements in Harvester Attachments for Cutting Peas, 12th May, 1885.</p> <p>375. D. C. SUMNER, 2nd 5 years of No. 11,231, from the 13th day of May, 1885. Improvements on the Art of Finishing Textile Fabrics and on Machinery for Carrying the Same into Effect, 13th May, 1885.</p> | <p>376. J. JOHNSTON, 2nd 5 years of No. 11,270, from the 20th day of May, 1885. Improvements on Reaping Machines, 16th May, 1885.</p> <p>377. F. VAN RYSSELBERGHE, 2nd and 3rd 5 years of No. 15,305, from the 14th day of August, 1887. Improvements in the Means of Operating Microphones, 16th May, 1885.</p> <p>378. F. VAN RYSSELBERGHE, 2nd and 3rd 5 years of No. 15,323, from the 17th day of August, 1887. Method of and Apparatus for Preventing Induction in Telegraphic and Telephonic Systems, 16th May, 1885.</p> <p>379. G. C. DE LAMETTER, 2nd 5 years of No. 12,810, from the 14th day of May, 1886. Improvements on Fruit Dryers, 19th May, 1885.</p> <p>380. W. JOHNSTONE, 2nd 5 years of No. 11,380, from the 26th day of May, 1885. Improvements on Boilers for Generating Steam or Heating Water, 19th May, 1885.</p> <p>381. J. G. BAKER, 2nd and 3rd 5 years of No. 11,481, from the 19th day of July, 1885. Improvements on Tincture Presses, 19th May, 1885.</p> <p>382. M. GANDY, 2nd 5 years of No. 11,324, from the 5th day of June, 1885. Improvements on Cotton, Canvas, or like Driving Belts or Bands and Machinery for their Manufacture, 26th May, 1885.</p> <p>383. L. GODDU, 2nd 5 years of No. 11,294, from the 29th day of May, 1885. Improvements on Nailing Machines for Nailing the Soles to the Uppers of Boots and Shoes, 28th May, 1885.</p> |
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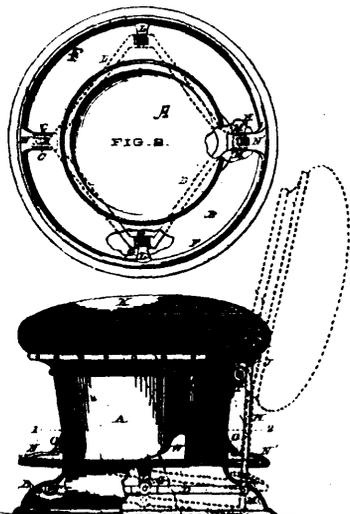
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ILLUSTRATIONS.

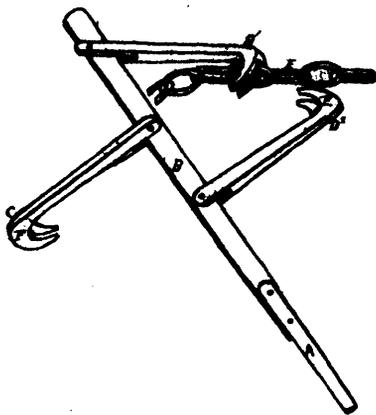
Vol. XIII.

JUNE, 1885.

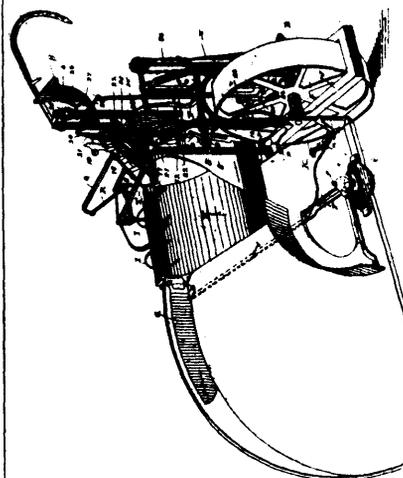
No. 6.



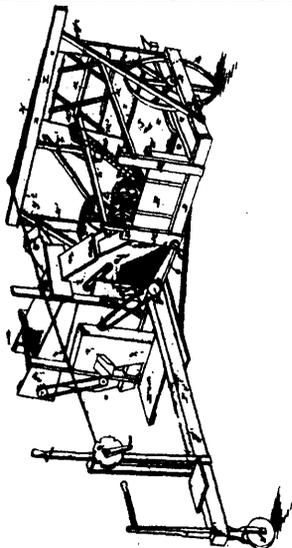
21578 Haskins' Spittoon-Holder.



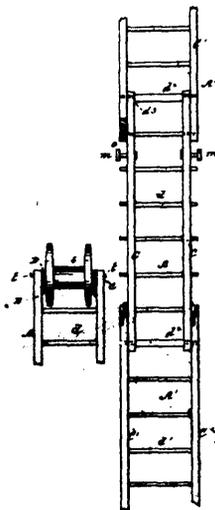
21579 Rooney's Stump-Extractor.



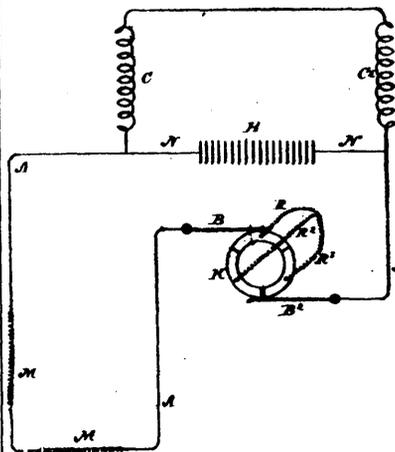
21580 Aldred's Harvester Binder.



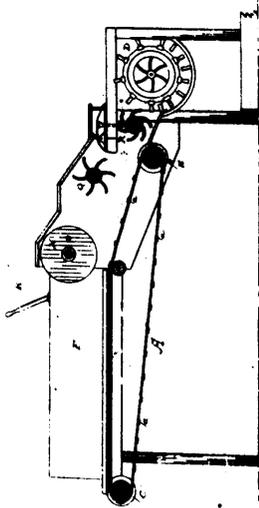
21581 Gaines' Header and Thresher



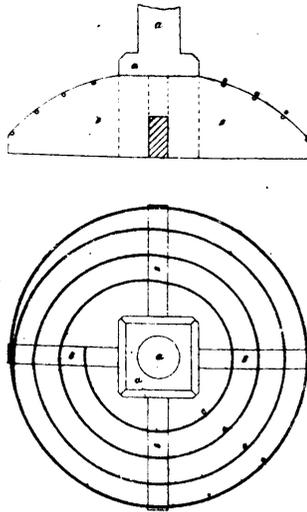
21582 Gates' Sectional Ladder.



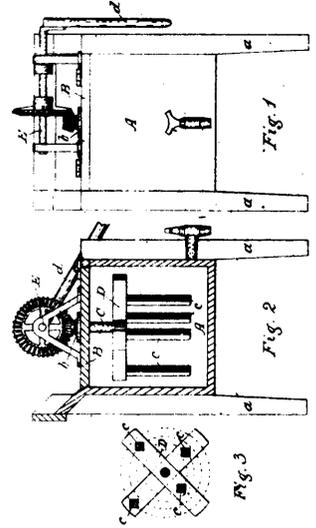
21583 Thomson's Dynamo-Electric Machine.



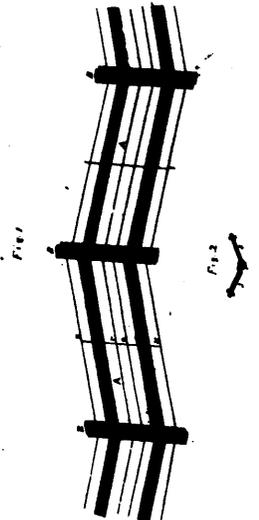
21584 Aitken's Band-Cutter and Feeder for Thrashing-Machines.



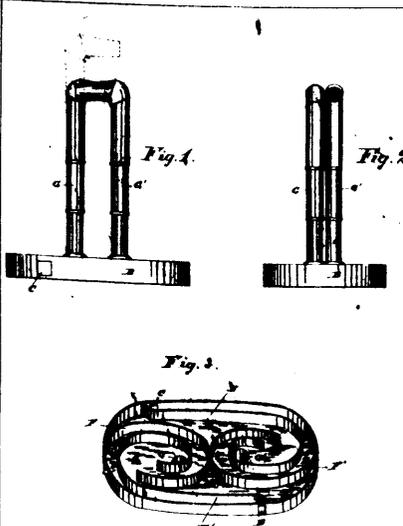
21585 Landing's Churn Dasher.



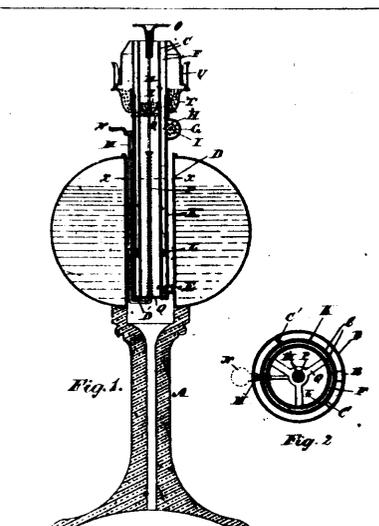
21586 Cadran's Washing Machine.



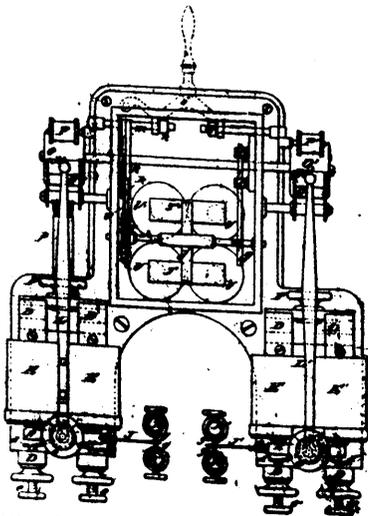
21587 Forster's Portable Barb Wire Fence.



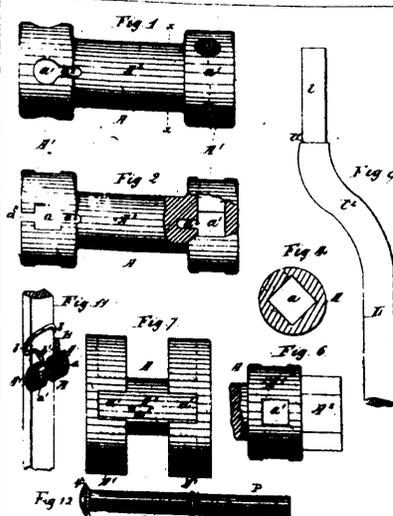
21588 Berney's Wash Boiler Fountain.



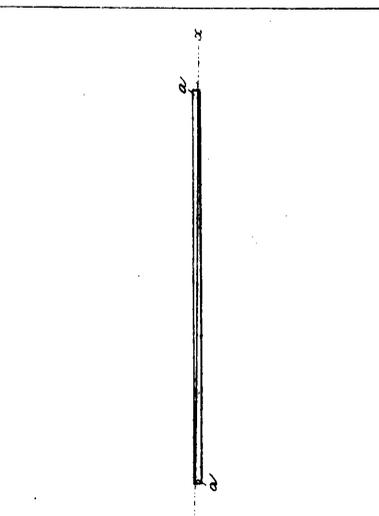
21589 Matthews' Lamp.



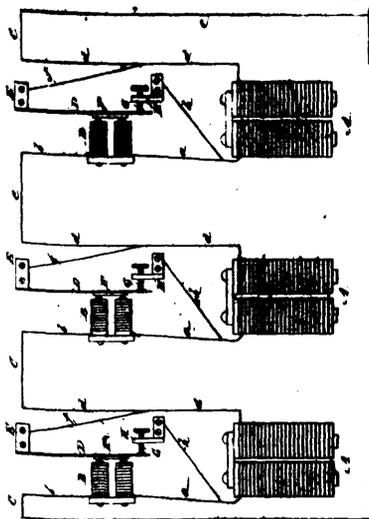
21590 Denson's Autographic Telegraph Instrument and Circuit.



21591 Walker's Wire Strainer for Wire Fences.



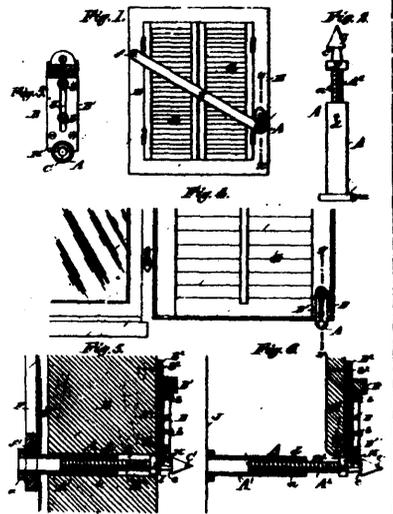
21592 Reed's Manufacture of Shoes.



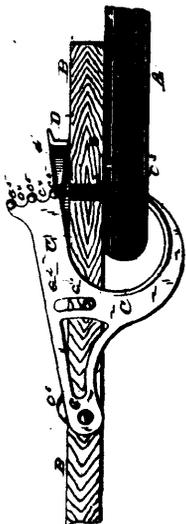
21593 Wright & Fisser's Automatic Shunt for Telephone Lines.



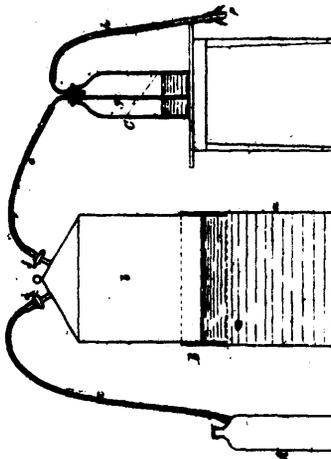
21594 Downie's Fire Escape.



21595 Von Hollen's Shutter Bolt and Fastening.



21596 Zeigler's Adjustable Clamping Device.



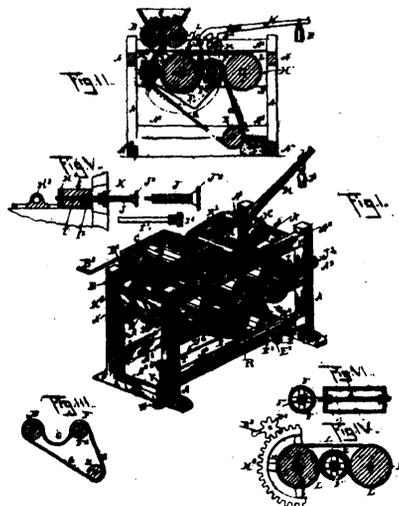
21597 Mayo's Apparatus for Administering Gas for the Production of Anaesthesia.



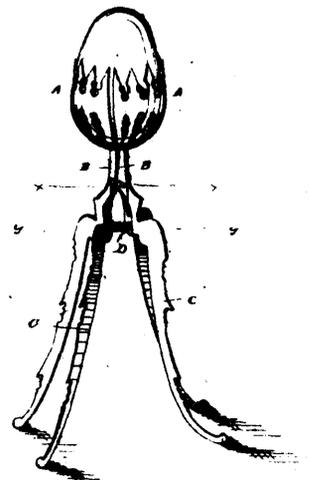
21598 Goodspeed's Wick-Adjusting Mechanism for Burners.



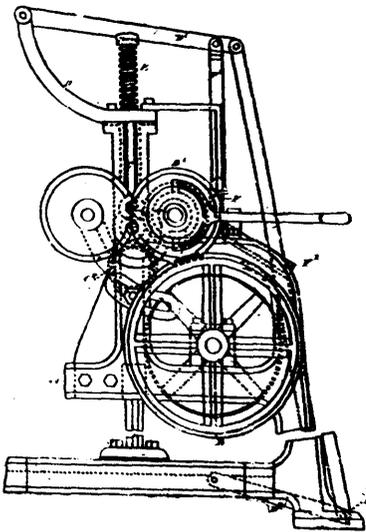
21599 Schlemmer's Head Protector.



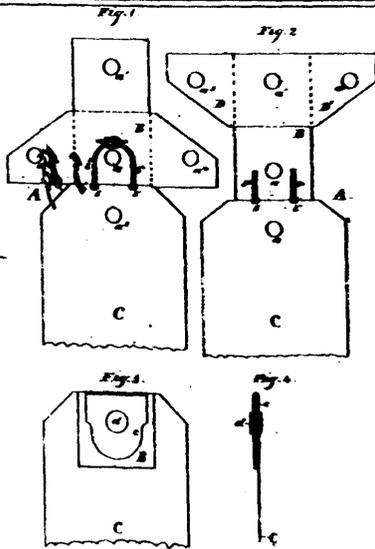
21600 Gorgas & Mohler's Cider Press.



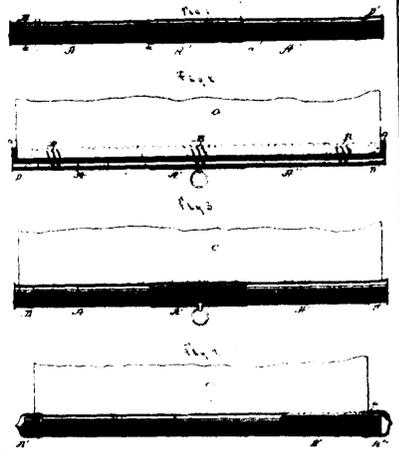
21601 Hervey's Egg-Holder.



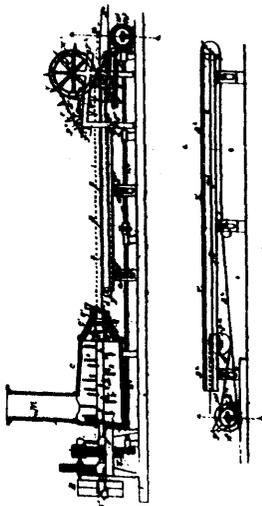
21602 Hardy's Finishing Machine for Leather.



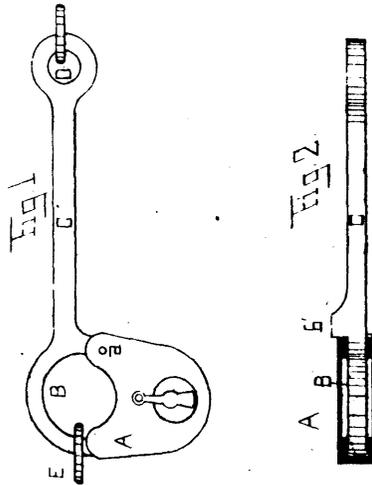
21603 Castle's Tag for Securing and Shipping Parcels.



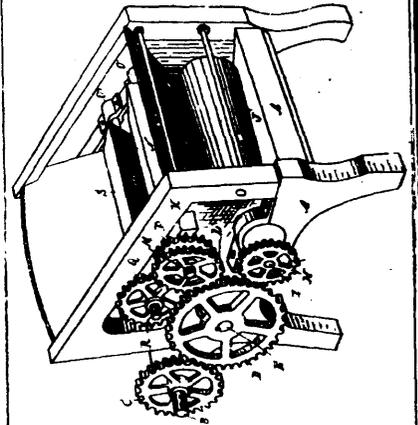
21604 Tripp's Window Curtain Bar.



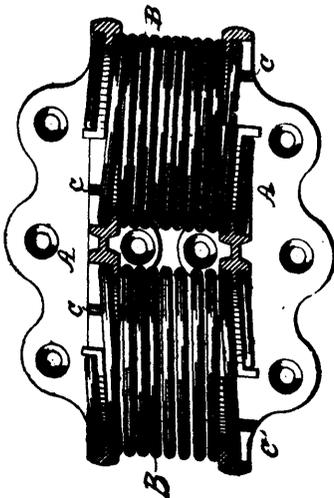
21605 Chamber's Brick-making Machine.



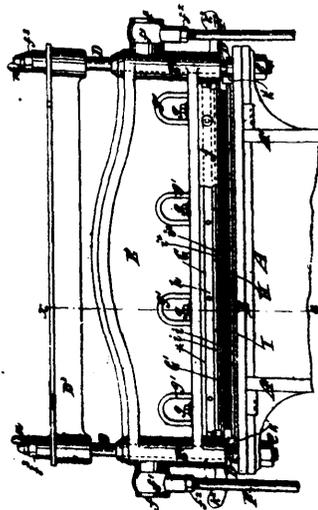
21606 Dixon's Hasp Lock.



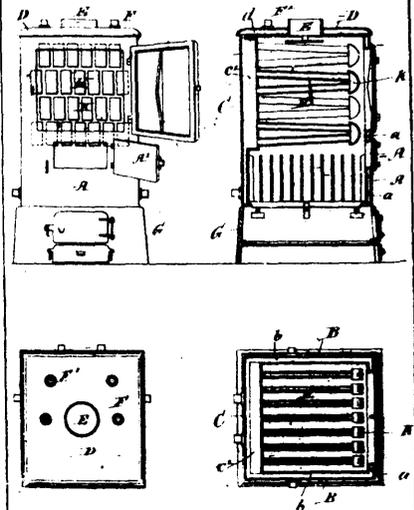
21607 McKinney & Soper's Clay-Crusher.



21608 Banker's Spring Attachment for Platform Weighing Chairs.



21609 Stimpson's Perforating Machine.



21610 Leduc's Furnace for Heating Water.

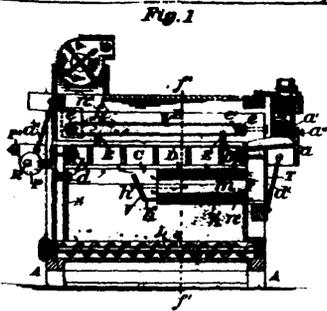


Fig. 1.

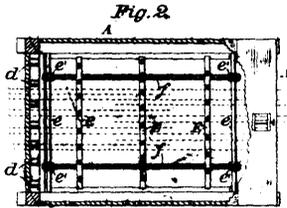


Fig. 2.

21611 Hunter's Middlings Purifier.



Fig. 2.

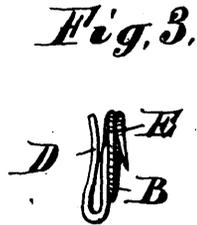


Fig. 3.

21612 Turner's Neck-Tie Fastener.

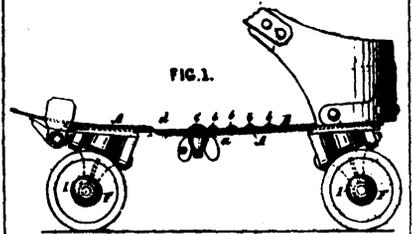


FIG. 1.

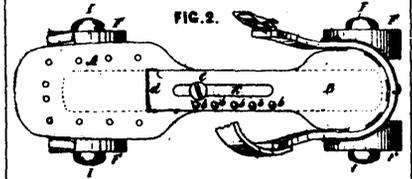
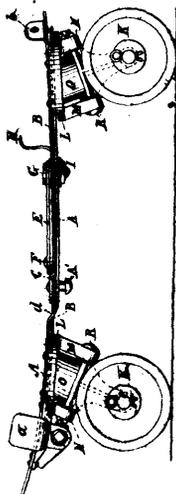


FIG. 2.

21613 Raymond's Roller Skate.



21614 Raymond's Roller Skate.

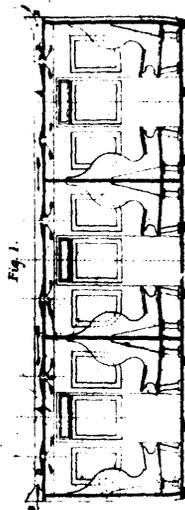
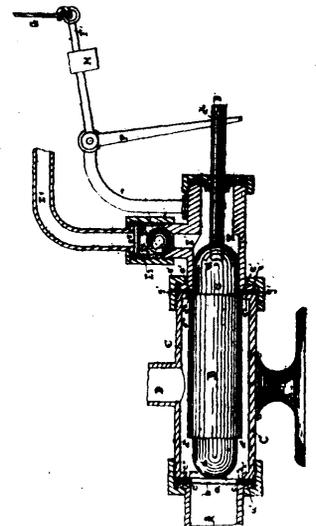
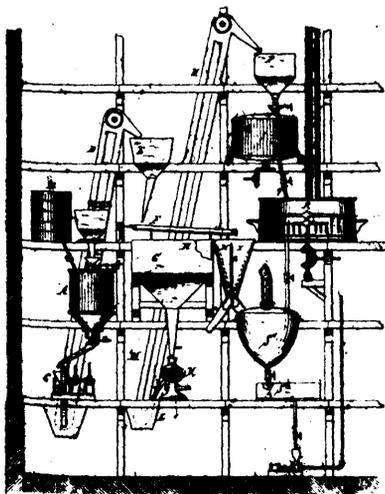


Fig. 1.

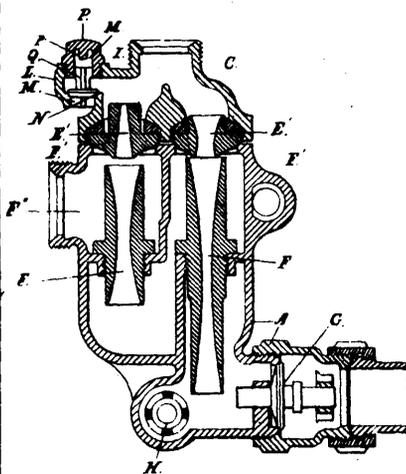
21615 Miller's Apparatus for Ventilating Railway Carriages, &c.



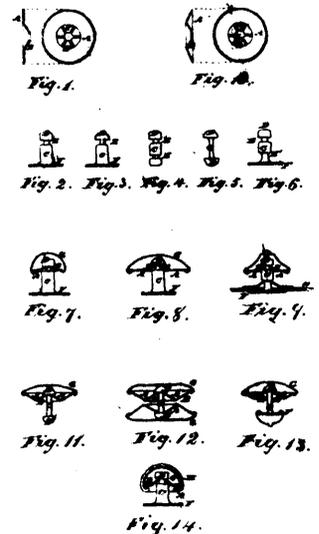
21616 Harvey's Stop and Water Valve.



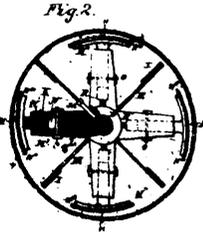
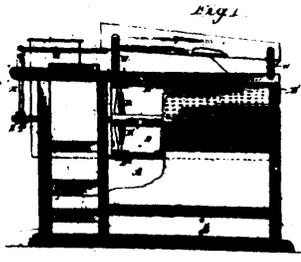
21617 Jobb's Manufacture of Malt Liquors.



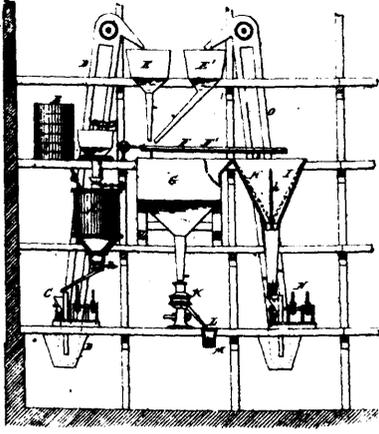
21618 Park's Boiler Injector.



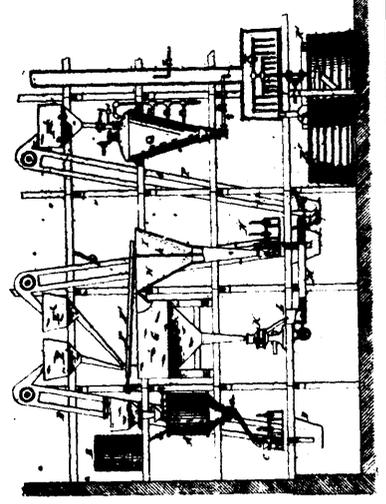
21619 Heys & Salkeld's Buttons.



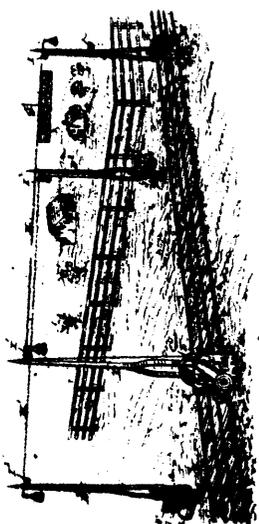
21620 Dawson's Grain Scourer.



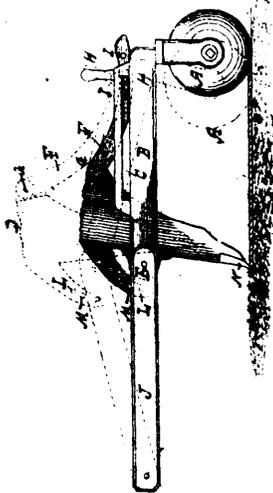
21621 Schuman's Manufacture of Starch.



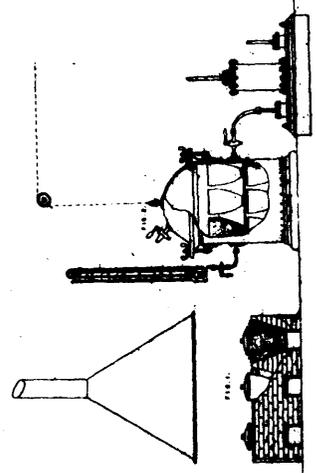
21622 Schuman's Manufacture of Distilled Spirits.



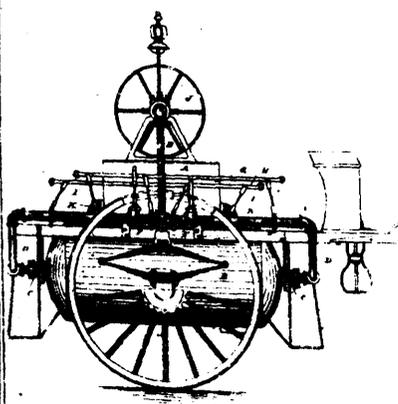
21623 Copeland's Railway Gate.



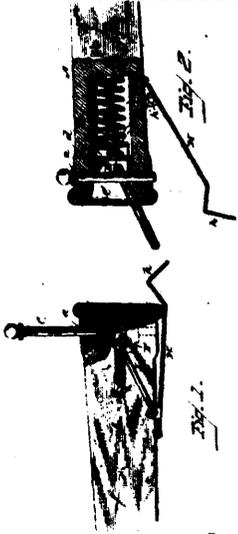
21624 Ludwig's Drill Tooth Regulator and Compressor for Seeders.



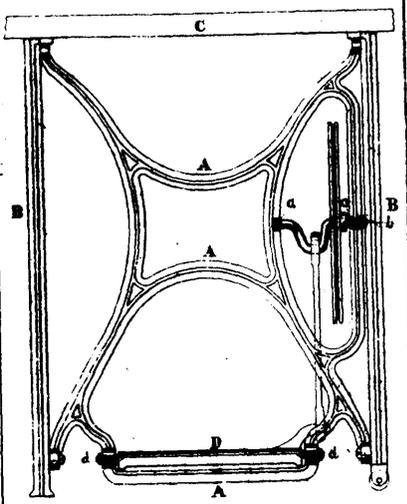
21626 Brin's Manufacture of Anhydrous Oxide of Barium.



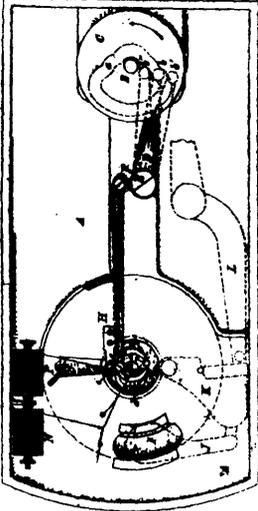
21627 Morrison's Chemical Fire Engine.



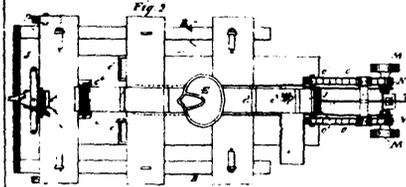
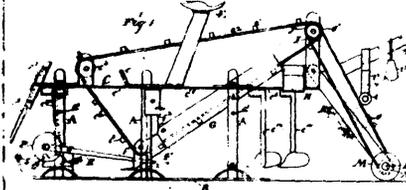
21628 McCready's Car-Coupling.



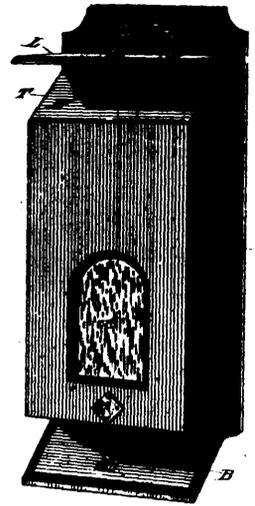
22629 Diehl's Sewing Machine Stand and Treadle.



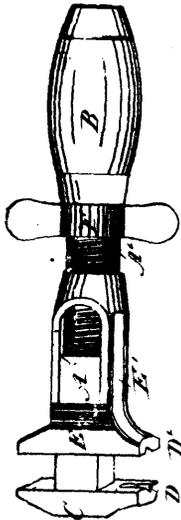
21630 Greene's Button Hole Sewing Machine.



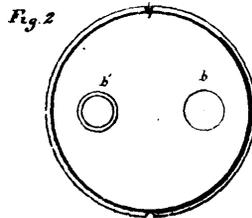
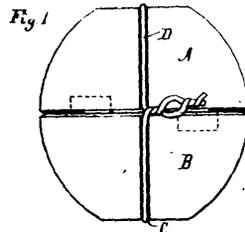
21631 McCannel's Ditching Machine.



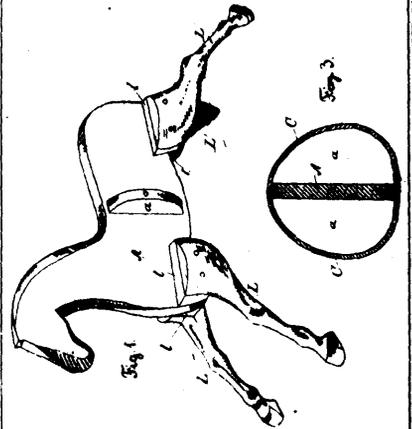
21632 Cook's Letter Box.



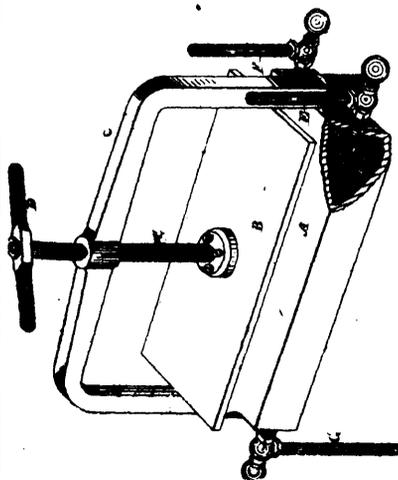
21633 Greenleaf's Wrench.



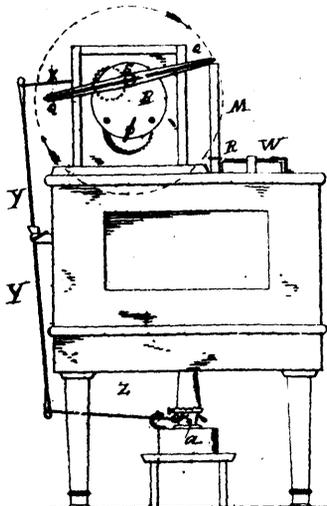
21634 Harden's Hand Grenade for Fire Extinguishers.



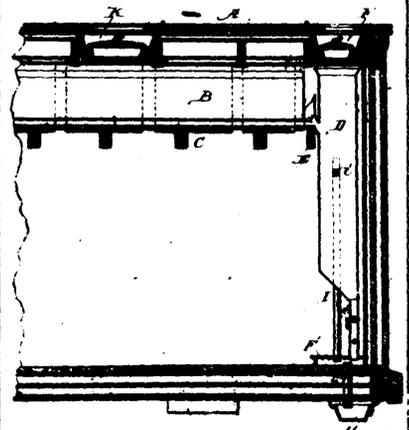
21635 Lindner's Toy and Model Horse, etc.



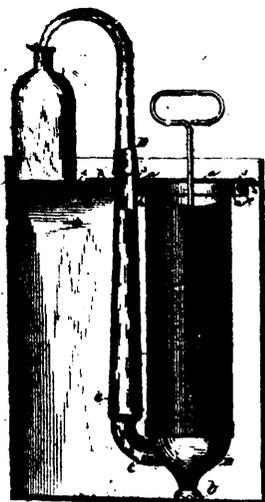
21636 Zeldler's Machine for Polishing Celluloid, etc.



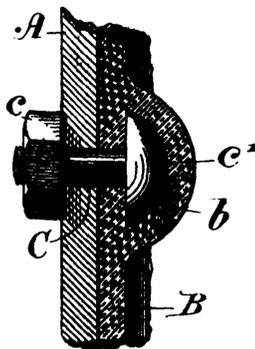
21637 Campbell's Thermostat.



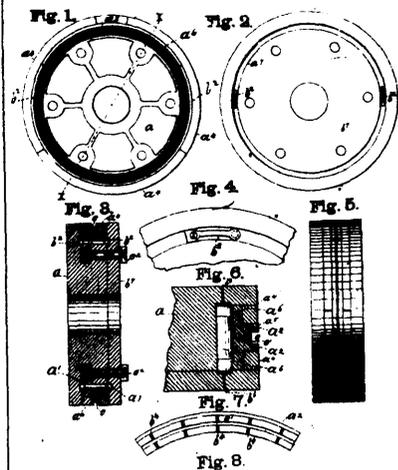
21638 Pierce's Refrigerator Car.



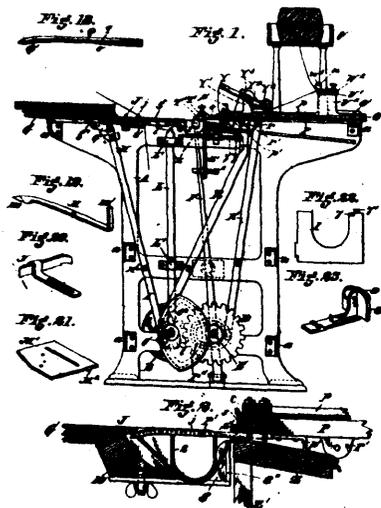
21639 Metzger's Apparatus for Filling Bottles.



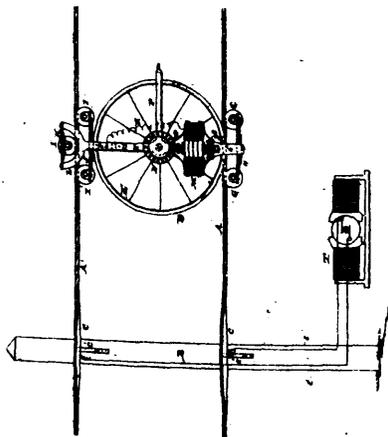
21640 McDougall's Manufacture of Paper Pulp and apparatus therefor.



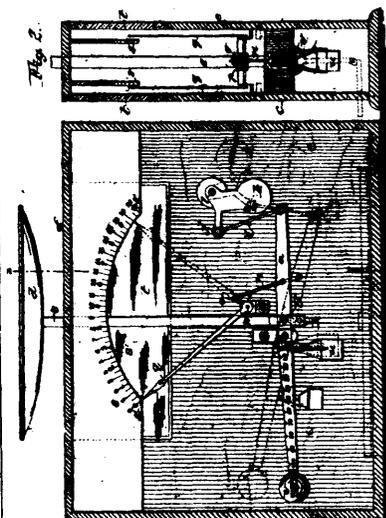
21641 Suckow's Piston Packing.



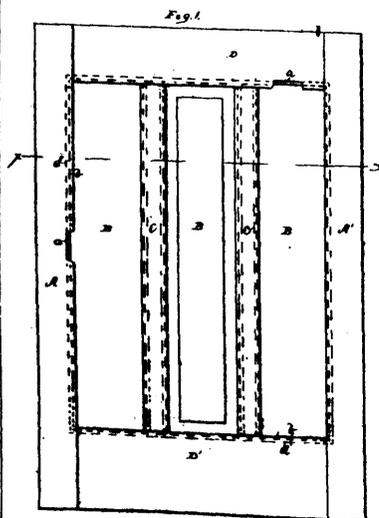
21642 Cheshire's Machine for Sewing Books.



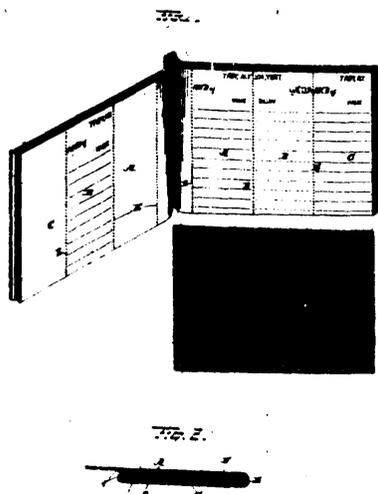
21643 Chandler's Electric and Other Railways.



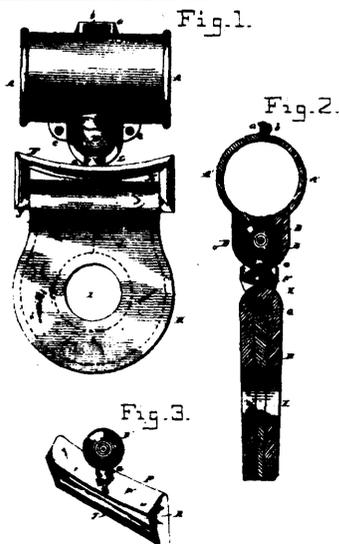
21644 Keeler's Pendulum Scales.



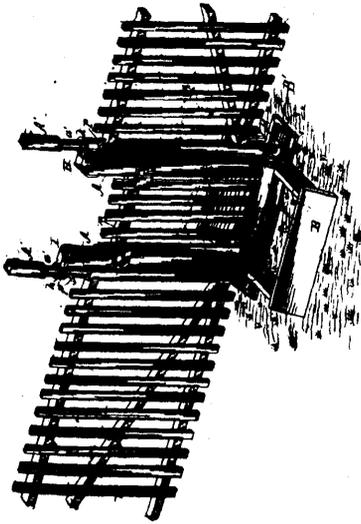
21645 Belden's Door and Shutter.



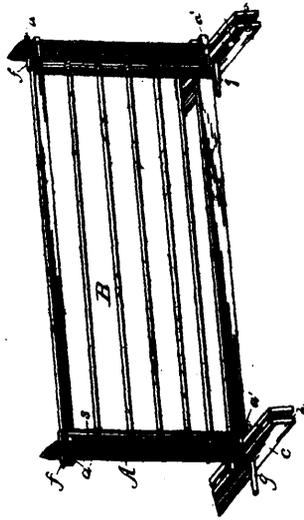
21646 Barlow's Device for Manifold Copying.



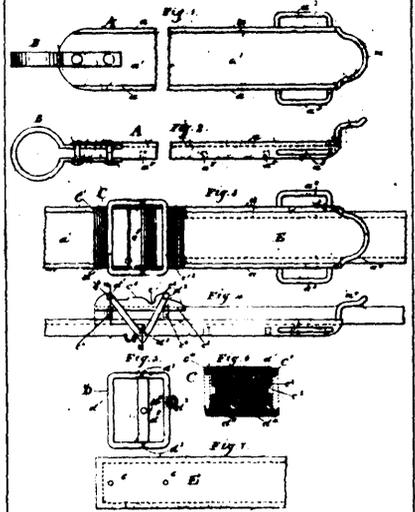
21647 Hlatt's Neck Yoke.



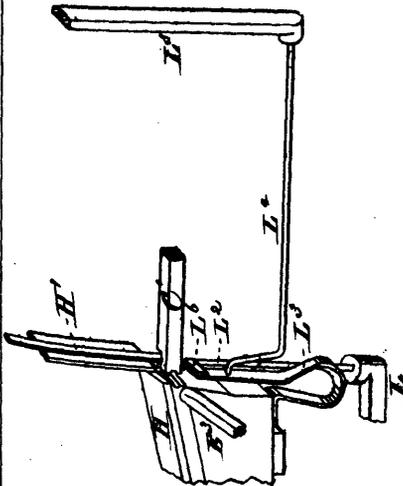
21648 Du Bois' Adjustable anchor Gate.



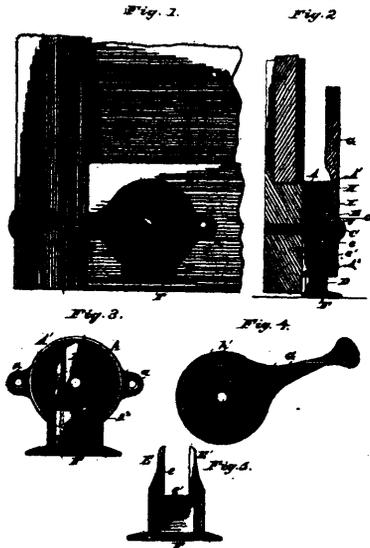
21649 Du Bois' Portable Anchor Fence.



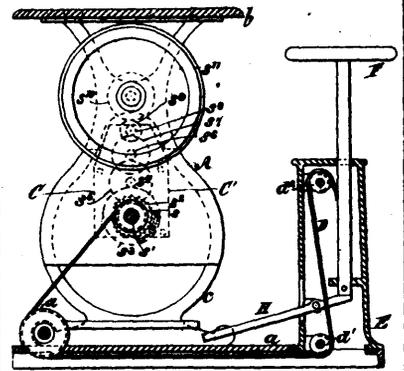
21650 Bickle's Hame Tug and Buckle.



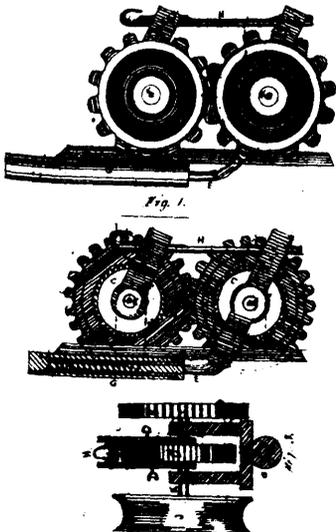
21651 Reed's Nail Machine.



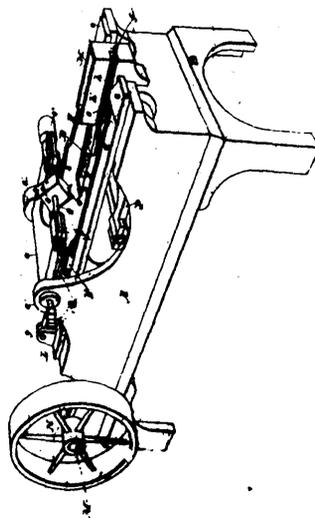
21652 Rosentreter's Door Holder.



21653 Spengler's Means for Operating Sewing Machines, etc.



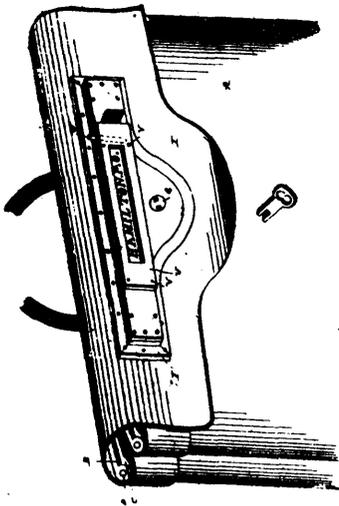
21654 Rolston's Machine for Pulling Pump and Sucker Rods.



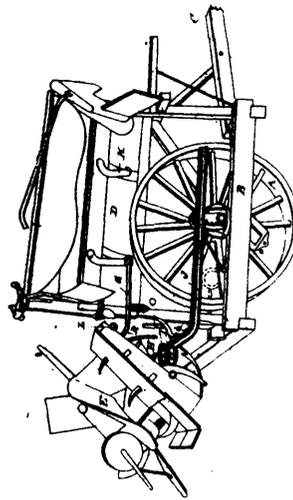
21655 Burnham's Machine for Making Wedges.



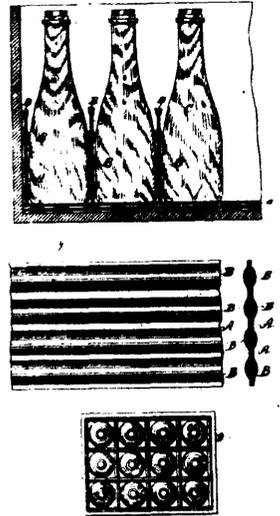
21656 Long's Material for Packing Bottles.



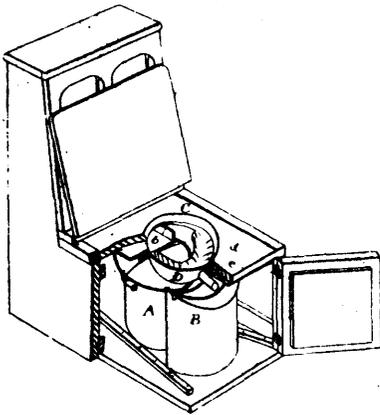
21657 Deimel's Lock for Mail Pouches.



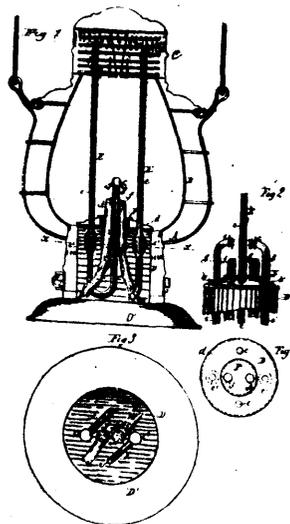
21658 Watson's Harvester Binder.



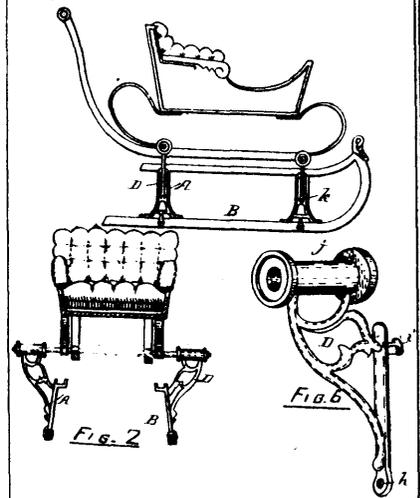
21659 Long's Material for Packing Bottles.



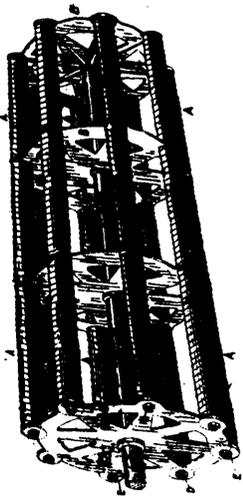
21660 Heap's Earth Closet



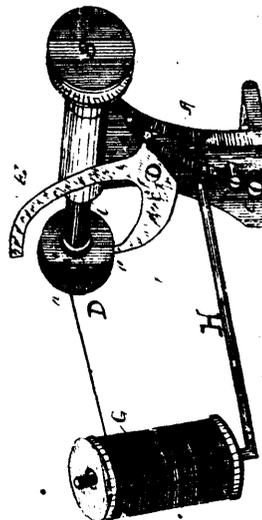
21661 Wood's Lantern



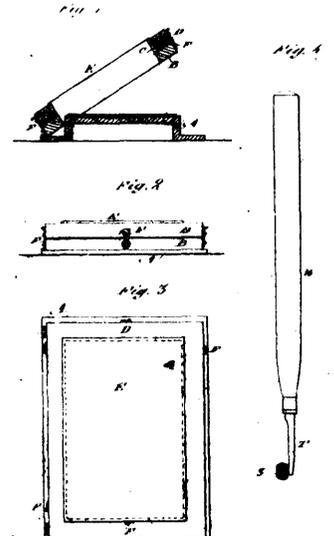
21662 Anthes' Child's Vehicle.



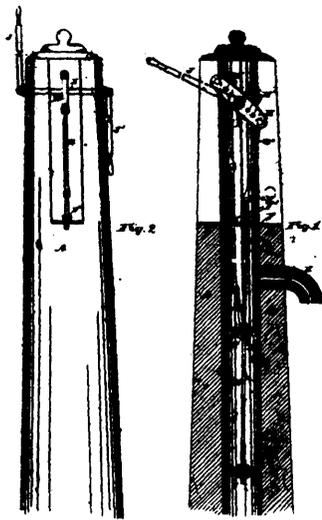
21663 Woolnough's Beater, Concave and Drum for Thrashing-Machines.



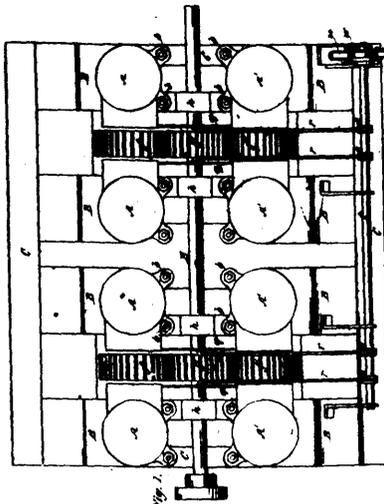
21664 Abercrombie's Bobbin Winder for Sewing Machines.



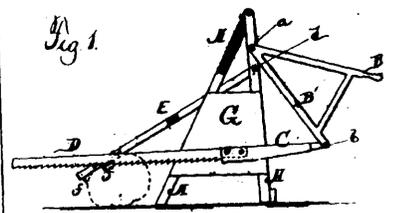
21665 Klaber's Apparatus for Reproducing Drawings, Letters, etc.



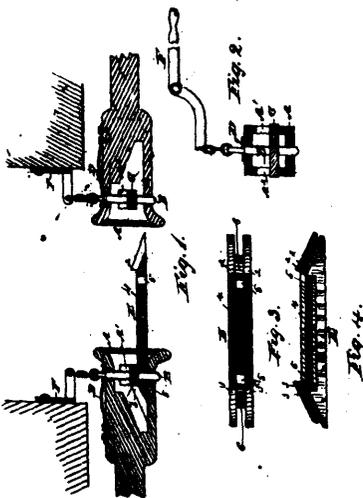
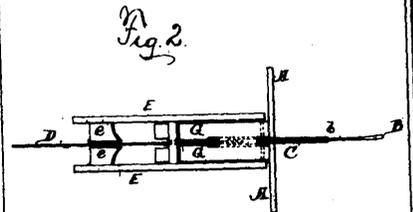
21675 Porteous and Fairgrieve's Pump.



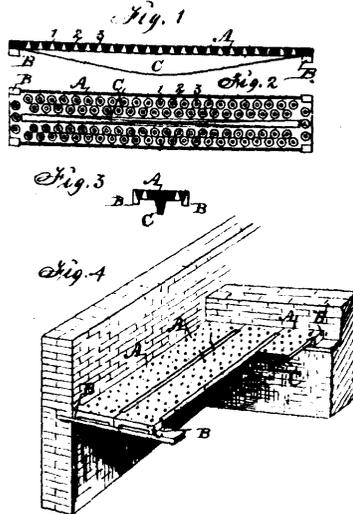
21676 Golding's Steam Engine.



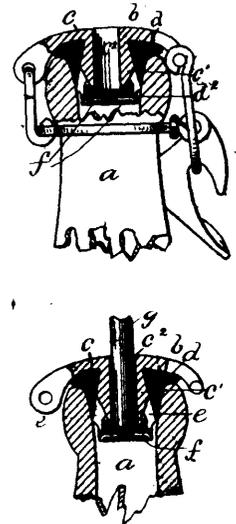
21678 Spedding's Machine for Sawing Logs.



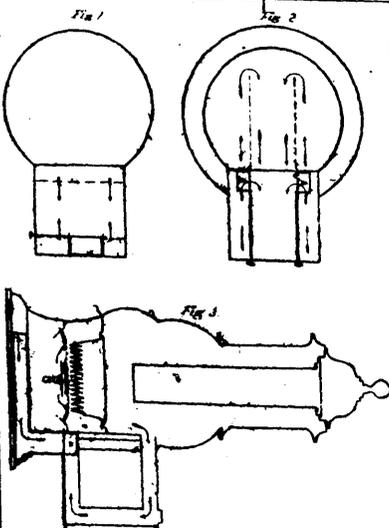
21679 Knight's Car-Coupling.



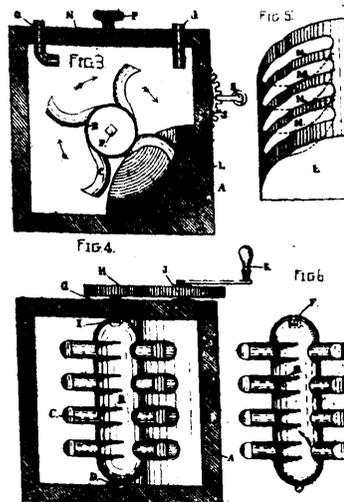
21680 Medynski's Furnace Grate.



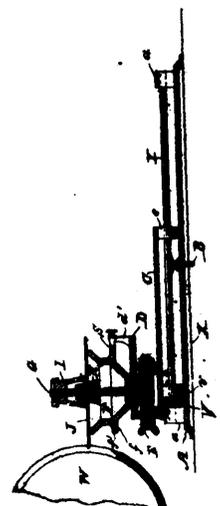
21681 Thatcher's Bottle Stopper.



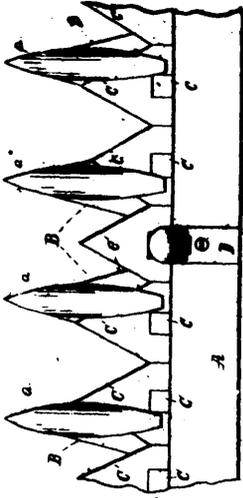
21682 Rose's, Improvement in Changing the Drafts in Coal Parlor Cook Ovens.



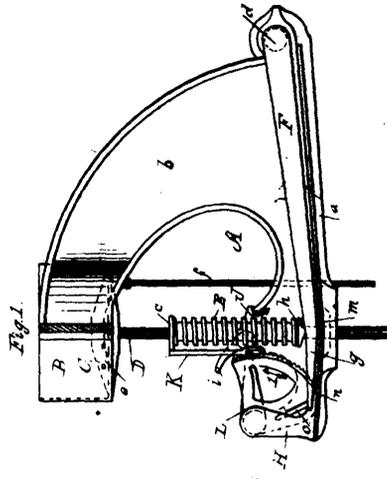
21683 Morrelle, Redstone & Obeamüller's Churn.



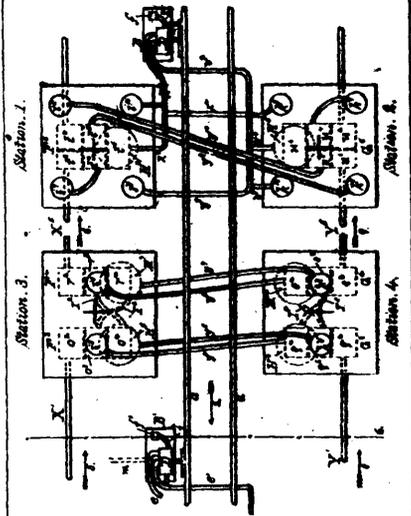
21684 Willey's Saw-Sharpening Machine.



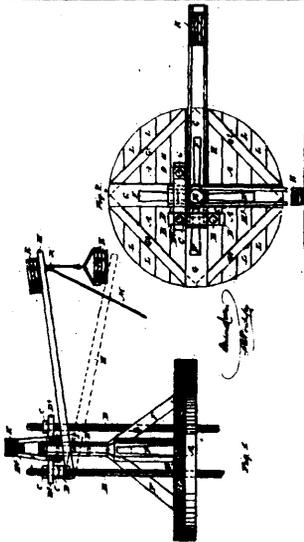
21685 Sharood's Harvester Cutting Apparatus.



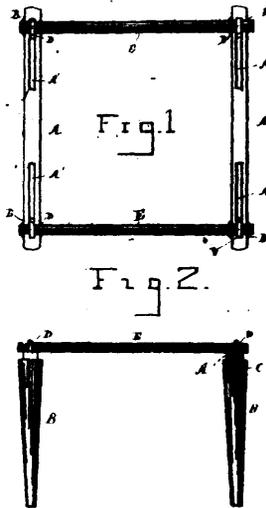
21686 Buck's Apparatus for Operating Railway Danger Signals.



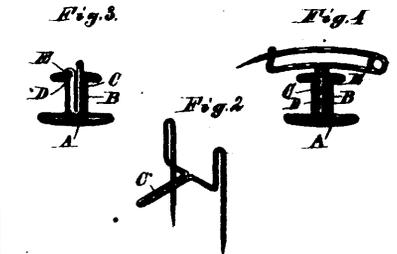
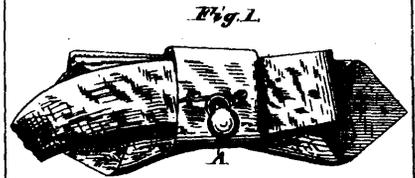
21687 Chase's Pneumatic Block Signal System.



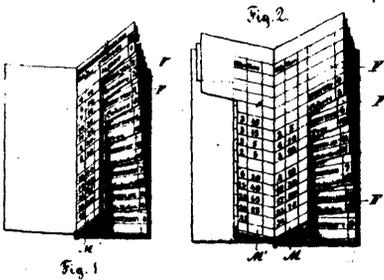
21688 Blunt's Apparatus for Compressing Ensilage.



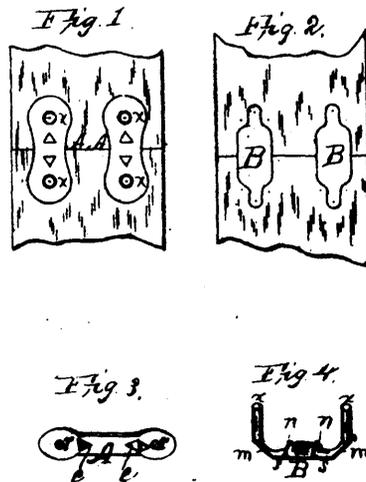
21689 Rickenbrode's Quilting Frame and Table.



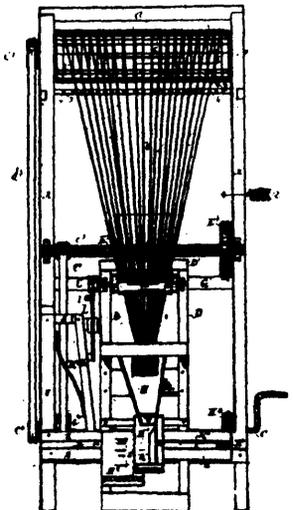
21690 Gilbert's Neck Tie Fastener.



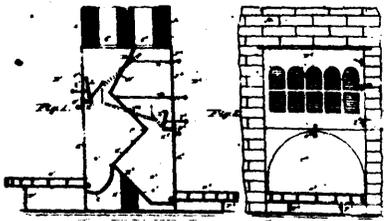
21691 Steven's Railway Passenger Tariff and Distance Guide Book.



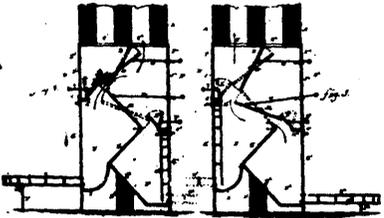
21692 Smith's Belt Fastener.



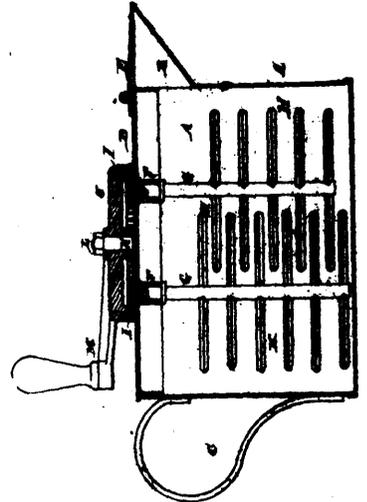
21693 Coddington's Machine for Manufacturing Waxed Tapers and Coated Strings.



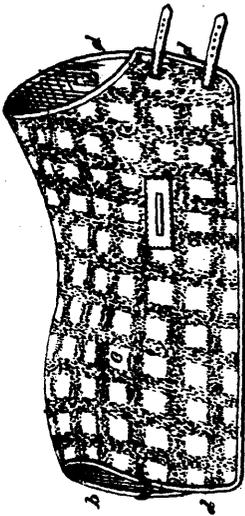
21684 Jones' Fire Place.



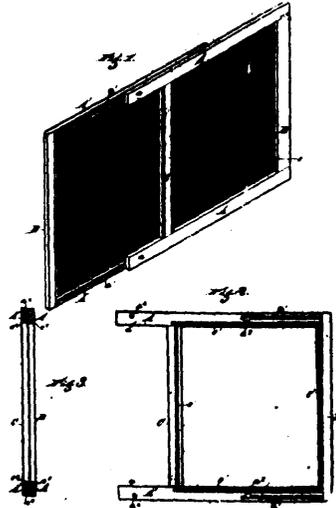
21695 Forster's Portable Barb Wire Fence.



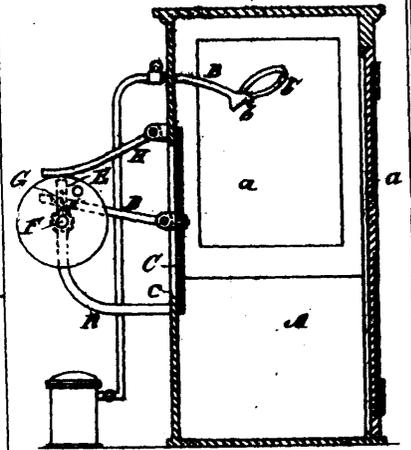
21696 Rex's Egg and Cake Mixer.



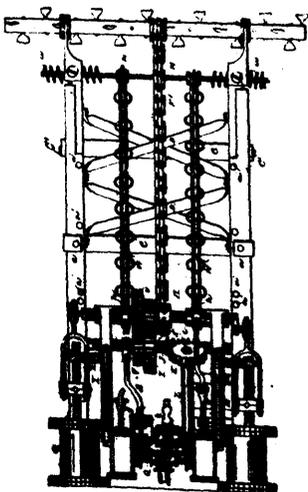
21697 Broadhead's Blanket.



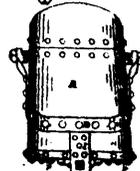
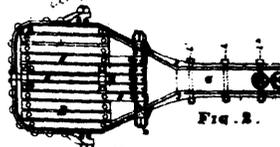
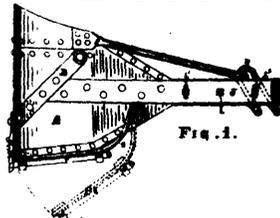
21698 Dowling's Window Screen.



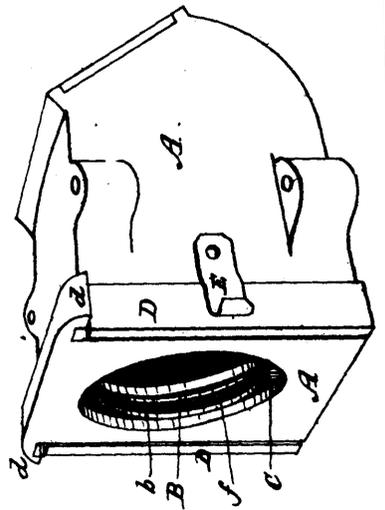
21699 Ketchum's Means for Producing Artificial Respiration.



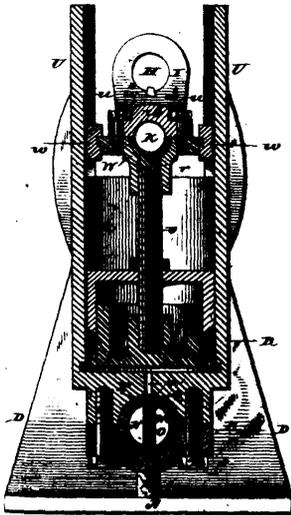
21700 Legg's Mining Machine.



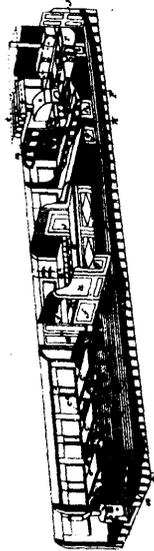
21701 Pike's Dredge Dipper.



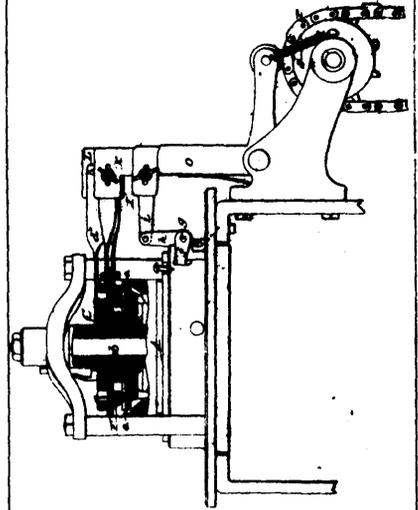
21702 Stinson's Car Axle Box.



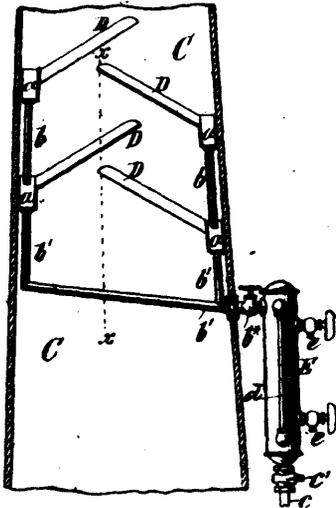
21703 Clark's Steam Engine.



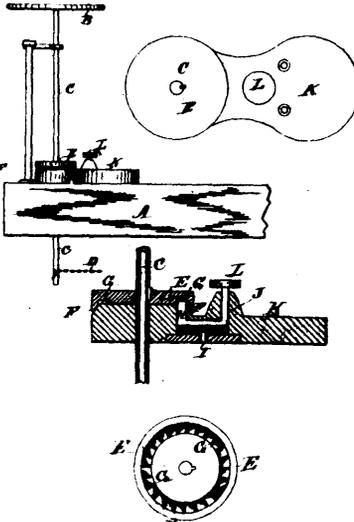
21704 Strong's Hotel Car.



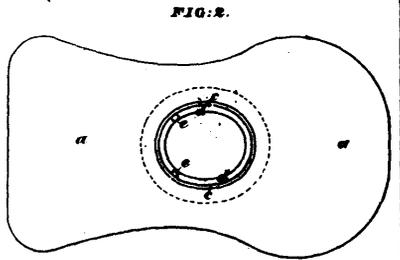
21705 Nye's Knitting Machine.



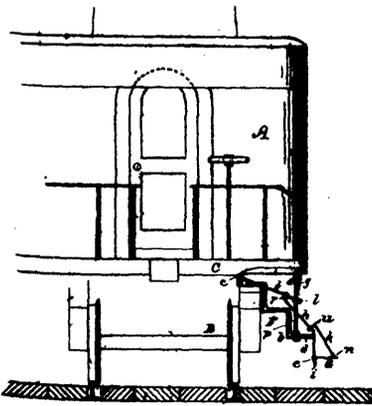
21706 Stuart's Means for Excluding Oil and Grease from Condensers and Pumps of Steam Engines.



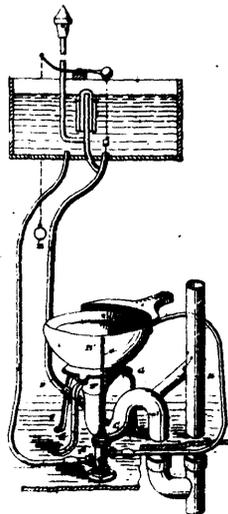
21707 Currie's Car Brake.



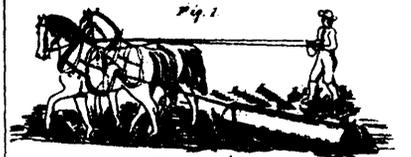
21708 Booth & Dyer's Sanitary Appliance for Children, etc.



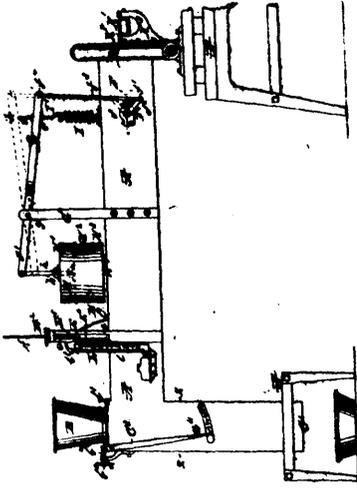
21108 Hadley's Car Step.



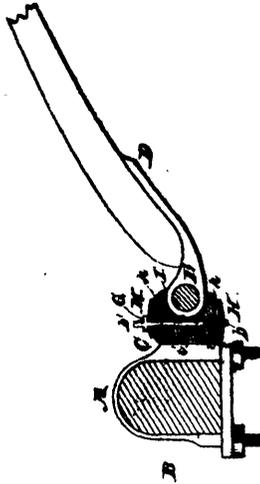
21710 O'Neil's Water Closet.



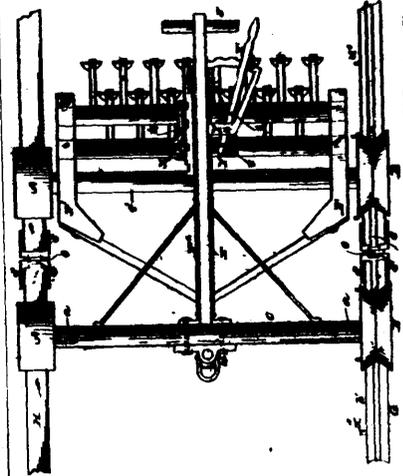
21711 Sherwood's Harness.



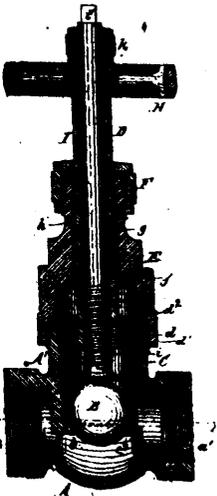
21712 Crow's Apparatus for Separating or Concentrating Material of Different Specific Gravities.



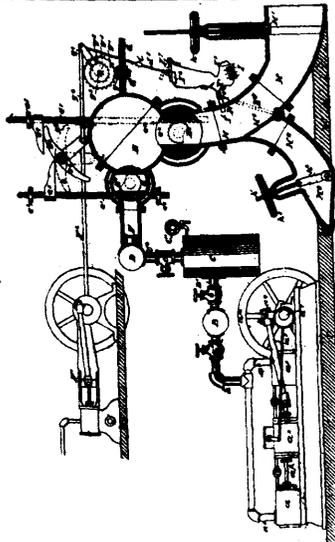
21713 Wittich's Thill Coupling.



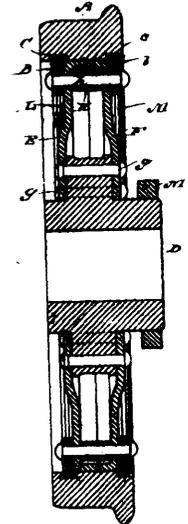
21714 Smith's Seed Drill and Cultivator.



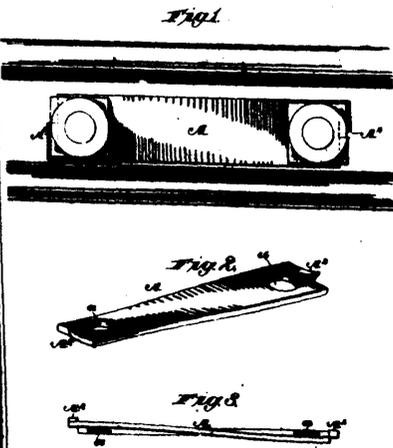
21715 Gilbert's Combined Stop and Check Valve.



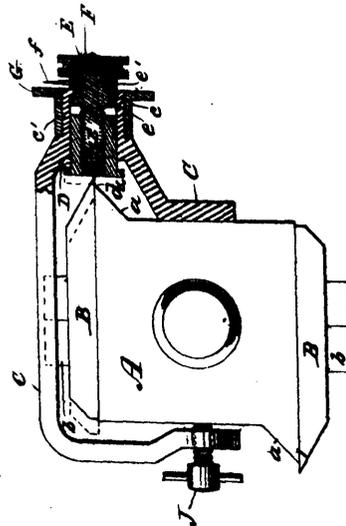
21716 Secor's Means for Propelling Vessels.



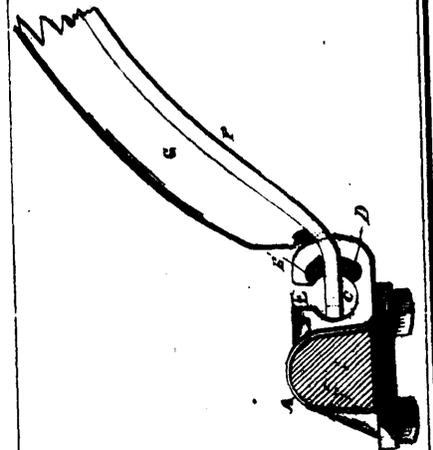
21717 Hagan's Railway Car Wheel.



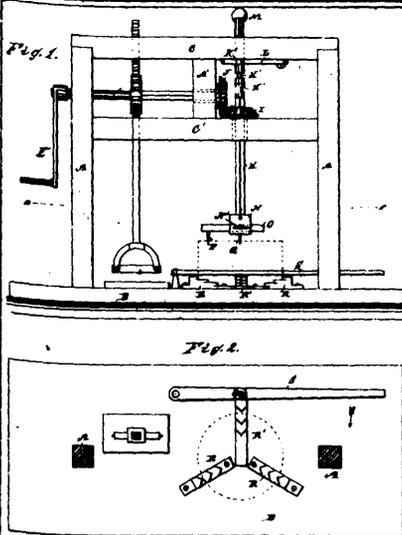
21718 Campbell, Noble & Howe's Nut Lock.



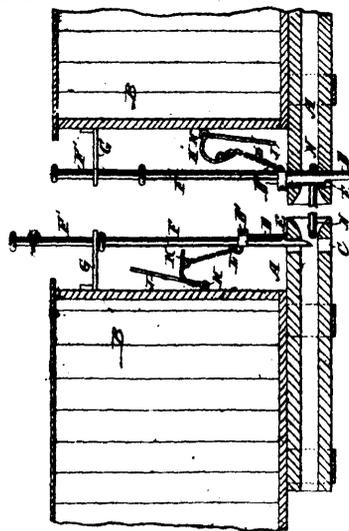
21719 Willey's Device for Setting Planer Knives.



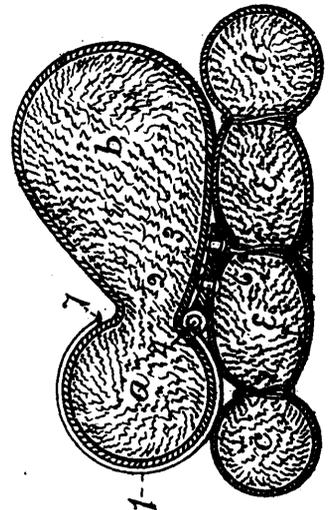
21720 Bonsteel's Thill Coupling.



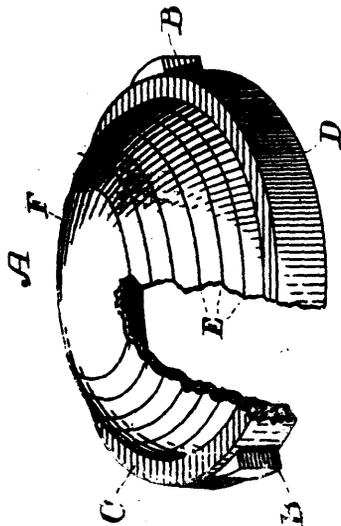
21721 Lobdell's Can-Opener.



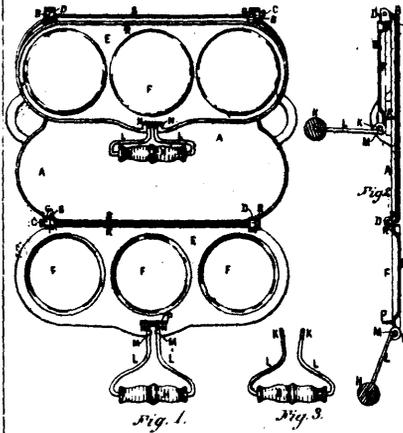
21722 Graham's Car-Coupling.



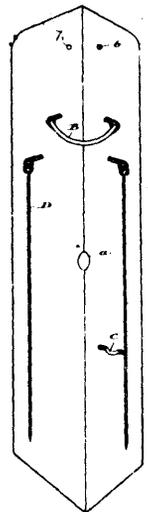
21723 McClain's Horse Collar Pad.



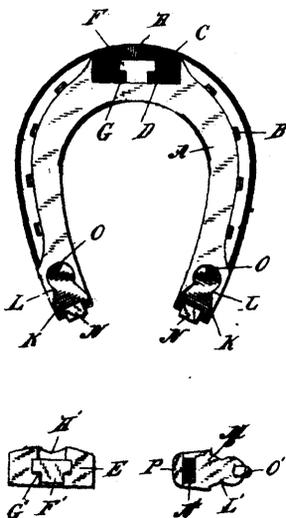
21724 Stock's Flying Target.



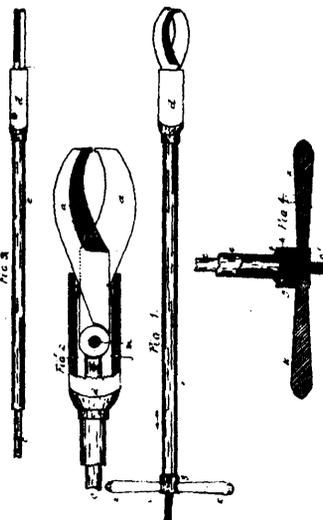
21725 Taylor's Cake Griddle.



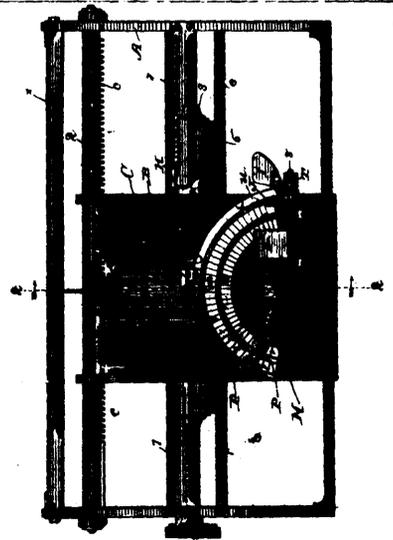
21726 Larmour's Portable Shield.



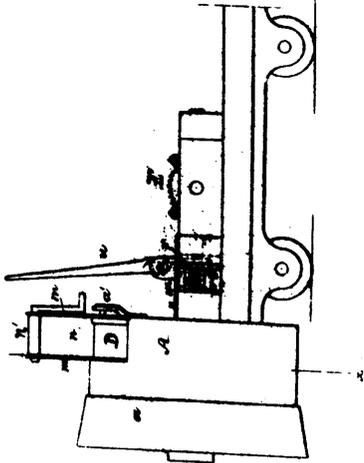
21727 Stevens' Horse Shoe.



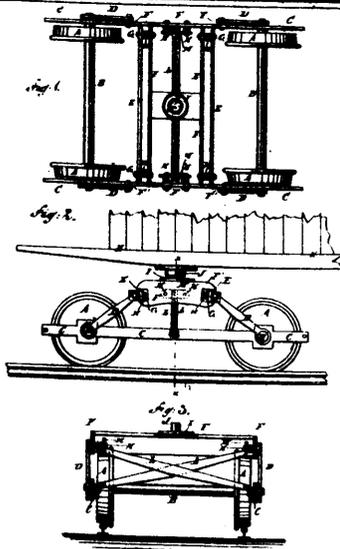
21728 Cullon's Parturition Shears.



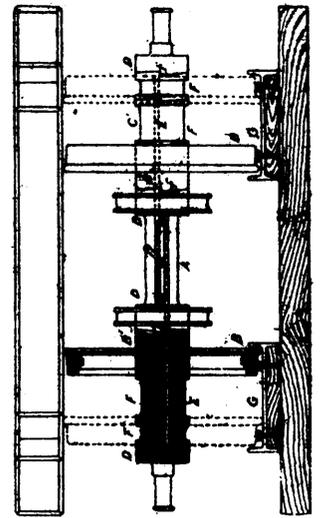
21729 Burt's Type writer.



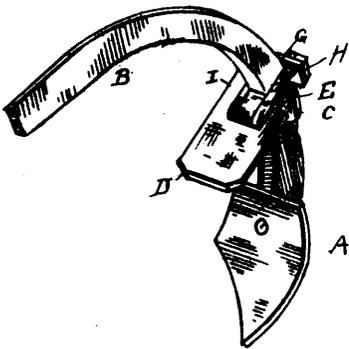
21730 Leslie's Rotary Excavator.



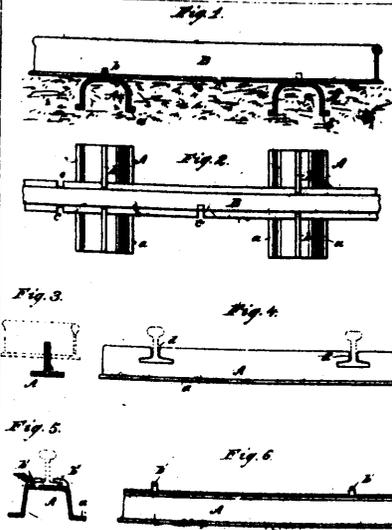
21731 McEwen's Railway Car Truck.



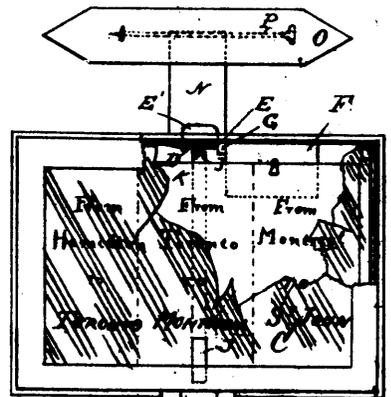
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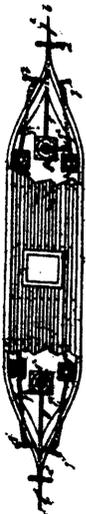
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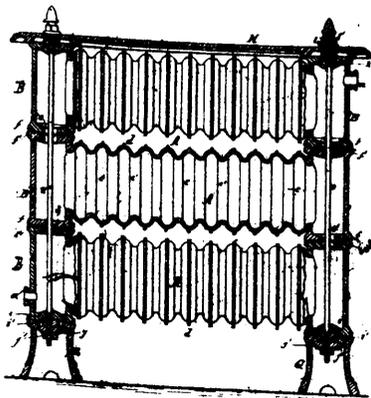
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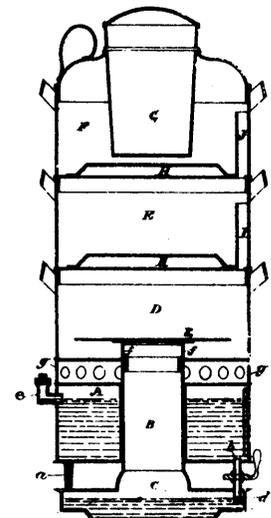
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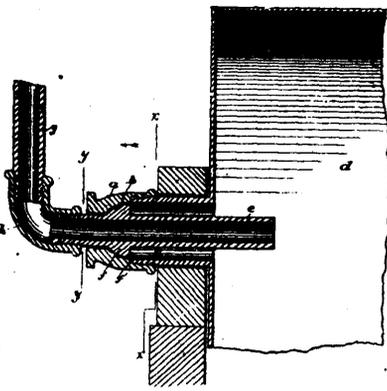
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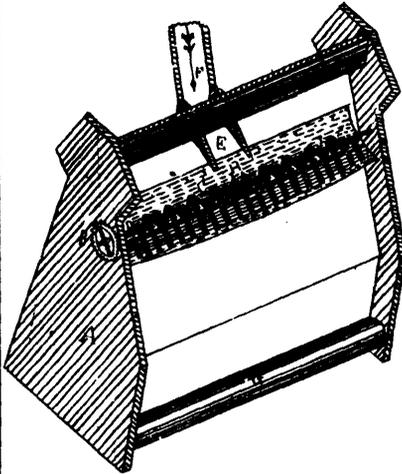
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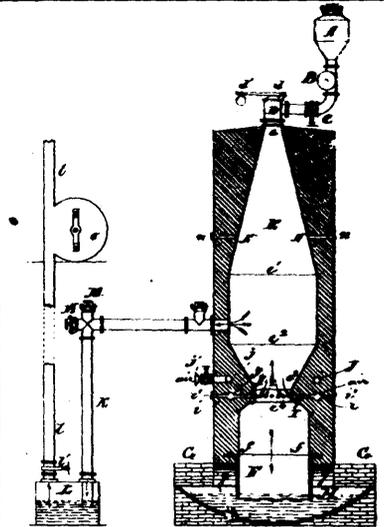
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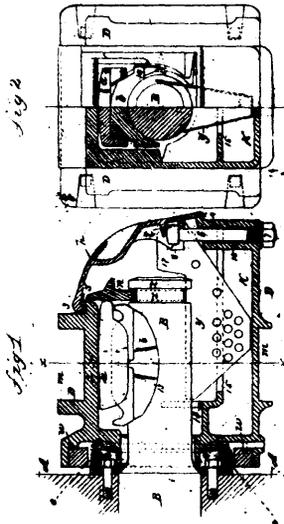
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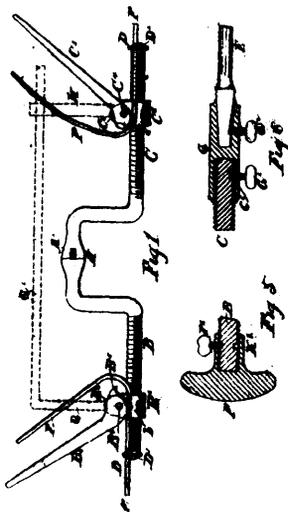
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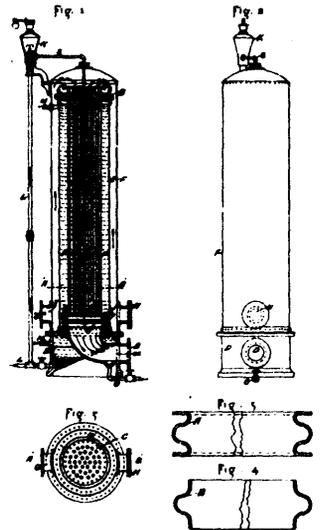
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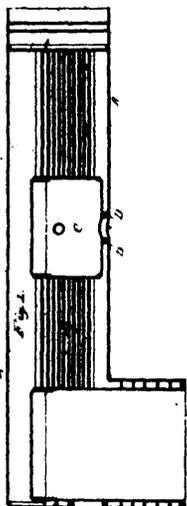
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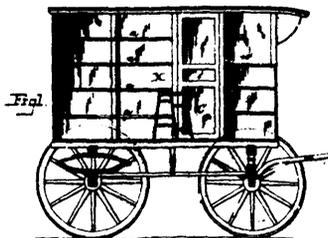
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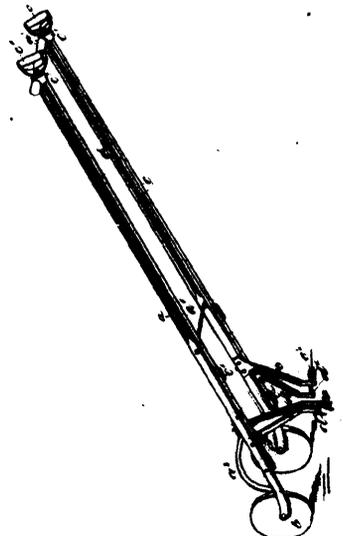
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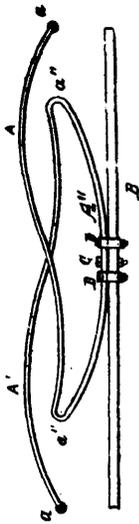
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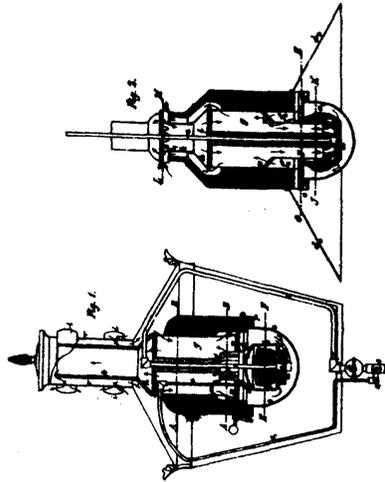
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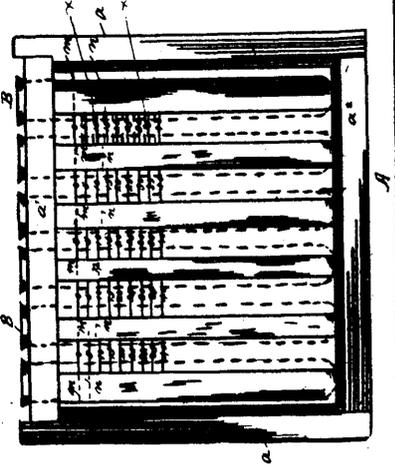
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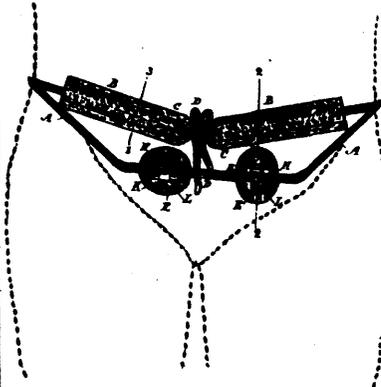
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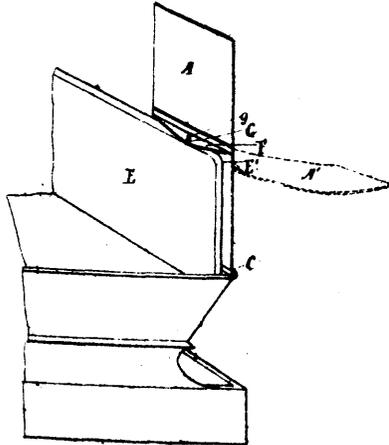
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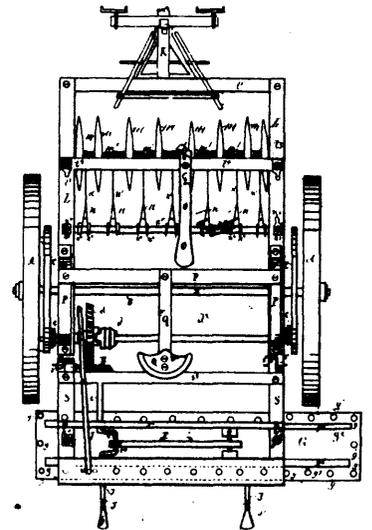
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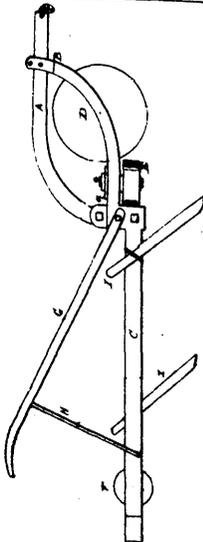
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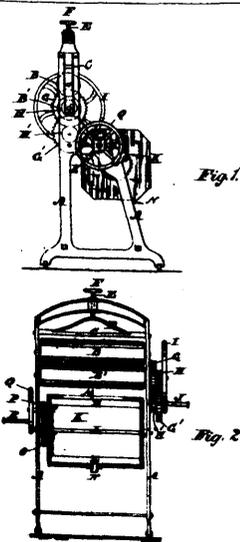
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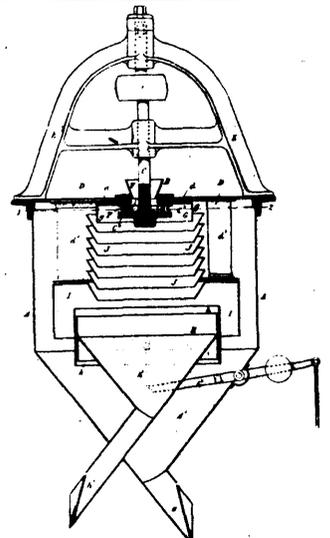
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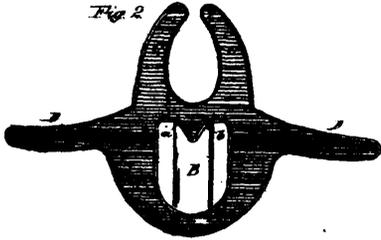
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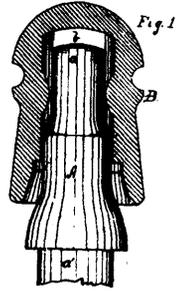


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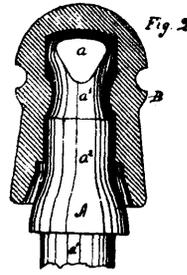


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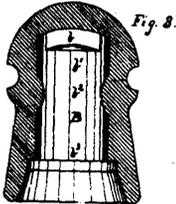


Fig. 3



Fig. 4

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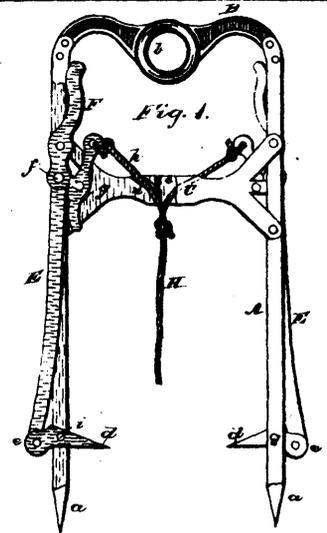
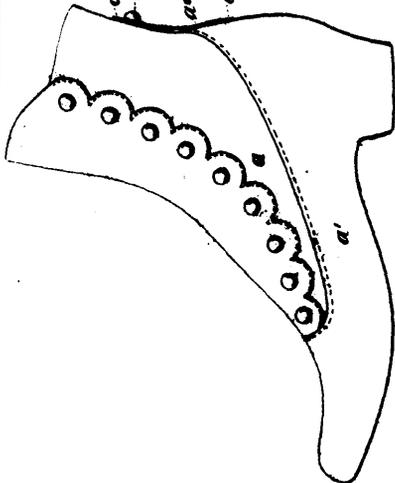
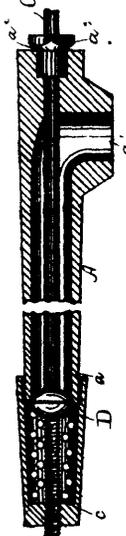


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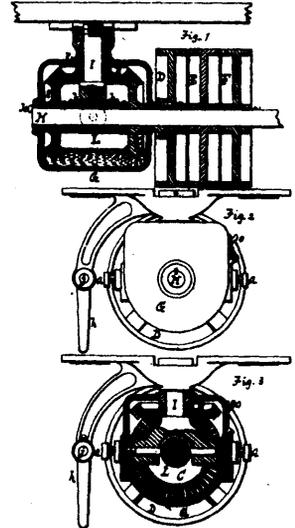
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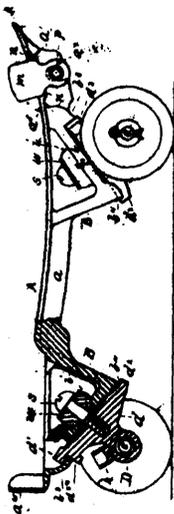
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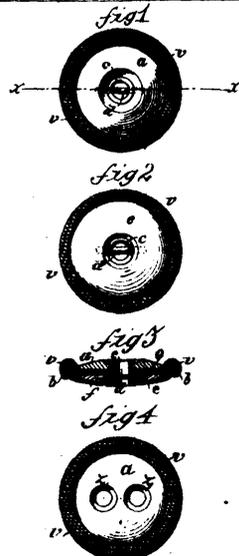
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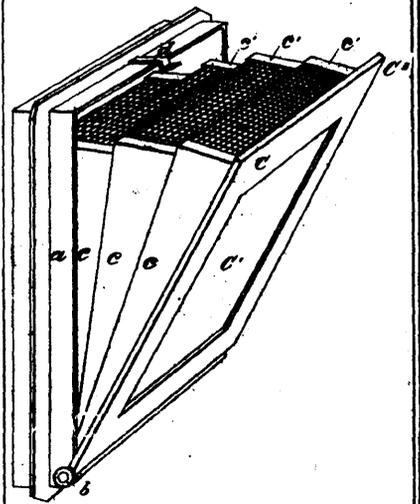
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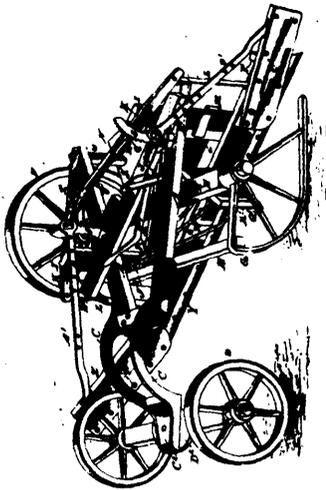
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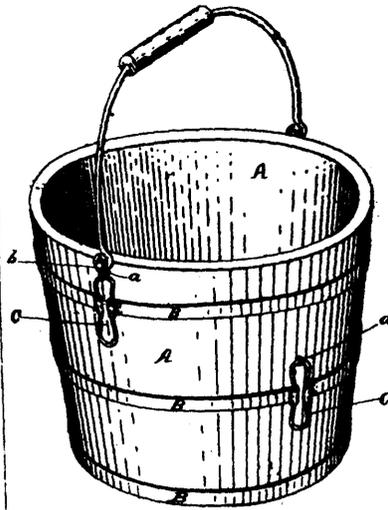
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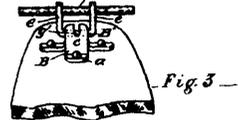
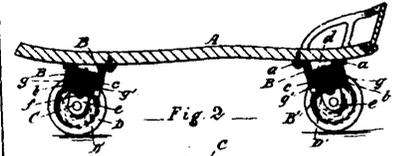
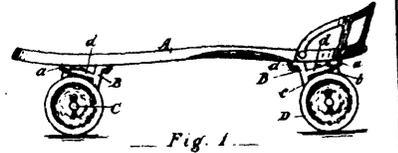
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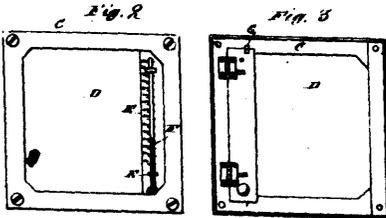
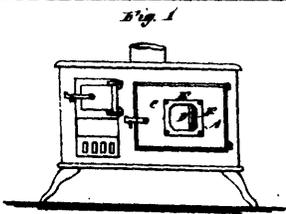
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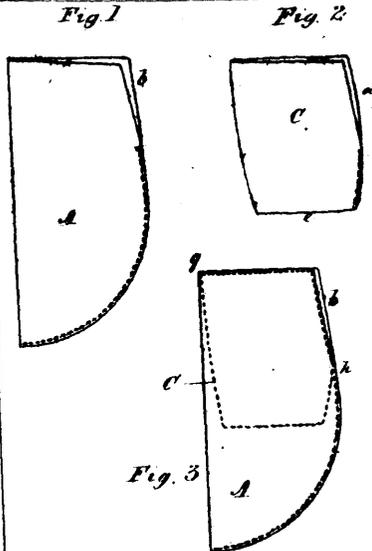
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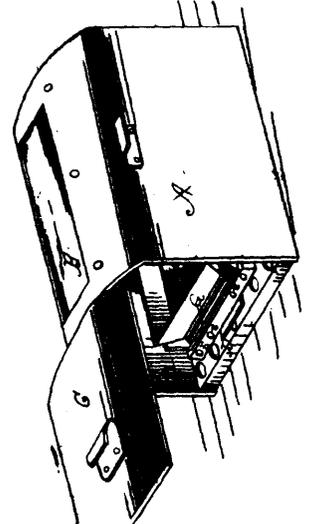
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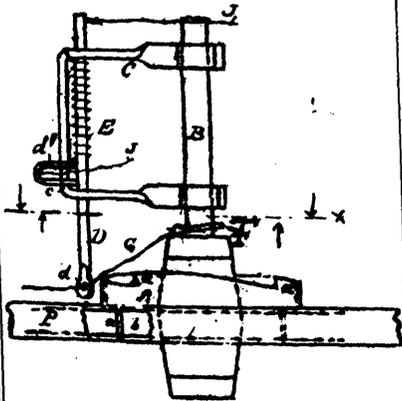
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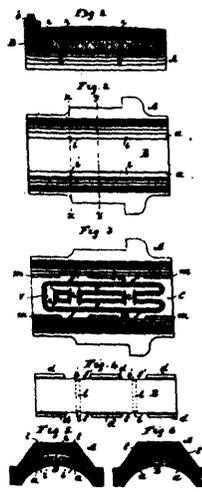
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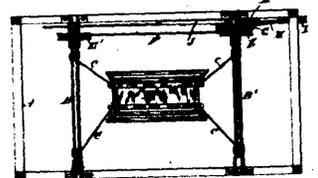
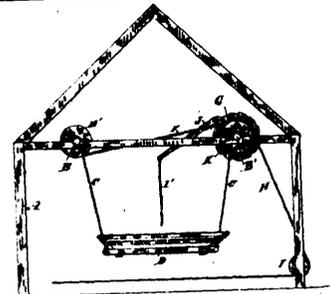
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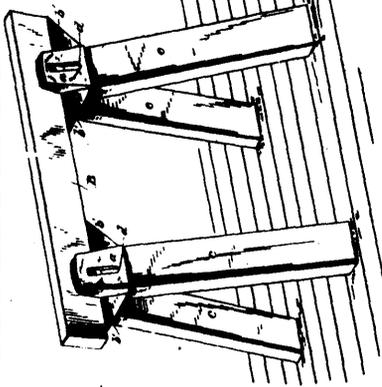
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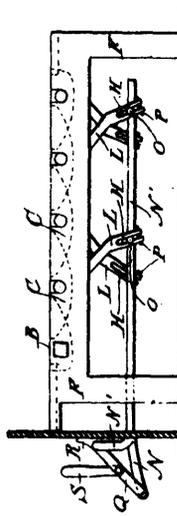
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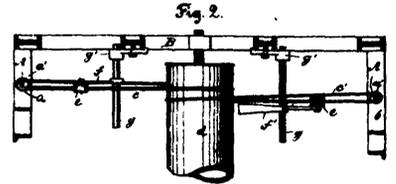
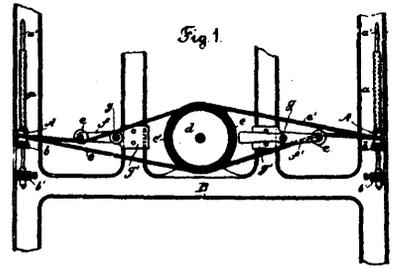
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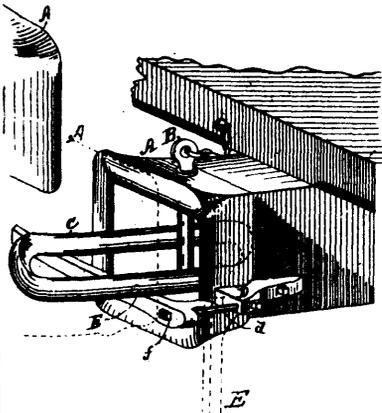
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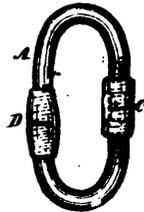


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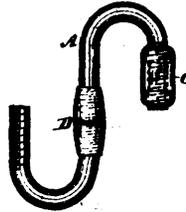


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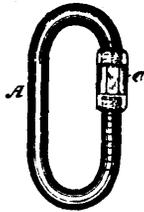


Fig. 2.

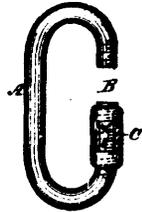
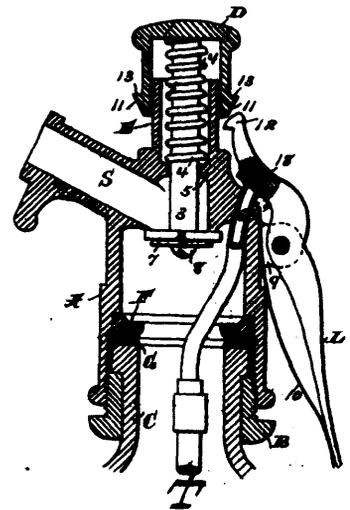
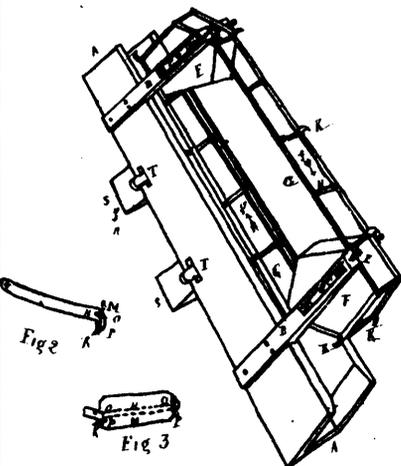


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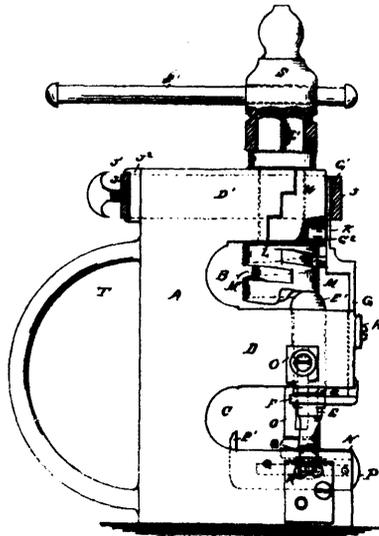
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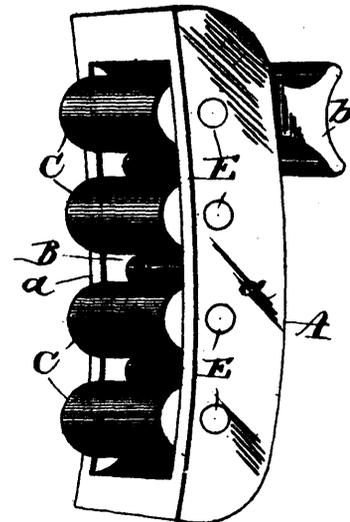
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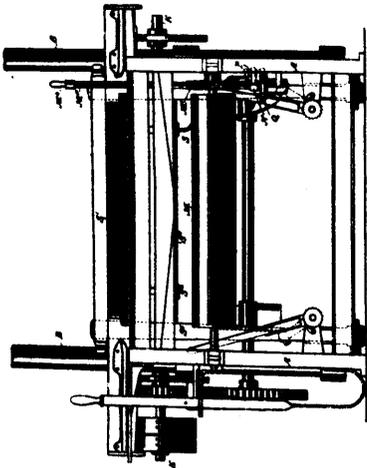
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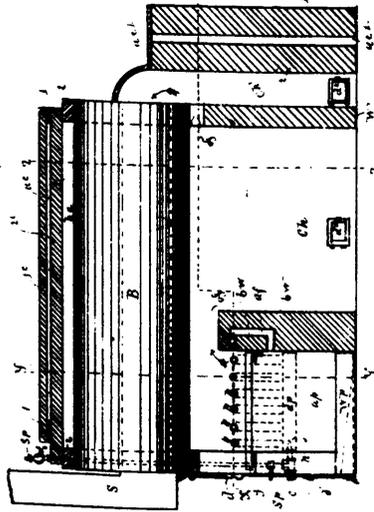
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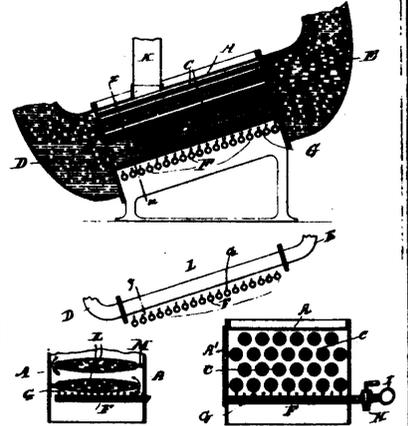
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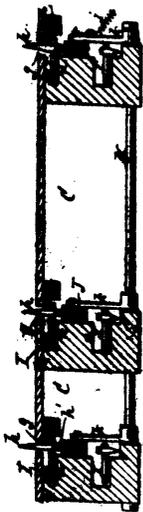
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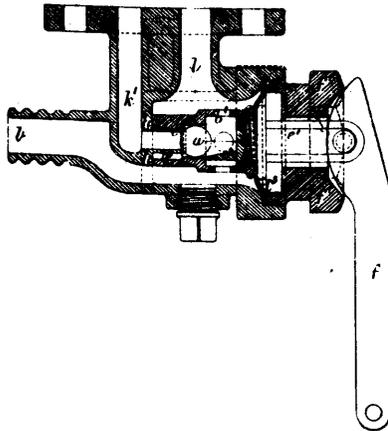
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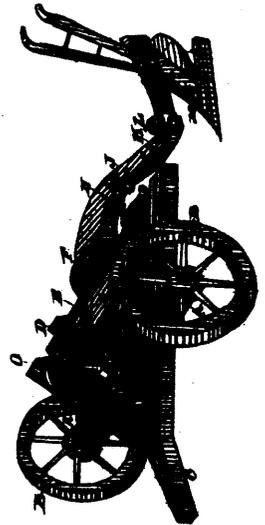
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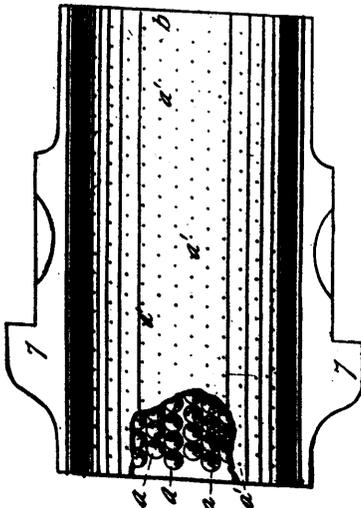
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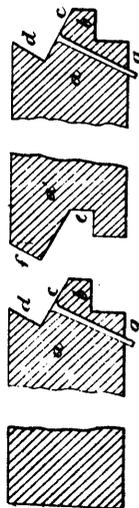
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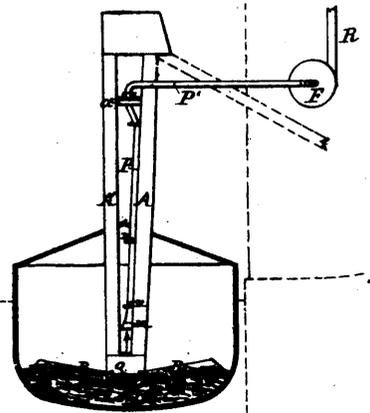
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