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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. 21,346. Vehicle Spring. (*Ressort de Voiture.*)

John P. Callan, Aurora, Ill., U.S., 1st April, 1885; 5 years.

Claim.—1st. The vehicle spring, constructed as described, that is of the two parts or halves A and D, each having a central part substantially straight, terminating at each end in a curve, the parts being joined at their extremities, the upper half having leaves on its under side, and the lower half having leaves on its upper side, the springs being applied to the vehicle with the body or weight connected directly underneath to the lower half D, and with the additional springs underneath the lower half, as shown and described. 2nd. In combination, the described spring, consisting of the parts A, and D, constructed as set forth, the braces 3, and 4, connecting the upper part A, to the axle, the braces 5 connecting the same part to the shafts, A, and the body supported by, or upon, or underneath the lower half D of the spring.

No. 21,347. Rotary Engine. (*Machine Rotatoire.*)

Richard P. Park, South Melbourne, Victoria, 1st April, 1885; 5 years.

Claim.—1st. The rotary adjustable cut-off or expansion valve E, fitted on the engine shaft A, and with or without a governor E, substantially as herein described and explained, and as illustrated in my drawings. 2nd. The rotary adjustable cut-off or expansion valve E, provided with a peripheral groove and a port E, and with the divided metallic ring E, fitted on the engine shaft A, substantially as herein described and explained. 3rd. The metallic arm-piston U, keyed on engine shaft A, in a double flange on one side and concave on the other, and having its end and two edges grooved out to receive strips of metallic packing C, combined with the rotating eccentric ring D, held up by small spiral springs U, substantially as herein described and explained, and as illustrated in my drawings. 4th. The divisional ring D, whose edges abut on the before described arm-piston, and have metallic packing strips D, held forward by spiral springs D, substantially as herein described and explained, and as illustrated in my drawings. 5th. The compensating or wearing pieces K, fitted flush in the cylinder covers A7, and A12, inside said divisional ring D, substantially as and for the purpose herein described and explained, and as illustrated in my drawings. 6th. The arm-piston U, flat on one side and concave on the other, so as to present the same transverse area within the gap of the ring D, at all points of its revolution, combined with the packing D5 in said ring, on the rear side of said piston, and the friction-rollers D7, in said ring at the front side of said piston. 7th. The divisional ring D, whose end edges abut on the before described arm-piston, and are armed with metallic packings, which may both be strips D5, held forward by spiral springs D6, as shown in Fig. 14, or instead one may be provided with a packing roller D7, as shown in Fig. 9, substantially as herein described and explained, and as illustrated in my drawings. 8th. The compensating or wearing pieces K, fitted flush in the cylinder covers A7, and A12, inside said divisional ring D, substantially as and for the purpose described and explained, and as illustrated in my drawings. 9th. The joint piece or pad H, fitted into the recess formed in the bottom of a rotary engine cylinder A, in the manner and for the purpose substantially as herein described and explained, and as illustrated in my drawings. 10th. The combination of the special rotary cut-off chamber valve E, the trigger valve H, operating pin H6, spring H7, gas and air supply pipes H1 and H2, with the cylinder having an outer jacket L, through which a current of cold water

flows and the before-described arm C, piston and divisional ring D, for the purpose of producing a gas engine, substantially as herein described and explained, and as illustrated in Figs. 15, 16, 17 of the drawings. 11th. The governor E5, attached by a tap bolt E6, to the rotary valve E, and controlled by a spiral spring E7, also affixed to valve and governor, all substantially as herein described and explained, and as illustrated in my drawings.

No. 21,348. Laying-out and Embalming Board. (*Table pour Exposer et Embaumer.*)

Noah T. Shaw and William S. Carlisle, Columbus, Ohio, U.S., 1st April, 1885; 5 years.

Claim.—1st. A laying out and embalming board, provided with a perforated or cane-bottom, in combination with a frame or posts erected thereon, to support a curtain or covering. 2nd. A laying out and embalming board of perforated hinged folding sections, each section having hinged folding legs. 3rd. The combination, with a perforated laying out board of a canopy top hinged folding legs and an adjustable head-rest. 4th. The combination, with a laying out board for corpses, of a head-rest consisting of a ring and a semi-ring, the former adjustably pivoted to the ends of the latter, and a vertically adjustable bar to which the semi-ring is adjustably pivoted, substantially as described for the purpose specified. 5th. The head-rest of a laying-out and embalming board, consisted of the pivoted ring a, the pivoted semi-ring b, the vertically adjustable bar c, and the clamp screw d, the several parts adapted for adjustment when arranged for use, as herein set forth. 6th. The combination, with the vertically adjustable bar c, having an eye in its upper end, and the clamping screw d, for said bar, of a head-rest consisting of a ring and a semi-ring pivoted together, as described, the said semi-ring having a cylindrical bearing f, forming a pivoted connection with said bar c, and the clamp screw a, for said semi-ring, whereby said semi-ring may be turned and held at an angle to either side, as set forth. 7th. The combination, with a cooling-board, of a head-rest adapted for adjustment to hold the head in any desired position, substantially as described.

No. 21,349. Manufacture of Compounds of India Rubber, Gutta-Percha, etc. (*Fabrication des Compositions de Caoutchouc, Gutta-Percha, etc.*)

Alfred H. Huth, F.S.A., London, Eng., 1st April, 1885; 15 years.

Claim.—1st. The combination resulting from the admixture of india rubber, gutta-percha, or like material, with resins or gums, and with sulphur, the said resins and gums being so combined as to have a melting temperature corresponding to the curing heat, and the material being cured, as herein set forth. 2nd. The combination, with india rubber, gutta-percha and like materials, of resins or gums, previously freed from volatile oils, whether mixed together or separately, as herein set forth. 3rd. The combination of india rubber, gutta-percha and like materials, with resins or gums freed from volatile oil, and with insulite, as herein set forth. 4th. The combination, with india rubber, gutta-percha and like materials, of sulphur and insulite, as herein set forth.

No. 21,350. Rock-Drill. (*Foret de Mine.*)

Frederic A. Halsey, New York, N. Y., U.S., 1st April, 1885; 5 years.

Claim.—1st. In a steam rock-drill or analogous machine, the cylinder, the elongated circumferentially grooved piston and the described means for distributing the steam to both ends of the cylinder, together with steam-induction passages leading from the said circumferential chamber of the piston, and located, one or all, relatively to the piston, as described, so that the piston, in its other stroke, closes the respective inlet ports before it reaches the limit of its stroke, whereby the steam is used expansively during a portion of the stroke of the piston, as specified. 2nd. In a steam rock-drill or analogous machine, the cylinder and elongated circumferentially grooved piston, and the induction and ejection steam passages, for distributing steam to the cylinder, substantially as described, and the single circumferentially-grooved steam-moved valve, working

in the described chambered valve-chest and co-operating with the piston, to distribute steam to both ends of the cylinder, all constructed and arranged to operate as and for the purpose specified.

3rd. In a steam rock-drill or analogous machine, the cylinder, the elongated circumferentially grooved steam-moved valve in the described valve-chest, and the steam passages or ports located relatively to each other and to the piston, and valve, as described, whereby while said valve operates to control the distribution of steam to the ends of the cylinder, the piston operates directly as a cut-off to the inlet ports, as specified.

4th. The combination, in a steam rock-drill or analogous machine, of the cylinder A, the elongated circumferentially grooved piston B, valve-chest F, single valve G, the steam inlet port I, and the exhaust passage J, which serves both as an induction and eduction port for the lower end of the cylinder, substantially as and for the purpose specified.

5th. In a steam rock-drill or other analogous machine, the combination of the cylinder A, elongated circumferentially grooved piston B, single valve G, valve-chest F, and the steam inlet port E, controlled directly by the said piston and communicating between the steam chest E, formed by the circumferential groove in the piston, and the lower end of the said valve-chest from the said steam-chest in the cylinder, as and for the purpose described.

6th. In a steam rock drill or other analogous machine, the combination of the cylinder A, elongated circumferentially grooved piston B, valve-chest F, with the steam passage A, opening at one end into the upper end of the valve-chest and at the other end into the cylinder, whereby steam is introduced from the steam-chest in the piston, both into the upper end of the cylinder and the upper end of the valve-chest, substantially as and for the purpose described.

7th. The cylinder, provided with the longitudinal groove E², and the supply pipe E¹ communicating therewith, and the elongated piston provided with the circumferential groove, forming a steam-chest in the cylinder, communicating with said groove E², as and for the purpose described.

8th. In a steam rock-drill, or analogous machine, the cylinder, the elongated circumferentially grooved piston and the described means for distributing the steam to the cylinder, the combination, with the piston, of an inlet-passage to conduct steam from the circumferential chamber in the piston to be distributed to the upper end of the cylinder, said passage being governed by the piston, and located relatively thereto, as described, so that the piston in its upward stroke closes said passage before reaching its termination, whereby the steam is used expansively during a portion of the upward stroke, as specified.

9th. In combination with a steam moved valve, means for introducing live steam into one end of the valve-chest, while the other end of the valve-chest is in communication with the end of the main cylinder containing expanded steam, whereby the valve is moved by the excess of the pressure of live steam acting upon one end of it, over the pressure of expanded steam acting upon the other end of it.

10th. In a steam rock-drill, or other analogous machine the cylinder and piston, the passages for distributing steam to the cylinder and the valve governing said passages, together with the exhaust port leading from the upper end of the cylinder and governed by the piston and located relatively thereto, as described, so that the residual steam remaining in the upper end of the cylinder, after the exhaust is confined therein, and retained while the piston makes its upward stroke, and until on its return-stroke the exhaust is again opened, whereby the steam in its compression assists in propelling the piston in its downward stroke, as described.

11th. In a steam rock-drill, or other analogous machine, in which the length of the working-stroke is subject to variation, the combination, with the main piston and a valve governing the inlet-port to the lower end of the cylinder, of a passage for the transmission of steam, whereby said valve is actuated, said passage being constructed as and for the purpose described, and an inlet passage to the upper end of the cylinder, arranged so that it is closed before the piston reaches the limit of its downward stroke, as described.

12th. In a steam rock-drill, or other analogous machine, in which the length of the working-stroke of the piston is subject to variation, the combination, with the main piston, the inlet passages to the cylinder leading from the valve-chest, and the valve governing said passages, of the port e leading to the valve-chest governed by the piston and located relatively thereto, as described, so that it is opened when the piston in its downward stroke reaches the point of limit of the shortest practical working-stroke, which in practice it is intended to be permitted to make, and the inlet-port h² for conducting steam to the upper end of the cylinder which actuates the piston in its downward stroke, whereby the steam is used expansively during a portion of said stroke, all constructed and arranged to operate as and for the purpose specified.

13th. In a steam rock-drill, or analogous machine in which the length of its working strokes is liable to variation, the combination, with a steam-moved valve governing the inlet-port to the lower end of the cylinder, of a passage communicating with the valve-chest for the transmission of steam, by the agency of which the valve is shifted to introduce steam to the lower end of the cylinder, said passage being suitably constructed, as described, to so limit the transmission of steam that between the commencement of the movement through it of the steam whereby the valve is shifted, and the actual shifting of the valve, there shall necessarily occur a determinate delay in which the piston may move beyond the point of the shortest working stroke which in practice it is intended to be permitted to make, and make its longer strokes, as described, by the time steam is introduced into the lower end of the cylinder, as and for the purpose specified.

14th. The method of decreasing the steam-cushioning in the working-stroke of the piston of a rock-drill or other analogous machine, liable to make strokes of variable length, which consists in the application, at the time the piston reaches its shortest practical stroke, of a gradually increased steam-pressure to the steam-moved valve governing the inlet-port to the lower end of the cylinder, whereby between the beginning of said pressure and the shifting by it of the said valve there will necessarily occur a determinate delay, as and for the purpose specified.

15th. In a steam rock-drill, or other analogous machine, wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet-port to the lower end of the cylinder, of an exhaust passage from the upper end of the valve-chest, and an inlet-passage to the lower end of the valve-chest, said inlet-passage being constructed, as de-

cribed, for the the purpose of compelling the gradual admission of steam to the valve-chest, whereby there shall necessarily occur a determinate delay between the commencement of the transmission of steam through said inlet-passage to shift the valve to admit steam to the lower end of the cylinder, and the actual shifting of the valve, as and for the purpose described.

16th. In a steam rock-drill, or other analogous machine, wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet port to the lower end of the valve-chest, the said exhaust-passage being constructed, as described, for the purpose of compelling the gradual exhausting of the steam from said upper end of the valve-chest, whereby there will necessarily occur a determinate delay between the opening of said exhaust passage and the shifting of the valve, as and for the purpose described.

17th. In a steam rock-drill, or other analogous machine, wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet-port to the lower end of the cylinder, of the inlet-passage to the lower end of the valve-chest, both being suitably constructed to conjointly retard the action of the steam to shift the valve, whereby there shall necessarily occur a determinate delay between the commencement of the movement through said passage of the steam to shift the valve to admit steam to the lower end of the cylinder, and the actual shifting of said valve, as and for the purpose described.

18th. In a steam rock-drill, or other analogous machine, the steam-moved valve governing the distribution of steam to the cylinder, and the inlet and exhaust passages to and from said valve, one of said passages, either the inlet or exhaust at one end of the valve chest, being constructed, as described, relatively to the corresponding passage at the other end of said chest, whereby the valve has a slow motion in one direction and a quick motion in the opposite direction, as and for the purpose described.

19th. In a steam rock-drill comprising the main cylinder and piston, the steam-moved valve, the described passages for distributing steam to the cylinder and valve-chest and exhausting steam therefrom, the combination with the piston governing the exhaust-ports from the valve-chest, and the steam-moved valve governing the inlet-port to the lower end of the cylinder, of the inlet passages to the valve-chest that establish open communication between the ends of the valve-chest and the live steam supply, the said inlet passage leading to the lower end of the valve-chest being of comparatively small cross-area or conducting capacity, whereby there necessarily occurs a determinate delay between the opening of the exhaust at the upper end of the valve-chest and the shifting of the valve to open the inlet-port to the lower end of the cylinder in which the piston may move from the point of the shortest working-stroke, which in practice it is intended to be permitted to make, to the termination of its longer strokes, by the time the steam is admitted to the lower end of the cylinder.

No. 21,351. Fence. (*Clôture.*)

Christian Hanika, Springfield, Ohio, U.S., 1st April, 1885: 5 years.

Claim.—1st. The combination, with a fence picket and supporting rail or rails, of one or more ornaments or connecting links adapted to encircle said picket, and being provided with hook-shaped projections to hook over and under the supporting rail, said hooks being central with relation to the central longitudinal line of the picket, said hooks thereby forming a pivotal connection between the picket and rail, and allowing them to be adjusted at an angle with relation to each other, substantially as and for the purpose described.

2nd. The combination, in a fence provided with wooden pickets, iron supporting-rails and connecting links or ornaments, as described, of a locking-plate provided with a screw or spike-shaped projection, adapted to be screwed or driven into the picket, said locking-plate being provided with arms or lugs adapted to engage with the picket holding links, substantially as and for the purpose set forth.

3rd. The combination, in a fence having wooden pickets and iron or metallic supporting-rails, of ornamental links adapted to encircle said pickets and hook over and under the said rail, and a locking-plate adapted to be driven into the picket between the said connecting links, and being provided with arms or lugs to engage the said links, and a central projection to prevent the links being accidentally displaced, substantially as described.

4th. The combination, with the fence picket and supporting-rail, of two coupling links adjacent to one another at lines above and below the supporting-rail, said links being provided with loops at one end adapted to encircle the picket and having projecting hooked arms extending out in a line with the center of said loops, and in a line, or substantially so, with the central longitudinal line of said picket, the hook of one link extending over and the hook of the opposite link extending under the supporting rail, and a locking-plate adapted to be driven into the picket between the links and having arms adapted to engage with the said links to lock them securely together, substantially as described.

5th. The combination, with a fence having wooden pickets, of a metallic supporting rail having notches cut into it, and connecting links having centrally projecting hooked arms adapted to engage with said notches, which notches prevents horizontal displacement of said hooked arms, substantially as described.

6th. An improved coupling link for fences, one end of which is shaped to correspond with the shaped of the picket in cross section, and having hooks to engage with the supporting rail, substantially as and for the purpose described.

No. 21,352 Vehicle Wheel. (*Roue de Voiture.*)

Melvin L. Smith, Lockport, and Jonas Terry, Batavia, N.Y., U.S., 1st April, 1885: 5 years.

Claim.—1st. The axle-box A, and the wooden sleeve B, having a flange a, in combination with the collars C, C, having the flanges D, D, and annular inner flanges E, E, forming the annular spaces F, F, the nuts H, spokes G, and collars I, I, substantially as and for the purpose shown and described.

2nd. The spokes G, having the heads e, in combination with the spoke-socket K, having the socket f, and clips side, g, and the telly having the holes h, bored deeper than the socket and spoke-head, substantially as and for the purpose shown and described.

No. 21,353. Head and Tail Saw Mill Dog.*(Clameau de Scierie pour Tête et Bas.)*

Williams R. Parsons, Harriston, (Assignee of Oron B. Thompson, Melancthon,) Ont., 1st April, 1885; 5 years.

Claim.—1st. The combination of the steel chisels, *b, b*, and the chisel bars, Figs. 2 and 3, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the steel chise *s, s*, and the chisel bars, Figs. 2 and 3, of the ratchets *a, a*, and flanged pinions *d, d, d*, substantially as and for the purpose hereinbefore set forth.

No. 21,354. Car Door Hanger.*(Coulisse de Porte de Char.)*

Edward Y. Moore, Evanston, Ill., U.S., 1st April, 1885; 5 years.

Claim.—1st. The combination, with the car-door, its rollers and rail, of the horizontal roller levers, the vertical hand-lever, and means by which the vertical lever is connected with the inner ends of the horizontal levers, substantially as described. 2nd. In a car-door hanger, a roller or wheel operated through connecting devices by the act of opening and closing the door, in combination with a stop or rest connected with roller-support and co-acting with the wheel or roller, for opening and closing the door readily, and holding it stationary while at rest, substantially as described. 3rd. In a car-door hanger, a roller or wheel carried by a sliding plate operated through connecting devices by the act of opening and closing the door, in combination with a stop or rest connected with the roller-support and co-acting with the wheel or roller, for bringing the roller or wheel into engagement with the track or guide-rail, and keeping the wheel or roller from engagement with the track or guide rail when the door is at rest, substantially as and for the purpose set forth. 4th. In a car-door hanger, a sliding plate *a* carrying a wheel or roller *b*, and a stop or rest *c* co-acting with the roller, in combination with a lever located sliding door and connected with the sliding plate, whereby the wheel or roller will be brought into engagement with the track or guide-rail as the door is opened or closed, and will be clear of such track or guide-rail when the door is at rest, substantially as and for the purposes specified. 5th. In a car-door hanger, a sliding plate *a*, carrying a roller or wheel *b*, and a stop or rest *c*, connected with the roller-support and co-acting with a lever *p* pivotally attached to the door at its centre, and a connecting arm or link *e* for depressing the plate and bringing the roller or wheel into contact with the track or guide-rail, substantially as specified. 6th. In a car-door hanger, a roller or wheel, operated through connecting devices by the act of opening and closing the door, in combination with a bevelled stop or rest connected with the roller support, and co-acting with the roller, for opening and closing the door readily and holding it stationary while at rest, substantially as described. 7th. In a car-door hanger, a roller or wheel operated through connecting devices by the act of opening and closing the door, in combination with a stop or rest connected with door and a guide rail or track, connected with car and arranged to support the said stop or rest, a bearing surface between the said rail and said stop or rest being bevelled, substantially as and for the purposes specified.

No. 21,355. Spool Holder. (Porte-Bobine.)

Edward New, Hamilton, Ont., 1st April, 1885; 5 years.

Claim.—1st. In a spool holder *a*, cylinder *B* formed with rows of circular horizontal recesses *d*, the same being slightly inclined downwards to the rear to prevent the spools from falling out when the cylinder is revolved, substantially as specified. 2nd. In a spool holder, the combination of the recessed cylinder *B*, bottom plate *C* and top plate *D*, substantially as specified. 3rd. In combination with the recessed cylinder *B*, bottom plate *C* and top plate *D*, of the half circular shaped doors *E, E*, the same being made to slide in grooves *d, e, r, s* of said plates, substantially as specified. 4th. In combination, with the cylinder *B*, bottom plate *C* and top plate *D*, of the series of bands *f*, secured together with strips *g* and cords *i*, eyes *j, k, l*, and made to operate for a covering of the cylinder, substantially as specified.

No. 21,356. Operating Elevator Doors.*(Manœuvre des Portes d'Ascenseurs.)*

Cyrus W. Baldwin, Yonkers, N.Y., U.S., 2nd April, 1885; 5 years.

Claim.—1st. A stop device for elevators, consisting of a clamp arranged upon the cage in proximity to the hand rope, and appliances constructed and arranged to automatically operate said device and clutch the rope whenever the cage approaches an open door, as set forth. 2nd. The combination, in an elevator, of a clamp upon the cage, and devices connected to be operated by the door, and arranged within the well to strike the clamping device and insure the clutching of the rope when a door opposite the cage is opened, as specified. 3rd. The combination, with the cage and its rope, of a case having inclined faces *y, y*, a wheel or roller arranged between the rope and said faces, and appliances whereby to throw the roller to or from the rope, according to the position of the door opposite which the cage is travelling, substantially as set forth. 4th. The combination, with the case *F* and its opening *x* and inclined faces *y, y* jointed loosely together, the pulley *b* carried by the rod *d* and springs *e, e*, proportioned as set forth. 5th. The combination, with the cage and its clamp and with the doors of the well, of movable plates *G* arranged adjacent to the doors in the well, and devices whereby a plate is brought into position to be struck by the arm of the clamp when a door is open, substantially as set forth. 6th. The combination, with the doors leading to the well, and arranged to be opened only from within the cage, of self-latching catches within the well, and a rib upon the cage arranged to unlatch each catch as the cage is brought opposite the door, substantially as specified. 7th. The combination, with the case, of a supplemental valve operating cable and ropes *L, L*, or their equivalents, leading therefrom in different directions and extending to the landings, substantially as described. 8th. The combination, with the ropes *L, L*, of weights formed with

pulls, as specified. 9th. The combination, with the pull weights *M*, of elastic rings encircling the bodies, as specified.

No. 21,357. Hay Carrier and Fork.*(Fourche et Monte-Foin.)*

Gelon H. Palmer, Ancaster, Ont., 2nd April, 1885; 5 years.

Claim.—1st. In a hay carrier and fork, a pivoted arm *C* constructed in the form shown, with projections *a, b*, recess *c*, catch *d* and link *J*, substantially as and for the purposes specified. 2nd. In combination, with the arm *C* and frame *A*, of the lock button *G* and lug *t*, substantially as and for the purpose shown. 3rd. In combination, with the frame *A*, arm *C* and lock button *G*, of the stop block *E* on the rod *F*, and provided with a projecting flange *g* to operate the lock button and arm *C*, substantially as specified. 4th. The combination, with the carrier *A*, of the guide-blocks *H, I*, and swell *I* of the carrier frame, to form a bell mouth to receive the cylindrical-shaped head of the fork pulley-block *L*, substantially as specified. 5th. In combination, with the fork *M* of the connecting link trip *t*, the lower end secured to the inner lines *u*, and the upper part passing through the lever *v* and terminating in an eye for securing a trip rope *r* thereto, substantially as specified. 6th. The combination, with the pulley-block *L* and pivoted lock arm *C* of the cylindrical shaped head *p* and eye *r*, substantially as and for the purpose specified. 7th. In combination, with the fork *M*, and link *t*, of the lever *v* and its adjusting set screw *x*, substantially as and for the purpose specified. 8th. The combination of the solid head *s* of the fork *M* and jaws *o*, of the fork pulley-block *L*, the head being bolted to the jaws, to prevent the fork from falling or becoming detached from the fork pulley-block, substantially as specified.

No. 21,358. Car-Coupling. (Accouplage de Chars.)

David L. Richards, St. John, N.B., 2nd April, 1885; 5 years.

Claim.—1st. The draw-bar, notched or recessed in the abutment of its mouth, and connected to the coupling link by a chain attached thereto, and to one side of the draw-bar, the notch or recess in the abutment of the mouth of the draw-bar being for the chain to pass through, and to prevent such chain from being jammed when the draw-bar may abut against another draw-bar in the process of shackling together their cars, all being substantially as explained. 2nd. The draw-bar, notched or recessed in each of the opposite upright parts of the abutment of its mouth, and connected to the coupling link by a chain attached thereto and to one side of the draw-bar, such draw-bar also having at its opposite side an eye for connecting the chain thereto when desired.

No. 21,359. Electric Lamp Holder.*(Monture-Support de Lampe Electrique.)*

Alfred Haid, Rahway, N. J., U. S., 2nd April, 1885; 5 years.

Claim.—1st. A tubular holder for an incandescent lamp, formed in sections, adapted to be united in the manner described, in combination with fixed terminals in one section and movable terminals in the other, connected with the battery wires, and arranged to be joined with the fixed terminals and held in contact therewith by uniting the two sections together, substantially as set forth. 2nd. A tubular holder for an incandescent lamp, formed in two sections, adapted to be united, in the manner described, in combination with metal strips *D, E*, secured in one section, and springs *P, P*, secured to an insulating plug and connected with the battery wires and fitting loosely within the other section, these parts being so constructed that the springs *P, P*, when joined to the strips *D, E*, are held in contact therewith by uniting the two sections of the holder, as and for the purpose set forth. 3rd. The combination, with the tubular lamp holder, having a slot, as *K*, of a lamp and base adapted to be inserted in said holder, metal strips for making contact with the lamp terminals and connected with the wires from a battery, as set forth. 4th. The combination, with a tubular lamp holder, of the insulating strip *C*, the metal strips *D, E, F*, secured to opposite sides of the same and spread to form terminals in the portion of the holder formed as a socket, and the push button *G* in the side of the holder for forcing the normally separated ends of strips *E, F*, into contact, as and for the purpose set forth.

No. 21,360. Creamer. (Garde-Lait.)

George W. Millner, Charlottetown, P. E. I., 2nd April, 1885; 5 years.

Claim.—The combination, with the can *A*, provided with a packing box *D* and packing *C*, of a tube *B* passing through the box and packing, whereby the tube may be depressed in the can and be removable therefrom, as and for the purposes set forth.

No. 21,361. Load Lifter. (Monte Charge.)

William Lucas, Markdale, Ont., 2nd April, 1885; 5 years.

Claim.—1st. A shaft *A*, carried in suitable bearings at an elevated point in a barn or other building, and having attached to it the ropes *B* and *D*, the sheave-pulleys *E* and bar or scantling *F*, in combination with the grooved pulley *G*, having wound upon it the rope *H*, which is carried round the grooved rollers *J*, and *K*, and the pivoted block *L* contained within the box *I*, the whole being arranged and operating substantially as and for the purpose specified. 2nd. As an improved clutch, the rollers, *J* and *K*, having ratchet teeth *m*, in combination with the pivoted block *L*, carried on the pawls *M*, the whole being arranged end operating substantially as and for the purpose specified. 3rd. The ropes *B* wound round sheaves on the shaft *A*, and arranged to be connected at their ends to the body *C* and the ropes *D*, also wound round sheaves on the shaft *A*, and connected to the scantling *F*, which is longer than the width of the body *C*, in combination with the rope *H* wound round the pulley *G*, and controlled by a frictional device, substantially as and for the purposes described.

No. 21,362. Doubletree Clevis.*(Volée de Palonnier.)*

Herman M. Zinn, Bleinheim, Ont., 2d April, 1885; 5 years.

Claim.—The combination of the projection C, the washer figure 2, together with the slots A and B, substantially as and for the purpose hereinbefore set forth.

No. 21,363. Direct Acting Engine.*(Machine à Effet Directe.)*

Charles C. Worthington, Irvington, N.Y., U.S., 2nd April, 1885; 5 years.

Claim.—1st. The combination, with a main cylinder and piston, of one or more compensating cylinders and piston, which are arranged to act in opposition to said main piston, during the first part of its stroke, and in conjunction therewith during the last part of its stroke, a tank communicating with said compensating cylinder or cylinders, and an air-compressing pump which is operated by the engine and communicates with said tank, substantially as described. 2nd. The combination, with a main cylinder and piston, of one or more compensating cylinders and pistons, which are arranged to act in opposition to said main piston during the first part of its stroke, and in conjunction therewith during the last part of its stroke, a tank communicating with said compensating cylinder or cylinders, and an air-compressing pump which communicates with said tank and is operated from the engine, so as to make two strokes to each stroke of the engine, substantially as described. 3rd. In combination, with the main cylinders and pistons, forming the two sides of a duplex-engine, and provided with means by which each side actuates the valves of the other, of one or more compensating cylinders and pistons, arranged to operate in connection with each side of said engine and acting in opposition to said main pistons during the first part of the stroke, and in conjunction therewith during the last part of the stroke, a tank communicating with said compensating cylinders, and an air-compressing pump which communicates with said tank, and is operated from the engine so as to make two strokes to each stroke of the engine operating it, substantially as described. 5th. The combination, with a main cylinder and piston and one or more compensating cylinders and pistons, arranged to operate in connection therewith, of a tank communicating with said compensating cylinder or cylinders, an air-compressing pump which is operated by the engine and communicates with said tank, and means by which the position of the piston or plunger of said pump can be varied so as to regulate the amount of air forced into the tank at each stroke, substantially as described.

No. 21,364. Steam Boiler. (Chaudière à Vapeur.)

Milton W. Hazelton, New York, N.Y., U.S., 2nd April, 1885; 5 years.

Claim.—1st. The combination, with the steam chamber of a boiler and the steam delivery pipe, closed at its inner end, of a series of tubes with closed outer ends radiating from the steam chamber into a hot air chamber, and a series of smaller open-ended tubes radiating from the steam-delivery pipe into the said steam chamber tubes, substantially as and for the purposes set forth. 2nd. The method, substantially as herein described, of drying or superheating steam, consisting in subdividing the mass of steam into many distinct and individual columns or jets, and exposing them to heat by causing the steam from the steam-chamber to enter a series of tubes radiating therefrom, and then to pass into tubes that radiate from the steam delivery pipe into the steam chamber tubes and thence into the steam delivery pipe, said steam chamber, and the tubes radiating therefrom being exposed to heat in a hot-air chamber, as set forth.

No. 21,365. Hay-Cutter. (Coupe Paille.)

Charles A. Clark, St. John, N.B., 2nd April, 1885; 5 years.

Claim.—The knives L, L', and the method of connecting the frame-work containing the knives with the crank-wheel, and also the combination of the knives and frame-work with the cog-wheels and crank wheel, as above described.

No. 21,366. Apparatus for the Purification of Water. (Appareil pour la Purification de l'Eau.)

Albert R. Leeds, Hoboken, N.J., U.S., 2nd April, 1885; 15 years

Claim.—1st. In an apparatus for the purification of water, the water supply pipe A, receiving water under pressure from any suitable source, and the air-supply pipe B, receiving air under pressure from any suitable source and a conducting main C, through which the communicating air and water under pressure and in motion will be conveyed to a suitable reservoir or point of discharge, substantially as and for the purpose hereinbefore described. 2nd. In an apparatus for the purification of water, the combination of a water supply pipe A, provided with a check valve a, and air-supply pipe B, provided with a check valve b, a conducting main C, and a reservoir d, substantially as and for the purposes hereinbefore described. 3rd. In an apparatus for the purification of water, the water supply pipe A, and an air-supply pipe B, with a conducting main C, having, at suitable intervals in its length, a series of pressure chambers D, E, and F, substantially as and for the purpose hereinbefore described.

No. 21,367. Process for the Purification of Water. (Procédé pour la Purification de l'Eau.)

Albert R. Leeds, Hoboken, N.J., U.S., 2nd April, 1885; 15 years.

Claim.—1st. In the art of purifying water, the process of saturating water with oxygen or ozone, consisting in introducing into water while in motion under pressure, compressed air also in motion, substantially as hereinbefore described. 2nd. In the art of purifying water, the process of saturating it with oxygen or ozone by causing to come in contact, while under artificial pressure and in motion, with compressed air, in a system of pipes with or without pressure chambers along its length, permitting both air and water to enter under pressure to move through said system while under pressure, and to be discharged into a suitable reservoir, substantially as hereinbefore described.

No. 21,368. Lamp. (Lampe.)

William H. Harvey, Medford, Ont., 2nd April, 1885; 5 years.

Claim.—1st. The combination, in lamps, of the cylindrical air-chamber A, having opening F, E, and collar D, enclosing wick case B, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the suspended isolated wick case B, with the cylindrical air-chamber A, substantially as and for the purpose hereinbefore set forth.

No. 21,369. Apparatus for Justifying and Stereotyping Matrix Strips. (Appareil pour Justifier et Stéréotyper les Bandes des Matrices.)

Mirritt H. Dement, Chicago, Ill., U.S., 2nd April, 1885; 5 years.

Claim.—1st. The combination of the grooved bars A, with the movable covers F, substantially as and for the purposes shown and described. 2nd. The combination of the bars A, plate G, having bars F, and plate a, having transverse ridges c, substantially as and for the purposes shown and described. 3rd. The combination of the bars, provided with bevelled tongues f, and the matrix strip E, provided with a bevelled edge, substantially as and for the purposes shown and described. 4th. The combination of the plate d, strips E, and grooved plate a, substantially as and for the purposes shown and described. 5th. The combination of the grooved plate I, stops Q, and R, and pedal, substantially as and for the purposes shown and described.

No. 21,370. Manufacture of Solidified Compound Metals. (Fabrication des Métaux Solides Composés.)

Ferdinand E. Cunda, New York, N.Y., U.S., 2nd April; 5 years.

Claim.—1st. A mixture or compound composed of two or more ground, pulverized, granulated or otherwise divided metals, or of two or more alloys, or of one or more metals with one or more alloys, solid at ordinary atmospheric temperature, mixed in any desired proportions, such mixture or compound being in a loose form or condition, as and for the purposes specified. 2d. A mixture or compound, composed of two or more ground, pulverized, granulated or otherwise divided metals, or of two or more alloys, or of one or more metals with one or more alloys, solid at ordinary atmospheric temperature, any or all of which are mixed in any desired proportions, such mixture or compound being in a loose form or condition, as and for the uses mentioned. 3rd. A solidified compound metal composed of two or more metals or two or more alloys, solid at ordinary atmospheric temperature, in any desired proportions, soldered or welded together and forming one compact mass, substantially as and for the purposes mentioned. 4th. The method of producing the within described material or compound, which consists in first grinding pulverized granulating, or otherwise dividing into particles, two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, and mixing in any desired proportions, substantially as described. 5th. The method, herein described, of making a material or compound from two or more metals or two or more alloys, or from one or more metals with one or more alloys, solid at ordinary atmospheric temperature, which consists in first grinding pulverized granulating or otherwise dividing into particles the metals or alloys, and then coating or covering the same with other metals or alloys melting at lower degrees of temperature, substantially as herein specified. 6th. The method, herein described, of making a solidified compound metal, which consists of first grinding, pulverizing, granulating or otherwise dividing two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, then subjecting the whole to heat sufficient to bring some or all of the metals to a welding or soldering state, and afterward pressing the same while hot to perfect the welding or soldering and to give the mass or compound metal compactness, solidity, and shape, substantially as set forth. 7th. The method, herein described, of making a solidified compound metal, which consists of first grinding, granulating or otherwise dividing two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, then subjecting the whole to heat sufficient to bring some or all of the metals to a welding or soldering state, and afterwards pressing the same while hot to perfect the welding or soldering and to give the mass or compound metal compactness, solidity, and shape, substantially as set forth. 8th. The method, herein described, of making a solidified compound metal, which consists in first grinding, pulverizing, granulating or otherwise dividing into particles two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, then coating one or more of said metals or alloys with other metals or alloys melting at lower degrees of temperature, the subjecting the whole to heat sufficient to bring the metals, or alloys, or the coating thereof to a soldering or welding state, and afterward pressing the same while

hot to perfect the welding or soldering and to give the mass or compound metal compactness, solidity, and shape substantially as herein set forth. 9th. The method, herein described, of making a solidified compound metal, which consists in first grinding, pulverizing, granulating or otherwise dividing into particles two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, with the addition of a suitable flux or fluxes, then coating one or more of said metals or alloys, with other metals or alloys, melting at lower degrees of temperature, then subjecting the whole to heat sufficient to bring the metals or alloys or the coating thereof to a soldering or welding state, and afterwards pressing the same while hot to perfect the welding or soldering and to give the mass or compound metal compactness, solidity, and shape, substantially as herein set forth. 10th. The method, herein described, of making a solidified compound metal, which consists in first grinding, pulverizing, granulating, or otherwise dividing into particles two or more metals or two or more alloys, or one or more metals with one or more alloys, solid at ordinary atmospheric temperature, with or without a suitable flux or fluxes, then if desired coating one or more of said metals or alloys with other metals or alloys, melting at lower degrees of temperature, then subjecting the whole in the die or mold to heat sufficient to bring the metals or alloys or the coating thereof, if coated, to a soldering or welding state, and afterward pressing the same while hot to perfect the soldering or welding and to give the mass compound metal compactness, solidity, and shape, substantially as herein described.

No 21,371. Manufacture and Preparation of Butter Tubs. (*Fabrication et Préparation des Tinettes.*)

George H. Pierce, Cleveland, Que., 2nd April, 1885; 5 years.

Claim.—1st. The formation, on the interior of a butter tub, of a film of pure wood fibre, substantially in the manner hereinbefore set forth. 2nd. The application of paraffine, to the interior of a butter tub, when so prepared for the purposes and substantially in the manner hereinbefore set forth.

No. 21,372. Machine for Cutting Sheet Metal in Oval and other forms. (*Machine à Tailler la Tôle en Oval ou autres Formes.*)

Erskim A. Coles and Frederick W. Troemner, Philadelphie, Penn., U.S., 2nd April, 1885; 5 years.

Claim.—1st. A sliding carriage, having cutters attached thereto, a former or shaper engaging with said carriage, and a rotary holder for the metal, located adjacent to the cutters, combined and operating substantially as and for the purpose set forth. 2nd. A machine for cutting metal into oval form, having cutters which are attached to a yoke or support, which has pivoted motions on a sustaining carriage, substantially as and for the purpose set forth. 3rd. A carriage supporting a pivotal yoke, and cutters connected with said yoke, in combination with a shaft carrying a holder for the metal, a former or shaper controlling the action of the cutters, and a cam imparting motions to the pivotal yoke, substantially as and for the purpose set forth. 4th. The holder, former or shaper cutters and carriage, in combination with the yoke H, arm K, lever L, with stud or roller L¹ and cam M, substantially as and for the purpose set forth. 5th. The holder consisting of heads C, the two part shaft B, the spring D and lever D¹, substantially as and for the purpose set forth. 6th. A machine for cutting sheet metal in oval and irregular forms, constructed and operating substantially as herein described.

No. 21,273. Stump and Stone Lifter. (*Arrache Sauche Epierreur.*)

Gilbert Morier, Stuckley Sud, Que., 2nd April, 1885; 5 years.

Réclame.—1o. Dans un arrache-souches et épierreur combiné, la combinaison du bâti D K J, avec les barres d'attelage X, Y, les roucs A, A¹ et les patins B, B¹ et les étois G, G¹, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées. 2o. Dans un arrache-souches et épierreur combiné, la combinaison du bâti D K J et des essieux partiels C, C¹, avec le tambour L M N, la chaîne O et le crochet P, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées. 3o. Dans un arrache-souches et épierreur combiné, la combinaison du tambour L M N, avec la chaîne O, le double crochet P et le plateau S, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 21,374. Medicinal Compound. (*Composition Médicinale.*)

Christ Werner, Buffalo, N.Y., U.S., 2nd April, 1885; 5 years.

Claim.—The medicinal compound consisting essentially of elecampane, Iceland-moss, comfrey, spiguel, loaf-sugar or rock-candy, cauc-syrup, goose-uit and brandy, combined substantially in the manner and proportions hereinbefore stated.

No. 21,375. Front Gear for Waggon. (*Avant-Train pour Wagons.*)

George T. Wilson, Lowville, N.Y., U.S., 2nd April, 1885; 5 years.

Claim.—1st. The combination, with the parts H, of the reach the head-block F and the lower part N of the spring, of the bars S bent upwardly beyond the head-block at their forward part to form a support for the spring, and their curve rearward part resting upon reach portions H, H, and the plate P on the under side of the head-block, provided with the rearward curved arms Q fitting upon the under sides of reach portions H, H, and bolts passing through arms Q, S and reach portions H, for securing them together, substantially as set forth. 2nd. In combination with the reach head-block and spring mounted on the latter, the curved bar S formed with an extension resting against and projecting above the head-block, to sustain the

spring in the position, substantially as set forth. 3rd. In combination with the reach, the head-block and spring mounted on the latter, the arm Q made interial with the bottom plate P of the head-block, and extending forward under the reach to form a shank, the bar S made separate from the bottom plate P and formed with an extension resting against the back of and projecting above the head-block to protect the spring, and having a shank resting on the top of the reach, and an attaching-bolt T passing horizontally through the extension of bar S and the head-block, substantially as set forth.

No. 21,376. Mode of Hoisting, Securing and Discharging an Anchor. (*Mode de Hisser, Bosser et Lâcher un Ancre.*)

Rufus P. Trefry, Bridgewater, N.S., 7th April, 1885; (Reissue of patent No. 20,605.)

Claim.—1st. In an anchor supporting and tripper the angular plate provided with a concavity or cavity extending across said plate, and having an abrupt oblique rear surface, substantially as and for the purpose set forth. 2nd. In an anchor supporter and tripper, the plate having an oblique or diagonal shoulder or flange, crossing the plate from side to side, the base of said shoulder or flange, touching a sloping or inclined surface of said plate, substantially as and for the purpose set forth. 3rd. In an anchor supporter and tripper, the plate having an oblique shoulder or flange extending transversely from side to side of said plate, said plate also having a cavity or concavity in front of said shoulder or flange, substantially as and for the purpose specified.

No. 21,377. Fence Post. (*Pieux de Clôture.*)

John W. Davey, Kingston, Ont., 7th April, 1885; 5 years.

Claim. A fence post composed of a triangular base A of rod iron, and a pyramidal frame B, for the attachment of the fence wire C, as set forth.

No. 21,378. Tubular Seamless Collar Pad. (*Collier de Cheval Tubulaire sans Couture.*)

George Rumpel, (Assignee of Joseph Carr,) Berlin, Ont., 7th April 1885; 5 years.

Claim.—As a new article of manufacture, a tubular sweat collar pad made integrally of felt without seam, and worked a tree or stretcher to the proper shape, substantially as shown and described and set forth.

No. 21,379. Device for Preventing Incrustations in Steam Boilers. (*Appareil pour Empêcher les Incrustations dans les Chaudières à Vapeur.*)

Harrison D. Boogs, Jr., (Assignee of Edward J. Hoffman,) Sioux City, Iowa, U.S., 7th April, 1885; 5 years.

Claim.—1st. A case or receptacle adapted to contain compound or composition for preventing incrustation of steam-boilers, consisting of a closed casing of suitable shape, containing one or more inside chambers or compartments adapted to contain the compound, and provided with wires having their end projecting through apertures in the heads of the casing, and adapted to feed the contents of the same gradually through the apertures, substantially as and for the purpose shown and set forth. 2d. The apparatus for preventing the incrustation of steam-boilers, consisting of a box or casing A, of suitable shape, divided longitudinally by diaphragms B¹ into a central compartment C, and outside compartments D, and provided with coiled spring E and twisted wires H, projecting out through apertures in the heads of the casing or receptacle, constructed and combined substantially as and for the purpose herein shown and set forth. 3rd. The apparatus for preventing the incrustation of steam boilers, constructed and arranged substantially as shown and described.

No. 21,380. Harvester Binder. (*Moussonneuse-Lieuse*)

Adam Cochrane, (Assignee of Charles T. Corming,) St. Thomas, Ont., 7th April, 1885; 5 years.

Claim.—1st. The combination of gudgeons M, O, with the front and back sills B, I, for carrying the wheels L, N, substantially as shown and described. 2nd. The combination of grain-wheel L, with the gudgeon M on back sill I and of extra wheel N, with the gudgeon O on front sill B, for transporting a harvester binder endwise, substantially as shown and described. 3rd. The combination of tongue-socket F, clips C, reverse-eye-bolt J and the eye-strap K, with front and back sills B, I, of a harvester binder, substantially as shown and described. 4th. The combination of tongue A, tongue connector E and tongue-braces H, with eye bolt J and eye plate K, when attached to ends of front and back sills B, I, so as to draw the machine endwise, as shown and described. 5th. The grain-wheel L, and extra wheel N, when placed at the side of a harvester-binder, and used as a fulcrum for oscillating the machine upon, while the hull-wheel is raised clear of obstructions and for carrying the weight of the machine, substantially as shown and described.

No. 21,381. Medicinal Compound. (*Composition Médicinale.*)

Andrew W. Sanborn, (Assignee of Leonidas C. Bachand,) Coaticook, Que., 7th April, 1885; 5 years.

Claim.—A compound composed of glycerine, spirits of wine, fresh beef blood, citrate of iron, and ammoniac, tincture of orange and oil lemon, to be used as a medicine and called *Glycerated Wine Iron and Blood Compound*.

No. 21,382. Metal Drawing Dog.*(Tenaille pour Etirer le Métal.)*

Philip M. Haas and Meshach C. Williams, Youngstown, Ohio, U.S., 7th April, 1885; 5 years.

Claim.—1st. The combination, with a suitable drawing-die, of grasping-dog, suitable holders therefor, pivoted couplings for the inner ends of said holders, and pivoted operating connections for their outer ends connected to the draw-head, whereby the dogs are adapted to operate upon the article, being drawn by a compound movement of their biting points toward each other at right angles to the line of draft, and by a deflection from a right line in their biting action in a direction opposite to that of the draft, substantially as described for the purpose specified. 2nd. In a metal drawing machine, the grasping and drawing device consisting of the dogs *b, b*, their pivoted holder *c, c*, their coupling-plates *c₂*, their coupling arms *h*, their yoke *i*, provided with the nuts *m*, the draw head *a* and the screws *e, f*, for adjusting and supporting the dogs, substantially as described. 3rd. The combination, with a suitable drawing-die, of the dogs *b, b*, their holders *c, c*, the coupling-plates *c₂*, to which said holders are pivoted across the line of draft, the pivoted coupling-arms *h, h*, the draw-head, and means, substantially such as described, connected with the draw-head and with the coupling-plates, whereby the biting action of the dogs into the article being drawn is automatically limited. 4th. The combination, in a metal-drawing machine, a suitable drawing-die, the draw-head *a*, the dogs *b, b*, their pivoted holders *d, d*, *c, c*, the coupling-plates *c₂*, the coupling-arms *h, h*, the adjustable yoke *i*, and the lever *r* connected therewith and with the draw-head, substantially as described for the purpose specified. 5th. The dogs *b, b*, their holders and suitable pivoted coupling-connections for the inner ends, in combination with suitable operating-connections pivoted to the outer ends of said dog-holders, and a suitable draw head to which said operating-connections are also pivoted, substantially as described for the purpose specified.

No. 21,383. Machine for Drawing Bars.*(Machine pour Etirer les Barres Métalliques.)*

Philip M. Haas and Meshach C. Williams, Youngstown, Ohio, U. S., 7th April, 1885; 5 years.

Claim. 1st. The combination, in one machine, of appliances for pushing and for drawing bars or shafts of metal into and through a gauging-die, adapted to be shifted in relation to fixed abutments, whereby the said die is placed upon the bar as a preparatory operation of drawing the bar through it, substantially as described for the purpose specified. 2nd. In a metal drawing machine, the combination of a trough-shaped bed or way, with a fixed abutment *E*, a removable gauging die *K*, a pushing abutment *M* adapted to slide upon and within said trough, and means, substantially such as described, for drawing said pushing abutment within said trough against the bar to place the die upon its end, for the purpose specified. 3rd. The combination, in a metal-drawing machine, of a trough-shaped bed, or way, with a fixed abutment *G*, a removable gauging-die *K*, an abutment *M* adapted to slide upon said trough, a suitable dog or grasping device carried by said sliding abutment, and means, substantially such as described, for operating the driving device. 4th. The combination, with suitable drawing mechanism and removable gauging die, of a trough-shaped bed or way, abutments having fixed relations thereto, forming supports for said gauging-die, and an abutment having a nose adapted to slide within said die, to push the bar therefrom into said die, and carrying a suitable dog or grasping device adapted to draw the bar through said die, both the pushing and drawing operations being in the same direction, substantially as described. 5th. In a metal drawing machine, the combination of a trough-shaped bed, or way, having a concave line of support for the bar in the line of the drawing action, with the abutment *M*, having a nose adapted to travel in said trough, an abutment *E* fixed at the end of said trough, a removable gauging-die, and suitable drawing mechanism for said abutment *M*, substantially as described for the purpose specified.

No. 21,384. Tape Measure. (Ruban-Mesure.)

Frank M. Slagle, Alton, Iowa, U.S., 9th April, 1885; 5 years.

Claim.—1st. The combination, with a casing, having one side provided with reference tables, of the annular band for securing the side walls, having the overlapping flange, and the disk of mica adapted to have its annular edge spring under the said flange in the recess and secured thereto, substantially as specified. 2nd. The tape measure described, consisting of the tape line, spaced on one side into inches, and the opposite side into feet, the casing having the reference tables, the filling mica disk, annular band connecting the sides and mica disk, and the bail adapted to fold over the edge wall of the case, substantially as specified. 3rd. A tape measure case, composed of an outer covering of leather, a filling of wood, and an annular metallic band having edge-grooves for engaging and securing the side walls of the case, substantially as specified. 4th. In a tape measure, the combination of the line having one side spaced into inches only, and the opposite side spaced into feet, and the casing provided with a reference table, as set forth. 5th. A tape measure, having a side provided with one or more fixed reference tables. 6th. A tape measure, having a side provided with one or more fixed reference tables, and protected by a transparent disk, substantially as specified.

No. 21,285. Compound for Coating Metals.*(Composition pour Plaquer les Métaux.)*

Josiah H. Legge, Pittsburg, Penn., U.S., 9th April, 1885; 5 years.

Claim.—The herein-described compound for coating metals, composed of lead, zinc, tin and borax, the borax being in the proportion of one-half of one per cent. to five per cent. of the lead and zinc employed, substantially as and for the purposes set forth.

No. 21,386. Manufacture of Bottle Stoppers.*(Fabrication des Bouchons de Bouteilles.)*

John M. Lewin, Toronto, Ont., 9th April, 1885; 5 years.

Claim.—1st. The method of securing the flexible disk to the wire, which consists in casting one metallic disk onto the wire, then placing the flexible disk on the metallic disk and wire, and then casting the second metallic disk upon the wire, while the flexible disk is compressed. 2nd. The block *D*, arranged to support the wire and flexible disk, and placed below the plate *E*, in combination with an eccentric *I*, arranged to actuate the block *D*, substantially as and for the purpose specified.

No. 21,387. Automatic Fire Alarm.*(Avertisseur d'Incendie Automatique.)*

Charles H. Judson, Greenville, S.C., U.S., 9th April, 1885; 5 years.

Claim.—1st. In a fire alarm, the combination, with a series of wires having fusible connections, of a spring *D* at one end of each wire, a loop *W* at the opposite end of the wire, the spring *T* connected with the loops, a lever passed through the loops, a latch for holding the lever, and an alarm mechanism connected with the latch, which alarm mechanism is released when the lever drops, substantially as herein shown and described. 2nd. The combination, with wires having fusible connections, of a spring *D* at one end of each wire, the loops *W* at the opposite ends of the wires, the springs *Y* connected with the loops, the pivoted lever *V*, the pivoted hook *U*, the catch *F*, the elbow lever *O*, the wire *I* and an alarm mechanism connected with the wire *I*, substantially as herein shown and described. 3rd. In a fire alarm, the combination, with a wire having fusible connections, of the spring *D* at one end of the same, a less powerful spring *F* at the opposite end, a mechanical bell-ringing mechanism, a gong or bell *H*, the trigger lever *M* formed with two arms, one of which engages the alarm mechanism and the other of which projects outward therefrom, and the projection *N* formed on the wire and adapted to act on the said outwardly-projecting arm of the trigger lever *M*, substantially as herein shown and described. 4th. The combination, with the bell-wire *A*, the elbow lever *O* and the cord or pull *P*, of a spring connected at the upper end with the elbow lever, and with a wire having a fusible connection, and holding the upper end of the spring and preventing it from pulling or turning the elbow-lever, substantially as herein shown and described. 5th. The combination, with the bell wire *A*, the elbow-lever *O* and the cord or wire pull *P*, the spring *B* secured to the wall and the elbow lever, and the wire *R* having a fusible connection and secured to the ceiling or wall, and to the upper end of the spring *Q* to prevent it from contracting, substantially as herein shown and described.

No. 21,388. Lock for Railroad Switches.*(Arrête-Aiguille de Chemin de Fer.)*

Philander L. Pettengill, Elmira, N.Y., U.S., 9th April, 1885; 5 years.

Claim.—1st. The combination of a switch-lever, two catch-lugs projecting upward from the base-plate of the lever, one upon each side of the fulcrum of the same, a lock casing having slots in its sides adapted to fit over the catch-lugs, and means for engaging said lugs, and a casing sliding upon the lock-casing and covering the slot at the time facing upward, as and for the purpose shown and set forth. 2nd. The combination of a switch lever, a lock-casing secured upon the end of the same, having slots in its sides at the opposite ends of the same, and having lock-bolts inside the said slots, two catch lugs projecting upward from the base plate of the lever, one upon each side of the fulcrum of the same, and adapted to enter and be held in the slots of the casing by the lock-bolts, guide lugs projecting from the base parallel with the catch-lugs adapted to bear against the outer side of the lock-casing, and a sliding casing, as much shorter than the lock-casing as the distance from the inner end of one of the slots to the nearest end of the lock-casing, as and for the purpose shown and set forth. 3rd. The combination, in a lock for railroad switch, levers, of the casing having slots upon the opposite sides, near the opposite ends of the same, and having transverse key holes or slots in the opposite ends near the sides opposite to the slots provided with dividing lugs, as described, two pairs of shouldered bolts pivoted at their ends at the inner ends of the slots, and bearing with the rear sides of their free ends against the ends of two pairs of springs, a key having bifurcated end and catch-lugs secured upon the base of the switch, each having an inwardly-projecting shoulder upon its upper end adapted to engage one of the shouldered bolts, as and for the purpose shown and set forth.

No. 21,389. Tubular Lantern.*(Lanterne Tubulaire.)*

John H. Stone, Hamilton, Ont., 9th April, 1885; 5 years.

Claim.—1st. In a tubular lantern, a double or triple jointed hinge *K*, consisting of the links *h, i*, the former secured to the base *A* and the latter link *i* hinged to the perforated disk *C* and to the link *h*, thus forming two or three hinge joints to allow the globe to be tilted over easily for lighting, trimming or filling, substantially as specified. 2nd. In a tubular lantern, the combination of the guards *D, D*, and double or triple-jointed hinge *K*, substantially as specified. 3rd. In a tubular lantern, the catch *c* and eye *f*, in combination with the base *A* and disk *C*, substantially as specified. 4th. In a tubular lantern, the body of the air chamber *E*, and the flange *c*, being crimped together and forming a recess *d* under the bottom *a*, substantially as and for the purpose specified.

No. 21,390. Ear Muffler. (Oreillère.)

Andrew L. Britton, Philadelphia, Pa., U.S., 9th April, 1885; 5 years.

Claim.—1st. An ear muffler, having pad frames and a head piece, said frames being formed with eyes integral with the same, and the head piece connected therewith, substantially as and for the purpose set forth. 2nd. An ear muffler, consisting of an adjustable head piece

and pad frames, formed with eyes integral with the frames, the head-piece, jointed to said eyes, substantially as and for the purpose set forth. 3rd. An ear muffler, consisting of a head piece jointed or hinged, as at A, and a pad frame formed with eyes integral with the same, the head-piece being jointed to the pad frame in the eyes thereof, substantially as and for the purpose set forth.

No. 21,391. Rolling Mill. (Laminoir.)

Philip M. Haas and Mesbach C. Williams, Youngstown, Ohio, U.S., 10th April, 1885; 5 years.

Claim.—1st. The metal-reducing rolls, arranged in divergent direction, each rounded at their edges, and comprehending a bevelled collar or shoulder *a*, combined with a shaft provided with a screw-thread *b*, a screw sleeve bearing *c*, matching the screw *b*, and a centrally arranged feeding-tube *H*, substantially as described for the purpose specified. 2nd. The metal-reducing rolls and their shafts, arranged in divergent direction, in combination with the main housing *A*, a central feeding-tube supported thereby, the separate housings *B*, *B*, *B*, and means, substantially such as described, arranged within the said housings, whereby said roll-shafts are supported and may be adjusted in the several directions stated, at one or at both ends within said housings, substantially as described for the purpose specified. 3rd. The combination of the rolls arranged in divergent direction, the bed-plates carrying said roll-shafts provided with cross-slots *f*, the main housing *A* and a central feeding-tube, with means, substantially such as described, whereby the said bed-plates with their roll shafts are adjusted crosswise to adjust the rolls in relation to each other for the purpose specified. 4th. The combination of the metal reducing rolls, having their shafts arranged with their axial lines diverging with the main housing, a centrally arranged feeding-tube *H*, the separate supporting housings for the roll-shafts, the bed-plates *F* provided with the cross-slots *f*, the clamping-screw *g*, and the screws *g*, *h*, *i*, arranged to act upon the main housing, to adjust the bed-plates to set the rolls in relation to each other, substantially as described for the purpose specified. 5th. The metal-reducing rolls, arranged in divergent direction, said rolls having the edges of their ends rounded or bevelled, combined with the main housing *A*, a central feeding-tube *H*, the separate housings *B*, *B*, *B* for the shaft-bearings, the bed plates *F* and the screws *g*, *h*, *i*, whereby the roll-carrying bed-plates are adjusted in the direction of the axis of the machine, to properly line the rolls transversely and to adjust said bed-plate radially in relation to said axis, to increase and diminish the space between said rolls, substantially as described for the purpose specified. 6th. The combination, with the main housing *A*, and the feeding-tube *H*, centrally arranged therein, of the reducing-rolls, having their shafts arranged with their axial lines diverging the bed-plates *F*, adjustably secured to the main housing and the separate housings *B*, *B*, *B*, each provided with adjustable bearings for the roll-shafts, whereby the roll-shafts and their bed plates are carried and supported out of contact with the said main housing, substantially as described for the purpose specified. 7th. The combination, in a mill for rolling metal articles of cylindrical form, with the reducing rolls arranged in divergent direction, the main housing *A* and a central feeding-tube *H* for the article being reduced, of the chamber *L* in said housing, through which cold water may be caused to flow over and around that part of said feeding-tube which has its bearing within said housing, substantially as described for the purpose specified. 8th. In a rolling-mill, the combination, with the main housing *A*, having the surface projections *h* and the central feeding-tube *H* and the rolls of the bed-plates *F* for the roll shafts having side projections, and the screws *i* threaded into said projections and adapted to bear upon the bed-plate projections, all constructed and arranged for operation, as described. 9th. The combination, in a rolling-mill, of the main housing *A*, having the nose *A*, the central feeding-tube *H* and the rolls, the bed-plates within which the roll-shafts are mounted, the several screws for securing and adjusting the bed-plates upon said main housing, and the separate housings *B*, *B*, *B* within which the roll-shafts are mounted, each provided with boxes supported upon screws for adjustment in any direction, substantially as described for the purpose specified.

No. 21,392: Steam Emptying Ash-Pan.

(*Cendrier se Vidant par la Vapeur.*)

James Carey and Charles Rutson (Assignees of John Desmond, Jackson, Mich., U.S., 10th April, 1885; 5 years.

Claim.—1st. A steam-emptying ash-pan for ejecting ashes, snow and ice from locomotives, constructed and operated substantially as shown and described. 2nd. The application of steam for ejecting ashes, snow and ice from the ash-pans of locomotives, substantially as shown and described. 3rd. The combination of the ash-pan *A*, having plates *B*, and steam-supply pipe *D*, having ejector pipes *C*, substantially as shown and for the purpose described. 4th. In a locomotive ash-pan, the plates *B*, arranged with relation to the ejector pipes *C*, having slots *C* for ejecting the ashes from the bottom of the pan, substantially as shown and for the purpose described. 5th. In a locomotive ash-pan, the combination of the pan *A*, having outlet gates *a*, *a*, plates *B*, ejector-pipes *C* and steam supply pipe *D*, substantially as shown and for the purpose described.

No. 21,393. Metallic Shingle or Roofing Plate. (Barreau Méallique ou Plaque à Toiture.)

Thomas G. Matheson (Assignee of Levi H. Montross, Simcoe, Ont., 10th April, 1885; 5 years.

Claim.—1st. The combination of a square or rectangular-shaped metallic shingle or roofing plate, with vertical ribs *A*, *B*, *B*, *C*, slots *e*, *c*, a *d* cut *d*, provided with lips *g*, *g*, formed from its body, substantially as set forth, as and for the purposes specified. 3rd. A metallic shingle or roofing plate, provided with vertical ribs *A*, *B*, *B*, *C*, lateral ribs *a*, *a*, *a*, and oblique ribs *b*, *b*, *b*, *b*, substantially as set forth as and for the purpose specified. 4th. A metallic shingle or roofing plate, provided with rib *C* and flange *D* at one edge, and at

the opposite edge or side with half rib *A* and lock *F*, for the purpose of interlocking the vertical edges of the plates, substantially as set forth as and for the purpose specified. 5th. A metallic shingle, provided with vertical ribs *A*, *B*, *B*, *C*, slots *e*, *e*, cleets *c*, *c*, provided with lips *g*, *g*, lateral ribs *a*, *a*, *a*, oblique ribs *b*, *b*, *b*, *b*, flange *D* and lock *F*, substantially as set forth as and for the purpose specified.

No. 21,394. Hay Car. (Char à Foin.)

James A. Buchanan and Robert Neely, North Dorchester, Ont., 10th April, 1885; 5 years.

Claim.—1st. In a hay car, the latch *F*, shaped as shown, and provided with head *b* and foot *c*, and attached by lugs *a* to slots between jaws *E* of said hay car, as shown and described. 2nd. The stop-block *D*, shaped as shown and described, in combination with the latch *F*, as shown and described and for the purpose specified. 3rd. The combination of catch *G*, stops *H*, *K* and latch *F* in a hay car, as shown and described. 4th. In combination with the above described catch *G*, and stops *H*, *K*, a wheel pulley *J* having projection on shaft *N* at head, provided with ring or flange *I* and head *k* for operating aforesaid catch *G*, and acting in combination therewith, as shown and specified.

No. 21,395. Machine for Digging Potatoes. (Machine à Arracher les Patates.)

Lewis Bresett, Ancaster, Ont., 10th April, 1885; 5 years.

Claim.—1st. The combination of the scraper *B*, lever *k*, frame *A* and tracks *L*, *I*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of scraper *B*, gear wheels *O*, *O*, and endless elevator *c*, with grate *D*, substantially as and for the purpose hereinbefore set forth.

No. 21,396. Smoke Consuming Furnace. (Fourneau Fumivore.)

James W. Hubber, San Francisco, Cal., U.S., 10th April, 1885; 5 years.

Claim.—1st. In a smoke-consuming engine or furnace, the inlet or suction pipe entering the smoke-stack or chimney, and provided with downwardly projecting holes or openings, and terminating a broad funnel connected to the fan-blower, substantially as described. 2nd. In a smoke-consuming furnace or engine, the exhaust-pipe *A*, having inlets *C* at the end, which enters the smoke-stack, and terminating at its other end in a funnel *D*, in combination with the fan *D*, chamber *E* and pipe *F*, substantially as shown and described. 3rd. In a smoke-consuming furnace or engine, the auxiliary section and forcing fan blower *J*, connecting by a branch pipe *K* with the main pipe *F*, constructed, arranged and operating substantially in the manner as set forth and specified.

No. 21,397. Guiding and Supporting Device for Doors, etc. (Appareil pour Guider et Supporter les Portes, etc.)

Amos Sanders and Roger S. Henderson, Philadelphia, Penn., U.S., 10th April, 1885; 5 years.

Claim.—1st. The combination of a door *A*, with a rope *g*, secured at its opposite ends and passing over pulleys *d* at the rear of the door, as set forth. 2nd. The combination of the door and its pulleys, with the rope *g*, secured at one of its ends to an adjustable fastening, as set forth. 3rd. The combination of the door, and its pulleys, the rope *g*, the fastening for one end of the same, and a bar *J* having an adjustable slide *h* for the opposite end of the rope, as set forth. 4th. The combination of the door and its pulleys, the rope *g*, the bar *J* having an adjustable slide *h* and the adjustable plate *a*, as set forth. 5th. The combination of the door and its pulleys, the rope *g*, the bar *J* having a bearing for said rope and an adjustable slide *h*, as set forth. 6th. The combination of the door and its pulleys, the rope *g*, the bar *J*, the screw rod *i* longitudinally confined thereto, and the slide *h* having a nut *n* adapted to said screw rod, as set forth. 7th. The combination of the door *A* and its pulleys, the rope *g*, and a guide-wheel and rail for supporting the rear of the door, as set forth. 8th. The combination of the door *A* and its pulleys, the rope *g*, the guide-rail *s* and the wheel *s* carried by an adjustable bracket *p*, as set forth.

No. 21,398. Railway Car-Coupler and Draw-Head. (Atelage et Tige de Traction de Char de Chemin de Fer.)

Jacob W. Baker, Uxbridge, Ont., 10th April, 1885; 15 years.

Claim.—1st. The combination of bell mouth, Figs. 4 and 5, slide clutches *I*, Figs. 1 and 2, and slots, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of levers *C*, *C*, Fig. 1, chains *H*, *H*, slide clutches *I*, *I*, squared slots and side springs *B*, *B*, *ig* 4, substantially as and for the purpose hereinbefore set forth. 3rd. Combination of levers *C*, *C*, lever jointed at *S*, Fig. 2, horizontal rod connecting levers, substantially as and for the purpose hereinbefore set forth. 4th. The slide clutches *I*, *I*, Fig. 5, with bevelled circular opening *I*, Figs. 1 and 5, with slots in which slide clutches work, substantially as and for the purpose hereinbefore set forth. 5th. The single slide clutch in upper side of draw-head, substantially as and for the purpose hereinbefore set forth. 6th. The bevelled openings, in slide clutches *Z*, Figs. 5 and 6, substantially as and for the purpose hereinbefore set forth. 7th. The double conical ended draw-heads *K*, *K*, *K*, Fig. 4, substantially as and for the purpose hereinbefore set forth. 8th. The combination of bell mouth and conical ended heads of draw-bar, which is such that, *f* conical end of draw-bar is forced into bell mouth, it is compelled to follow its contour, and be directed into bevelled opening in slide clutches, substantially as and for the purpose hereinbefore set forth. 9th. The combination of side springs *B*, *B*, Fig. 4, slide clutches *I*, *I*, Fig. 4, and slots, substantially as and for the purpose herein

before set forth. 10th. The combination of stiff *c*, *e*, levers and lever jointed at *S*, Fig. 2, pivots *D*, *B*, chains *H*, *H*, slide clutches *I*, *I*, side springs *B*, *B*, substantially as and for the purpose hereinbefore set forth.

No. 21,399. Harrow. (Herse.)

John P. Armstrong, Alvinston, Ont., 13th April, 1885; 5 years.

Claim.—1st. A harrow tooth, provided with the central cutting edge *c*, the concave faces *d*, *d*, and the double-shouldered and T-shaped head *e*, substantially as shown and described and for the purpose set forth. 2nd. In a harrow, the diagonally-placed girts *A*, *B*, *C*, *D*, *E* and *F*, connected by the end cross-bars *H* passing on each side of the harrow teeth under the shoulders of the head, and secured thereto by the bolts *g*, substantially as shown and described. 3rd. In a harrow, the combination of the girts *A*, *B*, *C*, *D*, *E* and *F*, formed as shown, and the end cross-bars *H*, having the slotted hook holes *f*, with the draw-hooks *J*, having their hook ends returned and flattened, substantially as shown and for the purpose set forth.

No. 21,400. Machine for Pulverizing Ores, etc., by Centrifugal Force. (Machine à Force Centrifuge pour Pulvériser les Minerais, etc.)

Gédeon Frisbee, Elmore, Ohio, U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination, the metal casting, the disks *d*, the arms *B*, *B* and the drivers *D*, all combined and arranged substantially as described. 2nd. In combination with the chamber *H*, of the lugs *e*, *e*, *e*, the shaft *S*, all combined and arranged substantially as described. 3rd. In combination with the disks *a*, the drivers *D*, *D*, the arms *B*, *B* and the rollers *A*, substantially as and for the purpose described.

No. 21,401. Street Shaft and Gully.

(Entrée d'Egout et Egout.)

Percival W. St. George, Montreal, Que., 13th April, 1885; 5 years.

Claim.—1st. A street gully, formed of a single piece, in shape of a cylinder, with one stopped end, and having the first joint of sewer connection made in one with it, all substantially as set forth. 2nd. The combination, with a gully, made of a cylinder, with one stopped end, of one or more lengths of cylinders corresponding thereto in material and diameter, and a shaft top having an open front and man-hole cover, all as herein set forth. 3rd. The combination, with the shaft top *D*, of the bar *E*, set across opening in same, and arranged, substantially as herein set forth.

No. 21,402. Tobacco Pipe Cleaner. (Cure-Pipe.)

John Wilson, London, Ont., 13th April, 1885; 5 years.

Claim.—The combination of a rubber casing *A*, integral with the tapered shank *E*, in which reservoir *C* and channel *D* are formed, substantially as shown and described and for the purpose specified.

No. 21,403. Cuff Fastener and Adjuster.

(Mode de Poser et Assujétir les Manchettes.)

Theodore B. Wilson, Chicago, Ill., U.S., 13th April, 1885; 5 years.

Claim.—1st. In a cuff-holder and adjuster, the combination, with the strap *A*, having the off-set *A*₁, and the prong *A*₂ at one end, of the clasp or pin *B* fastened to the opposite end, substantially as set forth. 2nd. In a cuff-holder and adjuster, the combination, with the strap *A*, having the off-set *A*₁, prong *A*₂, and spur *C* at one end, of the spring clasp or pin *B* fastened to the opposite end, substantially as set forth.

No. 21,404. Gas Lamp. (Lampe à Gaz.)

Francis H. Wenham, London, Eng., 13th April, 1885; 5 years.

Claim.—The new and improved arrangement of gas lamp, wherein are employed a ring burner situated at the lower end of an air heating chamber *c*, and a disc or button *b* beneath the burner, the space between this chamber and the burner, and also the central orifice in the said burner being covered with gauze, or divided or perforated plates, substantially as and for the purposes hereinbefore described with reference to the accompanying drawings.

No. 21,405. Rock Drill. (Foret de Mine.)

Sylvanus Hussey, Buffalo, N.Y., U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination, with the drill bar and clutch head, of the actuating lever *D* provided with side rollers *e*, and a tooth *e*₃, and an actuating segment having star ing arms *e*₁ and a releasing roller *e*₂, substantially as set forth. 2nd. The combination, with the drill bar, provided with a feed screw *m*, the drill frame and a screw nut held in the drill frame against turning, of a clutch head *G*, whereby the drill bar is turned, and a ratchet coupling which permits the clutch head to turn forward in the direction of the feed and prevent it from turning backward, substantially as set forth. 3rd. The combination, with the drill bar *g*, provided with the feed screw *m*, of the clutch head *G*, secured to the tube *J*, a screw nut *K*, connected with the tube *J* and held against turning, and a ratchet coupling *J*₂ connecting the tubes *J*, *J*, substantially as set forth. 4th. The combination, with the drill bar *g*, provided with a longitudinal groove *t*, of the clutch head *G*, and a feather *f* pivoted to the clutch head *t*, whereby the feather can be disengaged from the groove, substantially as set forth. 5th. The combination, with the drill bar *g*, provided with a longitudinal groove *t*, of the clutch head *G*, feather *f* pivoted to said clutch head, and a lock nut *l*, whereby the feather is secured in place, substantially as set forth. 6th. The combination, with the drill bar, provided with a feed screw *m*, of the guide sleeve *P*, enclosing the feed screw, and a divided nut *R*, composed of two parts pivoted to the sleeve *P*, substantially as set forth. 7th. The combi-

nation, with the drill bar, provided with a feed screw *m*, of the guide sleeve *P*, provided with a flange *pi*, the divided nut *R*, composed of two parts pivoted to the flange *pi*, and a stop pin *ri*, secured to the flange *pi*, substantially as set forth. 8th. The combination, with the drill bar, provided with a feed screw *m*, of the cross-head *M*, springs *a* connected therewith, the guide sleeve *P* seated in said cross-head, and the divided nut *R* pivoted to said sleeve, substantially as set forth. 9th. The combination, with the drill bar, provided with a feed screw *m*, of the cross-head *M*, springs *a* connected therewith, the guide sleeve *P* seated in said cross-head, the divided nut *R* pivoted to the sleeve *P*, the tube *J* attached to said cross-head, the clutch head *G* attached to the tube *J*, and the ratchet coupling *J*₂ connecting the tubes *J*, *J*, substantially as set forth. 10th. The combination, with the drill frame and a drill bar provided with a feed screw *m*, and cross head *M*, of the tubular rolls *rs*, rolls *rt*, springs *a* and screw nuts *o*, substantially as set forth. 11th. The combination, with the drill bar and the swinging frame *A*, provided with side bars *K*, *K*, connected at their lower ends by a cross-head *K*₂ of the upright bar *l* and the guide sleeve *L*, adjustably secured to the bar *l*, substantially as set forth.

No. 21,406. Grate Bar for Furnaces and Stoves. (Barreau de Grille pour Fourneaux et Poêles.)

James Kerr, Cobourg, Ont., 13th April, 1885; 5 years.

Claim.—The perforated grate bar consisting of the ribs *A*, with perforations *B*, and connecting braces *C*, provided with a diagonal perforated web *D*, having serrated teeth *E*, the whole as shown and described for the purpose set forth.

No. 21,407. Corn Broom. (Balai de Houque.)

Charles Boeckh, Toronto, Ont., 13th April, 1885; 5 years.

Claim.—A hollow shank *A*, with a plug *B* fitted into it, and the corn broom *D* tied thereon, in combination with the handle *C*, fitted into the hollow shank *A* and having a screw formed on its end to fit into a screw-hole made in the plug *B*, substantially as and for the purpose specified.

No. 21,408. Double Carbon Arc Lamp.

(Lampe à Arc à Double Charbon.)

Elihu Thompson, Lynn, Mass., U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination, with two carbon-carriers in an electric-arc lamp, of a movable releasing-stop for the feeding mechanism of one carrier, and suitable means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position. 2nd. The combination, in a double-carbon lamp, of a releasing-clutch for one of the carbon-carriers, a movable releasing-stop for said clutch, and means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position. 3rd. The combination, in a double-carbon lamp, of a releasing-stop for the feed mechanism of one of the carbon-carriers, mounted on a lever, and a lug or projection on the other carbon-carrier for tilting said lever, and carrying said lever into releasing position when the latter carrier has moved to a predetermined point. 4th. The combination, in a double-carbon lamp, of a feed clamp or clutch for one of the carbon-carriers, a releasing-stop for said clutch mounted on a lever placed to hold the stop out of releasing position, and a projection on or connected with the other carbon-carrier for tilting said lever and moving the stop into releasing position. 5th. The combination, in a double-carbon lamp, of a releasing-stop for the feed-controlling clamp of one carrier, and means connected directly or indirectly with the other carrier for controlling the position of said stop, as and for the purpose described. 6th. The combination, with two carbon-carriers, of a releasing-stop with the other carrier for setting said stop into releasing position, and a stop or catch for limiting the movement of the releasing-stop in the setting operation. 7th. The combination, with two carbon-carriers, of feed-clamps or clutches actuated by a common magnet system, a fixed releasing-stop for the clamp or clutch of one carrier, and a movable releasing-stop for the clamp or clutch of the other set, by a button or other suitable device connected with, or controlled by, the first carrier. 8th. The combination, with a clutch for a carbon-carrier, of a releasing-stop mounted on, or supported by, one arm of a lever, and a button-stud or its equivalent, as described, upon the other carrier, which button or stud engages with the other end of a lever whose carbon is wholly or nearly consumed. 9th. The combination of a carbon-carrier *R*₂, a feed clutch *a*, a stop *t*, a lever *l*, a carbon-carrier *R*₁, and a button *B*. 10th. In a double-carbon lamp, the combination, with the feed-controlling mechanism engaging with one carbon or carrier, of a releasing-stop, detent, or such like, releasing device adapted to cause a release of said feed mechanism, whenever through wasting of said carbon in the arc, the feed-controlling mechanism is lowered to a predetermined extent, said releasing device being mounted in a movable support, or means for holding the same out of feed-releasing position while the other of the two carbons is in action. 11th. The combination, in a double-carbon lamp, of feed-regulating devices for the respective feed devices of said carriers mounted on a common adjustable support, as and for the purpose described. 12th. In a double-carbon electric lamp, the adjustable support *P* carrying the fixed releasing-stop *J* for one carrier, and the movable releasing-stop *t* for the other carrier, as and for the purpose described. 13th. The combination, with the two carbon-carriers *R*₁, *R*₂, of the clutches *U*, *C*₂, releasing-stop *J*, *t*, a movable support for the stop *t*, and means connected with carrier *R* for setting the stop *t* in releasing position.

No. 21,409. Gas Cooking Stove.

(Cuisinière à Gaz.)

John Somerville and William H. Y. Webber, London, Eng., 13th April, 1885; 5 years.

Claim.—1st. In a gas cooking stove having a roasting or baking

oven, the swivelling or swinging gas supply tube or tubes, provided with suitable burners, and arranged outside of the oven, substantially as and for the purposes specified. 2nd. The oven of the stove, perforated for the entry and escape of the products of combustion of the gas, as described, in combination with the separated outer casing of the stove, and a boiler or water vessel arranged above and free of the oven for utilization of the escaping products of combustion of the gas after they leave the oven, essentially as described. 3rd. In a gas cooking stove having a roasting or baking oven or chamber, the combination, with the separated outer casing of the stove, of a removable sliding oven or oven-lining, substantially as specified. 4th. The combination, in a gas cooking stove, of a movable oven lining one or more externally arranged swivelling or swing gas supply tubes, provided with burners, the flames of which are mainly confined to the space between said lining and the stove casing, and a boiler for utilizing the waste heat of the oven, arranged substantially as shown and described and for the purposes herein set forth.

No. 21,410. Thrashing Machine.

(Machine à Battre.)

Riley H. Coon, Canastota, N.Y., U.S., 13th April, 1885; 5 years.

Claim.—1st. In combination with the racks R, R₁, grain tables O, O₁, sieve-shoe L, and rock-arms T and U, the rock-arm V, rod M and the rock-arm N and N₁, connected respectively with the grain table and sieve-shoe, substantially as described and shown. 2nd. The combination, with the fan-wheel, of the diaphragms f, f₁, arranged equidistant from the centre of the length of the wheel, and formed with central apertures, substantially as described and shown.

No. 21,411. Bed Bottom. (Somnier de Lit.)

Oscar J. Mitchell, Ingersoll, Ont., 13th April, 1885; 5 years.

Claim.—The combination of the web A, A, and the springs F, F, substantially as and for the purpose hereinbefore set forth.

No. 21,412. Reed Organ, etc. (Orgue, etc.)

James B. Hamilton, London, Eng., 13th April, 1885; 5 years.

Claim.—1st. The combination of the pallets, sound board and reeds, with cavity-boards, one above the other, the lower one containing the nostrils and the upper one the mouths and an intermediate controlling slide, substantially as set forth. 2nd. The combination of the pallets, sound-board and reeds, with cavity boards, one above the other, the lower one containing the nostrils and the upper one the mouths, substantially as described.

No. 21,413. Type Writing and Printing Machine. (Machine à Ecrire en Types et à Imprimer.)

Merrit H. Dement, Chicago, Ill., U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination of the lever P, and a revolving holder, with a series of rods, by means of which the lever is pressed upon the material operated upon, substantially as shown and described. 2nd. The printing lever P, provided with a wheel P₁, in combination with a series of rods in rotary holder, and the type ring, substantially as and for the purposes shown and described. 3rd. The combination of a rotary holder and its series of rods of different widths, with the printing lever P and type ring, substantially as shown and described. 4th. A type wheel having two or more rows of type, in combination with the printing lever P, adapted to be shifted so as to operate upon any desired row of type, substantially as shown and described. 5th. A rotary holder and a series of bars, each provided with two or more operating surfaces, and the lever P adapted to be shifted so as to be operated upon by any desired one of the operating surfaces, substantially as shown and described. 6th. The combination of the type ring A, provided with two or more rows of type, the cylinder B, and rods K, with the shifting lever P, substantially as shown and described. 7th. The combination of the shifting lever P, the rocking bar V, and the operating key, substantially as shown and described. 8th. The combination of the manuals R, guard springs δ δ, and the main cylinder c, substantially as shown and described. 9th. The guard springs δ, δ, the cylinder c provided with a curved longitudinal cam and the keys, substantially as and for the purpose shown and described. 10th. The combination of a type wheel containing two or more circumferential rows of type, with a paper guide adapted to shift to any desired row, and mechanism, substantially as described, by means of which the paper and the types are brought in contact. 11th. The combination of a rotary holder, and series of rods or cams of different widths, with the milled rings and lever, substantially as shown and described.

No. 21,414. Spark Arrester, Conductor and Consumer. (Appareil pour Arrêter, Renvoyer et Consumer les Flammeches.)

Michael L. Flynn and Albert F. Bull, St Thomas, Ont., 13th April, 1885; 5 years.

Claim.—1st. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector to the fire-box, said smoke-box provided with a screen, the construction being such that the cinders may be taken from the base of the smoke box by the open injector and delivered to the fire-box, substantially as described. 2nd. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector into the fire-box, said smoke box provided with a screen and a beater arranged to clear said screen, substantially as described. 3rd. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector into the fire-box, and a beater to clear said screen, said beater connected with the hand-rail and arranged to be operated thereby, substantially as described. 4th. The combination of the fire-box A, the brick arch or diaphragm B therein, the smoke-box C, the injector opening into the

smoke-box, and the tube F extending from the injector and having its rear discharge end F₁ curved forward and downward through the brick arch or diaphragm, to spread or distribute the cinders over the surface of the fuel, substantially as described. 5th. The combination of the fire-box A, the brick arch or diaphragm B therein, the smoke-box C, the diaphragm D arranged in the latter, the injector located at the base of the smoke-box and opening thereunto, and a tube F, extending from the injector and having its discharge end F₁ turned forward and downward through the brick arch or diaphragm, to spread or distribute the cinders uniformly over the surface of the fuel, substantially as described.

No. 21,415. Skylight. (Lanterne.)

George Hayes, New York, N.Y., U.S., 13th April, 1885; 5 years.

Claim.—1st. A new article of manufacture, the base-frame of a metallic skylight, formed with an extended adjustable flange attached to or a part thereof, adapted to be bent to curbs of varying widths and lengths, substantially as shown and described. 2nd. In combination, with the base-frame of a skylight, a plate or flange δ, formed into several rabbets d of adjusting the frame to suit openings of varying dimensions, substantially as shown and described. 3rd. In combination with the base-frame of a skylight and adjustable plate δ, the necking flange e or lip e, substantially as and for the purpose described and shown. 4th. In combination with the base-frame A, provided with an extended adjustable plate or flange δ, as herein set forth, Bars provided with rabbets to support glass plates and gutters beneath to collect leakage and condensation, essentially as shown and described. 5th. In combination with the base-frame A provided with adjustable plate δ, and necking e, the bars B, substantially as shown and described. 6th. In combination with the adjustable base-frame A formed with flange δ, the bars C, substantially as shown and described. 7th. In a metallic skylight the combination of base-frame A Bars B and Bridge-bars C, each formed as herein set forth for the purpose mentioned.

No. 21,416. Rock Drill. (Foret de Mine.)

Frederick W. Coe, George A. Hoffnagle, Vergennes, Vt., U.S., George A. Miller, Charles H. Miller, and James Mitchell, Montreal, Que., 14th April, 1885; 5 years.

Claim.—1st. The combination, in a rock-drilling machine, of the frame D carrying the hammer and pivoted, as described, a shaft F suitably journalled, and having keyed thereon, cams G, H and I, a pivoted latch i, adapted to be intermittently lifted by the cam H, A, jam-wrench K connected with the latch i to be lifted therewith, and bite the drill-rod, and a lever N arranged on I for operating, as specified, to rotate the jam-wrench, substantially as set forth. 2nd. The combination, in a rock-drill, of the frame D carrying the hammer, and pivoted, as described, a shaft F, actuating means for reciprocating the drill-rod, and hammer, the waved wheel L, lever N having spring attached thereto, so as to keep the upper end of said lever in contact with the waved wheel, and a connecting-rod n attached to the lever n and to devices for rotating the drill-rod, substantially as set forth.

No. 21,417. Automatic Responding Instrument for Electric Circuits. (Appareil Servant à Répondre Automatiquement pour Circuits Electriques.)

The Equitable Electric Company, (Assignee of Alfred G. Holcomb.) New York, N.Y., U.S., 14th April, 1885; 5 years.

Claim.—1st. The combination, with an electro-magnetic call bell having a movable armature, an electric circuit, and means for operating the call bell, of a responding instrument in a local circuit, the signaling mechanism of which is released free to act by the armature of the call bell, when the call bell is actuated, substantially as and for the purpose set forth. 2nd. The improvement in electrical communication, consisting of the application of an automatically operated instrument in a local circuit, constructed to return signals to a calling station, by causing induced currents or definite impulses in the line circuit, when said instrument is released or set in motion by a current sent from a calling station to actuate a call apparatus in the line circuit, which is adapted to lock the responding instrument, substantially as set forth. 3rd. The combination, with the secondary coil, of an inductorium, an electric circuit and a call apparatus of an automatic return signal instrument, the primary coil of the inductorium, a battery and a local circuit, substantially as and for the purpose set forth. 4th. In combination, an inductorium, a battery and an automatic responding instrument provided with a signaling device and connected motor included in a local circuit, a call apparatus or bell constructed when at rest to lock the signaling device of the responding instrument, and means for operating the call-bell and the secondary coil of the inductorium included in the line circuit, substantially as and for the purpose set forth. 5th. In a telephonic system, a microphonic transmitter, a switch, the primary coil of an inductorium and a battery in an independent circuit, in combination with the signaling device or contact spring and disc of an automatic responding instrument, connected to said circuit between the microphonic transmitter and the battery, and between the switch and the primary coil of the inductorium, substantially as and for the purpose set forth. 6th. In an automatic responding instrument, in combination, a fixed disc or plate having a series of teeth or notches representing different signals, and an insulated block on its periphery, a contact brush carried by a rotating shaft concentric with the disc, a motor for imparting motion to said brush, and a locking device for holding the brush stationary on the insulated block, and actuated by an electric current to allow the brush to be rotated by the motor, substantially as and for the purpose set forth. 7th. In an automatic responding instrument, in combination a fixed disc or plate having a series of notches or teeth, a shield plate connected to and operated by an index pointer, a dial plate having marked thereon the signals the instrument is adapted to give, and a contact brush and motor for causing the

same to travel around the fixed disc or plate, substantially as and for the purpose set forth. 8th. In combination, a battery, the primary coil of an inductorium, the signalling device of an automatic responding instrument, constructed to be operated by means of a motor, a receiving instrument, a call apparatus, constructed to lock the automatic responding instrument, the secondary coil of the inductorium and a current generator included in the line circuit, substantially as and for the purpose set forth. 9th. In combination, the responding instrument, constructed and operated substantially as described, the battery n_2 , the primary coil n_1 of the inductorium n , the line wire m the call apparatus i, j adapted to lock, the responding instrument, the line wire m_1 , the secondary coil m_2 of the inductorium n and the receiving instrument m_3 and electrical generator, substantially as and for the purpose set forth. 10th. In combination, the automatic responding instrument composed of the disc d , insulated block e , contact brush h , carried by and forming a part of the motor f , the battery n_2 , the connecting circuit n_3, n_4 and the primary coil n_1 of the inductorium of a telephonic transmitter, substantially as and for the purpose set forth. 11th. A telephonic system, comprising the following instrumentalities: the call apparatus i, j , spring switches r, t_2 , lever s , receiver t , the secondary coil m_2 of the inductorium n included in the line circuit, the microphonic transmitter o , battery n_2 , automatic responding instrument d, e, h, f , the switch o_1 and primary coil n_1 of the inductorium included in a local circuit, in combination substantially as set forth. 12th. In an automatic responding instrument f electric circuits, in combination, the spring motor f , the contact brush h , the fixed disc d , provided with the teeth d_1 , the insulated block e , the circuit wire n_3 connected to the disc d , the primary coil n_1 of the inductorium and the battery n_2 , substantially as set forth. 13th. In an automatic responding instrument for electric circuits, in combination, the fixed disc d provided with the teeth d_1 , the shield plate c , shaft b pointer b_1 the dial plate a_1 and the rotating contact brush h , substantially as set forth. 14th. In an automatic responding instrument for electric circuits, in combination, the wheel b of a motor, the contact brush h , the stop pin h_1 , the arm i of the armature i of an electro-magnetic device, the adjustable shield plate c , the fixed toothed disc d and the insulating block e , substantially as set forth. 15th. In an automatic responding instrument for electric circuits, in combination, the fixed disc d provided with the series of teeth d_1 and the series of small teeth d_2 , the rotating brush h , the insulated block e , the shield plate c adapted to cover all the teeth d_1 and leave the teeth d_2 exposed, and to expose one or more of the teeth d_1 and at the same time cover the teeth d_2 , substantially as and for the purpose set forth.

No. 21,418. Sealing Device for Seal Locks.

(Appareil pour Sceller les Serrures.)

Joseph M. Edgar, Argentine, Ks., and John Z. Roraback, Kansas City, Mo., U.S., 14th April, 1885; 5 years.

Claim.—1st. In combination with the seal lock having a suitable receptacle in the lock plate or hasp, and a perforation through said lock plate, of a seal composed of fibrous material arranged in said receptacle and over said perforations, for the purpose described. 2nd. In combination with the seal lock, of a hasp having a suitable receptacle, a perforation through the lock plate in proximity to the latch, and a seal composed of fibrous material arranged in said receptacle and over said perforation, for the purpose described. 3rd. In combination with the seal lock, having a suitable receptacle in the said lock, and adapted to protect the opening to the latch, of a seal composed of a water-proof material, as described.

No. 21,419. Seal Lock. (Serrure Scellée.)

Joseph M. Edgar, Argentine, Ks., and John Z. Roraback, Kansas City, Mo., U.S., 14th April, 1885; 5 years.

Claim.—1st. A seal lock consisting of a plate, having suitable transverse slots, and a locking device, a seal holder upon said plate adapted to retain a seal over one of said slots, and a hasp provided with a suitable recess and opening, adapted to fit over said seal holder and exhibit a seal, and a keeper on said hasp adapted to enter one of said slots and engage with the locking device, as and for the purpose described. 2nd. In a seal lock, the combination, with the perforated seal plate of a latch and a staple, one prong of which staple is adapted to serve as a pivot for said latch, and the opposite prong as a lug for the latch to rest upon, as shown and described. 3rd. The combination, in a seal lock, with the perforated plate of the latch and a staple, one prong of which staple is adapted to serve as a pivot for said latch, and the opposite prong as a lug for the said latch to rest upon, and a recess in said latch, as shown and described. 4th. In a seal lock, the combination, with the latch, provided with an inclined end, as shown, and a slot in the seal plate in proximity to said latch, and inclined as shown and described.

No. 21,420. Automatic Tram Greaser for Greasing Trams in Coal and other Mines. (Appareil Graisseur Automatique pour Graisser les Orniers à rebord dans les Mines de Charbon et autres.)

Daniel Ross and Charles Archibald, Cow Bay, U.S., 14th April, 1885; 5 years.

Claim.—1st. In a tram oiler, the box A, provided with hopper B, as shown and described for the purpose set forth. 2nd. In a tram oiler, the shaft b , provided with brushes f , loose wheel d , crank c and balance e , as shown and described for the purpose set forth. 3rd. In a tram oiler, the box A, having hoppers B, in combination with shaft b , crank c , balance e and loose wheel d , arranged as shown and described for the purpose set forth.

No. 21,421. Heating Stove. (Poêle de Chauffage.)

James Jamieson and John G. Bowes, Hamilton, Ont., 14th April, 1885; 5 years.

Claim.—1st. In combination, with a heating stove, of the ring A formed with an opening B, and seats b, b to receive, and be fastened thereto, an interchangeable plate C or an interchangeable hot air pipe collar D, substantially as and for the purpose specified. 2nd. In a heating stove, the combination of the ring A, and seats b, b , substantially as and for the purpose specified. 3rd. In a heating stove, the combination of the ring A, and movable plate C substantially as and for the purpose specified. 4th. In a heating stove, the combination of the top A, and interchangeable hot air pipe collar D, substantially as and for the purpose specified. 5th. In combination, with the hot air pipe collar D, of the casting G, the same being attached thereto to cover the space under the back part of the said collar, substantially as specified.

No. 21,422. Combined Harrow, Clod Crusher and Stalk Cutter. (Herse, Brise-Motte et Coupe-Tige Combinés.)

David M. McElhanev, Gustav A. Klein, Adolph Caden and Marie Caden, Buena Vista, Ohio, U.S., 14th April, 1885; 5 years.

Claim.—1st. A combined harrow, clod-crusher and stalk-cutter, constructed substantially as herein shown and described, and consisting of the wheels and axle provided with cutters, the stationary frame provided with cutters and the hinged frame provided with curved harrow teeth, as set forth. 2nd. In a combined harrow, clod-crusher and stalk-cutter, the combination with the frames E, C and the revolving axle B, of the stationary curved harrow teeth J, the stationary cutters K, and the revolving cutters D, substantially as herein shown and described, whereby the soil will be pulverized and clods, sods, stalks and weeds will be crushed and cut in pieces, as set forth. 3rd. In a combined harrow, clod-crusher and stalk-cutter, the combination, with the frame C, provided with cutters K, and the frame E provided with curved harrow teeth J, of the hinges F and the hook-G, substantially as herein shown and described, whereby the said harrow teeth can be readily secured in working position, and can be raised from the ground for convenience in passing from place to place, as set forth.

No. 21,423. Lubricating Carriage Axles. (Graissage des Essieux de Voitures.)

Edouard J. Dubeau, Quebec, (Assignee of Pierre Proteau, Beauport, Que.) 14th April, 1885; 5 years.

Claim.—1st. The axle B, provided with a diagonal bore F, longitudinally from the outer end, meeting a radial bore H, nut D having an oil reservoir E on the outer end of the axle, and wire G inserted loosely in bore F, as set forth. 2nd. The axle B, having a diagonal bore F, extending from the outer end of the axle to the axle box A, and provided with wire G inserted loosely in the box, in combination with a hollow nut D screwing on the outer end of the axle, as and for the purpose set forth. 3rd. The axle B, having a diagonal bore F from the outer end inwardly, and a nut D having a reservoir E screwing on the axle, in combination with an axle box A, as set forth.

No. 21,424. Electric Fire Alarm. (Avertisseur d'Incendie Electrique.)

Sidney A. Chase and William R. Mapes, Evart, Mich., U.S., 14th April, 1885; 5 years.

Claim.—1st. A relay for an electric fire alarm apparatus, consisting of the usual magnets and armature, one insulated contact screw which is in contact with the armature, while the main line circuit remains closed, and which has a wire passing to a binding post, one contact screw having wire connections with another binding post, and two wires connected to the armature and passing to binding-posts, the said wires forming connections with a closed and an open local circuit upon which the alarm instruments are placed, as and for the purpose shown and set forth. 2nd. In an electric fire-alarm apparatus, the combination of two relay-magnets upon the main-line circuit, an armature having wires passing to two binding-posts, a screw which is in contact with the armature while the latter is attracted by the magnets, having a wire passing to a binding-post, a screw which comes in contact with the armature when the latter is released, having a wire passing to a binding-post, with the wires of an open local circuit, having a vibrating alarm-bell and a battery, and connected to the binding-post receiving the wire from the screw coming in contact with the released armature and to the post receiving the wire from the armature, and the wires of a closed local circuit having an alarm-releasing instrument and a battery, and connected to the binding-post receiving the other wire from the armature and to the post receiving the wire from the screw coming in contact with the attracted armature, as and for the purpose shown and set forth. 3rd. A relay for an electric fire-alarm, having an open local circuit provided with an alarm-bell, and with an alarm-releasing instrument and a battery, the said relay consisting of the usual magnets and armature, a frame having wire connection with a binding-post and having an insulated aperture for the contact screw touched by the armature when the latter is at rest, and having the contact screw touched by the released armature, a contact-screw passing through the insulated armature and having wire connection with a binding-post, and two binding-posts having wire connections with the armature, as and for the purpose shown and set forth. 4th. In an alarm-releasing instrument for an electric fire alarm, the combination of the magnets of a closed circuit, a lever pivoted below the ends of the magnets and having an armature x attracted by the magnets, a spring secured to the lever and tilting it outward when the lever and armature is released, and an alarm released by the outwardly tilted lever, as and for the purpose shown and set forth. 5th. In an electric fire-alarm, the combination of a pair of relay-magnets of a closed circuit, or lever pivoted below the ends of the magnets and having an armature held by the magnets, a spring drawing the lever from the magnets, a trigger having a hooked upper end and pivoted above the free end of the lever, with its lower end projecting in front of the upper end of the lever, a lever having one end engaged by the hooked end of the trigger and having a weighted cord secured to its other end,

and an alarm-whistle having its cock opened by the cord, as and for the purpose shown and set forth.

No. 21,425. Plaster for the Skin. (Sparadrapp.)

Thomas A. Abbott, Lowell, Mass., U.S., 14th April, 1885; 5 years.

Claim.—1st. The combination of menthol, with an adhesion base or composition, constituting a plaster for the skin. 2nd. The combination of menthol, with an adhesion plaster or base of which caoutchouc is a constituent. 3rd. The composition, substantially as described, constituting a plaster for the skin, it consisting of olibanum, burgundy, pitch, resin or rosin, arris, root, wax, caoutchouc and menthol, combined in or about in the proportions, as set forth. 4th. The improved medicinal plaster, herein described, consisting of menthol, combined with the customary ingredients of adhesion plasters, herein described, in or about in the proportions specified, substantially as set forth.

No. 21,426. Manufacture of Tanning Extracts. (Fabrication des Extraits de Tan.)

Theodore F. Colin, Bodmisville, Penn., U.S., 15th April, 1885; 10 years.

Claim.—1st. The process of evaporating tan liquor, consisting in introducing first a stream of carbonic acid, sulphurous acid, gases and steam through the liquor contained in a common vacuum pan thereupon, shutting off the steam, and at intervals introducing a small quantity of steam, as and for the purpose shown and set forth. 2nd. As an article of manufacture, a tanning extract evaporated by introducing carbonic acid, sulphurous gases and steam through the liquors.

No. 21,427. Method of, and Apparatus for Dessiccating Eggs, etc. (Méthode et Appareil de Dessiccation des Oeufs, etc.)

Lydia J. Cadwell, Chicago, Ill., U.S., 15th April, 1885; 5 years.

Claim.—1st. The within-described improvement, in treating eggs and other liquid or semi-liquid substances, which consists in forming the same into a thin film and exposing it to heat while being crushed, agitated and dessicated, then transferring this worked material to form another film, and again similarly treating it to more thoroughly dessicate it, and finally thoroughly drying the same, as set forth. 2nd. In an apparatus for treating eggs and other like substances, two carriers and working appliances and openings arranged to convey heated gases from the furnace, first to the carrier on which the material is last worked, and then to the first carrier, substantially as described. 3rd. The combination, in a dessicating apparatus, of two or more carriers, and two or more disintegrators, and means for bringing the first carrier after the material is sufficiently worked in contact with and transferring it to the second, substantially as described. 4th. The combination, with the carrier B, of a disintegrating roll, and means for revolving the latter positively in the same direction as the carrier. 5th. The combination of the carriers B, F, scrapers S and gas inlet z, arranged adjacent to said scrapers, and outlet y below the inlet and at the opposite side of the apparatus, substantially as described.

No. 21,428. Construction of Pavements. (Construction du Pavage.)

James Kerr, London, Eng., 15th April, 1885; 5 years.

Claim.—The construction of a pavement by laying down a bed or foundation of concrete, and placing directly thereon wood blocks impregnated with creosote oil, as above described, which blocks are laid with a space between them, the lower portion of which space is filled with bitumen or bituminous composition, and the upper and greater portion with lime or cement grouting, all substantially as and for the purposes specified.

No. 21,429. Composition of Materials for Damp Proof Socks or Soles for Boots and Shoes, and Method of Preparing or Manufacturing the Same. (Composition de Matières pour Mettre les Chausselles et les Semelles de Chaussures à l'Épreuve de l'Humidité, et Manière de la Préparer.)

Robert J. Baggaley, Nottingham, Eng., 15th April, 1885; 5 years.

Claim.—The herein-described composition of matter to be used in the manufacture of socks, shoes or other articles it is desired to make water-proof, consisting of boiled linseed oil or equivalent oil, caustic lime, borax, essential oil of almonds, flowers of sulphur and cork, compounded in the manner and in the proportions hereinbefore set forth.

No. 21,430. Lathe Tool. (Ciseau de Tourneur.)

Thomas Ryan, (Co-inventor with, and Administrator of the Estate of Thomas E. Ryan,) Lockport, N.Y., N.S., 15th April, 1885; 5 years.

Claim.—1st. The combination, with a notched circular cutter, having a central screw threaded opening, of a screw-threaded supporting shank, a screw nut applied to said shank, a sleeve or collar surrounding said shank between the cutter and the screw nut, and a pin which permits relative longitudinal movement of the sleeve or collar and screw shank, but prevents relative rotative movements of these parts, substantially as set forth. 2nd. The combination, with the carrying bar, having a screw shank a, provided with a pin g, of the notched cutter C, having a central screw threaded opening a, screw nut k and a sleeve F, arranged on said shank between the cutter and the nut, and having a longitudinal slot j, into which the pin g projects, substantially as set forth.

No. 11,431. Claw Bar. (Lévier à Panne Fendue.)

William H. Lyman, Springfield, Mo., U.S., 15th April, 1885; 5 years.

Claim.—1st. An improved claw-bar, composed of a lever a, having a wedge-shaped lower end, to which are attached movable claws B by means of a yoke or collar C, and a connecting bolt c, said yokes being held forward by a spring D, all substantially as shown and described. 2nd. A lever for a claw-bar, having its lower end made wedge-shaped, through which is a hole a¹ to receive a connecting bolt, and above which is a lug a² or other equivalent device for supporting the back end of the claws, all substantially as shown and described for the purpose set forth. 3rd. The combination of movable claws B, attached to the lower end of a lever by means of a collar C and bolt c, with a spring D supported on a guide rod d, said rod having a free end playing in a hole c² of the collar, all substantially as and for the purpose set forth.

No. 21,432. Bosom Board.

(Table à Devant de Chemise.)

Samuel Maxim, Wayne, Mo., U.S., 15th April, 1885; 5 years.

Claim.—1st. The combination, with the bosom board, of the swinging U-shaped frame D hinged or pivoted thereto, the cross-bar E fixed to the bottom of the U-shaped frame, the U-shaped spring F, the roller G journalled in the U-shaped spring, and guides for controlling the roller in its yielding movement in the swinging frame, substantially as shown and described. 2nd. The combination, with the bosom board, of the slotted and swinging U-shaped frame D, provided with slot f, the cross-bar E made thickest in the middle, the U-shaped spring F fastened at its middle to the cross-bar E, the roller G journalled in the U-shaped spring, and the headed pins G¹ forming the journals of the roller and extending through the slots of the swinging frame to guide the roller in its yielding motion, as described.

No. 21,433. Rein Holder. (Acroche-Guides.)

Christmas Rivett, Almonte, Ont., 15th April, 1885; 5 years.

Claim.—A rein-holder, consisting of the shank portion A, having two arms C, C, extending in near proximity from the top end of the shank, thence spreading apart or nearly parallel for the middle portion of their length, and finally curving outwardly at the free ends, as set forth for the purpose described.

No. 21,434. Drop Weight Lifting Machine. (Monte-Charge à Contre-Poids.)

Ebenezer W. Silver, Bracebridge, Ont., 15th April, 1885; 5 years.

Claim.—The rotary cam C, having a cylindrical portion parallel to its axis, a bevelled portion G at the end, and fixed on the end of a spindle, whereby the cam will alternately wind and slip a rope to hoist and drop a hammer or tool suspended by the rope when the cam spindle is rotated by suitable means, as set forth.

No. 21,435. Emery Wheel Turner and Cleaner. (Machine à Tourner et Nettoyer les Tambours à Emeri.)

Charles B. Brown, Hamilton, Ont., 15th April, 1885; 5 years.

Claim.—1st. A movable frame, carrying an adjustable steel cutter, operated by an adjusting screw, attached to a frame and to a sliding carriage, all constructed and arranged substantially as and for the purpose specified. 2nd. An emery wheel turner and cleaner, consisting of a frame A, steel cutter B, operating screw R, adjusting screw G, nut F, screw J, block C, all constructed substantially as and for the purpose specified.

No. 21,436. Testing Sealed Cans.

(Épreuve des Boîtes Métalliques Etanches.)

Marvin C. Hutchings, Astoria, Oregon, U.S., 15th April, 1885; 5 years.

Claim.—The herein-described method of testing filled tin cans whose heads have been soldered in place, the said method consisting in placing the cans in a vessel A and closing the latter hermetically, then admitting air compressed to the required degree, next shutting off the same and opening the vessel, and then suddenly relieving the air pressure on the cans exteriorly, as specified.

No. 21,437. Machine for Heading Bolts.

(Machine à Têter les Boulons.)

Charles S. Seaton, Cleveland, Ohio, U.S., 15th April, 1885; 5 years.

Claim.—1st. In a machine for heading bolts or rivets, the combination, with a movable die carrying a cutter and provided with openings of unequal sizes, as described, of a stationary die, a heading die, a hammer working through the smaller opening in the fixed bar, and connections for actuating the movable and heading dies and the hammer, substantially as and for the purpose set forth. 2nd. In a machine for heading bolts or rivets, the combination, with the gauge K suspended between the heading-die and the grasping-dies, the screw engaging the upper end thereof and the supporting arm provided with a downwardly-extending foot of the heading-die, having an inclined surface adapted to engage the foot as it advances toward the blank, and to raise the said arm and gauge, substantially as set forth. 3rd. In a bolt or rivet heading machine, the combination of the arm L and the lever K, with the spring i and the set-screw k, causing the lower end of the said lever to recede from the blank as it rises, substantially as described and for the purpose specified. 4th. In a bolt or rivet heading machine, the combination with the die E and the slide e, of the toggle joint lever and cam operating the same and the cam e and the arm g, substantially as and for the purpose set forth. 5th. In a machine for heading bolts or rivets, the combination, with the dies E and Et, the suspended gauge and its supporting lever having a foot extending therefrom, a heading-die having

an inclined surface, and the bar J having the cutting-plate secured thereto and provided with a bolt and hammer pin openings, of the pivoted lever having a pin extending therefrom, and the rotating flange having an inclined lug, substantially as described, whereby the bolt or rivet is dislodged from the die, substantially as described.

No. 21,438. Record Tablet. (*Plaque Monument.*)

James Crackett, Bloomingdale, Penn., U.S., 15th April, 1885; 5 years.

Claim.—1st. A record tablet, consisting of the glass case A, having a tapered recess A¹, and glass-tablet B comprising a record, the tablet being inserted in the case, and secured by means of the tapered plug or stopper C hermetically sealed therein, substantially as shown and for the purpose described. 2nd. A record tablet for preserving a likeness and family record of a decedent, constructed and arranged substantially as shown and described.

No. 21,439. Spool Cabinet. (*Porte-Bobine.*)

Jacob H. New, Toronto, Ont., 15th April, 1885; 5 years.

Claim.—A spool-holder cabinet, constructed of a rectangular case A, having internally inclined tracks B, and external selves D, provided with cavities to receive the lower spool discharging from the track, whereby the last discharged spool will tumble into an erect position, and laterally prevent the remaining spools from sliding endwise down the track, as set forth.

No. 21,440. Oscillating Fan. (*Eventail Oscillant.*)

Thomas Burrows, Jr., Hamilton, Ont., 15th April, 1885; 5 years.

Claim.—1st. The combination, of the adjustable cramp A, the swivel A¹ and the pendulum D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the adjustable cramp A, the swivel A¹ and the pendulum D, of the attachment E and the eye-screw C, substantially as and for the purpose hereinbefore set forth.

No. 21,441. Lifting Jack. (*Cric.*)

James Chase, Rochester, N.Y., U.S., 16th April, 1885; 5 years.

Claim.—1st. The combination of the tubular frame, cored out to form the inward projecting bearings, with a lifting bar, and a spring sustaining the bar under the weight of the load to be raised, substantially as described. 2nd. In a lifting jack, the combination of the tubular frame, cored out to form the inward projecting bearings, with the sliding tube, substantially as described. 3rd. The combination of the frame, cored out to form the inward projecting bearings, the sliding tube, the lifting bar and the spring, substantially as described. 4th. The combination of a frame, a sliding tube, a jointed support for the tube, a lifting bar and a spring, substantially as described. 5th. The combination of the frame, a sliding tube, a spring, a cup supported thereby, a block in the cup supporting the tube, and a lifting bar, substantially as described. 6th. The combination of a frame, a sliding tube, a spring, a flanged cup suspended thereon, a block in the cup supporting the tube, and the sliding bar, substantially as described. 7th. The combination of a frame, a sliding tube formed with a female screw-thread, a screw lifting bar and a spring supporting the tube, substantially as described. 8th. The combination of a frame, a sliding tube, a tubular lifting bar and a spring sustaining the tube, substantially as described. 9th. The combination of a frame, a sliding tube formed with a female screw-thread, a tubular screw-threaded lifting bar and a spring sustaining the tube, substantially as described. 10th. The combination of a frame, a lifting bar, a spring sustaining the bar and a rotary indicator for weighing a load lifted by the bar, substantially as described. 11th. The combination of a frame, a sliding tube, a lifting bar in the tube, a spring sustaining the tube and a rotary indicator operated by the tube, substantially as described. 12th. The combination of a frame, a sliding tube having a rack bar, a lifting bar, a spring sustaining the tube, and a rotary indicator in gear with the rack bar on the tube, substantially as described. 13th. The combination of a frame, a sliding tube having a rack bar, a lifting bar, a spring sustaining the tube, the rotary indicator having a pinion engaging, the rack bar and the spring between the pinion and indicator, substantially as described. 14th. The combination of the frame, the sliding tube, the spring sustaining the tube, the screw-lifting bar having the ratchet wheel secured thereto, the lever loosely mounted on the bar and engaging the wheel and the loose cup piece, substantially as described.

No. 21,442. Manufacture of Cream of Tartar.

(*Fabrication de la Crème de Tartre.*)

Rudolf Silberberg, Jersey, N.J., U.S., 16th April, 1885; 5 years.

Claim.—1st. The process, herein described, of making cream of tartar, which consists in separating tartaric acid from argous, and then treating the mother liquor with soda and potassium carbonate, substantially as set forth. 2nd. The mode, hereinbefore described, of utilizing the waste liquor from the manufacture of tartaric acid, the same consisting in treating the said liquor with soda and potassium chlorate, substantially as described.

No. 21,443. Combined Truck and Ladder.

(*Camion et Echelle Combinés.*)

John C. Lowen, Titusville, Penn., U.S., 16th April, 1885; 5 years.

Claim.—1st. The combination, with the truck having cross-braces B, of the side standards F pivoted to the sides of the bars A, and provided near their lower ends with cross-piece G, extending across the upper side of the truck, as shown, for holding the standards in place, and serving also as a guard for the lower or forward end of the truck frame, whereby, when the truck is raised on its nose, the standards will automatically swing outward, substantially as described. 2nd. The combination, with the sides A, of an ordinary truck having cross-braces B, of the standards F extensively pivoted to

the sides A, near their upward or forward ends, and a locking device H secured to the sides A above or in rear of the pivots of the standards, whereby, when the truck is raised on its nose, the standards will automatically swing outward and into engagement with the locking device, substantially as set forth. 3rd. The combination, with an ordinary truck having cross-braces B, of the standards F slotted at d and pivoted to the rod c at the upper or rear end of the truck, as shown, locking device consisting of a socket plate secured to the sides of the truck, above or in rear of rod c, and the cross-brace G connected to the lower or forward end of the standard and adapted to rest on the upper surface of the truck, when folded, all constructed and arranged substantially as set forth. 4th. The combination, in a truck, with the side bars A, of braces B uniting them, and placed at medium inclination, that when the truck is turned over and rested on its nose E, to be used as a ladder, the said braces will be in a horizontal, or nearly horizontal position, and form convenient steps, substantially as herein shown and described.

No. 21,444. Hay Fork. (*Fourche à Foin.*)

Sullivan S. Wilson, Lithfield, Mich., U.S., 16th April, 1885; 5 years.

Claim.—1st. In a hay fork, the combination of the sheath provided with the block B, the sliding bar carried within said sheath, the prongs d, pivoted to the lower end of said sliding bar, the sliding head-block E rigidly attached to said sliding bar, the cam-lever F pivoted on said head-block, the side arms C, C pivoted to the blocks B, and the connecting-rods c, c, substantially as and for the purpose set forth. 2nd. In a hay fork, the bars A, A, the block B secured to said bars the sliding bar carrying prongs, the block E rigidly attached to said sliding bar, the cam-lever pivoted on said block and provided with a notch at its outer end, the arms C, C pivoted to the block B, and rods c, c connecting said arms and said block E, the parts being arranged and combined substantially as and for the purpose set forth.

No. 21,445. Gas Governor. (*Régulateur au Gaz.*)

John D. Averell, Brooklyn, Benjamin G. Bloss, and Sumner T. Dunham, New York, N.Y., U.S., 16th April, 1885; 5 years.

Claim.—1st. The combination, in glycerine oil gas pressure governors, with the float governor valve C, of the syphon tubular governor liquid case A, and the syphon conducting gas pipe F, substantially as and for the purpose herein set forth. 2nd. The construction of the governor valve, with its guide rod O and its stud Q, and the slotted guide P, substantially as and for the purpose herein stated. 3rd. The combination of the governor case A, its syphon chamber G, with its spaces I and N, the air outlet J and the pipe F, the float D, the valve C, the passages H and K and drip cock M and the in and outlet of the governor, all arranged substantially as and for the purpose herein set forth. 4th. The construction of the governor case A, with the cap B, and cap R, with the V-shaped liquid chamber G, and its space I, with its outlet J, and its space N, with the float D, and the valve C, and its guide P, and rod O, and the passages H and K and the governor in and outlet with the gas pipe F and its drip cock M, substantially as and for the purpose herein mentioned.

No. 21,446. Rail Scraper for Railways.

(*Grattoir pour Rails de Chemins de Fer.*)

William H. Robertson, Toronto, Ont., 16th April, 1885; 5 years.

Claim.—1st. A rail scraper, composed of a plough-shaped nose H, attached to the toe of the shoe F, which has journaled within it a wheel or roller G, in combination with the sleeve C, securely fastened to the bottom of the car, substantially as and for the purpose specified. 2nd. A rail scraper, composed of a plough-shaped nose H, having a lip a and attached to the toe of the shoe F, which has journaled within it a wheel or roller G, in combination with the sleeve C, securely fastened to the bottom of the car, substantially as and for the purpose specified. 3rd. The wheel or roller G, arranged to support the shoe F on which the plough-shaped nose H is attached, a shank E extending upwardly from the shoe F and fitting into the hollow sleeve C, in combination with the friction rollers b, arranged substantially as and for the purpose specified. 4th. The wheel or roller G, arranged to support the shoe F, on which the plough-shaped nose H is attached, a shank E extending upwardly from the shoe F and fitting into the hollow sleeve C, in combination with the friction rollers b and cord or chain I, substantially as and for the purpose specified.

No. 21,447. Adjustable Reclining Chair.

(*Sièzeil Bristé.*)

William J. Maddox, Thomas B. Howe and George W. Finn, Scranton, Penn., U.S., 16th April, 1885; 10 years.

Claim.—1st. In combination with the main frame, the back pivotally secured to the main frame, and the seat pivoted to the back and supported near its front edge on the link, substantially as described. 2nd. In combination, with the main frame and back pivoted thereto, as described, the seat mounted upon a link at one end and hinged to the back at the other, and a locking mechanism for sustaining the seat and back against the forward thrust, substantially as described. 3rd. In combination with the main frame, the brackets pivoted thereto and fastened to the back, the seat hinged to the lower arm of the bracket, and the link pivoted to the seat and to the frame below the seat, substantially as described. 4th. In combination with the main frame and the back and seat, the latter hinged together and supported at one end by the bracket b, and at the other by the link c, and the toothed bars pivoted to the main frame and arranged to engage the lugs attached to the seat, substantially as described. 5th. In combination with the movable seat, provided with the lugs D, the pivoted bars D located on either side of the seat, and provided with projections d for engagement with the lifting levers, substantially as described. 6th. In combination with the movable seat, its lugs D, and locking bars D, the two lifting levers engaging the bars D connected at their inner ends, substantially as and for the purpose

set forth. 7th. In an adjustable reclining chair, and in combination with the main frame thereof, a seat supported at one end upon a link and hinged at the rear end to the back, and a bracket or hanger attached to the back and pivoted to the main frame in advance of the point of attachment to the seat, substantially as described. 8th. In an adjustable reclining chair, and in combination with the movable seat thereof, the movable foot-rest sliding within the seat, substantially as described. 9th. In combination with the main frame, the bifurcated brackets or hangers *b*, attached to the back and provided with extensions *b*₃, the seat provided with strips *c*, the pivots and the links *c* supporting the forward end of the seat, substantially as described. 10th. In a chair, and in combination with the main frame thereof, the folding arms or rests, substantially as described. 11th. In an adjustable reclining chair, and in combination with the main frame and the movable seat and back thereof, the extensible or folding arms, substantially as described. 12th. In a chair, and in combination with the main frame thereof, an arm or rest, constructed in two parts, hinged together at their forward ends and provided with interlocking bearings beneath the hinge, substantially as described.

No. 21,448. Middlings Purifier.

(*Epurateur des Gruaux.*)

The Case Manufacturing Company, (Assignee of John M. Case, Columbus, Ohio, U.S., 16th April, 1885; 5 years.

Claim.—1st. In a middlings-purifier, the combination, with the bolt constructed of bolting-cloth, of a reciprocating frame placed below said bolt, and provided with tightly-stretched wires or cords vibrating in contact with the under side of the cloth, as explained. 2nd. In a middlings-purifier, the bolt and a reciprocating frame placed below it, and having wires or cords tightly stretched thereon, in combination with a fan for producing a current of air past said cords whereby they are vibrated, as explained. 3rd. In a middlings-purifier, the bolt and a reciprocating frame having tightly-stretched wires or cords placed beneath said bolt, in combination with a fan placed above the bolt for producing a current of air upward past said cords and through said bolt, as and for the purpose set forth. 4th. In a middlings-purifier, the combination, with a reciprocating frame having bolting-cloth stretched thereon, of a reciprocating frame having wires or cords tightly stretched thereon, said frames being so arranged that the wires of the latter shall traverse and communicate their tremulous action to the under side of the cloth of the former, as and for the purpose set forth. 5th. The combination of two or more riddles mounted in the same frame, a belt or strap connected to one end of each riddle, an eccentric for operating said strap, and a walking-beam connected at its respective ends to the riddles, for the purpose set forth. 6th. The combination of the single eccentric-shaft 5, the central strap or yoke 3, the belts 2, the anti-friction bearings 2a, the riddles 1 and the walking-beam 6. 7th. In a middlings-purifier, the combination of a riddle, a cleaning device consisting of tightly stretched wires or cords arranged in proximity to the under side thereof, and a fan for vibrating said cords, as explained. 8th. In a middlings-purifier, the combination, with the vibrating riddle, of a feeding device carried thereby, consisting of a hopper-spout having deflectors therein, a branch spout for conducting the material therefrom, and a box into which said material empties, as explained. 9th. In a middlings-purifier, the combination, with a reciprocating riddle, of a feed box carried thereby, and extending completely across the same, whereby an equal and uniform quantity of material is fed to said riddle from side to side, as explained. 10th. The combination, with the feed-hopper 24 and delivery-spouts 25 branching therefrom, of the adjustable deflectors 26 located in said hopper, as and for the purposes set forth. 11th. The combination, with the riddles, the straps 2 connecting them, and means for imparting a reciprocating motion to said straps, of the walking-beam 6 connected to said riddles at its respective ends and having an adjustable fulcrum, as and for the purpose set forth. 12th. The combination, with the cleaning frame 19, 19, and walking-beam 17 connected thereto at its respective ends, of the crank-shaft 13, driving-shaft 5, and gearing mechanism, substantially as and for the purpose set forth. 13th. In a middlings-purifier, the combination, with a riddle, of a reciprocating frame placed below it and provided with tightly stretched wires or cords, vibrating in contact with the under side thereof, as and for the purpose set forth.

No. 21,449. Wood-Sawing Machine.

(*Scierie à Bois*)

Deunbord Beaudry, Montreal, Que., 16th April, 1885; 5 years.

Claim.—1st. In a wood-sawing machine, the lever *G* fulcrumed in the frame *A*, and the pitman *H* connecting the saw with the crank *H*, which is operated by the driving mechanism, substantially as and for the purpose set forth. 2nd. In a wood-sawing machine, the combination of the side block *F*, sliding in a dove-tailed recess in the kirt *B*, with the back piece *b*, and the lever *c* provided with the pivot *d*, and tightening screw *e*, substantially as shewn and described.

No. 21,450. Suspenders. (*Bretelles.*)

John Byrne and Augustus F. LeMesurier, Montreal, Que., 18th April, 1885; 5 years.

Claim.—1st. The combination, with the separate ends of the shoulder straps of suspenders, of links connected to same, and pivoted at opposite points to a plate, and a link connected to the joined end of auxiliary or back straps, and pivoted to the centre of such plate, substantially as herein set forth. 2nd. As a means of connecting the main of shoulder straps with the back or auxiliary straps of a pair of suspenders, a plate to which links attached to such straps are pivoted all as herein set forth.

No. 21,451. Boots and Shoes. (*Chaussures.*)

William H. Wetmore, Raleigh, and Malbourn A. Angier, Durham, N.C., U.S., 18th April, 1885; 5 years.

Claim.—The improved boot or shoe described, the same having the

upper united around the front to the side or edge of the inner sole, by stitches passing through the upper, and diagonally through the inner sole from the side or edge to the bottom, and to the outer sole by stitches passing through the upper in close proximity to, and parallel with, those of the first set, and through the outer sole, and having the said upper turned in at the shank between the outer and inner soles, and there fastened by cable screws, or equivalent fastening device, the margin of the upper around the front of the boot or shoe being turned outward below the upright portion, which is fastened to the edge or side of the inner sole, substantially as set forth.

No. 21,452. Swinging Churn Motor.

(*Moteur de Baratte Oscillante.*)

Arthur Kew and Abram Lockman, Brantford, Ont., 18th April, 1885; 5 years.

Claim.—1st. In a swinging churn motor, the combination of platform *B*, with radial bars *C*, *D*, substantially as and for the purposes hereinbefore set forth. 2nd. In a swinging churn motor the combination of toothed segment *E*, pinion *F*, crank shaft *G*, with cross-head *I*, and connecting rod *L*, and strap and screw *O*, substantially as and for the purposes hereinbefore set forth.

No. 21,453. Photographic Paper and Sensitive Paper therefor. (*Papier Photographique et Papier Sensibilisé pour cet objet.*)

E. and H. T. Anthony & Co., (Assignees of Thomas C. Roche), New York, N.Y., U.S., 18th April, 1885; 5 years.

Claim.—1st. As a new and useful or improved article of manufacture, a photographic printing paper made with a toothed facing of gelatine and bromide of silver, as herein set forth. 2nd. The within described compound for facing photographic paper, consisting of a gelatine and bromide of silver, and a suitable toothed substance, such as the sulphate of baryta, prepared in the manner and proportions substantially as described. 3rd. The combination, with a photographic emulsion of gelatine and bromide of silver, of a toothed substance, such as the sulphate of baryta, substantially as herein described.

No. 21,454. Metallic Shingle.

(*Bardeau Métallique.*)

George Patten, New York, N.Y., U.S., 20th April, 1885; 5 years.

Claim.—1st. The construction of a metallic roofing plate, with an oppositely inclined double corrugation on one side, and a similarly inclined corrugation and flange on the other side, with valleys between them, substantially as set forth, for forming the lateral joints between adjacent plates. 2nd. The hood *R*, in combination with the securer *B*, substantially as described, whereby the upper tier of plates is firmly attached to the beneath and the joint valleys closed. 3rd. In metallic roofing plates, breaking joints in adjacent tiers securing the plates of the upper tier upon those of the lower tier, by securers fastened within the lower joints, so that said attachment will be covered by the upper plate when in position. 4th. The combination of the hood *R*, or its equivalent, and the securer *B*, with the pendant triangular flanges *m* for forming the transverse joint, substantially as described. 5th. The combination of the two sets of triangular flanges, with the plate surfaces, united substantially as and for the purposes set forth.

No. 21,455. Dust Arrester. (*Arrête-Poussière.*)

Oswald Kutsche, Grand Rapids, Mich., U.S., 20th April, 1885; 5 years.

Claim.—In a dust-arrester screens *A*, attached independently to the frames *B*, *C*, *D*, *E*, which frames are arranged in series, and connected together, substantially as shown, in combination with the inlet chambers *I*, provided with closed top *F*, and the outlet chambers *G*, having closed bottoms *B*, as herein set forth.

No. 21,456. Wire Netting for Fencing, etc.

(*Clôture, etc. en Treillis de Fil de Fer.*)

Arthur G. Hulbert, St. Louis, Mo., U.S., 20th April, 1885; 5 years.

Claim.—1st. A wire netting formed from continuous wires connected to the nearest wire on each side alternately by right and left twists, to form elongated hexagonal meshes, as set forth. 2nd. A wire netting, formed from continuous lines connected to the adjacent wire upon each side alternately by right and left twists, to form hexagonal meshes and selvage wires, as set forth. 3rd. The combination of body-wires *C* connected by right and left twists *c*₁ *c*₂, and vertical wire *D* passing through eyes *c*₃ in the twist. 4th. The combination, in wire netting, of body-wires *C*, connected by right and left twists with eyes *c*₃ therein, and longitudinal wires or strips passing through said eyes or twists. 5th. The combination of the body-wires *C*, connected by right and left twists, forming eyes *c*₃, and the vertical and longitudinal wires or strips passing through the eyes, as set forth.

No. 21,457. Stump Extractor. (*Arrache-Souche.*)

Alexander Logan, North Sydney, N.S., 20th April, 1885; 5 years.

Claim.—1st. In a stump-extracting machine, the frame *A*, having the forward leg *b* hinged to it, so as to fold under it, as shown and for the purpose herein stated. 2nd. In a stump-extracting machine, the frame *A*, having the arms *C* hinged thereto, and the chain *e* connecting the outer ends of said arms, substantially as and for the purpose set forth. 3rd. In a stump-extracting machine, the combination of the frame *A*, with the leg *b*, and the arms *C* hinged thereto, and the binding chain *e* connecting said arms, substantially as herein shown and described.

nection with a shaft M slotted vertically at *m*, arm N, shaft O, and means for rocking the shaft to lift the plate, substantially as herein set forth. 4th. In a rail clearer for snow ploughs, the combination with a plate K slotted at *k*, and shaped at *k1, k2, k4*, substantially as specified, of the frame D fitted in ways E, fixed to the mould-board A, the bracket hangers H, H', fixed to frame D, and entering slots *k* of plate K, the plate J fixed to hangers H, H' above plate K, and means for raising and lowering the frame D and plates K, J, substantially as herein set forth. 5th. In a rail clearer for snow ploughs, the combination with a plate K slotted at *k* and shaped at *k1, k2, k4*, substantially as specified, of the frame D fitted in ways E, fixed on mould-board E, the bracket hangers H, H', fixed to frame D and entering slots *k*, of plate K, the plate J fixed to hangers H, H', above plate K, the shaft M fixed to frame D, and slotted at *m*, and the arm N, shaft O, and means for rocking shaft O, substantially as herein set forth. 6th. In a rail clearer for snow ploughs, the combination, with a plate K, slotted at *k*, and shaped at *k1, k2, k4*, substantially as specified, of the frame D fitted in ways E, fixed on mould-board A, the bracket hangers H, H' fixed to frame D, and entering slots *k* of plate K, the plate J fixed to hangers H, H', above plate K, the shaft M fixed to frame D and slotted at *m*, the arm N, shaft O, arm Q and reach rod R, substantially as herein set forth. 7th. In a rail clearer for snow ploughs, the combination with the plate K, supported above and across the rail C by a vertically movable frame fitted to slide in ways fixed to the snow plough, and said plate K being held to move independently lengthwise in said frame, and being shaped at its lower edge, as at *k1, k2, k4*, substantially as specified, of a roller L journalled on plate K, and adapted to run against the edge of the head of the rail, substantially as herein set forth. 8th. In a rail clearer for snow ploughs, the combination, with the plate K, supported above and across the rail C by a vertically movable frame D fitted to slide in ways fixed to the snow plough, and said plate K having independent lengthwise movement in said frame, of a carrier roller G journalled in the frame D, or brackets thereon, and so as to ride on the rail C, substantially as herein set forth. 9th. In a rail clearer for snow-ploughs, the combination, with the plate K supported above and across the rail C by a vertically movable frame D, fitted to slide in ways fixed to the snow-plough, and said plate K being shaped at its lower edge, as at *k1, k2, k4*, and fitted to move lengthwise, substantially as specified, of a roller G, journalled in the frame D, or brackets thereof, so as to ride on the rail C, substantially as herein set forth. 10th. In a rail clearer for snow-ploughs, the combination, with the plate K supported above and across the rail C by a vertically movable frame fitted to slide in ways fixed to the snow-plough, and said plate K being shaped at *k1, k2, k4*, and fitted to move independently lengthwise, substantially as specified, of a roller G journalled in frame D or brackets thereon, so as to ride on top of rail C, and a roller L journalled on plate K, so as to ride against the edge of the head of the rail, substantially as herein set forth. 11th. In a rail clearer for snow ploughs, the combination, with the plate K, supported above and across the rail C by a vertically movable frame fitted to slide in ways fixed to the snow plough, and said plate K being shaped at *k1, k2, k4*, and fitted to move independently lengthwise, substantially as specified, of the plate J, fixed to the frame above plate K, and the interposed thrust blocks I, I', and said block I' being extended downward, as at *i*, to stand behind the plate K substantially as herein set forth. 12th. In a rail clearer for snow ploughs, the combination, with the mould boards A, A', of ways E, E' fixed thereon, the frames D, D' fitted to slide vertically in said ways, the plates K, K', supported by frames D, D', and so as to move independently lengthwise, and formed at their lower edges, as at *k1, k2, k4*, rollers L, L' fitted to plates K, K', rollers G, G', journalled in frames D, D', the plates J, J', fixed to said frames, the shafts M, M', fixed to frames D, D' and slotted at *m, m*, the arms N, N, shaft O, arm Q and reach rod R, all substantially as herein set forth.

No. 21,466. Corn and Potato Cultivator and Hiller Combined. (*Cultivateur-Butteur pour le Blé d'Inde et les Patates*)

William G. Parmelee, Stone Church, N. Y., U. S., 20th April, 1885; 5 years.

Claim.—1st. The combination, with the trapezoidal frame B, C, and standards D having their upper ends secured thereto of the slotted plates I having the lower bent ends *d*, knife M, secured to the bent ends *d*, hiller N and bolts *e*, substantially as shown and described. 2nd. The combination, with the tongue A having mortises *a, a*, and frame B, C, D, carrying knives and hillers M, N, of a protector consisting of a top K, inclined sides L and standards H passing through the mortises *a* of the tongue, and adjustably secured thereto, substantially as shown and described.

No. 21,467. Process and apparatus for the Production of Poly sulphites and Double Salts for the manufacture of Cellulose or Paper Pulp from Wood Fibre. (*Procédé et appareil pour la Production des Poly-Sulfites et Doubles Sels, pour la Fabrication de la Cellulose ou Pâte à Papier de Bois.*)

Eugene B. Ritter and Charles Kellner, Podgoia, Austria, 20th April, 1885; 10 years.

Claim.—1st. The process of producing a bi-sulphite solution, consisting of sulphurous acid, combined with a double base, in the proportions of more than two atoms of the acid with one atom of the respective base. 2nd. The process of producing a bi-sulphite solution, consisting of sulphurous acid, combined with a double base, in the proportions of more than two atoms of the acid with one atom of the respective base, said process consisting in first bringing a solution of sulphurous acid water in contact with a base and thereby forming a sulphite solution with said base, then unpreparing said solution with sulphurous acid and bringing the same into contact with the second base. 3rd. In and apparatus for the continuous production of bi-sul-

phites by the combination of sulphurous acid with a suitable base, an absorption chamber subdivided into a series of communicating compartments through which the gases are caused to circulate in one direction. In combination with a liquid supply, constructed and adapted to effect a circulation of the liquid through said compartments in an opposite direction to the gases, for the purpose described. 4th. An apparatus for the production of bi-sulphite by the combination of sulphurous acid, with a suitable base, comprising the following elements, viz: an absorption chamber subdivided into communicating compartments provided with grating to receive coke or limestone and connected through suitable pipes and sliince valves with the gas supply, a series of liquid reservoirs surmounting and communicating respectively with said compartments, a series of basins with pipes leading to said reservoirs by way of intermediate pumps or delivery devices, and with said compartments by means of discharge pipes or conduits whereby the gases and liquid are caused to circulate through said compartments in opposite directions, boxes adapted to contain carbonates of the base, meters arranged at the entrance and discharge ends of said boxes and communicating therewith, and pipes leading in series from one compartment of the tower to one box thence to a reservoir basin next to the last compartment through which the liquid circulates, thence to the second box, and finally to the reserve basin, all substantially as described and shown.

No. 21,468. Floor Grinding Machine.

(*Machine à Dresser les Parquets.*)

James B. Harris, Jr., Genesee, N. Y., U. S., 20th April, 1885; 5 years.

Claim.—1st. The grinding machine consisting of the wheel or block A, the axle U carrying rollers at its end, the tongue I and the seat E, combined for operation substantially as described. 2nd. In a floor grinding machine, the combination, with the grinding block or wheel, of an axle hung to rock upon the wheel, and provided with a seat for the operator, substantially as described. 3rd. In a floor grinding machine, the combination of the axle D and the grinding wheel or block A provided with the vertical stud or post C upon which the axle is hung, substantially as described.

No. 21,469. Process for Extracting Gold and Silver from Copper Ores, Oxides of Copper, Manganese Ores, etc.

(*Procédé pour Extraire l'Or et l'Argent des Minerais de Cuivre, Oxides de Cuivre, Minerais de Manganèse, etc.*)

George Thomson, Dillinton, Que., 20th April, 1885; 5 years.

Claim.—The improved process for the extraction from copper and other ores and oxides, by adding to them hydro-chloric acid in the proportions set forth, heating the mixture to a point above that of calcination, thereby driving off the acid and volatilizing the precious metals, and then collecting such metals, all as herein set forth.

No. 21,470. Road Engine. (*Machine Routière.*)

George F. Page, Baltimore, Ind., U. S., 20th April, 1885; 5 years.

Claim.—1st. In a road-engine, the driving and pilot wheels provided with peripheral grooves, and connected by an endless chain having a V cross-section, substantially as and for the purpose specified. 2nd. In a road-engine, the driving and pilot wheel, connected by an endless track composed of hollow links having extensions which extend into the adjoining links, substantially as and for the purpose specified.

No. 21,471. Insertible Saw Tooth.

(*Dent de Scie Mobile.*)

John C. Trullinger, Astoria, Oregon, U. S., 20th April, 1885; 5 years.

Claim.—1st. In a saw of that class having a rotary clamping bit seated in a recess at the bottom of the throat in front of each tooth, the removable tooth back or shank having a case-hardened portion at the back of the inserted portion of the tooth, substantially as and for the purpose set forth. 2nd. In a saw, the combination, with the blade, of the rotary clamping bit seated in a curved recess at the bottom, of the throat in front of each tooth, and the removable tooth shank or back curved at its front side to conform to the curvature of said recess or seat, together with the tooth with its lower portion interposed or held between said shank and bit, substantially as and for the purpose set forth. 3rd. In a saw the combination, with the blade or plate of the rotary clamping-bit seated in a curved recess at the bottom of the throat in front of each tooth, and the removable shank or back curved to conform to the curvature of the aforesaid recess and having a case-hardened portion along its upper curved surface together with the tooth with its lower portion held or interposed between the case-hardened portion of the removable shank or back and said bit, substantially as and for the purpose set forth.

No. 21,472. Button. (*Bouton.*)

Dilman B. Shantz, Berlin, Ont., 20th April, 1885; 5 years.

Claim.—A button, consisting of the annular front ring A, back B, provided with shank C and disk D confined by the back and ring, as set forth.

No. 21,473. Production of Compounds containing Nitro-Cellulose. (*Production de Compositions contenant de la Nitro-Cellulose.*)

William V. Wilson, London, and Joseph Storey, Lancaster, Eng., 20th April, 1885; 5 years.

Claim.—The use of acetate of amyl as the solvent nitro-cellulose, which may be used either alone or in combination with any of the well known menstrua, and the application of the dissolved or softened

nitro-cellulose either alone or compounded as described to the production of leather cloth, artificial leather and varnishes, substantially as herein set forth.

No. 21,474. Sash Lock. (*Arrêlé-Croisée.*)

Seth A. Brown, Buffalo, N.Y., U.S., 21st April, 1885; 5 years.

Claim.—A sash lock, consisting of the pressing plate B having the parallel arms C, C, provided with the projections *f, f*, in combination with a cam lever A, having the eccentric portion or cam A¹, and a boss or projection D, the latter being concentric to the pivot G, and provided with a depression or recess E, on its opposite side to receive the screw-head.

No. 21,475. Water Heater and Circulator.

(*Calorifère à Eau.*)

Peter Smith, Detroit, Mich., U.S., 21st April, 1885; 15 years.

Claim.—1st. A water heater and circulator, consisting of an upright furnace with an inclosing water jacket, a conduit leading into the jacket from the outside of the furnace, a coil arranged within the furnace and having one terminal connected with the water jacket, and the other leading directly to the outside of the furnace, and adapted for connecting with a water conveying pipe, and an escape pipe for air affording a communication between the jacket and the riser pipe, substantially as described. 2nd. In a water heater and circulator, constructed and operating substantially as described, an air pipe communicating between the water jacket at its highest point and the riser pipe, in combination with a compression drum, substantially as and for the purposes specified.

No. 21,476. Circular Sawing Machine.

(*Scierie à Scies Circulaires.*)

George J. Kautz, Beechwood, Pa., U.S., 21st April, 1885; 5 years.

Claim.—1st. The combination, with the lever Q, pivoted at S to the frame, and connected at its free end to the chain T, which passes under an idler below the lever, and over a chain pulley or sprocket wheel on the shaft of the feed-roller D, above the lever Q, of the cam P, mounted on shaft K, for operating lever Q, and devices connected therewith, substantially as described. 2nd. The combination of the feed-roller D, on the shaft of which is mounted loosely a chain pulley or sprocket wheel V, having pivoted thereto pawls X, an internal ratchet wheel Y, keyed upon the shaft of the said feed-roller D adjacent to said sprocket wheel, and pawls X, a chain J running upon said sprocket wheel V and over an idler U and pivoted cam-operated lever Q below the table, substantially as set forth. 3rd. The combination of the shaft K, provided with the cams L, P, the former for operating the swinging saw-frame, and the latter for operating the pivoted lever Q, connected with the chain T passing under idler U and over loose chain-pulley V on the shaft of the feed-roller D with the fixed internal ratchet wheel Y keyed upon said shaft and engaging the pawls X and suitable gearing for operating the shaft K and the saw, substantially as set forth. 4th. The combination of the shaft K, carrying the cams L, P, mounted respectively below the swinging saw-frame, and pivoted lever Q, and said shaft K also provided with cog-wheel O, with the shaft M provided with pinion N gearing with wheel O, and with a driving pulley for operating said shaft M, and the pulleys G, H on the saw-frame shaft and saw-arbor respectively by belts passing over the same, substantially as set forth.

No. 21,477. Engine Governor.

(*Gouverneur de Machine.*)

John P. Simmons, San Francisco, Cal., U. S., 21st April, 1885; 5 years.

Claim. 1st. In a governor, the eccentric fitted loosely to the main engine shaft, and the curved weighted arms connected with the hub of the eccentric by straps attached to the arms, and to segments, so as to rotate it when turned outward, by centrifugal action, the said segments having a returning-spring coiled around said pins, as herein set forth. 2nd. In a governor, the eccentric loosely fitted to the main engine-shaft, the pivoted and curved weighted arms, connected with the hub of the eccentric, so as to rotate it when thrown outward by centrifugal action, and the arcs or segments connected with opposite sides of the eccentric, these segments being also made eccentric to their journal-pin, and having springs coiled around said pin to return them as the centrifugal force decreases, as herein described. 3rd. In a governor, the eccentric turning loosely upon the main engine shaft, and having a hub connected with the curved weighted arms, so as to rotate it in one direction, when turned outward by centrifugal action, and eccentric segments connected with opposite sides of the hub by straps, with coiled spring J upon their pins to resist the centrifugal action of the weights and return the hub and eccentric to its first position as the centrifugal power decreases, in combination with an adjusting tension-screw connected with the spring and passing through lugs on the arms of the disk and nuts L, as herein described. 4th. In a governor, the eccentric loosely fitted to main engine-shaft, the pivoted and curved weighted arms connected with the hub of the eccentric, so as to rotate it when thrown outward by centrifugal force, and the arcs or segments connected with opposite sides of the eccentric, in combination with these journal-pins and adjustable with reference thereto, substantially as herein described.

No. 21,478. Article of Manufacture for Panels for Joinery, etc., from Wood Paper Pulp. (*Article de Fabrication pour l'ameux de Menuiserie, etc., en Pâte à Papier de Bois.*)

Simon X. Cimon, Malbaie, Que., 21st April, 1885; 5 years.

Claim.—As a new article of manufacture, a panels for doors and joiner's work, formed of paper pulp, made waterproof and coloured, if required, substantially as described and for the purpose set forth.

No. 21,479. Steam Vacuum Pump.

(*Pompe à Vapeur à Vide.*)

George H. Nye, Chicago, Ill., U.S., 21st April, 1885; 5 years.

Claim.—1st. In steam vacuum pumps for elevating water, the case A, L, K, constructed with the pipe attachments R, S, openings 1, 4 communicating with the valve chamber and pipes R, S, the annular grooves *d, d, m*, steam pipe C, and partition N, in combination with the valve having the four cut-off, J, L, L, J, spaces *a, a¹*, a between them and holes *e, e*, through the heads J, J, for alternately directing steam into the cylinders *d, D*, as and for the purpose hereinbefore specified. 2nd. The valve case A, L, K, and valve E, constructed as specified, in combination with the steam chambers *e, e*, in the heads L, K, for shifting the valve, as specified. 3rd. The valve E, valve-case A, L, K, and pipes S, R, constructed substantially as specified, in combination with the cylinders B, D, pipes H, H, with valves L, L placed above them and at their intersection with the pipe F, also in combination to bring the steam below the discharging water, all substantially as and for the purpose specified.

No. 21,480. Wheel Expander.

(*Appareil pour Etendre les Roues.*)

William Campbell, Detroit, Mich., U.S., 21st April, 1885; 5 years.

Claim.—The combination, with the rim and spoke of a wheel, the clip or plate C, having a hub *b* formed thereon, ferule *d* fitting on the end of the spoke, plate E, and expander screw *b*, the parts being constructed and operating substantially as and for the purposes described.

No. 21,481. Combined Harrow and Seeder.

(*Herse-Semoir.*)

Jay S. Corbin, Gouverneur, N.Y., U.S., 21st April, 1885; 5 years.

Claim.—1st. The combination, substantially as set forth, of the seeding devices, the disk gangs and the levelling devices. 2nd. The combination, substantially as set forth, of the frame, the disk gangs, the seeding devices arranged to drop the seed in front of the cutting disks, and the levelling devices which act on the soil in rear of the disks. 3rd. The combination, substantially as set forth, of the frame, the series of cutting disks arranged across the line of draft, and a leveller which acts on the soil in rear of the cutting disks. 4th. The combination, substantially as set forth, of the main frame, the disk gangs arranged on opposite sides of the machine transversely to the line of draft, mechanism for changing the angle of the gangs relatively to the line of draft, a seed box and seeding devices carried on the main frame, mechanism for driving the seeding devices from one of the disk gangs, and compensating devices acting on said driving mechanism to compensate for the variation in the positions of the disk gangs. 5th. The combination, substantially as set forth, of the main frame, the disk gangs arranged on opposite sides of the central draft line, mechanism for varying the angle of the gangs relatively to the line of draft, a seed box and seeding devices carried on the frame, the sprocket driving wheel on one of the gang shafts similar on the seed shaft and an elastic compensating pulley over which the driving chain passes. 6th. The combination, substantially as set forth, of the disk gang, the sprocket wheel thereon, the driving chain and the dirt-discharge opening in the sprocket wheel. 7th. A sprocket wheel, substantially as described, formed with openings leading from the bottom of the depression or chain socket, in the periphery of the wheel, to the side of the wheel. 8th. The combination, substantially as set forth, of the frame a series of cutting disks arranged transversely to the line of draft, and the vertically yielding or elastic supporting wheel. 9th. The combination, substantially as set forth, of the main frame, the disk gangs arranged on opposite sides of the central line of the machine transversely to the line of draft, and the supporting wheel arranged between the inner ends of the disk gangs. 10th. The combination, substantially as set forth, of the frame, a series of cutting disks arranged transversely to the line of draft, a supporting wheel and mechanism for varying the relation of the supporting wheel relatively to the cutting disks, and consequently the amount of weight on the disks. 11th. The combination, substantially as set forth, of the frame, the cutting disks arranged transversely to the line of draft, the vertical yielding supporting wheel, and mechanism for adjusting said wheel vertically relatively to the disks. 12th. The combination, substantially as set forth, of the frame, the cutting disks, the supporting wheel, the hinged bracket in which the standard of the supporting wheel is mounted, and the spring which normally presses the wheel down upon the soil. 13th. The combination, substantially as set forth, of the frame, the disk gangs and the detachable or separable scraper beam S. 14th. The combination, substantially as set forth, of the frame, the disk gangs, the hangers in which the gangs have their bearings, the scraper beams removably supported upon the disk gangs and the pins which retain the scraper trans in position. 15th. The combination, substantially as set forth, of a disk gang, and a scraper beam supported so as to slide endwise directly upon the thimbles of the disk gang. 16th. The combination, substantially as set forth, of the scraper bar, with reversible scraper-teeth mounted therein. 17th. The combination, substantially as set forth, of the thimble having the collar or flange intermediate of its length, the journal box which envelops the sleeve and is provided with a recess or chamber in which the thimble works, and anti-friction balls placed in said chamber. 18th. The combination, substantially as set forth, of the thimble, the journal box, the conically-shaped flanges on the ends of the thimble, and the correspondingly shaped sand-bands. 19th. The combination, substantially as set forth, of the hanger (B), the disk gangs, the journal box carried by the hanger, the lug or projection on the upper side of the journal box, and the elongated slot in the hanger. 20th. The combination, substantially as set forth, of the thimble having a flange intermediate of its length, the enveloping journal box having a chamber in which the flange, and anti-friction balls work, the conically-shaped flanges on the ends of the thimble, and the correspondingly conical sand-bands. 21st. The combination, substantially as set forth, of the frame, the disk gangs arranged on opposite sides of the pole, a lever

common to both gangs by which their angle to the line of draft may simultaneously be adjusted, and mechanism for disconnecting one gang from said lever so that the other gang only will be affected by the vibration of the lever, for the purpose set forth. 22nd. The combination, substantially as set forth, of the frame, the disk gangs arranged on opposite sides of the frame, the hand lever directly connected with one gang, the supplemental lever with which the other gang is directly connected, and mechanism for locking said supplemental lever with the hand lever to simultaneously operate both gangs or disconnecting said supplemental lever from the hand lever to operate one gang only. 23rd. The combination, substantially as set forth, of the frame, the disk gangs arranged on opposite sides of the frame, the hand lever, the adjusting rod connecting said lever with one gang, the supplemental lever and the rod which connects it directly with the other gang, the bracket *o*, shoe *o'*, latch *P* and loop *p* on the hand lever. 24th. The combination, substantially as set forth, of the frame, the disk gangs arranged on opposite sides of the frame, a lever for adjusting the angle of the gangs relatively to the line of draft, a cutting tooth located between the gangs, and mechanism for automatically raising or lowering it as the gangs are adjusted. 25th. The combination of the pole, the opposing gangs and the adjustable cultivator or harrow tooth located between the gangs. 26th. The combination, substantially as set forth, of the gang of cutting disks, the scraper beam, the bifurcated standards which support the beam on the gang.

No. 21,482. Combined Wooden Sheathing and Lath. (*Revêtement en Bois et Latte Combinés.*)

Edwin M. Byrkit, Indianapolis, Ind., U. S., 21st April, 1885; 5 years.

Claim.—In a combined wooden sheathing and lath, the combination of the boards A, A, having grooves in their faces, worked to form a key for the plastering, and of one or more cuts *c*, *c* in the back side of the boards A, A, substantially as described and for the purpose specified.

No. 21,483. Saw Mill Set Work.

(*Galet de Chariot de Scierie.*)

Robert R. Parsons, Montgomery, Miss., U. S., 21st April, 1885; 5 years.

Claim.—1st. In head-blocks for saw-mills, the combination, with the head-block having on its under side a rack, and the setting shaft geared with said rack, of the shaft, having its bearings in the head-block, and geared with said rack, and a spring applied thereto and to the head-block, substantially as and for the purpose set forth. 2nd. In a saw-mill head-block, the head-block having on its under side a rack, the setting shaft geared with said rack, and the shaft geared with the said rack, and having a spring applied thereto, and to the head-block, in combination with the ratchet wheel whose shaft is geared with the setting shaft, and the hand lever having a toothed segment gearing with the rack, of a sliding bar carrying the ratchet-wheel operating mechanism, substantially as and for the purpose set forth. 3rd. In a saw-mill head-block, the combination, with the setting-shaft geared with the head-block, and the shaft having a spring applied thereto and to the head-block, said shaft being geared with the head-block rack of the stop wheel having a series of pin-holes, and the buffer slide having a horn, a buffer spring and a supplementary spring to return the buffer slide to its normal position, after the movement of the horn out of the plane of movement of the stop-wheel, substantially as and for the purpose set forth. 4th. In a saw-mill head-block, the setting shaft geared with the head-block, and with the shaft carrying a ratchet wheel, and the shaft geared also with the head-block, and having a spring applied thereto, and to the head-block, in combination with the sliding bar having stops one on each side of one of its guides, and carrying a lever provided with pawls engaging with said ratchet wheel, the hand lever having a toothed segment gearing with a rack on said sliding bar, the stop wheel having a stop pin and the spring buffer bar having a horn, substantially as and for the purpose set forth. 5th. In a saw mill, the combination, with the pawl arms connected centrally to the axis of the ratchet wheel and to a centrally pivoted lever, and spring catches fitted to slide vertically in the pawl arm heads of the slides fitted to slide in the latter and in the catches at right angles to the plane of movement of said catches, and having at intermediate points between their ends notches or recesses with inclined surfaces, said slides being connected to a hand lever centrally pivoted upon the aforesaid lever, substantially as and for the purpose set forth. 6th. In a saw-mill head-block, the combination with a stop wheel having a stop pin and gearing with the setting shaft of the sliding spring buffer-rod having the horn and the supplementary re-adjusting spring connected to a fixed point and to the sliding buffer-rod, substantially as and for the purpose set forth. 7th. The stop wheel *t*, having a series of pin-holes *k*1, and the buffer slide *o*1, having horn *n*1, and a buffer spring *l*1, in combination with the setting shaft *t*, and the knees *c*, having springs *g* for shifting the knees back said wheel *t* being geared with said setting shaft, substantially as described.

No. 21,484. Journal for Axle Boxes.

(*Fusée d'Essieu.*)

Louis Goullioud, Charles Pagé, Montreal, and Ashley Hibbard. St. Armand East, Que., 22nd April, 1885; 5 years.

Claim.—1st. In railway and other rolling stock, the combination, with a journal, of a ring of greater diameter than the axle and rotated by it, substantially as herein set forth and for the purposes described. 2nd. The combination, with the journal, of a ring rested on and rotated by same, forming bearing surface for brass and acting as lubricator, all substantially as herein set forth. 3rd. The ring *C*, with bearing surfaces *c*, *c*, and teeth *C*1, in combination with the journal *B*, with bearing surfaces *b*, *b*, and teeth *B*1, as and for the purposes set forth. 4th. The brass *F*, with flange *F*1, as herein set forth.

No. 21,485. Cutting Apparatus of Mowing Machine. (*Scie de Moissonneuse.*)

Philip Pethick, (Assignes of Willard E. Clough,) Concord, N. H., U. S., 22nd April, 1885; 5 years.

Claim.—1st. In a cutting apparatus for mowing machines, the construction herein described, consisting in providing one more knife than there are guard fingers, substantially as and for the purpose specified. 2nd. The construction of a cutting apparatus for mowing machine, having cutters and guard fingers, substantially as described, in unequal numbers with each other, as and for the purpose set forth. 3rd. The cutting apparatus of a mowing machine comprising knives and guard fingers, so constructed respecting their numbers as that but two of the knives can be covered by guard fingers at one and the same time, substantially as and for the purpose described and set forth.

No. 21,486. Method of Casting Car Wheels. (*Méthode de Coulage des Roues de Chars.*)

William Wilmington, Toledo, Ohio, U. S., 22nd April, 1885; 5 years.

Claim.—The method of incorporating a desired quantity of the elements, composing rich ferre-manganese in varying quantities, in the molten iron forming the different parts of chilled tread cast iron car wheels, as described, which consists in reducing from a pig or cake condition to different degrees of fineness, rich ferre-manganese, then placing the same in a pouring ladle with molten chill, hardening cast iron at the time or just before commencing to fill the mould of a car wheel, and before the elements composing the whole of the ferre-manganese in the molten iron in the pouring ladle have become homogeneous with the same, then pouring the same, and continuing the pouring, while an increasing proportion of the ferre-manganese is being melted and disseminated, substantially as described and for the purpose set forth.

No. 21,487. Filter to be Attached to Cistern or Well Pumps. (*Filtre pour être attaché aux Pompes des Cisternes ou des Puits.*)

John Brokenshire, Kingston, Ont., 22nd April, 1885; 5 years.

Claim.—1st. The combination and attachment of the pump log or stem A, filter-box B, dove-tail C and clasp G, together with cleat H, substantially as and for the purpose hereinbefore set forth. 2nd. The construction and arrangement of slide-valves F, F, in connection with orifices E, E and cover D on filter box B, substantially as and for the purpose hereinbefore set forth.

No. 21,488. Machinery for Splitting Wood.

(*Machine pour Refendre le Bois.*)

Edwin A. Hildreth and Stanley B. Hildreth, Harvard, Mass., U. S., 22nd April 1885; 5 years.

Claim.—1st. The combination of the nut cheek or spanner *b*, applied as described, to the nuts *a, a*, of the pair of rods F, F, and bolted to the box C, of the driving shaft with such box and with the said rods applied to it and the frame A of the machine, substantially as set forth. 2nd. The combination of the braces or connecting bar N, and their fastening clips or devices, with the four rods F applied to the frame A, and provided with guides and axle carriers adapted to such guides, and with the rotary tables L and their supporting devices applied to such rods, all being substantially as represented. 3rd. The combination of each axle, provided with a rib *m*1 at its top, as represented, the axle carrier P socketed to receive such rib and provided with the arched opening *p*1, and connected to the axle by screws *n*1, as described, and the locking piece *o*1 applied to the heads of such screws and fastened to the said carrier, as set forth. 4th. The combination, with the pitman *w*, jointed to the axle carrier P, and with the crank wheel O, fixed on the driving shaft B, of the wrist *r*1 having its head inserted in a socket on the crank wheel O, the screw bolts *s*1 going through such wheel and wrist, and the nut *t*1 screwed on such screw, and grooved on its front, and having a key or pin *u*1 inserted into one of the grooves and into the bolt, all being substantially as set forth. 5th. The combination of the screw projection or nut G, applied to the two rods F, and provided with the flange *g*, extending down from it, as represented, and resting against the girt *d* of the frame A, with the cop plate I applied to the said rods F, and connected to the said nut G by screws R, having a lock *m* arranged with them and fastened to the said cop-plate, substantially as set forth. 6th. The combination of the frame A, provided with the two sets of rods applied to it, and the driving shaft boxes, as set forth, and with the cross-bars N and their fastenings or clips, with the two adjustable tables L and their supporting nuts G, and with the two axes and their carriers applied to each other, and the rods F, as explained, and with the two pitmen jointed to such carriers, and connected with the crank wheels of the main driving shaft, all being substantially as specified and represented. 7th. The combination of the locking shoes *i*, with the cross-bar *k*1, and with the screws and nuts connecting the parts *d*1 and *e*1, of the clamps, by which the pair of guides R R are fixed to their support rods F, the said shoes being fastened to the bar *k*1, by means as set forth.

No. 21,489. Foot Warmer. (*Chaufferette.*)

Edward B. Elrod, Flora, Ill., U. S., 22nd April, 1885; 5 years.

Claim.—1st. The heater and warmer, having a suitable base supported on legs, provided with an arched cover, closed on the rear side, and having open spaces at the forward side to admit the feet of the user, substantially as herein set forth. 2nd. The heater and warmer, having a suitable base supported on legs, and provided with the arched cover having the rear side closed, in combination with the reservoir beneath and the lamp therein, substantially as herein set forth. 3rd. The heater and warmer, having a hinged frame provided at its lower part with the horizontal plate, carrying the lamp chimney, and its upper part provided with a reflector, having centrally downturned wings for holding the lamp chimney, substantially as

herein set forth. 4th. The base, having the arched cover, with the rear side closed, in combination with the inclined foot rest, and centrally the lamp with the hinged wings, or guards, between the lamp and the foot rest, substantially as herein set forth. 5th. The combination of a suitable base A, and arched cover C, having the rear side closed, the inclined foot rests B, and the hinged upright wings or guards on each side of the lamp, substantially as herein set forth. 6th. The combination of the base A, having the oil reservoir beneath, and the arched cover above, with the ventilating tube N, extending upward from said reservoir, the lamp, the inclined foot bases B, and the hinged guards or wings, the whole arranged as and for the purpose substantially as herein set forth and described.

No. 21,490. Hydraulic Apparatus for Removing Sand Bars, etc. (*Appareil Hydraulique pour enlever les Bancs de Sable, etc.*)

Roy Stone, New York, N. Y., U. S., 22nd April, 1885; 5 years.

Claim.—1st. The combination, with the vessel or float, and an inclined connection or drag, of a curved water pipe at the lower end terminating in the jet tube *d*, having an upward inclination and acting to project the solid materials into the current in the river, substantially as set forth. 2nd. In a hydraulic excavating apparatus, the pipe B, the jet tubes *d*, having an upward inclination, and a jet tube *i* between the tubes *d*, substantially as set forth. 3rd. The combination, in a hydraulic plough, of a pipe through which water is forced, jet nozzles for the issuing water at upward and downward inclinations, to loosen and raise the solid material into the current, and a web *e* at the front of the water pipe, to cause the plough to rise and pass over any obstruction that is not removed by the water, substantially as set forth. 4th. In a hydraulic excavating apparatus, the pipe B, web *e*, jet tubes *d*, branch pipe *l* and connections to the scow and to the water pumps, substantially as set forth.

No. 21,491. Bend of Carding Engine. (*Coude de Machine à Carder.*)

George Ashworth and Eliza Ashworth, Manchester, Eng., 22nd April, 1885; 5 years.

Claim.—1st. In a carding engine, the combination, with the cylinder shaft and carding flats, of curved rails having their peripheries concentric with the said cylinder shaft, and adapted to support the ends of the said carding flats which travel thereon, substantially as and for the purpose specified. 2nd. In a carding engine, the combination, with the frame and shaft carrying the carding cylinder, of the curved rails adapted to carry the carding flats on their periphery, and screws for effecting the perfect concentricity of the said cylinder and rails, substantially as specified. 3rd. In a carding engine, the combination, with the main cylinder and carding flats, of the curved rails *a*, having one or more bands or ribands detachably secured to their peripheries, substantially as and for the purpose set forth.

No. 21,492. Art of Making Embroidery by Machinery. (*Art de faire la Broderie à la Mécanique.*)

Daniel Guggenheim, New York, N. Y., U. S., 22nd April, 1885; 5 years.

Claim.—1st. An improvement in the art of embroidering muslin, whereby a continuous strip can be produced, substantially as specified. 2nd. As a new article of manufacture, a web or package of embroidery, consisting of one continuous length.

No. 21,493. Machine for Lasting Boots and Shoes. (*Machine pour enformer les Chaussures.*)

Gilbert Hawkes, Lynn, Mass., U. S., 22nd April, 1885; 5 years.

Claim.—1st. The combination, with the two screw-rods 70, which raise and lower the pinchers carrying frame 79 (and the box 78), of a single wheel 75 and suitable intermediate gearing 74, 72, whereby the two rods may be made to turn uniformly, and so give uniform motion to the pinchers-carrying frame, substantially as set forth. 2nd. The combination of the screw-rods 70, the gears 72 and 74, and the wheel 75, with the cross-frame or yoke 73 for supporting the upper ends of the rods, substantially as and for the purposes described. 3rd. The combination, with the screw-rod 76, of the wheel 75, provided with a centrally perforated shaft, to admit the passage of the screw-rod 76 through it, substantially as described. 4th. The adjustable pincher-rod 84, herein described, consisting of two portions provided with end abutments, enclosing a coiled spring, whereby the motion of either portion of the rod along the other portion tends to compress the coiled spring, substantially as described. 5th. The inner pincher-rod 84, herein described, provided with means, substantially as set forth, for varying its length, and also with adjustable devices of the character herein described. 6th. The pinchers-opening device, herein described, consisting of a helical spring 94, compressed by the operation of the devices which close the pinchers, and provided with suitable means substantially as set forth, whereby it may be released to reverse the pinchers-closing mechanism, and thereby open the pinchers, all substantially as herein described and shown. 7th. The combination, with a griper attachment, of a radial supporting arm attached at one end to the griper, and slotted to engage with a suitable standard, around which as a centre the gripping mechanism may be swung to or from its place of working, all substantially as set forth. 8th. The herein described gripping attachment for lasting machines, provided with an extensible jointed support, by means of which it may be thrown backward and upward, or forward and downward, to bring it to or away from its place of working. 9th. A gripping mechanism, provided with a vertically slotted supporting attachment 62, of the character described; so as to permit the vertical uplifting of the gripping device, as and for the purposes set forth. 10th. The combination, substantially as herein set forth, with the gripping attachment, provided with

the flexible support, of a suitable suspending device 64, for holding the gripping attachment up and away from the lasted shoe when desired. 11th. The combination, with a removable gripping attachment, of centering arms or projections 65, and suitable sockets 65, to engage with said arms, and thus adjusting the gripping attachment in place, substantially as shown. 12th. The cam-faced carriage, herein described, having a suitable rack-formed extension 8, whereby upward and downward motion may be imparted to the carriage, all substantially as herein set forth. 13th. In a lasting machine, the herein described means of operating the lasting and cementing devices, consisting of an eccentric working within an interiorly slotted U-shaped pivoted arm, provided with teeth adapted to engage with and raise or lower a rack, all substantially as herein described and for the purposes set forth. 14th. The combination, with the shaft carrying a suitable driving pulley 1 and of the gears 3 and 4, shaft 5, eccentric 6, pivoted radial vibrating slotted arm 7 and rack 8, carrying a suitable cam-faced carriage. 15th. The combination, with a shaft 21, having a suitable driving pulley 20, of the gears 22 and 23, shaft 24, eccentrics 25, radial slotted vibrating arms 26, the gears 28 and 29, and the racks 30 attached to and carrying a beam 82a adapted to receive and raise or lower a cement fusing tool. 16th. The means of obtaining the compound motion of the heel or toe-slides, herein described, consisting essentially of an advancing support 32 carrying the said slides forward, and a second or subsiding support 32a having a motion past the first support, the heel and toe slides being carried by one support, and being geared to the other, whereby the differential motion of the two supports rotates the advancing slides. 17th. The combination of the slotted well-frame 33, right and left screw-rod 40, and double wedge blocks 41, 42, carrying the heel and toe supports, all substantially as herein set forth and for the purposes described. 18th. In a lasting machine, the combination, with the levers 18, 18a, for moving the heel, toe and side slides, of the double adjustable bearings 31 connected with said slides, whereby is insured the accurate bearing of the head of the lever with the slides during their various adjustments for various sizes of lasts, all substantially as herein set forth. 19th. In a lasting machine, the combination, with the levers which operate the heel, toe and side slides, of the retracting mechanism, herein described, consisting of the gear wheels 13, supported by standards 14, driven by the racks 12 on the carriage 8 and operating the cams 15 which engage with pin 16 on the lower ends of said levers, to throw the said lower ends inward, as described. 20th. In a lasting machine, the yielding upper leather guide, herein described, consisting of the concave lip 50, with its adjustable rods 50a and interposed springs 50b, substantially as and for the purpose hereinbefore set forth. 21st. The combination, with the adjustable upper leather guide, herein described, of the lever 53 and rod 52, whereby the upper leather guide is retracted at the close of the inward motion of the lasting slides, for the purpose and in the manner herein set forth. 22nd. The combination, with the outer jaw 82, of the pinchers, of a gripping device for lasting machines, of the rigid rod 83 attached to the outside of the flexible or jointed rod 84 attached to the inside of said jaw, substantially as herein set forth.

No. 21,494. Folding Dress Pillow. (*Oreiller Pliant.*)

Herman S. Sternberger, Piqua, Ohio, U. S., 22nd April, 1885; 5 years.

Claim.—1st. In a folding pillow, a series of radiating hinged ribs, two of them brought close together and so disposed as to swing around and thus fold up the device, substantially as herein set forth. 2nd. In a folding pillow, the cylindrical piece having centrally at the ends circular openings, and outwardly near the periphery a series of openings to receive therein the hooks, substantially as herein set forth. 3rd. In a folding pillow, a series of semi-elliptical ribs, with the ends bent inwardly and resting within the openings in the head of the cylinder piece, with the cylindrical piece, substantially as herein set forth. 4th. In a folding pillow, an axial piece having a series of ribs radiating therefrom, one of them fixed rigidly to the said axial piece while the others are so disposed as to swing around and fold up laterally, substantially as herein set forth. 5th. In a folding pillow, a covering having each of the upper and lower parts formed of a single piece provided with a tuck from one corner diagonally to the center and centrally to the opposite corner, cut so as to furnish edges whereby the edges of the facings may be stitched, substantially as herein set forth. 6th. The combination on the axial piece with a series of ribs one of them secured rigidly thereto the other, so disposed as to swing around laterally against the stationary rib, substantially as herein set forth. 7th. The combination, in a folding pillow, of the cylindrical piece having openings in the ends, the semi-elliptical ribs hinged thereto two of them disposed nearly parallel and forming a pair, the others radiating at right angles with each other and a catch to secure the ribs in position when opened with the covering, substantially as herein set forth. 8th. The combination of a series of hinged ribs, with the covering, having each of the upper and lower parts constructed of a single piece, provided with a tuck from one corner diagonally to the center, and centrally to the opposite corner, cut so as to furnish edges, whereby the edges of the facings may be stitched, substantially as herein set forth. 9th. The combination of the axial piece, having thereon at the ends a single stationary rib, and a series of hinged radiating ribs and the covering having each of its upper and lower parts formed with a diagonal tuck and openings, so as to readily attach the facings thereto, substantially as and for the purpose herein set forth.

No. 21,495. Shaft Packing for Car Axles. (*Boîte à Graisse pour Essieux de Chars.*)

William H. Wright, Tarrytown, N. Y., U. S., 22nd April, 1885; 5 years.

Claim.—1st. A compressible impervious packing *n*, such as felt or other similar material, applied, attached or affixed to the face of a supporting-metallic plate A, and articulating sliding clip B provided with vertical guides or ways, such packing presenting a continuous impermeable surface, in contact with the inner wall K of a packer-chamber, and around a car-axle shaft in such chamber, by means of such supporting-plate and clip tension-spring E and pressure-spring,

m, operating substantially in the manner and for the purpose described. 2nd. In a shaft-packing, the metallic supporting-plate A, its articulating sliding clip B, pressure-springs m and projecting crescent-shaped articulating seat with tension-spring E, substantially operating in the manner and for the purposes described. 3rd. A car-axle-packing composed of two sections, each having a raised segmental projection to receive a spring and also to increase the bearing surface of the wiper, said segmental portion being less than a half circle, and having their meeting edges bevelled to lap to fit varying sized axles, said segments being adapted to slide in guides, for the purpose of yielding to the motion of the axle, substantially as described. 4th. The combination, in an axle packing, having wiper segments adapted to lap at their meeting edges, and held in contact with the axle by an elastic spring for up and down motion, a side spring for yielding laterally, in combination with an axle, being substantially as described.

No. 21,496. Process and Apparatus for the Manufacture of Cellulose, or Paper Pulp from Wood Fibre.
(*Procédé et Appareil pour la Fabrication de la Cellulose ou de la Pâte à Papier de Bois.*)

Eugene B. Ritter and Charles Kellner, Podgora, Austria, 22nd April 1885; 10 years.

Claim.—1st. In an apparatus for producing paper pulp, a boiler or digester, consisting essentially of an iron casing, and a lead lining, united together by means of an alloy, whose melting point is below their own, and which will become soft at or near the normal working heat to which said boiler or digester is subjected, substantially as described. 2nd. The combination, in a boiler or digester, of the iron casing A, the lead lining B, of the iron bands b, b, and the fastening bolts d, d, substantially as described. 3rd. The bolts d, with chamber d, substantially as described. 4th. The employment of silver for seats and cones of valves, to be used in apparatus working with said solutions, substantially as described. 5th. In the manufacture of cellulose, or paper pulp, from wood fibre, the process of disintegrating and bleaching the fibre in one continuous operation, consisting essentially in subjecting the fibre to the action of a double salt solution, wherein sulphurous acid is combined with a double base in the proportions of about three atoms of the acid to one atom of the base, in a closed vessel or boiler to which steam is admitted, substantially as described. 6th. In the manufacture of cellulose of paper pulp from wood fibre by one continuous operation, the process of disintegrating and bleaching, which consists in first soaking the wood in a disintegrating solution in a closed vessel then, prior to heating, forcing in sulphurous acid until a pressure of at least two atmospheres is created, then forcing in steam, or steam mixed with sulphurous acid, and maintaining the contents of the boiler at a temperature exceeding that of boiling water, and finally bringing the temperature to a point corresponding to a steam pressure of three to five atmospheres, substantially as described. 7th. In the manufacture of cellulose of paper pulp from wood fibre by the action of sulphite solutions, the method of facilitating the disintegration and bleaching operations, which consists in an alternation of the solution between two or more boilers or digesters containing the fibre under different conditions of treatment, whereby each charge of fresh wood is subjected to the action of a solution already used and next subjected to the action of fresh solution, substantially as described.

No. 21,497. Vehicle Wheel. (*Roue de Voiture.*)

Edward Huber, Marion, Ohio, U.S., 22nd April, 1885; 5 years.

Claim.—In a vehicle wheel, the combination of the wheel, having two hubs, a frame having vertically-slotted trunnions securing-plates fastened to the ends of the trunnions and projecting beyond their periphery, and axle sliding vertically in the slotted trunnions plates, having guide arms, and secured to the upper and lower side of the axle within the frame, the guide-arms of the lower plate sliding in slots in the lower end of the frame, and springs secured to the lower plate upon the axle, and to the lower end of the frame cushioning the axle, as and for the purpose shown and set forth.

No 21,498. Method of Registering and Checking Baggage. (*Mode d'Enregistrer et Contre-Marque le Bagage.*)

Lewis G. Reynolds, Dayton, Ohio, U.S., 22nd April, 1885; 5 years.

Claim.—The within-described method of securing safe transportation and delivery of baggage to rightful owners, consisting in registering a number or mark for the same, with the name and address of the owner, the permanently attaching to the article of baggage, such registration number, or mark, and furnishing the owner with a duplicate of such registration number, or mark, all substantially as set forth.

No. 21,499. Row-Lock. (*Tollet.*)

Thomas Marshall, Ripon, Wis., U.S., 22nd April, 1885; 5 years.

Claim.—1st. A row-lock, having a swiveling ring, made in two parts, and provided with ears, between which are fitted elastic cushions, in combination with an oar ring made in two parts, whereby the two segments of the latter are adapted to bear freely inside the former, and to be fastened at various points of the oar as desired, substantially as set forth. 2nd. A row-lock, having an oar-ring made in two parts, fitting loosely within a swiveling ring, the latter also made in two suitably connected parts, between the points of contact, of which are fitted elastic cushions, whereby the two separate segments of the oar-ring are adapted to be fastened at points of different diameters of an oar, or to oars of various sizes, substantially as set forth. 3rd. In a row-lock, the swivelling ring B, made on two parts, each having a shoulder a and ears b, in combination with the elastic cushions c and the oar-ring C, made in two halves, substantially as shown and described.

No. 21,500. Combined Railroad Chair and Fish Plate. (*Coussinet et Eclisse de Chemin de Fer Combinés.*)

Nelson Newman, Springfield, Ill., U.S., 22nd April, 1885; 15 years.

Claim.—1st. As a means for connecting rail ends, a fish plate provided with projections adapted to engage recesses on the rail-webs, said projections and recesses having squarely abutting faces, so as to be adapted to positively hold the rails from separating, substantially as shown and described. 2nd. The fish plate, provided with ratchet-shaped projections, with their abrupt faces or ends towards each other, and the middle of the plate adapted to enter and engage correspondingly formed recesses in the rail web, substantially as and for the purpose specified. 3rd. In combination with the fish plates, provided on their inner faces with projections, made abrupt on the sides towards the middle of each plate, adapted to enter and engage recesses in the rail webs, means for forcing and holding the plates against the web, so as to insure and maintain the engagement of the projections and recesses, substantially as and for the purpose set forth. 4th. The fish plate, provided with projections engaging recesses in the rail webs, a pin adapted to be driven into the sleeper, between the rail ends, and provided with arms adapted to press against the outer faces of the fish plates and force and hold them against the rail webs, substantially as shown and described. 5th. As a means for connecting the ends of rails, the fish-plates having portions punched or driven in to form projections on their inner faces, adapted to engage depressions or recesses in the rail webs, substantially as shown and described. 6th. The combined rail chair and fish plate, having projections on the inner faces, of the fish plate portions adapted to engage squarely the abrupt ends of suitably-shaped recesses or depressions in the rail webs, so as to positively hold the rails from separating, substantially as shown and described. 7th. The combined rail chair and fish plate, consisting of the portion adapted to receive and support the foot of each rail, and the plates embracing the rail webs, and provided with internal projections engaging depressions in the latter, in combination with the pin adapted to be driven into the sleeper between the rail ends, and provided with arms engaging and pressing against the outer faces of the fish plates, substantially as and for the purpose set forth.

No. 21,501. Indicating Counter for Marking at Pool. (*Compteur-Indicateur pour Marquer à la Poule.*)

Simon P. Kleiser, Toronto, Ont., 22nd April, 1885; 5 years.

Claim.—1st. The pointer C, pivoted at the centre of the dial B, and connected to the ratchet wheel D, in combination with the pivoted bar F, the pawl G passing between the pins b and c, and arranged to operate substantially as and for the purpose specified. 2nd. The pointer C, pivoted at the centre of the dial B, and connected to the ratchet wheel D, in combination with the pivoted bar F, the pawl G passing between the pins b and c, and the lever H, the whole arranged and operating substantially as and for the purpose specified. 3rd. The pointer C, pivoted at the centre of the dial B, and connected to the ratchet wheel D, in combination with the pivoted bar F, the pawl G passing between the pins b and c, and the lever H and spring I, the whole being arranged and operating substantially as and for the purpose specified. 4th. The pointer C, pivoted at the center of the dial B, and connected to the heart E, in combination with the pivoted bar J, arranged to come in contact with the heart E, substantially as and for the purposes specified. 5th. The pointer C, pivoted at the centre of the dial B, and connected to the heart E, in combination with the pivoted bar J and push-rod K, substantially as and for the purposes specified. 6th. The pointer C, pivoted at the centre of the dial B, and connected to the heart E, in combination with the pivoted bar J and push-rod K, and spring I, substantially as and for the purpose specified. 7th. The pointer C, pivoted at the centre of the dial B, and connected to the heart E, in combination with the pivoted bar J having a spring finger L extending from its top end, to come in contact with the tail e, of the bell hammer f, substantially as and for the purpose specified. 8th. A two-coloured card N, placed behind a hole in the dial B, and connected to a spindle P, in combination with the fingers k, l, m, o, actuated by the pin n on the ratchet wheel D, substantially as and for the purpose specified.

No. 21,502. Harvester. (*Moissonneuse.*)

Rufus Dutton and Rudolf Eickmeyer, Yonkers, N.Y., U.S., 22nd April, 1885; 15 years.

Claim.—1st. In a two-wheeled vehicle, the combination, substantially as hereinbefore described, of a suitable frame and cutting apparatus, and a rod or bar rigidly connected to the cutting apparatus at its inner shoe, and projecting upwardly therefrom beneath the axle and between the wheels of the machine, as set forth. 2nd. The combination, substantially as hereinbefore described, a rear side cut mowing machine frame, a draft link, the cutting apparatus and rod or bar rigidly connected to said cutting apparatus at its inner shoe, projecting forwardly and upwardly to the draft link and coupled thereto, as set forth. 3rd. In a two-wheeled harvester, the combination, with rear side cutting apparatus, of the lifting mechanism embodying the rotative bar rigidly connected to the inner shoe and projecting forwardly and upwardly between the wheels and beneath the axle of the machine, and a hand lever coupled to said rotative rod and located in front of the drive seat, substantially as described. 4th. In a two-wheeled harvester, the combination, substantially as hereinbefore described, of the cutting apparatus and the rotative bar or rod extending forwardly and upwardly beneath the axle and between the wheels of the machine, and rigidly connected to the cutting apparatus, as set forth. 5th. In a two-wheeled harvester, the combination, substantially as hereinbefore described, of the cutting apparatus, the rotative rod or bar rigidly connected thereto and extending beneath the axle and between the wheels of the machine, and a hand lever coupled to said rod for first lifting it and then rotating it, whereby the cutting apparatus is first lifted bodily and then

folded, as set forth. 6th. In a two-wheeled harvester, the combination, substantially as hereinbefore described, of the cutting apparatus, the bar or rod rigidly connected thereto at its inner shoe and projecting upwardly therefrom beneath the axle, and between the wheels of the machine, and means for vertically adjusting the opposite or upper end of said rod or bar for varying the height of cut, as set forth. 7th. The combination, substantially as hereinbefore described, of a rear side cut mowing machine frame, the pendent draft link having one or more holes for coupling with a whiffletree, the cutting apparatus and the rod or bar rigidly connected to said cutting apparatus at its inner shoe projecting forwardly and upwardly to the draft link and coupled thereto, as set forth, whereby the draft of the team is applied in a direct line from the pendent link to the inner shoe. 8th. The combination, substantially as hereinbefore described, of a rear side cut mowing machine frame, the vertically slotted pendent draft link, the cutting apparatus and a rod or bar rigidly connected to said cutting apparatus at its inner shoe, projecting forwardly and upwardly into the slot of the draft link and coupled thereto, as set forth, whereby the front end of said rod or bar is limited in its movements. 9th. The combination, substantially as hereinbefore described, of a rear side cut mowing machine frame, the vertically slotted pendent draft link, the cutting apparatus with its rod or bar rigidly connected thereto and projecting forwardly and upwardly into the slot of said link, and a draft hook extending from said link rearwardly along said rod and coupled thereto, as set forth, whereby the forward end of said rod can be freely raised or lowered, as set forth, for varying the height of cut. 10th. The combination, with the cutting apparatus, of lifting mechanism, substantially as described, adapted to first rock the cutting apparatus in its longitudinal axis, then lift it vertically while it maintains a practically horizontal position, and then fold it up sidewise, as set forth. 11th. The combination, with the shoe rod located between the wheels and beneath the axle of the machine and rigidly connected to the inner shoe of the cutting apparatus, and free to be lifted at its outer or forward end, of an adjustable support for said outer end for limiting the height of cut, substantially as described. 12th. The combination, substantially as hereinbefore described, of the cutting apparatus, the rotative rod or bar located between the axle and between the wheels of the machine and rigidly connected to the inner shoe and vertically adjusted at its outer or forward end, and a hand lever connected to said rod for lifting its outer end and varying the height of cut and also for lifting and folding the cutting apparatus, as set forth. 13th. In a harvester, the combination, substantially as hereinbefore described, of the cutting apparatus, the shoe rod, the hand lever for lifting the cutting apparatus, the jointed link pivoted to said lever and to said shoe rod, and the fulcrum for said link at the end of said lever, said link adapted to operate as a mere link during a portion of the movement of said lever, and then during further movement to operate as a lever by engagement with its fulcrum at the end of the hand lever, and thereby practically elongate said hand lever beyond its fulcrum. 14th. In a harvester, the combination of the hand lever for lifting the cutting apparatus, the complex link embodying a bar link serving in part as a link and in part as a prolongation of the hand lever, and a segment or quadrant notched to confine said hand lever when said link operates as a link and also when a part of said link serves as a lever, substantially as described. 15th. The combination, with the pendent portion B₁ of the frame, the cutting apparatus hinged thereto the shoe rod or bar and the stop h₅ on said frame, which limits the upward movement of the cutting apparatus while in a practically horizontal position, substantially as described. 16th. The combination of the cutting apparatus and its rotative shoe rod rigidly connected thereto, the hand lever and the lever or arm on said rod linked to said hand lever, a stop for limiting the upward movement of said rod and a second stop for engaging with the lever arm on rod and thereby causing the latter to gradually rotate inwardly during the rising motion, substantially as described. 17th. The combination of the cutting apparatus and its rotative shoe rod rigidly connected thereto, the hand lever and the lever or arm on said rod linked to said hand lever, a stop for limiting the upward movement of said rod, and a second stop for engaging with the lever or arm on said rod and thereby limiting its inward rotation, substantially as described, when the cutting apparatus is in a folded position and also for inducing the initial outward rotation of said rod when lowered to drop the cutting apparatus from its folded to its working position, as set forth. 18th. The combination, of the rocking gear, the vibrating arm, the pendent portion of the frame and the bent swivelled rod *n* hinged at its inner or forward end to the frame upon a pivot bolt, and at its outer end swivelled within a cylindrical housing on top of said arm in a line at right angles to the line of said pivot bolt, substantially as and for the purpose described. 19th. The combination, with the cutting apparatus rocking gear and balance crank of a vibrating arm, the integral or jointless triangular truss *k* connected at its base to the hub and the periphery of the rocking gear and connected at its apex to the balance crank, substantially as described. 20th. The combination, with the cutting apparatus rocking gear and balance crank, of a vibrating arm consisting of the integral or jointless triangular truss connecting the rocking gear with the balance crank, and a second triangular truss provided with a ball head for connection with the cutting mechanism, substantially as described. 21st. The combination with the rocking gear and balance crank, of the skeletonized vibrating arm embodying the integral truss coupled to the hub of the gear and also to the balance crank and the second truss composed of said integral truss and the side plates projecting therefrom and the ball head to which they are bolted, substantially as described. 22nd. The combination, with the shoe rod and shafts or thills hinged to the machine, as described, of the cross brace connecting said shafts and a link suspended from said cross brace serving the double purpose of a draft link and a support for said shoe rod, substantially as described. 23rd. The combination, with the shaft or thill axle frame or wheels, of the pendent draft link having one or more holes for whiffletree connections at its lower end and the cutting apparatus coupled to said link above said whiffletree connection, substantially as described, whereby said link is fulcrumed at its point of coupling with the cutting apparatus and made to operate as a lever for enabling the draft of the team to oppose the lifting tendency of the cutting apparatus when in service, as set forth. 24th. The combination, with the shaft or thill hinged to the

frame sleeve, of the driver's seat mounted thereon and located centrally on the machine rearward of the axle and the foot stirrups also mounted on said thill or shaft, substantially as described. 25th. The detachable pendent frame piece, provided at its lower end with a hinge connection for union with the inner shoe of the cutting apparatus, and provided with the stop studs and the stud for mounting the lifting lever, substantially as described.

No. 21,503. Collar Button. (*Bouton de Col.*)

George Kremenz, New York, N.Y., U.S., 22nd April, 1885; 5 years.

Claim.—1st. A collar or sleeve button having a hollow head and stem, the said head stem and the base plate or back of the said button being shaped and made of a single continuous piece of sheet metal, substantially as herein shown and described. 2nd. A collar or sleeve button having a hollow stem formed on a base, a hollow head on the stem, the top and bottom layers of the head being pressed together to be in contact, and the edges of the head being bent to form a curved top surface for the head, the head, stem and base being formed of a single piece of sheet metal, substantially as herein shown and described.

No. 21,504. Military Water Bottle. (*Outre.*)

Peter B. Barnard, Hamilton, Ont., 22nd April, 1885; 5 years.

Claim.—1st. The combination of a water bottle A, made in two sections, with seam A, neck ring B, the stopper B with rubber B₁, provided with attachments D, buttons D₁ with strap rings e, the bar f with belt hook C, substantially as and for the purpose hereinbefore set forth. 2nd. In a water bottle, the combination of the canvas case A, provided with extended sides secured to the strap rings e, and with extended upright back with belt hook C₁ secured thereto, and the overlap H to allow the case to extend so to receive the water bottle A and buttoned up with button H₁, substantially as and for the purpose hereinbefore set forth.

No. 21,505. Tobacco Pipe. (*Pipe.*)

Jacob Pfeiffer, Niagara Falls, N.Y., U.S., 22nd April, 1885; 5 years.

Claim.—A tobacco pipe adapted to be filled from the top, having a close fitting cover at the top of the bowl, and a small open tube projecting downward from the bottom, in combination with a tube forming a passage leading from a point near the top of the bowl, then down to near the bottom of the same, and from thence outward through the stem and mouth-piece, as and for the purposes described.

No. 21,506. Hoop Planing Machine.

(*Machine à Planer les Cercles.*)

Alexander F. Ward, Detroit, Mich., U.S., 22nd April, 1885; 5 years.

Claim.—1st. In a hoop-planing machine, a pressure foot provided with a toe loosely secured thereto, and adapt to adjust itself to hoops of different bevel, substantially as described. 2nd. A pressure-foot, provided with a self-adjusting toe secured in a socket of the pressure-foot by means of the round shank a, substantially as set forth. 3rd. A pressure-foot, provided with a self-adjusting toe, and means such as the recess f and pin c for preventing accidental displacement, substantially as described. 4th. In a hoop-planing machine, the bed E, having lateral flanges g arranged to secure the bed adjustably and removably to the underside of the stationary part of the bed, substantially as described. 5th. The bed E, provided upon its face with under-cut recesses filled in with babbit metal, substantially as specified.

No. 21,507. Button. (*Bouton.*)

Dilman B. Shantz, Berlin, Ont., 22nd April, 1885; 5 years.

Claim.—1st. A button consisting of a ring A, having flange B, and rim C, inserted disk D, having a covering material E, dished plate F and inserted concavo-convex disk G covered with a material I, as set forth. 2nd. A button consisting of a ring A, having flange B, and rim C, inserted ornamental front disk G, covered with a material I, as set forth.

No. 21,508. Vehicle. (*Voiture.*)

John H. Tiffany, Dimock, Penn., U.S., 22nd April, 1885; 5 years.

Claim.—1st. In a vehicle, the combination of a set of wheels, with runners which are adapted to co-operate with the wheels to sustain the load when the vehicle is in motion, substantially as described. 2nd. In a vehicle, the combination of a set of larger wheels, the smaller wheels, the runners and the flexible tongue adapted to each other, substantially in the manner and for the purposes set forth. 3rd. In a vehicle of the character described, the combination, with the body of the vehicle, of the large central wheels the bent swinging axle secured to the bottom of said body by supports so that the said axle or one part will roll therein and swing under the body, the jointed tongue and the smaller wheels, as and for the purposes described. 4th. The combination, in a vehicle, of the flexible tongue with the body, the large central wheels and the smaller wheels, substantially as described.

No. 21,509. Curtain Fixture.

(*Bâton de Rideau.*)

John E. Wyant and Eff M. Wyant, Waterloo, Iowa, U.S., 22nd April 1885; 5 years.

Claim.—1st. The combination, with a curtain roll, of one or more metallic clamping plates adapted to secure the curtain to the roll without the use of other fastening devices, substantially as herein described. 2nd. The means described for securing curtains to rolls, which consists of metallic clamping plates, adapted to engage the

roll and secure the curtain independent of other fastening devices, substantially as herein described.

No. 21,510. Machine for Grooving the Surface of Boards. (*Machine à Boweter la Surface des Planches.*)

Abiram Hoppins, Kingston, Ont., 22nd April, 1885; 5 years.

Claim.—1st. The combination, in a grooving machine, of a series of cutters of different diameters arranged conewise on a shaft, substantially as set forth. 2nd. The combination, in a grooving machine, of two shafts canted intersectingly each, having a gang of cutters differing in diameter arranged conewise and reversely placed, as set forth. 3rd. The combination, in a grooving machine, of a series of cutters on a cone shaft, substantially as set forth. 4th. The combination, in a grooving machine, of two cone shafts canted intersectingly and reversely placed, each provided with a series of cutters, substantially as set forth. 5th. The combination, in a grooving machine, of the adjustable brackets E, set screws F, O, tilting journal boxes G, and shaft H, whereby the depth and width of the grooves can be increased and lessened and the grooves cut with convergent or divergent sides, as set forth.

No. 21,511. Leg Boot. (*Botte à Tige.*)

Guillaume Boivin, Montreal, Que., 22nd April, 1885; 5 years.

Réclame.—1o. Dans une botte l'empèigne A, composée d'un seul morceau de cuir, dont les extrémités sont unies par la couture verticale a faite avec la nervure tubulaire c, tel qu'indiqué. 2o. La combinaison de l'empèigne A, formée d'un seul morceau de cuir, avec la tige E munie de la courroie d. 3o. La combinaison de l'empèigne A, formée d'un seul morceau de cuir, avec le renfort du talon B, de la semelle C de la tige E, de la nervure tubulaire c du contre-fort de la tige D et de la courroie d, tel que décrit. 4o. Dans une botte à longue tige, la nervure c formant un petit tube pour recevoir la broche a, tel que décrit et pour les fins indiquées.

No. 21,512. Hen Nest. (*Pondeuse.*)

Joseph Kreamer, St. Louis du Mile End, Que., 22nd April, 1885; 5 years.

Réclame.—1o. Dans une pondeuse, le réceptacle O r q, en combinaison avec le nid N n p o et la boîte C D F G, tel que ci-dessus décrit et pour les fins sus-mentionnées. 2o. Dans une pondeuse, la combinaison du réceptacle O r q et du nid N n p o, avec la boîte C D F G, la tapisserie goudronnée m, l'ouverture H et la partie I, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 21,513. Oscillating Flat Iron.

(*Fer à repasser Oscillant.*)

Thomas C. Edwards, Chatham, Ont., 23rd April, 1885; 5 years.

Claim.—1st. The combination, with an oscillating flat iron, of the flattened lamp tube ρ with the elevated reservoir G, and the regulating attachment ρz , substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with an oscillating flat iron, of the circular handle D, with drooping ends M and the guard K, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, with an oscillating flat iron, of the sections $a_1 a_2 a_3$ of a pointed oval form and the slotted sleeve $e_1 e_2$, substantially as and for the purposes hereinbefore set forth.

No. 21,514. Carriage and Sleigh Body.

(*Caisse de Voiture et de Traineau.*)

John B. Armstrong, Guelph, Ont., 23rd April, 1885; 5 years.

Claim.—1st. In a jump seat carriage or sleigh body, the combination of the pivoted hand rail F, with the lower bar K, inwardly hooked projection I, and standards D, all operating as and for the purpose described and set forth. 2nd. In a jump seat carriage or sleigh body, the combination of the pivoted hand rail F, with the lower bar K, inwardly hooked projections H and I, and standards D, all operating as and for the purpose described and set forth.

No. 21,515. Paper Box. (*Boîte en Papier.*)

Frank P. Birley, Toronto, Ont., 23rd April, 1885; 5 years.

Claim.—1st. As an article of manufacture, the herein-described box, consisting of the sides A, B, C and D, with the flaps F, G, H and I, and flaps J, cut and folded substantially as described. 2nd. As an article of manufacture, the herein described box consisting of the sides A, B, C and D, and flap E, with the parts F, G, H and I, and flap J cut and folded, substantially as described.

No. 21,516. Spring Bed. (*Sommier Elastique.*)

Benjamin A. Hame, Boston, Mass., U.S., 23rd April, 1885; 5 years.

Claim.—1st. The slats A, A and the springs B, in combination with the cross bars d, d ρ , and clips e, e ρ , attached to the slats, substantially as described, whereby the bars may slide at right angles to the slats in the clips e, e ρ , substantially as set forth. 2nd. In combination with the slats A, A of the bed and connecting bars supported springs B, the bracket pieces c, c, the top side slat E and the auxiliary spring C placed directly beneath said top slat and upon the bracket pieces c, c, substantially as described.

No. 21,517. Process for Making Pills.

(*Procédé pour faire les Pilules.*)

William E. Upjohn, Kalamazoo, Mich., U.S., 23rd April, 1885; 5 years.

Claim.—The process of making pills and confection, which consists in placing in a revoluble pan, nuclei of any suitable material, setting the pan in motion, moistening the roller nuclei with liquid spray vapour, sifting on to the moistened nuclei powdered ingredient or ingredients, applying to the growing pills spray or vapour, sifting on to said pills the powdered ingredient, or ingredients, and so on alternately moistening and powdering until the pill have grown to the desired size, substantially as set forth.

No. 21,518. Boot and Shoe Seam.

(*Couture de Chaussure.*)

Guillaume Boivin, Montreal, Que., 23rd April, 1885; 5 years.

Réclame.—1o. Dans la couture des chaussures, la nervure tubulaire a formée d'un morceau de cuir ou équivalent, plié tel qu'indiqué dans la fig. 3, et cousue entre les deux bords rentrants b, tel que décrit. 2o. La combinaison, dans une chaussure, de la nervure double ou plié a, avec les bords rentrants b, b, des parties de matériaux unis par la couture, tel que décrit et pour les fins ci-dessus.

No. 21,519. Hoop Fastening. (*Arrête-Cercle.*)

Nelson Newman, Springfield, Ill., U.S., 23rd April, 1885; 15 years.

Claim.—A hoop fastening, which is adapted to be driven between the hoop and the stave, and is provided upon its inner side with means, substantially as shown, for automatic engagement with the chime edge of the hoop, substantially as and for the purpose specified.

No. 21,520. Saw Jointer.

(*Appareil pour Egaliser les Scies.*)

George H. Mayer, Kansas, Mo., U.S., 23rd April, 1885; 5 years.

Claim.—1st. A saw jointer, constructed with a frame A, having arms B, C, spaced apart at E, and connected by a head piece D, and the arm B having guards J fixed to and projecting beyond its inner face, the tri-form recess G H I, and with means for securing the file in the recess and for holding the guards J closely to the saw-blade, substantially as herein set forth. 2nd. A saw jointer, constructed with a frame A, having arms B, C, spaced apart at E, and connected by a head-piece D, guards J on the arm B and projecting beyond its inner face, the tie-form recess G H I, and the screws K, O, all arranged for operation with either a three-cornered or a flat file, substantially as herein set forth. 3rd. In a saw-jointer, having arms B, C, file-holding recess and a binding screw, the studs J and binding screw K, substantially as shown and described and for the purpose described. 4th. As an improved article of manufacture, the jointer-frame A made with arms B, C, spaced apart at E, and connected by a head-piece D, and with guides J formed on and projecting from the inner face of the arm B and with the tri-form recess G H I, substantially as set forth.

No. 21,521. Gas Burner. (*Bec à Gaz.*)

Theodore Clough, Dobbs Ferry, N. Y., U. S., 23rd April, 1885; 5 years.

Claim.—A gas burner tip, constructed with the angular or sloping shoulder b between the bore or chamber a and the domed portion c, and with the slit extended below said shoulder, all substantially as and for the purpose herein set forth.

No. 21,522. Method and Apparatus for Telegraphy. (*Méthode et Appareil de Télégraphie.*)

John C. Ludwig, San Francisco, Cal., U.S., 24th April, 1885; 15 years.

Claim.—1st. The herein-described improvement in the art of generating induced electric currents for telegraphic and other purposes, the same consisting in varying the magnetic character of a stationary body of metal, adjacent to magnetically polarized cores, surrounded by avils of wire included in a circuit, whereby currents of alternately opposite direction are induced in said coils and flow upon the circuit, essentially as set forth. 2nd. The herein-described improvement in the art of generating induced currents of electricity for telegraphic and other purposes, which consists in alternately magnetizing and demagnetizing a stationary body of iron within inductive proximity to magnetically polarized cores, surrounded by coils of wire in circuit, whereby reversed currents are set up in said coils and caused to traverse the circuit, essentially as set forth. 3rd. In an electric current generating and transmitting instrument, the combination with one or more pairs of magnetically polarized cores, having opposing poles adjacent to each other, of coils of wire surrounding said cores, and connected, as described, and a stationary electro-magnet, having a pole inductively adjacent to, but separated, from the poles of each opposing pair of said cores, substantially as described. 4th. In an electric current generating and transmitting instrument, the combination of two permanent magnets arranged at a proper distance apart, and having soft iron pole-pieces of opposite character projecting toward each other, of coils of wire surrounding said pole pieces, and connected to give uniformity of direction to currents resulting from induction of opposite magnet cores, and a stationary electro-magnet having its soft iron core or cores inductively adjacent to the poles of each pair of opposed pole-pieces, substantially as described. 5th. In an electric current generating and transmitting instrument, the combination of the permanent magnets A, A, having soft iron pole-pieces of opposite character extending toward each other, the coils surrounding said pole pieces and connected together, as described, and the stationary electro-magnet D, having the polar portions of its cores inserted between and isolated from the opposing pole-pieces, substantially as described. 6th. The combination, in an inductive electric generator, of two magnetically polarized cores

having poles adjacent to each other, coils of wire surrounding said cores, and a stationary electro-magnet having a polar portion of its core inductively adjacent to said cores, substantially as described. 7th. The combination, with the magnetically polarized cores, the surrounding connected coils, and the stationary electro-magnet with polar portions, or a polar portion adjacent to the poles of said cores, of suitable means for causing an intermittent flow of electricity through the coils of said electro-magnet, substantially as described. 8th. In a telegraphic receiving instrument, the combination, with a permanent and an electro-magnet, having its two cores similarly polarized by one of the poles of said permanent magnet, of an oscillating neutral armature having its opposite ends arranged within attractive distance of the electro-magnet cores respectively, substantially as described. 9th. The combination, with the permanent magnet, of the electro-magnet having its yoke piece in contact with one of the poles of said permanent magnet, and the oscillating neutral armature pivoted in front of the poles of said electro-magnet, substantially as described. 10th. The combination, with the permanent magnet, the electro-magnet having its cores polarized by one of the poles of said permanent magnet, and the neutral armature pivoted to oscillate in front of the poles of said electro-magnet, of a local circuit arranged to be closed and opened by said armature, substantially as described.

No. 21,523. Car-Coupling. (*Accouplage de Chars.*)

George W. Smillie, Newark, N.J., U.S., 24th April, 1885; 5 years.

Claim.—1st. In combination, in a coupling, a draw-head having a spring-actuated plunger, narrower than the link, and having recesses *g, g* in said head, laterally adjacent to said plunger, and a link wider than the plunger, and adapted to have the sides thereof lie in said recesses, the end of said link lying centrally across the face of said plunger, said link being thereby held horizontally, or approximately so, to engage the co-operating draw-head. 2nd. In combination with the draw-head and link, the connective *k*, permanently uniting the said link and draw-head, substantially as and for the purposes set forth. 3rd. In combination with the draw-head having the slotted connective *k* pivoted thereon, the link having the cross bar or centre bar *w* working in the slot in said connection, all substantially as herein set forth and shown. 4th. In combination, the draw-head connective and link having the centre bar, all said parts being arranged and operating substantially as and for the purposes set forth. 5th. As an improved article of manufacture, a car-coupling, consisting of a draw-head having a central chamber *c* and a spring actuated plunger *p* working therein and bearing against the end of the link, and having laterally adjacent bearings or shoulders adapted to receive the link after it has struck the said plunger, and partly repressed the same to prevent excessive repression, and a link and pin, said link being adapted to strike the plunger and repress the same and subsequently strike the lateral bearings, all said parts being arranged and operating substantially as set forth. 6th. The combination, in a car-coupling, with a draw-head having a spring actuated plunger and a pin which co-operates to hold the link in a horizontal position, of a lever fulcrumed on the car and bent at its opposite ends to form handles, and having a central arm coupled to said pin and adapted to raise said pin from holding engagement with the link when the said handles are turned, substantially as set forth.

No. 21,524. Buggy. (*Voiture.*)

Frederick Hess, Zurich, Ont., 24th April, 1885; 5 years.

Claim.—1st. The prop block D, provided with square ends C, H, matching square sockets B, J, of long joint A and lever I, causing the rotation of all the parts together, substantially as shown and described. 2nd. The lever I, in combination with rail G, prop block D, and long-joint A for effecting the partial rotation of prop-block D, in circular socket of rail G, substantially as shown and described and for the purpose set forth.

No. 21,525. Car-Coupler. (*Accouplage de Chars.*)

William C. Cowen, Hyde Park, Mass., U.S., 24th April, 1885; 5 years.

Claim.—1st. In a car-coupler, the combination of the following instrumentalities, to wit: a draw-bar head, a swinging coupling-pin disposed therein, a pivoted lever jointed to said coupling-pin and adapted to raise it, and means whereby said lever may be actuated without the necessity of going between the cars, said draw-bar head being adapted to receive a coupling link, and provided with an interior cavity adapted to receive the swinging coupling-pin, when it is pushed inwardly by said link, and with a shoulder adapted to engage the lower end of the coupling-pin when said pin is depressed or inserted in the link, substantially as described. 2nd. In a car-coupler, the head B provided with the hole H, shoulder I, cavity Z, pivoted lever D and swinging pin E jointed to said lever, substantially as set forth. 3rd. In a car-coupler, the rod J provided with the cranks M, N, spring *g* and lever K, in combination with the head B, pivoted lever D, swinging pin E jointed to said lever, substantially as described. 4th. In a car coupler, the rod P, lever Q and chain *d*, in combination with the crank rod J, spring *g*, head B, and pivoted lever D jointed to the swinging pin E, substantially as set forth. 5th. In a car-coupler, the draw-bar head B provided with the holes *r, a, H*, cavities *p, z*, and shoulder *l*, the pin E, links *f, f*, lever D, crank-rod J, spring *g*, rod P, lever Q and chain *d*, constructed, combined and arranged to operate substantially as described.

No. 21,526. Dairy Utensil. (*Utensile de Laiterie.*)

Albert F. Nash, Aultsville, Ont., 24th April, 1885; 5 years.

Claim.—1st. The strainer B having a perforated bottom, the neck *a* of the cooler C, projecting upward through it, so that the dropping from the perforations in the bottom of the strainer will fall upon the shoulders *c* of said cooler, and the spout and faucet *p* attached to said cooler, substantially as shown and described. 2nd. The combination of the milk can A, strainer B having a perforated bottom, and the cooler C having the spout and faucet, for emptying the same, substantially as shown and described. 3rd. The combination of the milk

can A, strainer B and cooler C, with the frame D, substantially as shown and for the purpose set forth.

No. 21,527. Class Register for Schools.

(*Régistre de présence pour les Ecoles.*)

Edward Ward, Collingwood, Ont., 24th April, 1885; 5 years.

Claim.—A class recorder box, fitted with a lid M, niche *m* and sliding in grooves *n, n*, and having compartments A, B, C, D, etc., provided with labels *a, b, c, d, etc., p, q, r, s, etc.*, and supplied with blocks, Fig. 2, all substantially as described and shown for the purpose set forth.

No. 21,528. Thrashing Machine.

(*Machine à Battre.*)

George W. Morris, Brantford, Ont., 24th April, 1885; 5 years.

Claim.—1st. A straw shaker, divided into three sections, A, B and C, the back ends of which are supported by the hangers D and E, shaft F provided with three cranks connected to the sections A, B, and C, in combination with the grain deck G, suspended by the spring hangers H, and connected to the section B by the pitman or rod K, substantially as and for the purpose specified. 2nd. An open-slatted straw-shaker, having its front end immediately below the beater covered with perforated sheet metal, substantially as and for the purpose specified. 3rd. A grain deck G, slanting upwardly from its front end, and having a corrugated metal bottom, substantially as and for the purpose specified. 4th. A grain deck, supported by the spring hangers H, in combination with the lip-sieve extension I, hinged at *a* to the grain deck G and supported by the hangers J. 5th. A thrashing machine, having a smutter located on the top, substantially as specified. 6th. A thrashing machine, having a smutter on its top, in combination with the conveyor P, arranged to discharge the grain into the spout Q, located on either side of the machine. 7th. A thrashing machine, having a smutter placed on its top; and opening directly with the interior of the thrasher, so that grain and tailings falling from the sieve must re-enter the machine.

No. 21,529. Filter. (*Filtre.*)

David Biggs, Casleton Corner, N.Y., U.S., 27th April, 1885; 5 years.

Claim.—A filter made substantially as herein shown and described, and consisting of an upright cylindrical vessel divided into two compartments by an upright partition extending from the top to within a short distance of the bottom of the vessel, each compartment containing a filtering medium, which is held between two perforated plates, of which the lower one is a short distance above the bottom of the partition, and each compartment having a separate outlet cock at the side, and at the top of the vessel an inlet pipe having a three-way cock, by means of which water can be admitted into either compartment, as set forth.

No. 21,530. Saw Set. (*Fer à Contourner.*)

John S. Long, Murphyborough, Ill., U.S., 27th April, 1885; 5 years.

Claim.—1st. The combination, in a saw-set, of the hammer E, spring H, cushion Q, and connecting link *g*, substantially as and for the purpose set forth. 2nd. The combination, with the hammer E, spring H, cushion Q and link *g*, of the treadle D, rod F, and spring hook *f*, substantially as and for the purposes set forth. 3rd. The combination, with the spring hammer E *e*, of the rod F, provided at its upper end with the hooked spring plate *f*, and at its lower end with a loop through which passes the lever D, provided with a spring B extending from within the loop to the bottom of the covered slot *c* *et*, in cross piece C, in which the lever D works, said lever being pivoted at its other end to an upright A *et* of the frame, substantially as set forth. 4th. The combination, of the hammer E, pivoted in a vertical recess, with plate G, the link *g*, and spring H, pivotally connected to said link at its inner end, and secured at its outer end with guides *i, i*, on the underside of plate G, by an adjusting screw and nut *h h*, and the table B recessed, as at B *et*, for the reception of said spring and its connections, substantially as set forth.

No. 21,531. Hose Coupling. (*Joint de Boyau.*)

Garrett M. Van Riper and James O. St. Clair, Republic, Mich., U.S., 27th April, 1885; 5 years.

Claim.—The combination, with the male and female sections A, B, of the coupling, of the elastic packing ring C, the locking pins *g* on the section, the pivots *e* on the adjacent section, in like central longitudinal line with the coupling as the pins *g*, the handle piece D constructed with hooks *f* at its one end, for engagement with said pins, and the links E uniting said handle piece with the pivots *e*, for operation in connection with the elastic ring C, substantially as shown and described.

No. 21,532. Axle and Axle Box.

(*Essieu et Boite à Graisse.*)

Josiah Fowler, Portland, N.B., 27th April, 1885; 5 years.

Claim.—1st. In axles and axle boxes for the wheels of draught vehicles, the internally and externally screw-threaded cap D, in combination with the axle A having an enlarged collar B at or near the inner end of the journal A *et*, and the axle box C having its inner and enlarged end of like diameter, or thereabouts as the collar, and constructed to engage while the interior thread *c* of the cap that enters by its exterior screw thread *b*, the hub of the wheel, the whole being arranged in relation with each other and the inner end of the axle box and the inner back face of the cap having said collar close in between them, whereby the wheel is enabled to run noiselessly without the aid of washers, substantially as specified. 2nd. The combination, of the axle A, with its collar B at or near the inner end of its journal A *et*, and an oil recess or chamber *f* in its outer and longitudinal groove *g*, the axle C, provided with an outer hollow end cap E,

having a screw plug or stopper *e* and the internally and externally screw cap *D* arranged to screw on to the inner end of the axle box and into the hub of the wheel, and having the collar *B* within and between it and the inner end of the axle box essentially as shown and described, the groove around the collar *B* is for the purpose of holding the oil.

No. 21,533. Carriage Top. (*Soufflet de Voiture.*)

Herman Buchholz and William Morris, Jamesville, Wis., U.S., 27th April, 1885; 5 years.

Claim.—1st. In a folding carriage-top, the combination, with the bows of the top brace pivotally secured to the front and rear bows and having knuckle joints at either side of its front pivot, a forwardly extending curved bow rigidly secured to the front ends of the top brace, and the cover secured to the bows and the forward extension, substantially as and for the purpose set forth. 2nd. In a folding carriage top, the combination, with the bows of a jointed brace pivotally secured to the front and rear bows and a top-prop pivotally secured to the carriage frame with its upper end pivotally secured to the front bow at the juncture where the brace is secured, substantially as and for the purpose set forth. 3rd. In a folding carriage-top, the combination, with the bows of a top-brace secured to the front and rear bows and provided with upwardly and downwardly working knuckle-joints, and a top-prop secured to the carriage frame and front bow and provided with an upwardly working knuckle joint, substantially as and for the purpose set forth.

No. 21,534. Bolster Spring for Vehicles.

(*Ressort à Settelle pour Voitures.*)

Charles A. Howard, Pontiac, Mich., U.S., 27th April, 1885; 5 years.

Claim.—1st. The combination, with the upper and lower cross-bars, of two semi-elliptic springs arranged in reversed positions, one of said springs being arranged at one side of the other, so that the ends of the lower spring bear against, and directly receive the thrusts of the upper cross-bar, while the ends of the upper spring bear against the lower cross-bar, substantially as shown and described.

No. 21,535. Removable Oven for Combined Coal and Gas Stoves. (*Fourneau Mobile pour Poêles à Charbon et à Gaz Combinés.*)

Henry H. Sheldon, Pawtucket, R. I., U.S., 27th April, 1885; 5 years.

Claim.—1st. The combination, with the baking oven herein described, within the same, and gas burners for heating said oven, and a supply pipe therefor introduced through the walls of the stove, substantially as shown and for the purpose set forth. 2nd. In a full burning stove having one or more ovens, the damper *h*, openings *k*, the bottom flue *c*, rear plate *c*₁, and upper flue *c*, the combination therewith of the damper *i* located in the rear flue, substantially as described and for the purposes set forth. 3rd. In a fuel-burning stove having one or more ovens, the bottom flue *c*₂, rear flue *c*₁, and upper flue *c*, and damper *i*, the combination therewith of the register or damper *h*, opening into the stove oven *B* above the damper *i*, substantially as shown and for the purpose set forth. 4th. In a fuel-burning stove having one or more ovens provided with the top, rear and bottom flues *c*₁, *c*₂, and dampers *h*, *i*, herein described, and further provided with one or more apertures *k*, *k*₁, opening into said oven and flues, the combination therewith of the oven *B*, detachably secured within the oven *B*, an air space *v* around the exterior of the inner oven, whereby the latter is adapted to be heated by means of gas introduced through the walls of the stove, the whole arranged and adapted for use, substantially as shown and set forth. 5th. The sheet metal oven *B*, herein described, having the front exterior flange *b* and a ventilating damper, in combination with a stove oven and means for supporting said sheet metal oven in the stove oven, substantially as shown and set forth.

No. 21,536. Gas Lamp. (*Lampe à Gaz.*)

Frederick Siemens, Dresden, Germany, 27th April, 1885; 5 years.

Claim.—1st. In a gas lamp, the combination of a number of gas-jets with a relatively high central ribbed stem and a ribbed cylindrical casing, as and for the purposes described. 2nd. The combination of a number of gas-jets, a relatively high central stem, a cylindrical casing surrounding the tubes or jets and extending above them, and a chamber located above the gas tubes and within the cylindrical casing, in which the flames of the gas issuing from the jets are partially shrouded, and the heat thereof is radiated to the casing. 3rd. The combination of the chamber communicating with the gas-pipes, from which rise a number of small tubes or jets, a perforated casing surrounding the tubes and extending some distance above them, and a chamber located above the gas tubes and within the cylindrical casing, in which the flame of the gas issuing from the jets is partially shrouded and radiated to the casing. 4th. In a gas lamp, the combination of a number of gas-jets, a relatively high stem terminating with a conical head, a relatively high cylindrical casing and chamber located above the gas-jets, and between the stem and the casing, in which the flame of the gas issuing from the jets is shrouded and radiated to the casing. 5th. In a gas lamp, the combination of a number of gas-jets, a relatively high stem terminating with a conical head, a relatively high cylindrical casing terminating at its upper part with a turned in lip, and having in its lower part a number of slits, and a chamber located above the gas-jets, and between the stem and the casing, in which the flame of the gas issuing from the jets is shrouded and radiated to the casing. 6th. In a gas-burner in which the gas issues in a series of small jets, a metal casing inclosing the lower part of the flame, which serves to take up the heat of the flame and impart it to the gas and air supply, in combination with a chamber in which the flame of the gas issuing from the jets is shrouded.

No. 21,537. Device for Shielding and Guarding Set Screws in Pulleys. (*Appareil pour cacher et protéger les Goujons des Poulies.*)

Seth H. Woodbury, Lynn, Mass., U.S., 27th April, 1885; 5 years.

Claim.—1st. The combination of a pulley, a set screw and a set-screw guard or shield, said guard or shield being adapted to conceal the set-screw, substantially as shown and, and being detachably connected to the pulley or its carrying shaft, for the purposes stated. 2nd. A set-screw guard or shield composed of a flanged disk having a central opening, provided with a flexible bushing and adapted to be sprung round the hub of a pulley or its carrying shaft, substantially as and for the purposes stated. 3rd. A set-screw guard or shield composed of the piece *e*, having rib *3*, and the piece *h* having recess *4*, whereby they are joined together at one end, and adapted to be clasped about a pulley hub or shaft, substantially as described.

No. 21,538. Hay Loader. (*Monte-Foin.*)

Jason W. Macy and Volney W. Macy, Searsborough, Iowa, U.S. 27th April, 1885; 5 years.

Claim.—1st. In a hay-loader, the revolving rake composed of the recessed circular middle and end disks, and the rake-heads let into said recesses and held in place by iron bands shrunk over them and around the middle and end disks, substantially as specified. 2nd. In a hay-loader, the combination of the elevator, the elevator-frame, the side rails, the tenoned cross-bar keyed in mortises in said side rails, the longitudinal parallel strips secured to the upper and middle cross-bars, between said side rails and the upper and middle pulleys, for carrying the elevator-belts journaled in said strips and side rails, substantially as specified.

No. 21,539. Feed Hopper for Roller Mills, etc. (*Trémie de Moulins à Cylindres, etc.*)

Walter M. Rand, Olney, Ill., U.S., 27th April, 1885; 5 years.

Claim.—The combination of the feed roller *B*, the feed-hopper *A*, the automatically operating valve *D*, springs *E*, spherical headed screws *F*, nuts *h* and *i*, spherical headed bolt screws *m*, *n*, *o*, and the principles and application of the spring hinges *d*, and oscillating and rotating shaft *B*, substantially as shown and specified.

No. 21,540. Sash-Holder. (*Arrête-Croisée.*)

William O. Smith, Norwalk, Ohio, U.S., 27th April, 1885; 5 years.

Claim.—The combination, with the casing provided with an inwardly projecting lug, of the eccentric provided with a groove *H*, the hub rigidly secured to the eccentric, the spindle *E*, plate *G* and handle *F*, all of the above parts combined as described.

No. 21,541. Sled. (*Traineau.*)

Luther M. Bradbury, jr., Quincy, Mass., U.S., 27th April, 1885; 5 years.

Claim.—1st. In a sled, the combination of the following instrumentalities, to wit: a body or platform, runners for said body, a tongue or shafts, a vertically working serrated bar adapted to engage the snow or ice, a toothed segment pivoted to a fixed portion of the sled and adapted to engage said bar, a hand lever pivoted to the body of the sled, and a connecting rod jointed to said lever and segment, substantially as described. 2nd. In a sled, the serrated bar *E* and segment *J* connected by the link *K*, in combination with the runners *C*, and means for actuating said segment, substantially as set forth. 3rd. In a sled, the serrated bar *E*, and pivoted segment *J*, connected by the link, in combination with the spring *z*, runner *C* and means for actuating said segment, substantially as described. 4th. In a sled, the pivoted lever *L*, catch *Q*, rod *N*, pivoted segment *J*, link *K*, and serrated bar *E*, in combination with the runners *B*, *C*, and body or platform *A*, constructed and arranged to operate, substantially as set forth.

No. 21,542. Harvester. (*Moissonneuse.*)

Frederick D. Mercer and John S. Mercer, Durham, Ont., 27th April, 1885; 5 years.

Claim.—1st. A tongue *so* connected to the frame of the machine, that it may be swung round from the front of the machine to the side without being detached. 2nd. A tongue *B*, pivoted on a bar *C*, and stayed thereto by the braces *D*, in combination with the brackets *E*, fixed to the frame *A*, and provided with detachable pin *F*, substantially as and for the purpose specified. 3rd. A tongue *B*, pivoted on a bar *C*, and stayed thereto by the braces *D*, in combination with the brackets *E*, fixed to the frame *A* and provided with detachable pin *F*, the tilting lever *H*, pivoted in the ordinary way on the frame *A*, and detachably connected to the tongue *B*, substantially as and for the purpose specified. 4th. A link *G* pivoted substantially on the corner of the frame *A* at one end, and at its other end to the bar *C*, on which the tongue *B* is pivoted, in combination with brackets *E* and *J*, provided with holding pins, the whole operating substantially as and for the purposes specified. 5th. The spur-wheels *M*, fixed to the axle of the main wheel *K* and arranged to mesh in teeth formed in the horn bracket *N*, in combination with an endless link chain *O*, passing round a sprocket wheel fixed to the axle of the wheel *K*, and a sprocket wheel fixed to a spindle *G*, which is journaled in the frame and provided with a ratchet gear *R*, substantially as and for the purpose specified.

No. 21,543. Washing Machine.

(*Machine à Laver.*)

Charles Falardeau, Cap Santé, Que., 27th April, 1885; 5 years.

Claim.—In a washing machine, the combination of the six-sided vessel formed by the sides *A* and ends *B*, the trunions *C*, one of which

has a ventilating opening made through it, frame D, cover E, provided with a cushioned edge and fitted to an opening in one of the sides A, the crank α , staples c, c, sewing locking bar d, pivoted to the cover E holding pin e, the plug e_1 and the binders F, and tie rods f, f, all substantially as herein shown and described.

No. 21,544. Adjustable Seat for Buggies, etc. (*Siege Mobile pour Bogheis, etc.*)

Samuel Penfold and George Penfold, Guelph, Ont., 27th April, 1885; 5 years.

Claim.—1st. In a vehicle, a seat having a hinged back and adjustably held within the body of the vehicle, in combination with an elevating device arranged to raise and to throw forward the seat on to elevated supports. 2nd. A seat E provided with a hinged back F, in combination with a crank-bar I, pivoted in the body of the machine, and arranged to move the seat E, substantially as and for the purpose specified. 3rd. A seat E provided with a hinged back F, in combination with the arm-rail G, suitably connected to the seat E and arranged to fit into sockets H, substantially as and for the purpose specified. 4th. A hinged hind-part B, provided with a pivoted crank-bar G, in combination with pins D connected to the body of the vehicle, substantially as and for the purpose specified. 5th. The seat E provided with a hinged back F and held by a pivoted crank-bar I, in combination with the arm-rails G suitably connected to the seat E and arranged to fit into the notched brackets M, substantially as and for the purpose specified.

No. 21,545. Machine for Sewing and Quilting Fabrics. (*Machine à Coudre et Piquer les Tissus.*)

Frank M. Palmer, New London, (Assignee of William H. Palmer, jr., Middletown,) Ct., U.S., 28th April, 1885; 5 years.

Claim.—1st. In a quilting machine, the combination of supports for a fabric, two carriages movable in transverse directions to each other and one mounted upon the other, a sewing machine supported by the second carriage, a pattern and means, as track n_2 , shaft H, and wheel m , for controlling the movement of the sewing-machine carriage, the first carriage being capable of free movement in order to permit a universal movement of the second carriage and its superposed sewing-machine, a driving-shaft in fixed bearings, and mechanism, substantially such as herein described, for transmitting rotary motion from said driving shaft to the operating-shaft of the sewing-machine, substantially as herein described. 2nd. In a quilting-machine, the combination of a fabric-holder and a sewing-machine, movable supports for one of said parts, a pattern comprising guide-flanges n , n_1 in pattern form, a shaft H connected with said movable supports and a friction roller m_2 on said shaft engaging with the guide flanges, whereby the movement of said supports may be controlled, substantially as herein described. 3rd. The combination, with fabric supports and a sewing-machine for operating on a fabric held by said fabric supports, of movable supports for the sewing-machine, pattern mechanism for controlling the movement of the sewing-machine, supports consisting of a track in pattern form, a shaft carried by the sewing-machine supports, a wheel upon said shaft gearing with said track, and an endless belt and gearing for imparting rotary motion to the wheel upon said shaft, and for rotating the operating shaft of said sewing-machine, substantially as herein described. 4th. The combination of supports for a fabric, a sewing-machine for operating upon a fabric held by said supports, movable supports for said sewing machine, a pattern, as J, on which is delineated or formed, a design arranged below the sewing-machine and its support, and means, as shaft H, through which the pattern controls the movements of said sewing-machine, substantially as herein described. 5th. In a quilting machine, the combination, with supports for holding a fabric extended, of a carriage and rails whereon it is movable, a rotary driving-drum arranged in fixed bearing parallel with the line of movement of said carriage near one end thereof, a pulley attached to the carriage near the other end thereof, a second carriage movable upon the first carriage in directions transverse to the line of movement of said first carriage, a sewing machine carried by said second carriage for operating on the extended fabric, pulleys attached to said second carriage, an endless belt passing around the driving drum and the pulley of the first carriage and partly encircling the pulleys on the second carriage, and mechanism for imparting motion from the pulleys on said second carriage to the operating shaft of the sewing-machine, substantially as herein described. 6th. In a quilting machine, the combination, with two carriages movable in directions transverse to each other, and a sewing-machine mounted on the second or upper carriage, of the driving drum E, the pulley E₁ on the first carriage, the pulleys h , h_2 on the second carriage, the driving-belt G, passing around the drum E, and the pulley E₁, and partly encircling the pulleys h , h_2 , the horizontal cross shaft F, on which is the pulley h , and mechanism for imparting motion to the operating shaft of the sewing-machine from said shaft F, substantially as herein described. 7th. In a quilting machine, the combination, with supports for a fabric, of two carriages movable in directions transverse to each other, a sewing-machine mounted upon the second or upper carriage, the driving drum E, the pulley E₁ on the first carriage, the cross shaft F, the pulley h , h_2 , movable with the second carriage, the driving belt G, the shaft G₁ on the sewing-machine carriage, the pulleys i_2 , i_3 , the needle operating shaft c and its pulley c₁, and the belts i_1 , i_4 , substantially as herein described. 8th. In a quilting machine, the combination, with supports for a fabric, of two carriages movable in directions transverse to each other, a sewing machine on the second or upper carriage, the cross shaft F on the second carriage, the driving drum E and pulley E₁ on the first carriage, the pulley h upon the shaft F, and the pulley h_2 on the said second carriage, the endless driving belt G, a pattern, as rack n_2 , arranged parallel with the plane of movement of said carriages, devices, as shaft H, and wheel m , engaging with said pattern, and operated by the cross shaft F for effecting the movement of said sewing-machine and carriage, and mechanism whereby the operating shaft of the sewing-machine is rotated from said shaft F, substantially as herein described. 9th. In

a quilting machine, the combination, with fabric supports, two carriages movable in directions transverse to each other, and a sewing-machine mounted on the second carriage, of the rotary driving drum E, the pulley E₁ on the first carriage, the cross shaft F and pulleys h , h_2 on said second carriage, the endless driving belt G and band G, the vertical shaft H supported in bearings on said second carriage, the worm wheel j , and worm j_1 , connecting the shafts F, H, a pattern arranged parallel with the plane of the movement of said carriages, and a wheel on the shaft H engaging with the pattern, substantially as herein described. 10th. In a quilting machine, the combination, with fabric supports, two carriages movable in directions transverse to each other and one mounted upon the other, and a sewing-machine on the second carriage, of the driving drum E, and the pulleys E₁, the shafts F, H carried by the second carriage and geared together, the pulley h on the shaft F, the pulley h_2 on the second carriage, the endless belt G, the pattern J, the wheel m on the shaft H and means for moving said shaft H axially to disengage the wheel m from the pattern J, substantially as herein described. 11th. In a quilting machine, the combination of fabric supports and a sewing-machine, for operating on a fabric, two carriages movable in directions transverse to each other, and one mounted upon the other, the shaft H supported by the second carriage, gearing for rotating said shaft H, the worm wheel j arranged between the bearing K, K, and locked to the shaft, the sleeve t surrounding the shaft in the bearing k_1 , the lever I connected with said sleeve for moving said sleeve and shaft axially, the wheel m on said shaft H and a pattern track with which said wheel may engage, substantially as herein described. 12th. In a quilting machine, the combination, with fabric supports and a sewing-machine for operating on a fabric held by said supports, of pattern mechanism for controlling the relative position of the fabric and needle, consisting of the rack n_2 and the flange n_1 extending therewith, an axially-movable rotary shaft H and a pinion m carried by said shaft and engaging with said rack, substantially as herein described. 13th. In a quilting machine, the combination, with fabric supports, and a sewing-machine for operating on a fabric held by said supports, of a pattern mechanism for controlling the relative position of the fabric and needle, consisting of a rack n_2 , and parallel flanges n , n_1 , which project beyond said rack, an axially-movable rotary shaft H, a pinion m thereon and a friction roller m_2 for operating on said flanges, substantially as herein described. 14th. In a quilting machine, the combination, with fabric supports and a sewing-machine for operating on a fabric, of pattern mechanism for controlling the relative position of the fabric and needle, consisting of a pattern rack, an axially-movable rotary shaft H, having a socket β , in its end, and a pinion m , having a stem m_1 , detachably secured in said socket and a friction roller m_2 , on said stem between the end of the shaft H and said pinion, substantially as herein described. 15th. In a quilting machine, the combination, with fabric supports and a sewing-machine for operating on a fabric held by said supports, of a pattern mechanism for controlling the relative position of the fabric and needle, consisting of a pattern rack, a shaft H having a pinion m at its end, a sleeve t surrounding said shaft between the shoulder t_1 and the collar t_2 , the bearing K whereon said sleeve is axially movable, the bearings K, K, for the said shaft, the wheel j through which said shaft may slide, the lever I connected with said sleeve for moving said shaft and the pinion carried by it axially, substantially as herein described. 16th. In a quilting machine, the combination, with fabric supports, of a lower carriage consisting of an I beam or stretcher A, mounted on wheels B, B₁, the sewing-machine D, D₁, and side frames D₂, D₃, D₄, D₄, depending on opposite sides of the beam or stretcher and provided with roller or wheels adapted to travel on said beam or stretcher and constituting a second carriage, substantially as herein described. 17th. In a quilting machine, the combination, with a lower carriage consisting of the beam or stretcher A, mounted on wheels B, B₁, of the sewing-machine D, D₁, and the side frames D₂, D₃, D₄, D₄, and wheels or rollers e , e_1 , e_2 , e_3 , adapted to said beam or stretcher and constituting a second carriage, substantially as herein described. 18th. In a quilting machine, the combination, with two carriages movable in directions transverse to each other and one mounted upon the other, of a sewing-machine on said second carriage supports, whereon a fabric may be held, a pattern, as J, arranged below said carriages, and means, as shaft H, through which said pattern controls the movements of the sewing-machine to produce a design on the fabric, substantially as herein described. 19th. In a quilting machine, the combination, with supports for a fabric, of a sewing-machine for operating on said fabric two carriages movable in directions transverse to each other and one of which said sewing-machine is supported, the other carriage being capable of free movement to permit a universal movement of the sewing-machine, a pattern consisting of a track, a wheel engaging with moving along said track by its rotation, a shaft F upon the sewing machine carriage, an endless belt G for rotating said shaft and mechanism substantially such as described, through which motion is transmitted from said shaft to the said wheel and to the operating shaft of the sewing machine, substantially as herein described. 20th. In a quilting machine, the combination, of fabric supports for holding a fabric extended, a sewing machine for operating on the fabric, movable supports for the sewing-machine, a pattern, as J, having a design to be produced on the extended fabric and arranged below the sewing-machine and directly below the extended fabric and means, as shaft H, through which the said pattern controls the movements of the sewing-machine, substantially as herein described.

No. 21,546. Machine for Applying Photographic Emulsion to Photographic Plates. (*Machine à Appliquer l'Emulsion Photographique aux Planches Photographiques.*)

Eli J. Palmer and Theodore Snell, Toronto, Ont., 28th April, 1885; 5 years.

Claim.—1st. A narrow vessel, made substantially the length to correspond with the width of the plate on which the emulsion is to be applied, and provided with a porous apron or its equivalent, designed to receive the emulsion and distribute it on the plate, substantially as and for the purpose specified. 2nd. A narrow vessel,

made substantially the length to correspond with the width of the plate on which the emulsion is to be applied, and having a longitudinal slit made at or near its bottom to permit the escape of the emulsion onto a porous apron, through which the emulsion is applied to the plate. 3rd. A distributing vessel F journalled on the rod g, and having an arm h attached to it, in combination with the bridge i attached to the travelling belt B, substantially as and for the purpose specified. 4th. The distributing vessel F, journalled or pivoted on the rod g, and provided with an arm h, the spring pinchers G arranged to grip the end of the flexible tube E, the lever H for operating the said pinchers, in combination with the bridges i and J, connected to the travelling belt B, substantially as and for the purpose specified. 5th. The spring pinchers G, arranged to grip and close the end of the flexible tube E, and connected, as described, to the pivoted lever H, in combination with the bridge J connected to the travelling belt B, substantially as and for the purpose specified. 6th. The distributing vessel F, journalled as described, and supplied with emulsion from a flexible tube E, closed by the pinchers G, in combination with a travelling belt B, having plates A held on its surface, as described, and bridges i and J arranged to operate the vessel F, and pinchers G, substantially as and for the purpose specified. 7th. An emulsion reservoir C, placed within a hot water urn D, in combination with a flexible tube E and distributing vessel F. 8th. A soft rubber plug, arranged to close holes in the bottoms of the reservoir C, and urn D, a hard rubber tapered ferrule a inserted in a correspondingly formed hole in the said plug, in combination with a flexible tube E, having a hard rubber tapered ferrule p inserted in its mouth, and forced into the ferrule a, substantially as and for the purpose specified. 9th. A flexible tube E, arranged to convey emulsion from the reservoir C to the distributing vessel F, in combination with the sponge r inserted within the reservoir C, and the mouth of the tube E, substantially as and for the purpose specified. 10th. In combination, with a device for distributing photographic emulsion on plates, an endless travelling belt B having projecting lips k placed on the surface, substantially as and for the purpose specified. 11th. An endless travelling belt B, having projecting lips k placed on the surface for holding the plates A, in combination with a shelf J placed at the turning point of the endless apron, and arranged to receive the plate A, substantially as and for the purpose specified. 12th. An endless apron B, having projecting lips k to retain in position. the plates K, in combination with a rack K, arranged to hold a series of shelves J and automatically operated, so as to bring an empty shelf before each plate, substantially as and for the purpose specified. 13th. In a machine for applying photographic emulsion to photographic plates, an endless travelling belt B arranged to convey the photographic plates from the distributing vessel through a refrigerator, substantially as and for the purpose specified.

No. 21,547. Tacking Machine for Lasting Boots and Shoes. (*Machine à Clouer pour Enformer les Chaussures.*)

George N. March, Watertown, and George W. Copeland, Malden (Assignees of Erastus Woodward, Somerville), Mass., U. S., 23th April, 1885; 5 years.

Claim.—1st. In a tacking machine for lasting boots and shoes, the combination, with a jack of tack-feeding and driving mechanism, constructed substantially as described, and adapted to be moved by one hand over the surface of the sole of a shoe fixed upon the jack in operative position. 2nd. In a tacking machine for lasting boots and shoes, the combination of tack-driving mechanism, the pivoted arm E and the handle n, all substantially as and for the purposes described. 3rd. In a tacking machine for lasting boots and shoes, the combination of the jack for supporting the work, the tack-driving devices supported at the end of a vertically-movable arm E, a treadle e₃ and connecting mechanism, whereby upon the movement of the treadle the tack is caused to be driven, all substantially as and for the purposes described. 4th. In a tacking machine, the combination of a jack for supporting the boot or shoe during the lasting process, a tack-feeding and driving device supported upon the end of a vertically-movable arm, said vertically-movable arm and its movable support, all substantially as and for the purposes described. 5th. In a tacking machine, the combination of a jack for supporting a boot or shoe, tack-feeding and driving devices, and means for moving them vertically in relation to the work, and for holding the nozzle of the tack-driving mechanism in contact therewith during the driving of the tack, and also means for moving said tack-feeding and driving devices in a horizontal direction, all substantially as and for the purposes described. 6th. In a tacking machine for lasting boots and shoes, the combination of a jack adapted to be moved, as specified, and tack-feeding and driving mechanism having both vertical and lateral movements, all substantially as described. 7th. The improvement in lasting boots and shoes, which consists in placing the last with the upper and insole thereon in a fixed and operative position upon the jack, drawing the upper over the insole, holding it in position with one hand, moving the tack-feeding and driving mechanism over the face of the sole to the desired point with the other hand, and then driving the fastening. 8th. The combination, with the tack-driving mechanism, of the tack-strip feeding devices operated by the lever e₉, and connecting mechanism, substantially as specified. 9th. The combination of the tack-strip feeding devices, tack-strip severing devices, the transferer having the curved finger or guard, and the tack-driver, all substantially as and for the purposes described.

No. 21,548. Telephone Connection. (*Commuteur Téléphonique.*)

The Long Telephone and Telegraph Company (Assignee of James A. Harlan), Washington, D.C., U.S., 23th April, 1885; 5 years.

Claim.—1st. In a telephone switch, the combination of an oscillating forked lever, inwardly moving contact buttons, and spring operating said buttons to make and break the circuit, substantially as described. 2nd. In a telephone switch, the combination, with an oscillating forked lever carrying the instrument, of inwardly moving contact making buttons or posts, springs operating said buttons or posts to make and break the circuit, and a segmental guard, substantially as set forth.

No. 21,549. Telephone Transmitter. (*Transmetteur Téléphonique.*)

The Long Telephone and Telegraph Company, Washington, D.C. (Assignee of Charles W. Long, Louisville, Ky.), U. S., 23th April, 1885; 5 years.

Claim.—1st. The combination, with the diaphragm and the contact button, of the spirally-coiled conducting wire electrically and mechanically connected to the button, the independent insulated spring which holds the button against the diaphragm, and the thimble for holding the spring and button, substantially as hereinbefore set forth. 2nd. The combination of the diaphragm, the contact button, the spirally-coiled conducting wire, electrically and mechanically connected to the button, the independent insulated spring for holding the button against the diaphragm, the thimble for holding the spring and button, and means, substantially as described, for varying the pressure of the spring.

No. 21,550. Railway Rail Joint.

(*Joint de Rail de Chemin de Fer.*)

The Morgan Rail Joint Company (Assignee of Richard P. Morgan), Dwight, Ill., U.S., 23th April, 1885; 5 years.

Claim.—1st. The sub-rail C, having its nearing ends reduced or flattened, substantially as described. 2nd. The jaw-piece d and separate staple e encompassing the same, the ends of said staple being provided with suitable fastening means, whereby in co-operation the track and sub-rails may be securely clamped together, substantially as set forth. 3rd. The combination, with the track-rails and cross-ties, of the sub-rail having reduced ends, the jaw-piece to receive the webs of said track and sub-rails, the separate staple and the fastening devices (wedge-keys), substantially as set forth. 4th. The combination, with the track-rails and cross-ties, of the sub-rail having reduced or flattened bearing ends, and the clamping devices for securely holding said rails together, substantially as set forth.

No. 21,551. Cloth Boot. (*Botte de Drap.*)

Eugene A. Hall, Troy; Francis C. Huyck, and Chancy E. Argersinger, Albany, N.Y., U.S., 23th April, 1885; 5 years.

Claim.—A boot formed with a foot part of a single piece, substantially as shown, having a rear seam n, n, front seam o, p, toe seam o, q and a seamless button, substantially as described.

No. 21,552. Rubber Shoe. (*Claque en Caoutchouc.*)

David Wilkey, Rock Island, Que., 29th April, 1885; 5 years.

Claim.—The combination of the rubber shoe A, and the strap C, C, substantially as and for the purpose hereinbefore set forth.

No. 21,553. Attachment to Gas Burners.

(*Disposition au Becs à Gaz.*)

Francis M. Kiely (Administrator of the estate of Ferdinand Dittmar, deceased), Toronto, Ont., 23th April, 1885; 5 years.

Claim. 1st. As a safety attachment to gas burners, and as a means for re-lighting the gas issuing therefrom, a platinum coil arranged vertically over said burner, and a platinum sponge G, inclosed within and supported by a convoluted of the said coil, substantially as described. 2nd. As a safety attachment to gas burners, and as a means for re-lighting the same, a platinum coil arranged vertically over said burner and provided with vertical ribs connecting the different parts of the coil together, substantially as and for the purpose described. 3rd. A safety attachment to gas burners, consisting of the following elements: a wire-holder D, substantially following the contour of the flame, platinum coil E provided with vertical ribs F, and platinum sponge G inclosed within a convoluted of said coil, the whole being constructed and arranged as shown and for the purpose specified.

No. 21,554. Justifying Apparatus. (*Cadrat.*)

Merritt H. Dement, Chicago, Ill., U.S., 29th April, 1885; 5 years.

Claim.—1st. In an apparatus for securing printed line strips in page or column form, a bar provided with perforating pins, and adapted to be pressed upon the form by means of a lever and pedal, substantially as shown and described. 2nd. The frame A, adapted to be moved upward line by line, and the lever guide H, in combination with the bar I, provided with pins, and adapted to be pressed upon the form by a lever, and pedal, substantially as and for the purposes shown and described.

No. 21,555. Self-Lighting Gas Burner.

(*Bec à Gaz à Allumage Automatique.*)

Henry H. Tallmadge, New York, N. Y., U. S., 29th April, 1885; 5 years.

Claim.—1st. The combination, with a gas burner, of the lever C, provided with the extension handle D adjustably secured thereto, as and for the purpose set forth. 2nd. The combination, with the burner operating mechanism and fulminating chamber, of the spring screw standard E, F, and the cap or cover G, as set forth. 3rd. The combination, with a self-lighting gas burner, of a hollow hammer head, arranged to conduct the flame from the flush of the exploding pellet direct to the escaping gas at the tip of the burner, as set forth.

No. 21,556. Apparatus for Gathering Liquid Manure. (*Appareil pour Enlever l'Engrais Liquide.*)

Ludwig Zimmer, Berlin, Ont., 29th April, 1885; 5 years.

Claim.—The combination of manure yard A, tank B, chain pump C and drain pipes D, substantially as and for the purposes hereinbefore set forth.

No. 21,557. Soldering Tool. (*Fer à Souder.*)

John Gillis and Ronald McDonald, Port Hawkesbury, N. S., 29th April, 1885; 5 years.

Claim.—1st. The combination of the handle A, tubular stem B, chambered copper bolt C, with fill hole closed by a plug, and tapered valve seat G extending into removable tip F, which is provided with passages H and h, and groove k, a valve rod I placed in the tubular stem B, and controlled by a spiral spring J and knob J'. 2nd. A chambered or hollow copper bolt C, provided with fill hole closed by a plug E, and a removable tip or point F, in combination with a spring rod I, having conical end fitting tapering valve seat G, and regulating the emission of solder through the same, and the passages H, h and h'. 3rd. A copper bolt C, bored or formed with a chamber or cavity D, provided with fill hole and a central tapering valve seat G, in combination with a removable tip F. 4th. A tapering tube K, adapted to fit upon a tip F, and provided with a bulb k at the end, and an opening close to said bulb for the emission of solder, all substantially as shown and described and for the purpose set forth.

No. 21,558. Rose Head Spike.

(*Clou à Tête en Rose.*)

James P. Perkins, Pullman, Ill., U.S., 29th April, 1885; 5 years.

Claim.—1st. A spike having a hard concentric with its shank, a square portion adjacent to its head and having its four corners, below said square portion, replaced or cut off by four opposite faces, and terminating at its lower end in a chisel-point located in the plane of two opposite edges or ribs, substantially as described. 2nd. A spike having a head concentric with its shank, and having ribs at its sides continued to the extreme point of the spike, and ribs on its front and back portions terminating in bevelled surfaces c, whereby a chisel point is formed in the plane of the lateral ribs, substantially as described.

No. 21,559. Animal Feeding Bin. (*Auge.*)

James Martin, Maryborough, Ont., 29th April, 1885; 5 years.

Claim.—1st. In the above described animal feeding bin, the movable feed gates F, arranged to be held at any desired distance from the bottom D, by set-screws or other equivalent device, substantially as set forth. 2nd. In an animal feeding bin, the combination of the sides A, ends B, removable top C, bottom D and sides E, with the adjustable feed gates F, substantially as shown and described.

No. 21,560. Embroidery Attachment for Sewing Machines. (*Machine à Coudre faisant la Broderie.*)

Charles Raymond, Guelph, Ont., 29th April, 1885; 5 years.

Claim.—1st. The thread carrier or carriers B suitably pivoted, the movable plate D connected to the said carrier or carriers, and having an oval hole or recess E made in it, in combination with a crank pin d arranged to receive a rotary motion. 2nd. The thread carrier or carriers B suitably pivoted, the movable plate D connected to the said carrier or carriers, and having an oval hole or recess E made in it, a crank pin d connected to the bottom face of the turret-head F and fitting into the hole or recess E, the projections e and f at right angles to each other, attached to, or forming part of the head F, in combination with the rocking lever H, connected to the needle-bar of the machine and provided with arms g and h, arranged and operating substantially as and for the purpose specified. 3rd. The pivoted lever H having its end i connected to the needle-bar of the machine, and arms g and h formed at its opposite ends, in combination with the turret-head F, having projections e and f formed on it, and arranged to actuate the thread-carrier B, substantially as and for the purpose specified.

No. 21,561. Lifting Jack. (*Cric.*)

Joseph S. Hood, Stahlton, Penn., U.S., 29th April, 1885; 5 years.

Claim.—In a lifting-jack, the combination, with the supporting-frame having grooves d, as shown, of a sliding rack-bar having tongs e and teeth f, a gear-wheel E, lever G having lug k, a pawl and a spring to hold said pawl in engagement with the teeth of the rack-bar, substantially as set forth.

No. 21,562. Snow Plough. (*Charrue à Neige.*)

John M. Poitras, Deseronto, Ont., 29th April, 1885; 5 years.

Claim.—1st. A removable and attachable snow plough carried by a locomotive engine, consisting substantially of an inclined plane floor, having a horizontal cutting edge forwardly, and a double mould board rearwardly, and supported inclinedly on the buffer and pilot frames, and rearwardly straddling the end of the boiler, as set forth. 2nd. A removable and attachable snow plough for locomotive engines, constructed of angle iron side pieces A, nose C, beam D, braces E, arms B, braces G², G³, G⁴, ridge bar G¹ and a sheet iron skin I, riveted together and to the sides A, and ridge bar G¹, as set forth.

No. 21,563. Treating Vegetable Substances in order to obtain Pulp for Making Paper, etc. (*Traitement des Substances Végétales pour en obtenir de la Pâte pour faire le Papier, etc.*)

Thomas G. Young, Durris, and John Pettigrew, Dinside, Scotland, 29th April, 1885; 15 years.

Claim.—1st. The treatment of vegetable substances, capable of yielding fibres suitable for paper making and other purposes, with a solution of nitric or nitrous acid, substantially as and for the purposes hereinbefore described. 2nd. The combination of the process of treating fibrous substances with nitric or nitrous acid, with the

subsequent treatment of the product thereby obtained, with a solution of an alkali, or alkaline earth, or alkaline salt, substantially as hereinbefore described.

No. 21,564. Tap for Boots and Shoes.

(*Tacon pour Chaussures.*)

William Quinlan, Oswego, N.Y., U.S., 29th April, 1885; 5 years.

Claim.—As a new article of merchandise, taps for repairs of rubber boots or shoes consisting of disks of elastic material, reaching across the bottom and beyond the edges of the sole, or shank, of heel, and having integral with it marginal flanges by which to cement said taps to the edges of the parts to be repaired, substantially as described and shown.

No. 21,565. Carpenter's Gauge. (*Trusquin.*)

Augustus J. Burger, Macon, Ga., U.S., 29th April, 1885; 5 years.

Claim.—The combination, with the adjustable head and hollow stock of a gauge, of the wheel E on one end of the stock, the nut and its set screw on the opposite end of the stock, the endwise adjustable bar G tapped through said nut, provided with a wheel F on one end, and a handle on the opposite end, substantially as described.

No. 21,566. Fire-Escape. (*Sauveteur d'Incendie.*)

Abraham S. Miller, and Lewis H. Miller, Republic, Ohio, U. S., 29th April, 1885; 5 years.

Claim.—1st. The combination, with a fire-escape boom, of the bifurcated claw Q made in one piece, and embracing the upper end of the boom on three sides. 2nd. The combination, with a base or support of an extension boom pivoted to said support, provided with means for raising and extending the same, and a hook at the upper or outer extremity for engaging some part of a building, and taking from said boom strains otherwise due to leverage, as herein described, of a pendulous flexible extension-ladder attached to the upper part of said boom, and adapted to hang therefrom parallel with the wall of the building, or nearly so. 3rd. A boom for fire-escapes, provided with plates b on one section, and C-shaped clips c on another section, said clips having their ends turned around and under the edges of and embracing the facing plates and forming bearings for said plates, thus performing the double function of holding two sections of the boom together, and forming the bearing surface of the upper section. 4th. The combination, with a wheeled truck or platform, of an extension boom hinged to a turn-table pivoted to said truck, a derrick hinged to a swivel base, also pivoted to said truck and adapted to raise said extension-boom by shortening the bights in a rope passing under the extension boom over swivel sheaves, and operated by a windlass adjacent to the derrick base, of supports or posts O secured upon the truck and arranged to bend the branches of said bights, and lessen the power required to be applied to said windlass during the early stages of the act of elevating said extension boom. 5th. As a detail of construction in a portable fire-escape, the spring support intermediate between the extension boom, and the frame of the truck consisting of the uprights E, the bow F having thereon the step n, the vertical guide-bar G and the helical spring s, all constructed, arranged and operating substantially as described. 6th. In a fire-escape, comprising an extension boom and a flexible ladder attached thereto, the flexible ladder, herein described, formed of the ropes S, rings t and rungs T passed through bights in the ropes S, and between the ropes and the rings, and bent or declined on or around the rings. 7th. The combination of a truck or platform, a radial guide rail G¹, a frame A' A'' furnished with guides a'' clipping and travelling upon the same, a king bolt a, having the extension boom C and a lever A⁶, braced laterally to the frame A' hinged to its head. 8th. A turntable A' A'', pivoted by a king bolt a, to a truck or platform, and having the lower end of an extension boom hinged thereto, a windlass D journalled upon said turntable, a screw I journalled in a head H, which is hinged to the boom C and passing through a threaded block I', pivoted in a bracket I'' upon said turntable, said screw provided with means for turning the same. 9th. The combination with the extension boom of the pulley-block P, hinged in a bracket P¹, secured to a bar P'', pivoted in bracket P''', secured to the said extension boom. 10th. The combination of a wheeled truck or platform A, a swivel base M pivoted thereto, and provided with lever M⁴ braced to said base, derrick legs L pivoted to said swivel base, the upper ends provided with swivel sheaves g. 11th. The combination of a shaft K, carrying rope pulleys N, each having secured upon it one end of a rope r, passing over swivel sheaves p upon stands O, swivel sheaves q at the end of derrick legs L and around the boom C through a swivel block P, all substantially as described and shown and as for the purpose set forth.

No. 21,567. Spring Bed Bottom.

(*Sommier Elastique.*)

LaFayette Wildermuth, Columbus, Ohio, U.S., 29th April, 1885; 15 years.

Claim.—1st. A spring bed bottom, composed of spring R, and spring bearing slats, and links pivoted to and connecting said slats, as described, in combination with the hinged and adjustable head section A¹ and supplemental frame F, as set forth. 2nd. A spring bed bottom, composed of sections A and A¹, hinged together as described, by means of hinged bars beneath, in combination with section A, consisting of slats and links pivoted to and connecting the same together, with the cross-bars L and stays L¹, as set forth. 3rd. A bed bottom, composed of a series of spiral springs, said springs having arms g bent to form three angles or points h, i and j, which embraced the top coils of two adjacent springs and return to the arm K, adapted to hook over the top coil of its own spiral, in combination with slats and links pivoted to and connecting the same, as set forth. 4th. In bed bottoms, the individual springs having an arm bent so as to form two or more angles, which embrace or hook over the coils of the adjacent springs, and, returning, embrace or hook over the top coil of its own spiral, substantially as herein set forth. 5th. In a spring bed bottom,

the slat holding bars having at suitable points the links for hinging the same together, in combination with the spring coils, substantially as herein set forth. 6th. In spring bed bottoms, the foot section having beneath the cross slats the longitudinal hinged bars provided with the cross braces L, in combination with the head section, having its cross slats secured to the longitudinal hinged bars, provided with suitable braces M, whereby the two sections are held perfectly rigid and independently of each other, substantially as herein set forth.

No. 21,568. Coating for Explosive Compositions and Cartridges. (*Enduit pour Compositions Explosibles et Cartouches.*)

Michael Cook, Sandhurst, Victoria, 29th April, 1885; 5 years.

Claim.—The coating of cartridges, and of explosive compounds, with melted sulphur, or melted compounds, or mixtures of sulphur, substantially as and for the purposes herein described and explained.

No. 21,569. Auger Handle. (*Manche de Turrière.*)

David M. Parry, Rushville, Ind., U.S., 29th April, 1885; 5 years.

Claim.—1st. An auger handle, constructed in two parts, having an aperture formed in the centre, one of said parts having a clamp-bolt adjustably secured in its portion of said aperture, and the other of said parts having a nut set in its portion, which engages with a screw threaded end of said clamp bolt, whereby the same is operated, substantially as described and for the purposes specified. 2nd. In an auger handle, the combination of the part B, having a socket for the admission of the auger shank, the clamp-bolt B adjustably secured in said part B and provided with a hole in its centre, which forms a part of the socket for the auger shank, the part B having a nut p^2 set therein, which engages with a screw-threaded end of the clamp-bolt, and the sleeve C surrounding the centre of the handle, substantially as described and for the purposes specified.

No. 21,570. Machine for Unrolling, Measuring and Winding or Rolling Cloth, etc. (*Machine à Dérouler, Mesurer et Enrouler les Draps, etc.*)

George Hotson, Rainham, Ont., 29th April, 1885; 5 years.

Claim.—1st. The combination of rollers *a, a*, and the roller supports *a1, a1*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of rollers *a, a*, the roller supports *a1, a1*, and registering wheels *B, B1*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of rollers *a, a*, the roller supports *a1, a1*, registering wheels *B1, B1*, together with unrolling board *D*, winding or rolling wheel *D* and crank *C*, substantially as and for the purpose hereinbefore set forth. 4th. The combination of rollers *a, a*, the roller supports *a1, a1*, registering wheels *B, B1*, unrolling board *D1*, winding or rolling board *D*, crank *C*, slide bar *E*, set screws *G1*, holding irons *G* and ribbon-holding attachment shown in Figs. 2 and 3, substantially as and for the purpose hereinbefore set forth.

No. 21,571. Machine for Sharpening Reaper and Mower Knives. (*Machine à Ré-mouler les Couteaux des Faucheuses-Moissonneuses.*)

William L. McArthur and Alexander Cameron, Ottawa, Ont., 29th April, 1885; 5 years.

Claim.—1st. In a knife sharpener, the shaft *D2*, provided with crank *C1*, connecting rods *C* and treadles *E* and *E1*, substantially as and for the purpose hereinbefore set forth. 2nd. In a knife sharpener, the gear *D1*, having crank shaft *D2* and meshing in gear *D* in the shaft of grindstone *C*, substantially as and for the purpose hereinbefore set forth. 3rd. In a knife sharpener, the bench *A* having feet *B* made to receive treadles *E* and *E1*, and the oscillating lever *G* provided with knife-holder *H*, substantially as and for the purpose hereinbefore set forth. 4th. The combination, in a knife-holder, of the bench *A*, provided with uprights *B*, in which gears *D* and *D1* and stone *C* revolve, the oscillating lever *G*, provided with knife-holder *H*, and legs *B* having treadles *E* and *E1* to which are pivoted connecting rod *C* to the cranks *C1* in the crank shaft *D2*, the whole arranged and combined as described and shown and for the purposes hereinbefore set forth.

No. 21,572. Artificial Ear Drum. (*Tympan Postiche.*)

John H. Nicholson, New York, N.Y., U.S., 29th April, 1885; 5 years.

Claim.—1st. An artificial ear-drum, made substantially as herein shown and described, and consisting of a magnetized steel rod on each end of which a rubber disk is held, as set forth. 2nd. In an artificial ear-drum, the combination, with the magnetized steel rod *A*, having a gold or silver covering *B*, of a rubber disk held on each end of the rod, substantially as herein shown and described. 3rd. In an artificial ear-drum, the combination, with the magnetized steel rod *A*, having a flat head *C*, of the rubber disks *H* and *K* on the ends of the rod, and the rubber washer *D*, and the gold washer *J* on opposite sides of the disk *H*, substantially as herein shown and described. 4th. In an artificial ear-drum, the combination, with the magnetized steel rod *A*, of the rubber disks *H* and *K* on the ends of the same, and the gold washers *L* and *M* on opposite sides of the disk, substantially as herein shown and described. 5th. In an artificial ear-drum, the combination, with a magnetized steel rod *A*, of rubber disks held on the ends of the same, which disks have notches in their edges, substantially as herein shown and described. 6th. In an artificial ear-drum, the combination, with a magnetized steel rod, of the rubber disks *H* and *K* held on the ends of the rod, and provided with notches in their edges, the disk *H* being provided with apertures *b*, substantially as herein shown and described.

No. 21,573. Sleeve Protector. (*Manche Postiche*)

Roscoe G. Turner, Plymouth, Mass., U.S., 29th April, 1885; 5 years.

Claim.—1st. As a new article of manufacture, a sleeve having a body composed of leather or other suitable material, and provided with an elastic gore or gusset, substantially as described. 2nd. A sleeve protector having one of its ends larger than the other, said protector being provided with an elastic gore or gusset, which is wider at the small end of the protector than it is at its opposite end, substantially as and for the purpose set forth. 3rd. The improved sleeve protector herein described, the same consisting of the body *A* and gore *B*, constructed and arranged, substantially as described.

No. 21,574. Weeding Machine. (*Extirpateur.*)

Cyrus S. Bell, Windsor, Ont., (Assignee of John Clarke, Detroit, Mich., U.S.) 30th April, 1885; 5 years.

Claim.—1st. The knife *C*, in combination with the wheel *G*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the perforated strap *H*, with the beam *A* and the wheel *G*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the elongated washers *B, B*, with the bars *A, A*, and the bolts *a, a*, substantially as and for the purpose hereinbefore set forth.

No. 21,575. Process for Dyeing Human or Animal Hair, either living or dead Hair, or Furs, and Dye therefor. (*Procédé pour Teindre les Cheveux ou le Poil, soit Vifs ou Morts, ou les Fourures, et Teinture pour cet objet*)

Marie L. Kellogg, (Assignee of Albert C. de Barbaran), New York, N.Y., U.S., 30th April, 1885; 10 years.

Claim.—1st. I claim as my invention, the use of an ammoniacal solution of nickel or of the salts, or compounds of nickel in its special application to produce various shades of colour on human hair, or the hair or fur of animals. 2nd. I furthermore claim as my invention, the use of pyrogallic acid, or other mordants or substances, to bring out, develop, fix, or cause to appear, various shades of colour on human hair, or the hair or fur of animals, which has been previously treated or impregnated with an ammoniacal solution of nickel, or compound of nickel. 3rd. I furthermore claim as my invention, the manufacture or preparation of dyes for human hair, or the hair or fur of animals, the said dye consisting of two solutions, the one being an ammoniacal solution of nickel, or compounds thereof, and the other a solution of pyrogallic acid, or other mordant or substance possessing the property of fixing, developing, or bringing out on the hair or fur the compound of nickel with the hair to which the colorative effect of the dye is due. 4th. Lastly I claim as my invention, the colouring matter produced on human hair, or the hair or fur of animals, by treating the said hair or fur, first with an ammoniacal solution of nickel, and then with pyrogallic acid, or other mordant or substance, substantially as hereinbefore described and set forth.

No. 21,576. Draw-Bar for Locomotives. (*Tige de Traction pour Locomotives.*)

Thomas C. Craven, Green Bush, and Benjamin W. Arnold, Albany, N.Y., U.S., 30th April, 1885; 5 years.

Claim.—1st. In a coupling attachment between a locomotive and tender, the combination and arrangement with a horizontal draw-bar which is connected with the lower side of the tender at a point distant from its front end, and a draw-link jointed to the outer end of said draw-bar, and coupled at its opposite end to the locomotive at a point on a plane above the draw-bar, so that said link is made to support the forward end of said bar, of a support for the tender applied to the upper side of the outer end of that bar, substantially as and for the purposes set forth. 2nd. In a coupling attachment between a locomotive and tender formed by a lifting link, which is jointed with a horizontal-arranged draw-bar, coupled with the tender, the combination, with said horizontal draw-bar, of a jack-strut having a joint connection with said bar, supporting socket secured to the locomotive, and receiving the free foot end of said jack-strut at a point therein on a plane below the draw-bar, and a support for the tender applied to the upper side of the jointed ends of said draw-bar and jack-strut, substantially as and for the purposes set forth. 3rd. In a coupling attachment between a locomotive and tender for hauling and backing the latter, the combination and arrangement with a horizontal draw-bar, coupled with the tender, lifting link coupled at one end to the locomotive and supporting the forward end of the draw-bar by having a jointed connection with the same, and a jack-strut coupled with the draw-bar and having its free foot end supported in a recess or socket attached to a locomotive at a point below the plane of the draw-bar, of a support for the tender which is applied to the upper side of the common joint connection of the draw-bar with the lifting link and jack-strut, substantially as and for the purposes set forth. 4th. The combination with coupling plate *C*, provided in its face side with recesses *b* and *e*, with coupling link hole *c*, through the sides of recess *b*, and having its rear side horizontal groove *i*, of the plate *G*, cross bars *D* secured to the locomotive and bolts *h, h*, substantially as and for the purposes set forth. 5th. In a draw-bar attachment between a locomotive and its tender, the combination, with draw-bar *I*, arranged and coupled horizontally with the tender with its forward end supported by lifting link *K*, coupled with the locomotive at a point above the plane of its connection with the draw-bar, and jack-strut *L* jointed with draw-bar and link, and having its free foot end working in a recessed step securely attached to the locomotive at a point below the plane of the jointed connection of the strut with the draw-bar of jack saddle *M*, constructed as above described, and applied to the upper side of said jack saddle, substantially as and for the purposes set forth. 6th. The combination and arrangement, with draw-bar *I*, lifting link *K* and jack strut *L*, constructed and arranged in relation to each other and the locomotive

and tender, as above described, of the jack saddle M, provided on its upper side with way P and rollers N, N, applied to the upper side of the draw-bar, jack-bar T provided with tongue t, and applied to the upper side of said jack saddle, and mechanism secured to the tender for forcing said bar down on said saddle, substantially as and for the purposes set forth. 7th. The combination, with jack saddle M applied to the upper side of the draw-bar I, arranged and connected at its ends, as above described, and jack bar T applied to the upper side of said saddle, of dead-wood O, lifting bars R and jack bolts S, substantially as and for the purposes set forth.

No. 21,577. Pump Gear. (*Appareil de Pompe.*)

John C. Kerr and James W. Curry, Millbrook, Ont., 30th April, 1885; 5 years.

Claim.—In a pump gear, the combination, with the pump rod A and post A', provided with friction roller D, of the rack C, pinion E, rock shaft F, journal box G and handle J, whereby the stroke of the pump can be effected from a high or low position and the handle erected, as set forth.

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

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| 347. J. P. JACKSON, 2nd and 3rd 5 years of No. 20,091, from the 1st day of September, 1885. Improvements on Appliances for Filtering Water and other Liquids. 1st April, 1885. | 357. P. BARCLAY, 2nd 5 years of No. 11,175, from the 24th day of April, 1885. Improvements in Lubricators for Steam Engines. 5th April, 1885. |
| 348. F. VÉZINA, 2nd 5 years of No. 11,087, from the 3rd day of April, 1885. Improvements on Spinning Wheels. 3rd April, 1885. | 358. A. JARVIS, 2nd 5 years of No. 4,719, from the 15th day of May, 1885. Improvements on Earth Augers. 11th April, 1885. |
| 349. W. C. BRAMWELL, 2nd 5 years of No. 11,243, from the 13th day of May, 1885. Improvements on Machines for Feeding Textile Materials to Carding and other Preparatory Machines. 4th April, 1885. | 359. L. D. BENNER, 2nd 5 years of No. 13,069, from the 9th day of July, 1886. Improvements on Paper Bags and the Manufacture thereof. 15th April, 1885. |
| 350. The Knickerbocker Co., (Assignees) 2nd 5 years of No. 11,676, from the 28th day of August, 1885. Improvements on Bolting Machines. 7th April, 1885. | 360. H. H. MILLER, 2nd 5 years of No. 11,196, from the 29th day of April, 1885. Improvements on a Machine for Planing Staves for Tubs. 16th April, 1885. |
| 351. The Knickerbocker Co., (Assignees), 2nd 5 years of No. 11,142, from the 19th day of April, 1885. Improvements on Bolting Machines. 7th April, 1885. | 361. J. S. KEMP, and W. M. BURPEE, 2nd 5 years of No. 4,659, from the 21st day of April, 1885. Improvements in Manure Spreading Machines. 17th April, 1885. |
| 352. H. L. NARAMORE, 2nd and 3rd 5 years of No. 19,421, from the 27th day of May, 1889. Improvements on Clocks. 7th April, 1889. | 362. A. FOISY, 2nd 5 years of No. 11,222, from the 7th day of May, 1885. Improvements in Oil Cabinets. 18th April, 1885. |
| 353. R. J. and J. F. BUERKEL, 2nd 5 years of No. 18,670, from the 13th day of February, 1889. Improvements on Heating Apparatus. 7th April, 1889. | 363. C. F. BOSWORTH, 2nd 5 years of No. 11,161, from 23rd day of April, 1885. Improvements on Sewing Machines. 18th April, 1885. |
| 354. A. HAMLIN and C. P. HOLMES, 2nd 5 years of No. 11,119, from the 9th day of April, 1885. Improvements in Churns. 8th April, 1885. | 364. C. CARPENTER and J. MILNE, 2nd 5 years of No. 11,171, from 24th day of April, 1885. Improvements in Elevated Oven Cooking Stoves. 21st April, 1885. |
| 355. R. M. WANZER & CO., (Assignees), 2nd 5 years of No. 11,126, from the 12th day of April, 1885. Improvements in Screw-Cutting Machines. 8th April, 1885. | 365. E. L. BUSHNELL, 2nd 5 years of No. 12,669, from the 22nd day of April, 1886. Improvements in Springs for Beds, etc. 23rd April, 1885. |
| 356. J. K. MASTER, 2nd 5 years of No. 11,138, from the 13th day of April, 1885. Improvements on a Machine for Hollowing Boston Chair Seats. 8th April, 1885. | 366. J. J. CROOK and R. CROOK, 2nd and 3rd 5 years of No. 21,183, from 27th day of February, 1890. Improvements on Process for Treating Copper Matt. 29th April, 1885. |

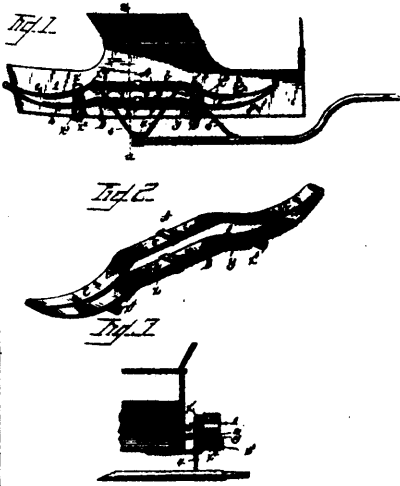
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ILLUSTRATIONS

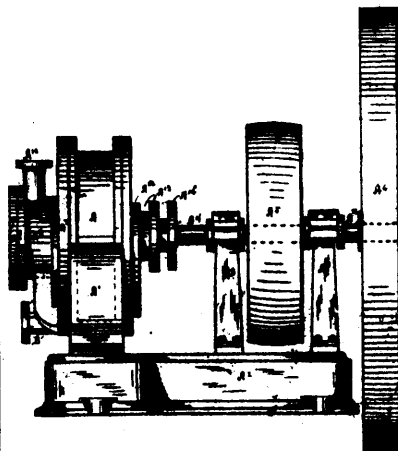
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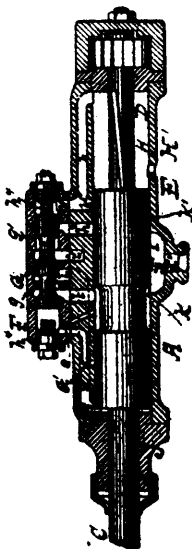
21346 Callan's Vehicle Spring.



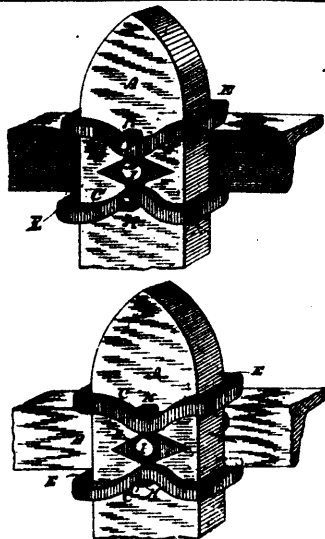
21347 Park's Rotary Engine.



21348 Shaw & Carlile's Laying Out and Embalming Board.



21350 Halsey's Rock Drill.



21351 Hanika's Fence.

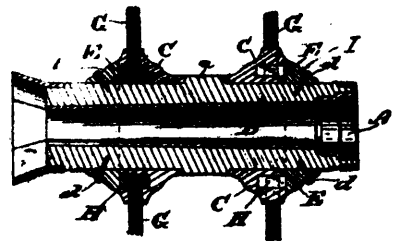
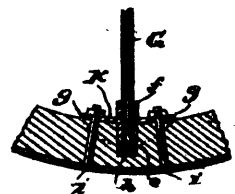
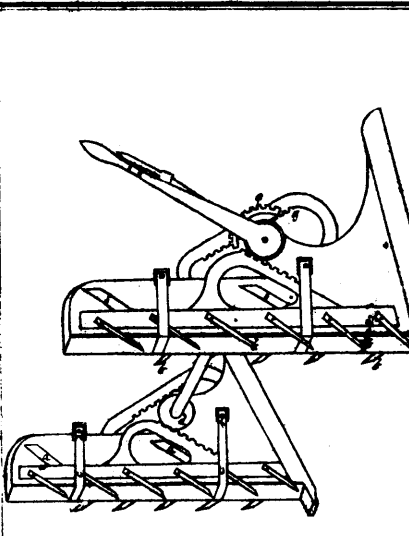


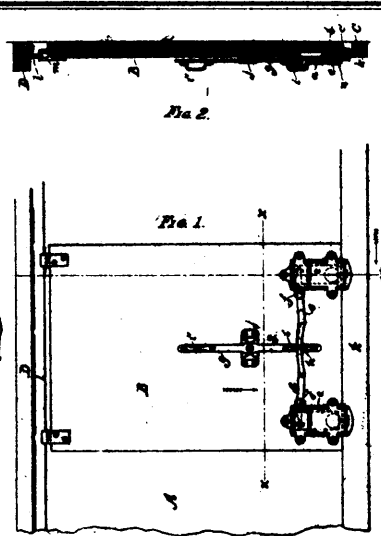
Fig. 3.



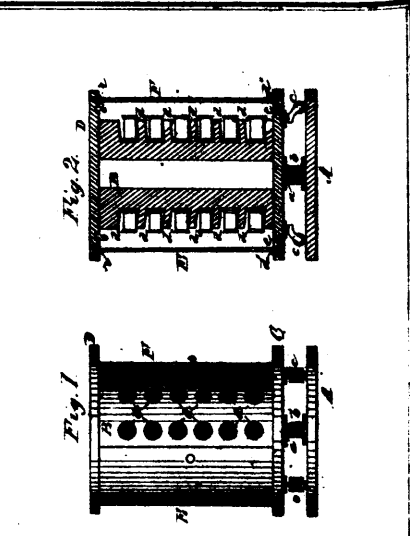
21352 Smith & Terry's Vehicle Wheel.



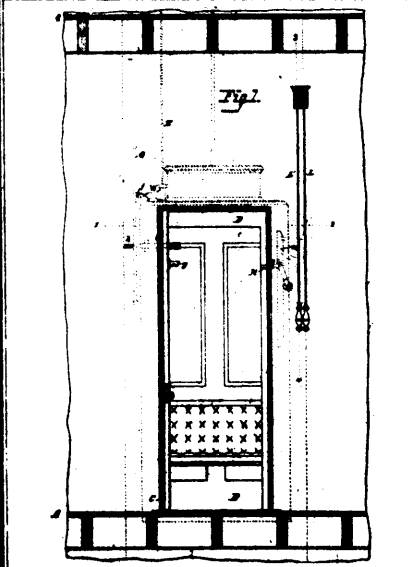
21353 Thompson's Head and Tail Saw Mill Dog.



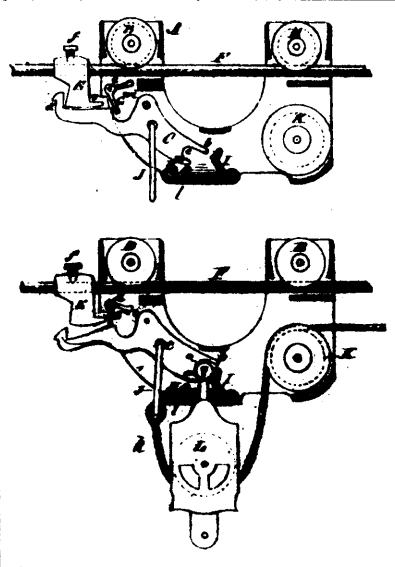
21354 Moore's Car Door Hanger.



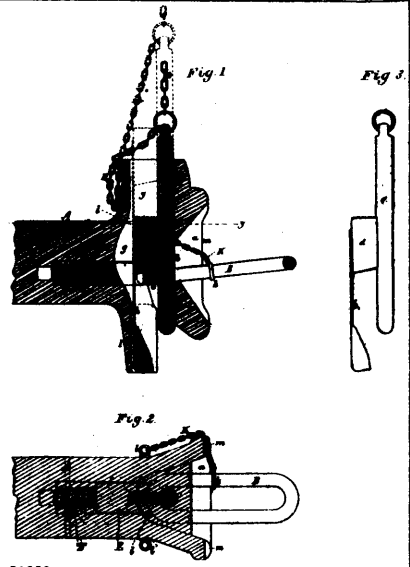
21355 New's Spool Holder.



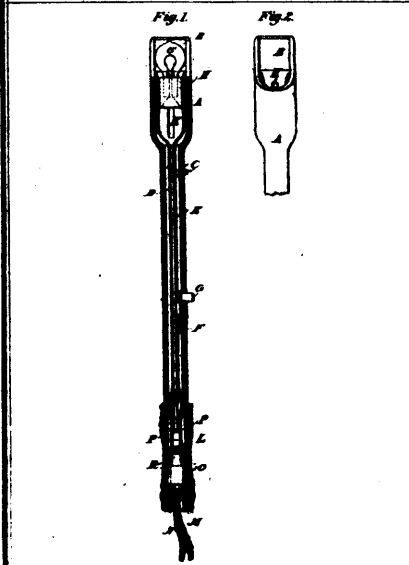
21356 Baldwin's Operating Elevator Door.



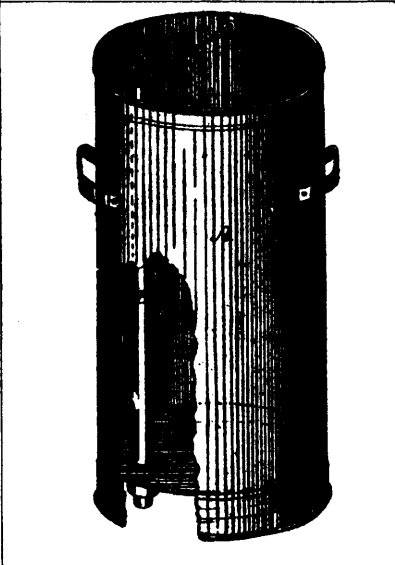
21357 Palmer's Hay Carrier and Fork.



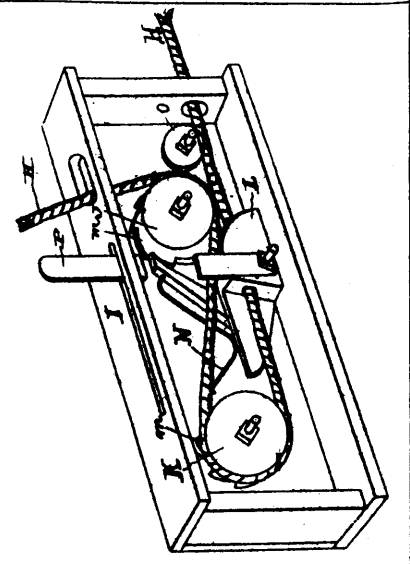
21358 Richards' Railway Car-Coupling.



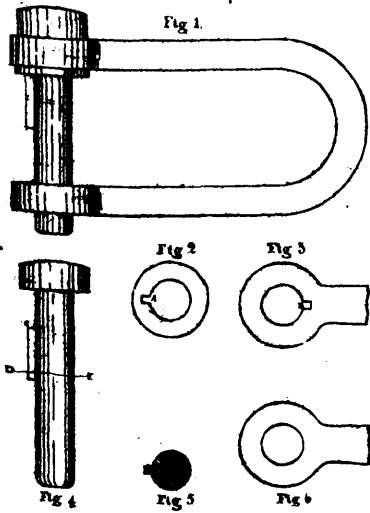
21359 Hald's Electric Lamp Holder.



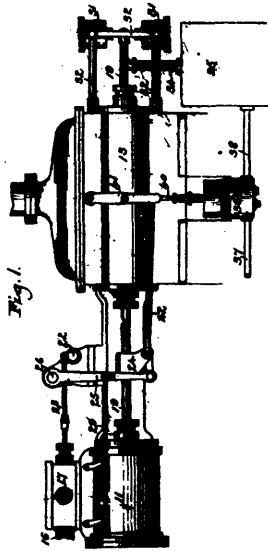
21360 Millner's Creamer.



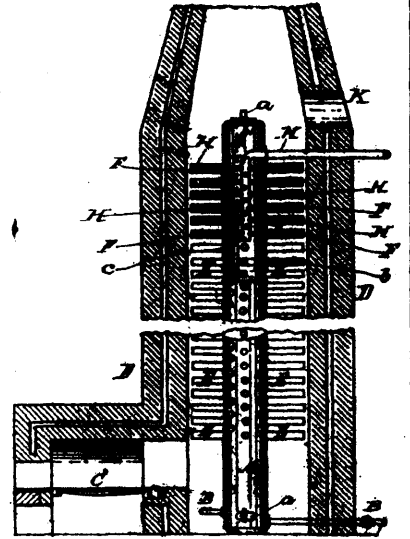
21361 Lucas' Load Lifter



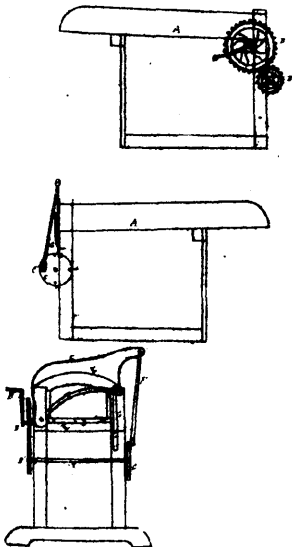
21362 Zinn's Doubletree Clevis.



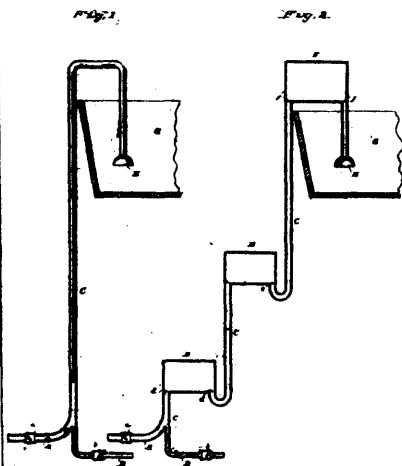
21363 Worthington's Direct Acting Engine.



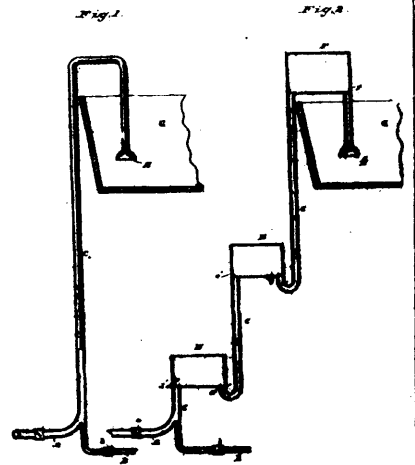
21364 Hazleton's Steam Boiler.



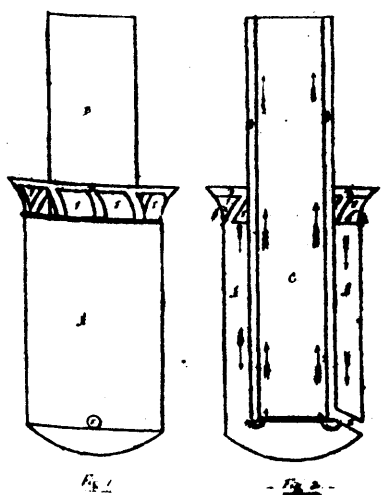
21365 Clark's Hay Cutter.



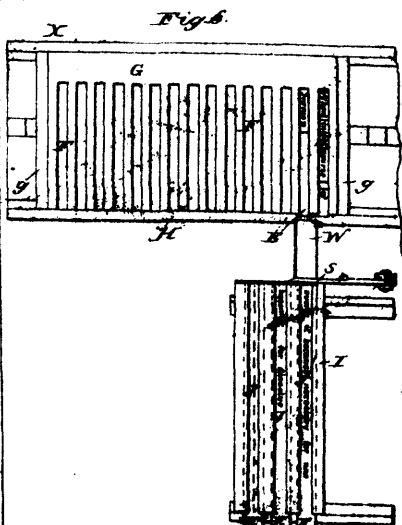
21366 Leeds' Apparatus for the Purification of Water.



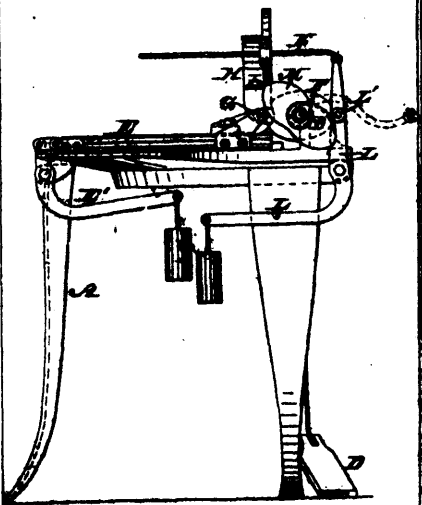
21367 Leeds' Process for the Purification of Water.



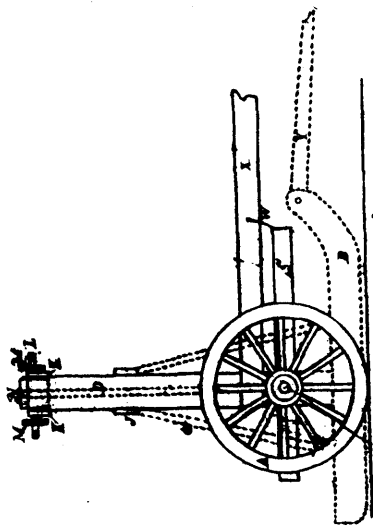
21368 Harvey's Lamp.



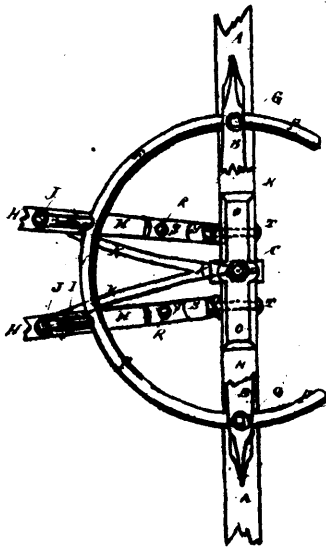
21369 Dement's Apparatus for Justifying and Stereotyping Matrix Strips.



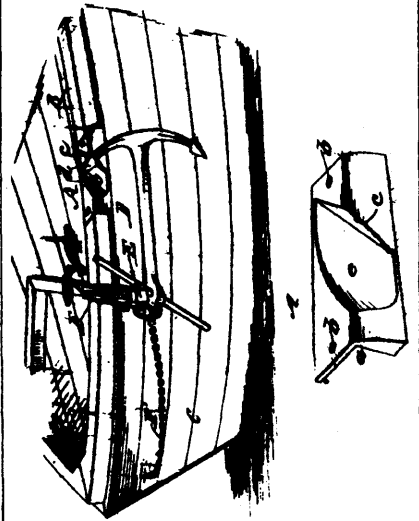
21372 Coles' Machine for Cutting Sheet Metal in Oval and other Forms.



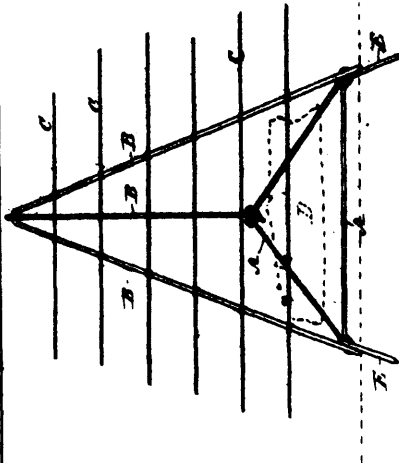
21373 Morrier's Stump and Stone Extractor.



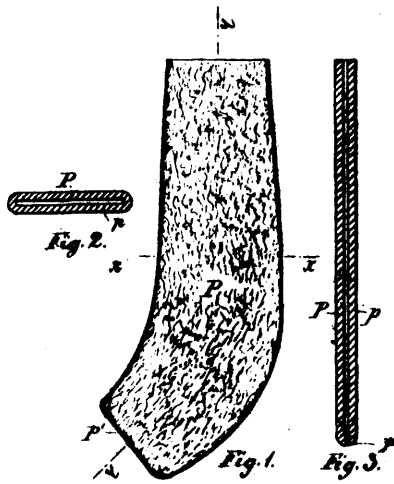
21375 Wilson's Front Gear for Waggon.



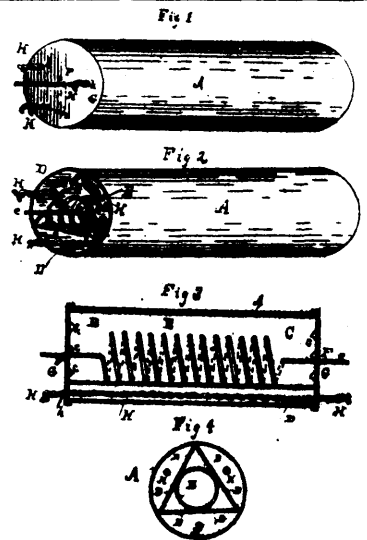
21376 Trefry's Mode of Holsting, Securing and Discharging an Anchor.



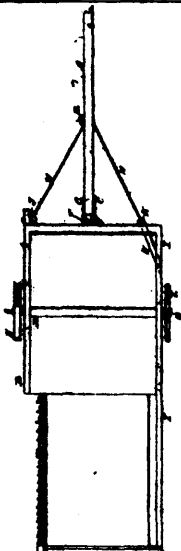
21377 Davy's Fence Post.



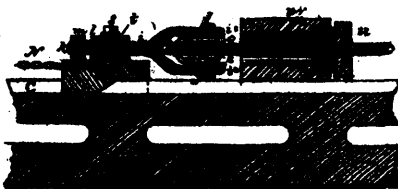
21378 Carr's Tubular Seamless Felt Collar Pad.



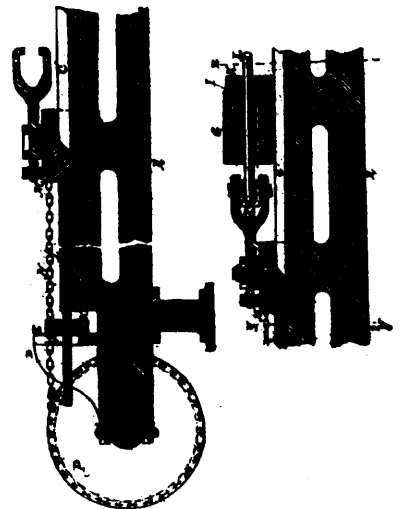
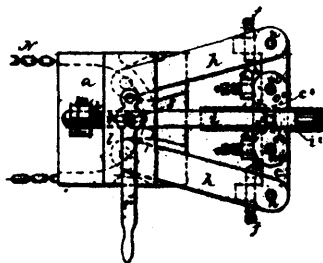
21379 Hoffman's Device for Preventing Incrustations in Steam Boilers.



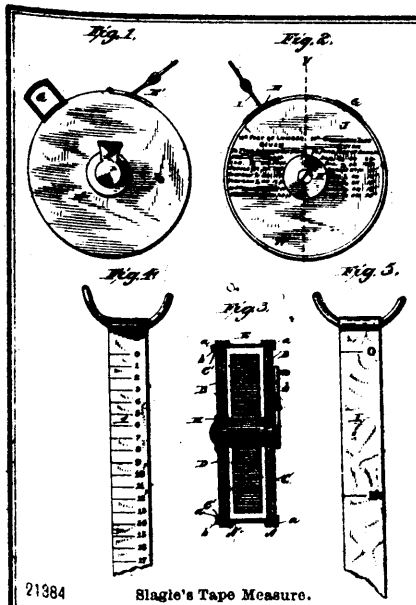
21380 Corning's Harvester Binder.



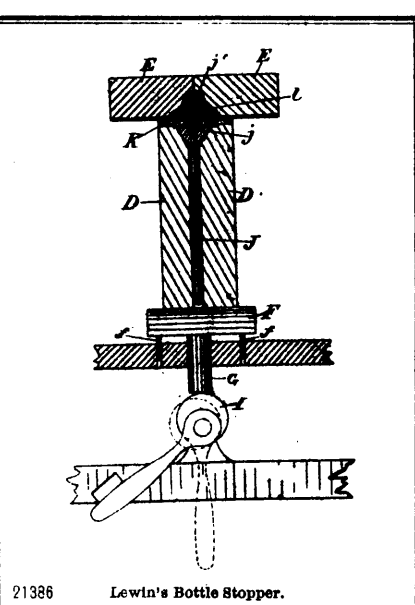
21382 Haas' Metal Drawing Dog.



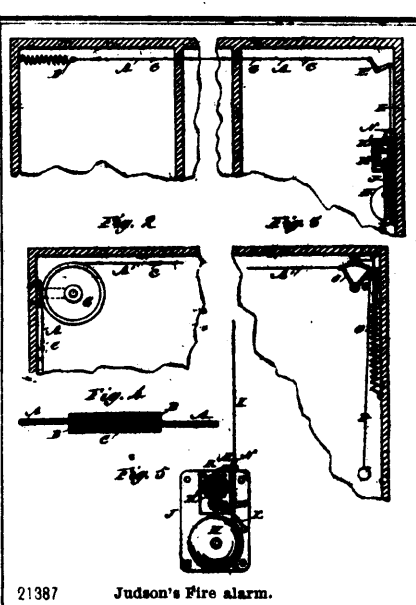
21383 Haas' Machine for Drawing Metal Bars,



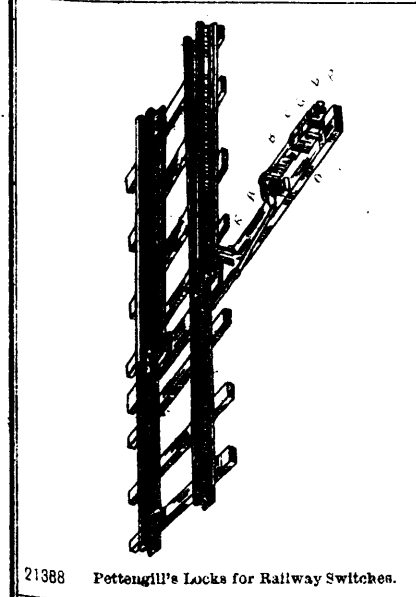
21384 Slagle's Tape Measure.



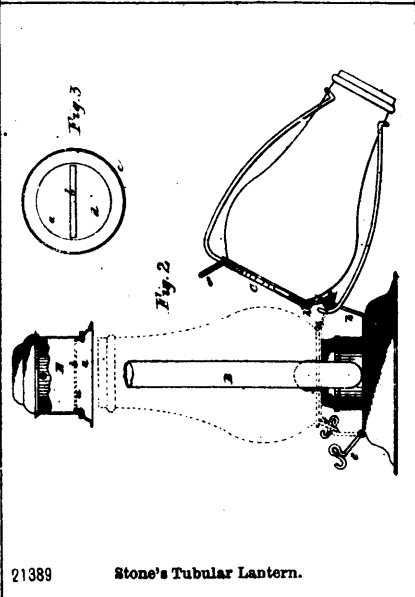
21386 Lewin's Bottle Stopper.



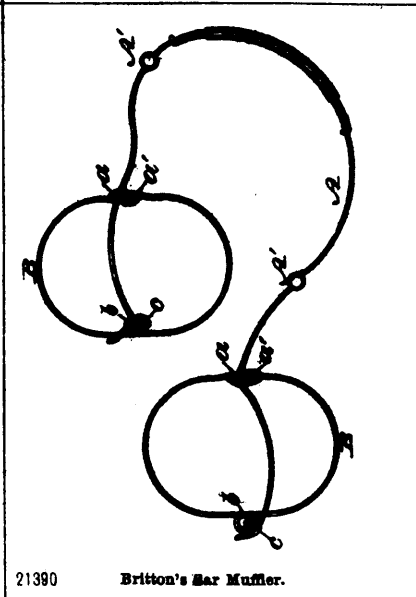
21387 Judson's Fire alarm.



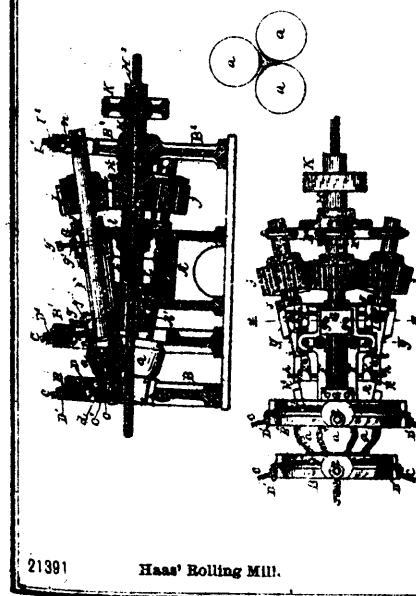
21388 Pettengill's Locks for Railway Switches.



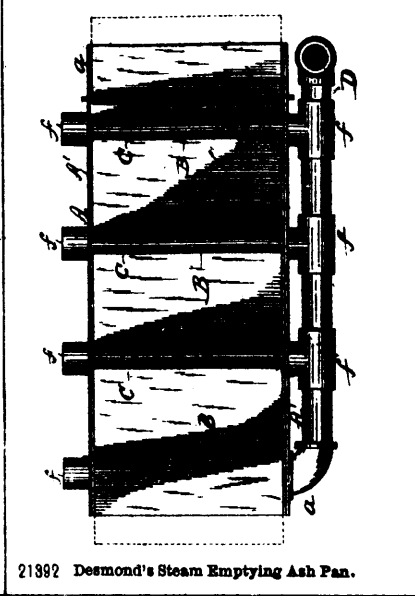
21389 Stone's Tubular Lantern.



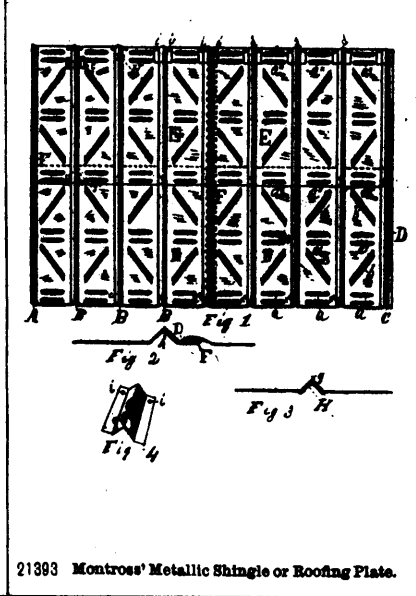
21390 Britton's Ear Muff.



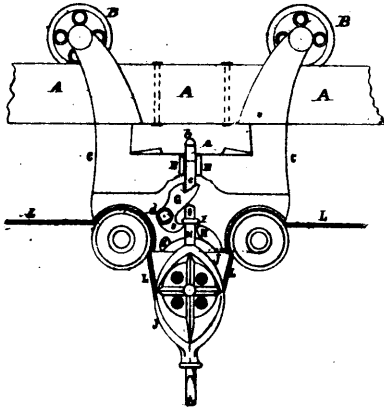
21391 Haas' Rolling Mill.



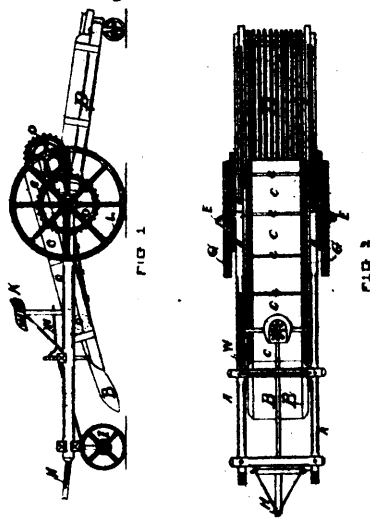
21392 Desmond's Steam Emptying Ash Pan.



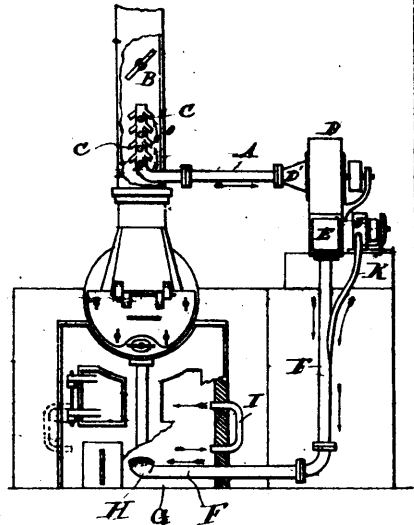
21393 Montross' Metallic Shingle or Roofing Plate.



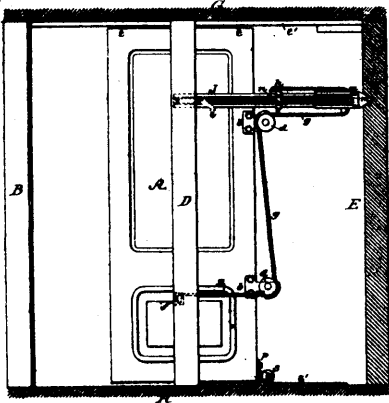
21384 Buchanan's Hay Car.



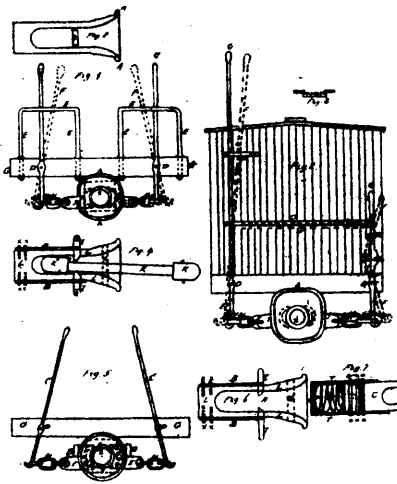
21385 Bresett's Potato Digger.



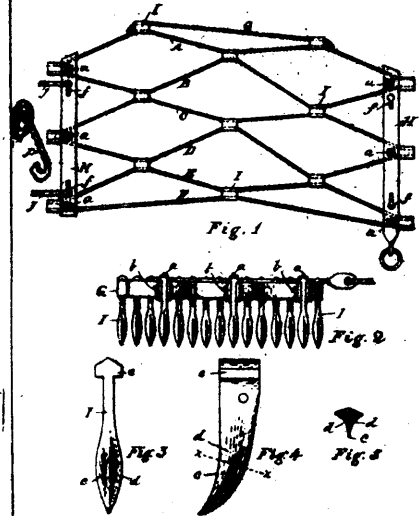
21386 Hubber's Smoke Consuming Furnace.



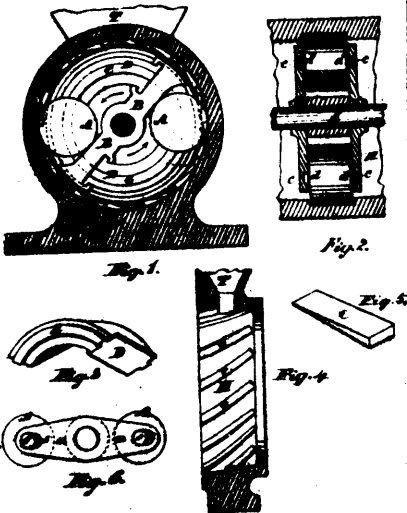
21387 Sanders & Henderson's Galding and Supporting Device for Doors, etc.



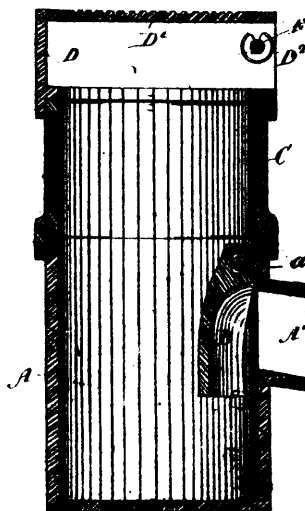
21388 Baker's Car-Coupler and Draw-Heads.



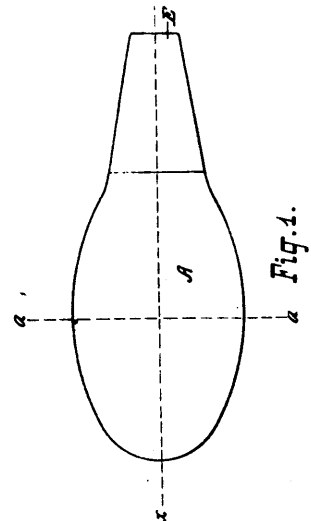
21399 Armstrong's Harrow.



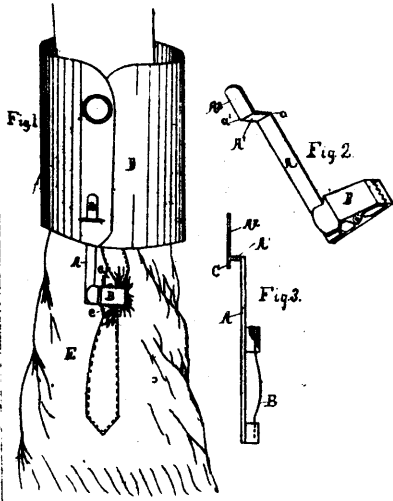
21400 Frisbee's Machine for Pulverizing Ores, etc.



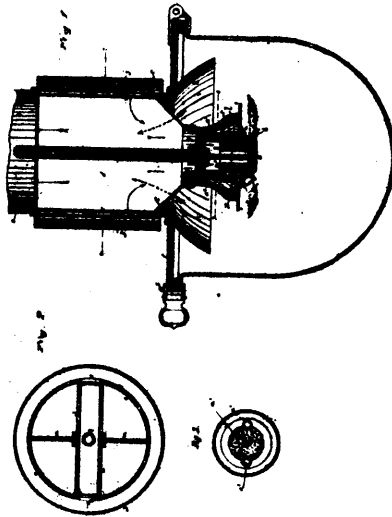
21401 St. George's Street Shaft and Gully.



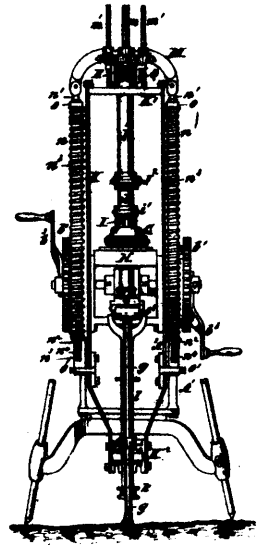
21402 Wilson's Tobacco Pipe Cleaner.



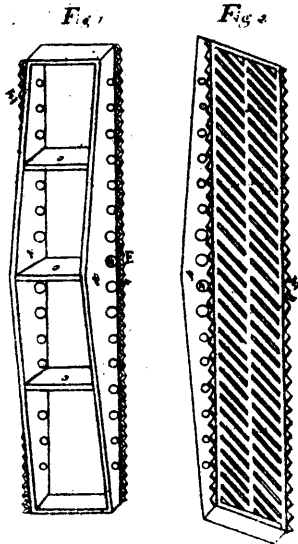
21403 Willson's Cuff Fastener and Adjuster.



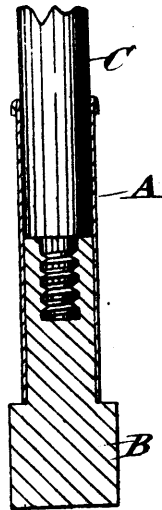
21404 Wenham's Gas Lamp.



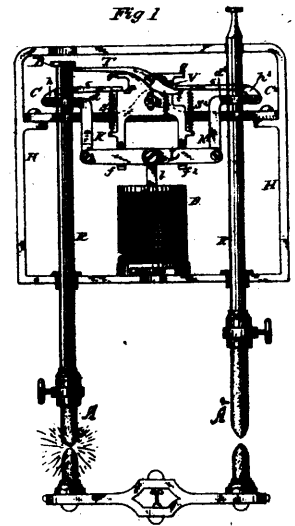
21405 Hussey's Rock Drill.



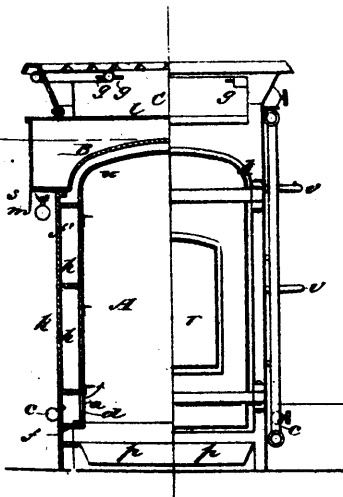
21406 Kerr's Grate Bar for Furnaces and Stoves.



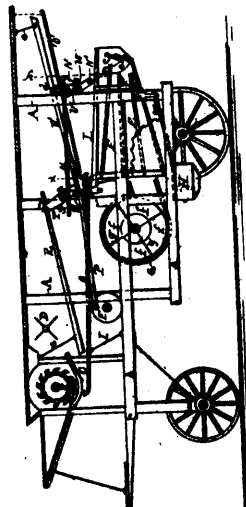
21407 Boecke's Corn Broom.



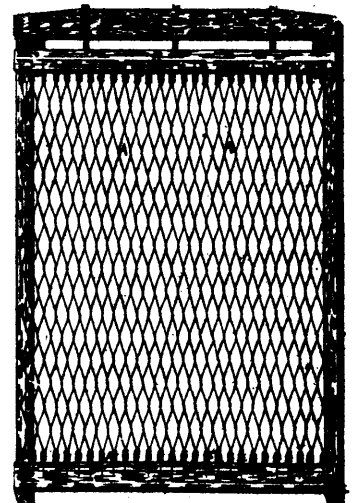
21408 Thomson's Double Carbon Arc Lamp.



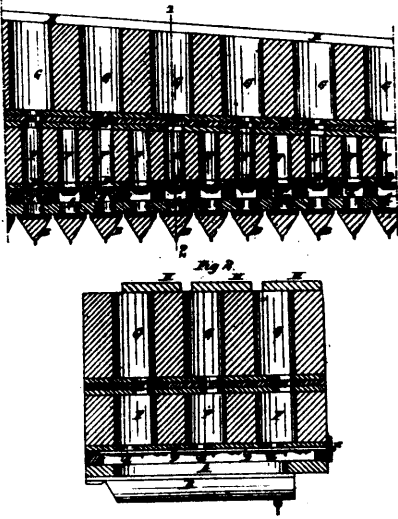
21409 Somerville & Webber's Gas Cooking Stove.



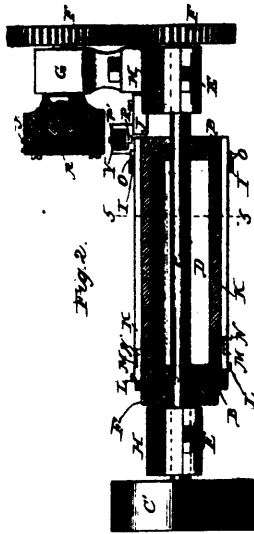
21410 Coon's Threshing Machine.



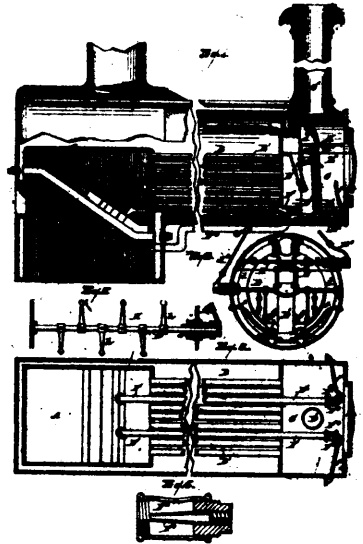
21411 Mitchell's Bed Bottom.



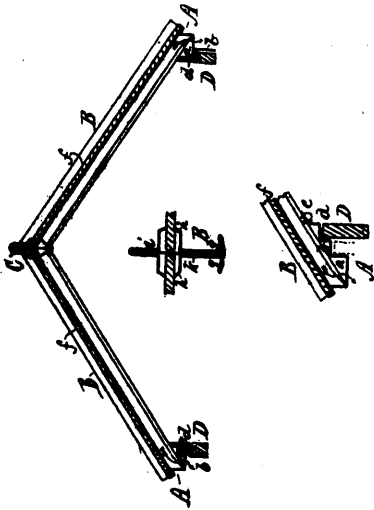
21412 Hamilton's Reed Organ, etc.



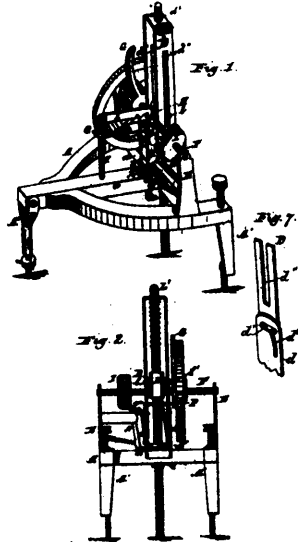
21413 Dement's Type-Writing and Printing Machine.



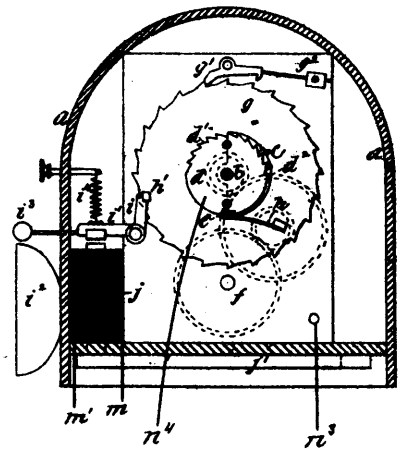
21414 Flynn's Spark-Arrester.



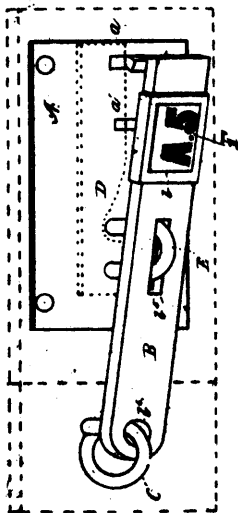
21415 Hayes' Skylight.



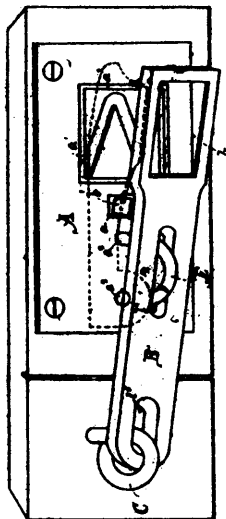
21416 Coe & Hoffnagle's Rock Drill.



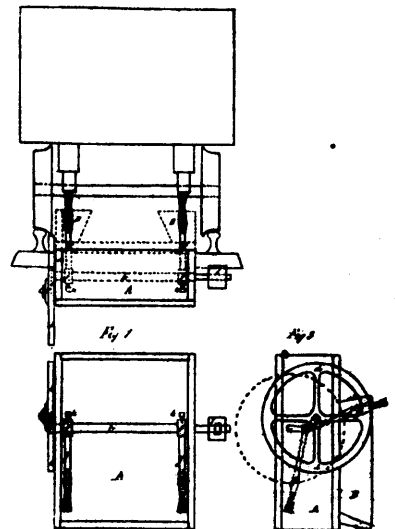
21417 Holcombe's Automatic Responding Instrument for Electric Circuits.



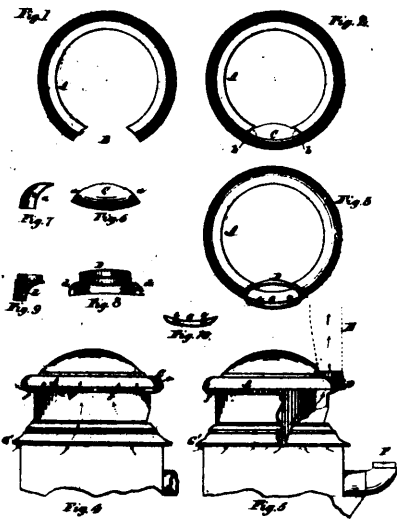
21418 Edgar's Sealing Device for Seal Locks.



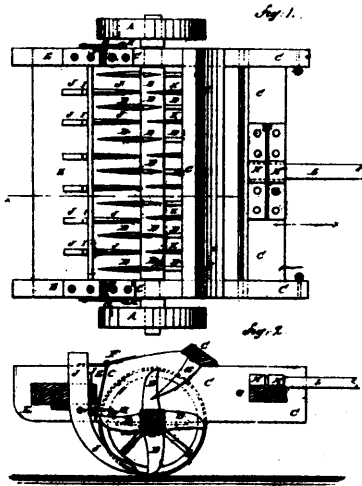
21419 Edgar's Seal Lock.



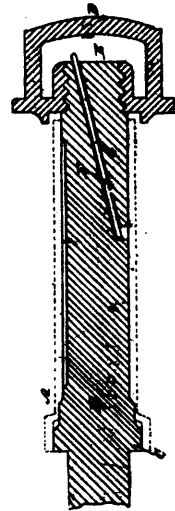
21420 Ross' Automatic Tram Greaser.



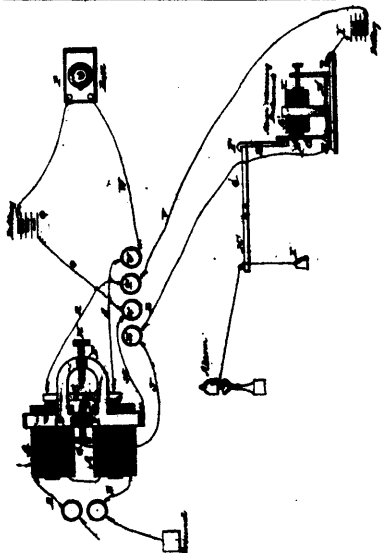
21421 Jameson's Heating Stove.



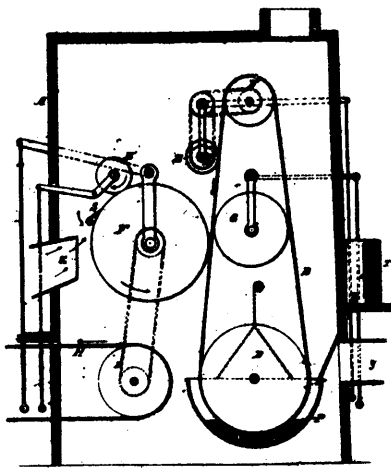
21422 McElhaney's Combined Harrow, Clod Crusher and Stalk Cutter.



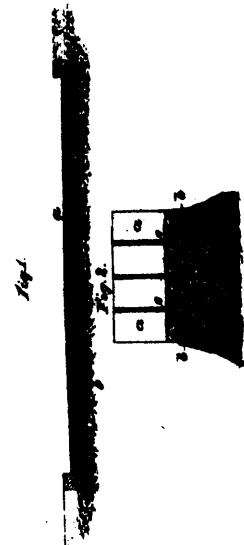
21423 Protean's Carriage Axle Lubricator.



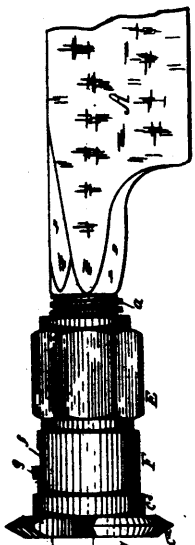
21424 Chase's Electric Fire Alarm.



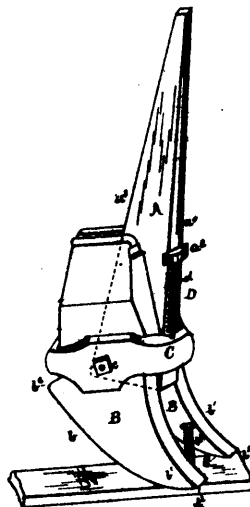
21427 Cadwell's Apparatus for Deseccating Eggs.



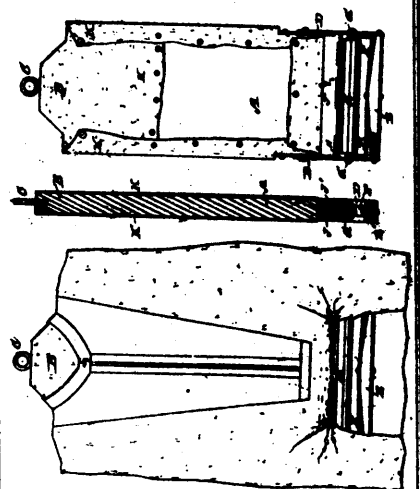
21428 Kerr's Pavement.



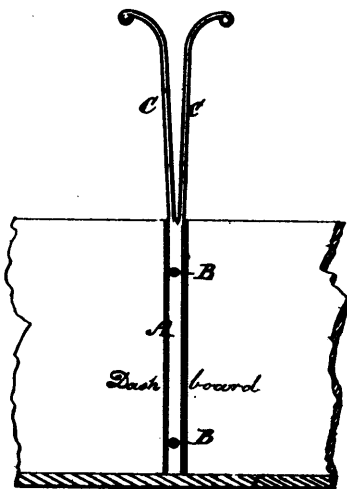
21430 Ryan's Lathe Tool.



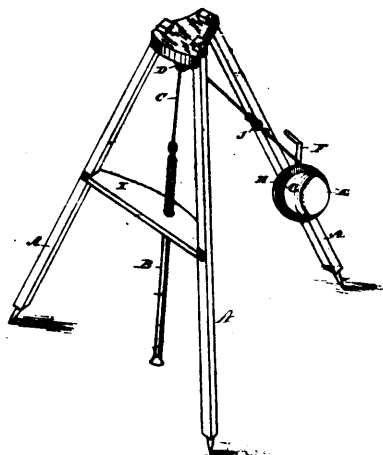
21431 Lyman's Claw Bar.



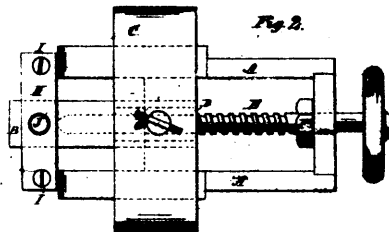
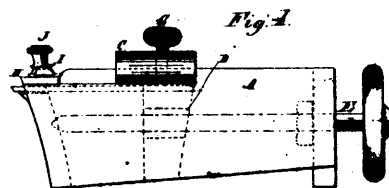
21432 Maxim's Bosom Board.



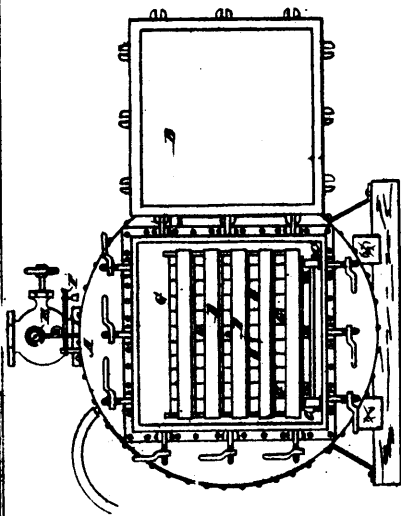
21433 Rivett's Reia Holder.



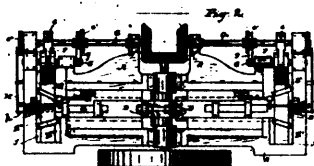
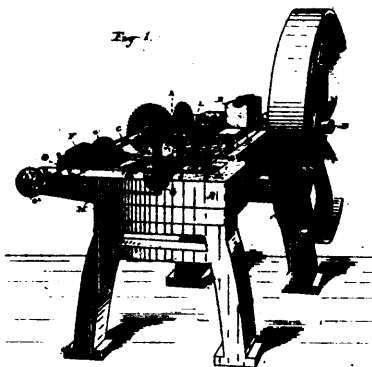
21434 Silver's Drop Weight Lifting Machine.



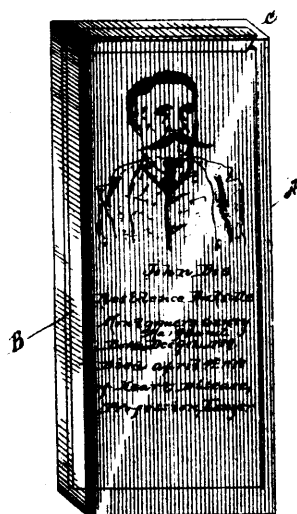
21435 Brown's Emery Wheel Turner and Cleaner.



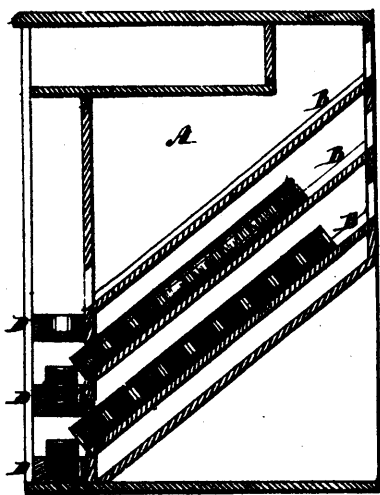
21436 Hutching's Machine for Testing Sealed Cans



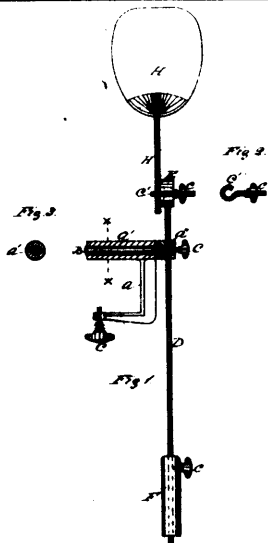
21437 Seaton's Machine for Heading Bolts, etc.



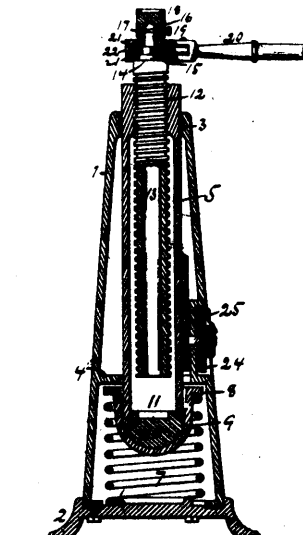
21438 Crockett's Record Tablet.



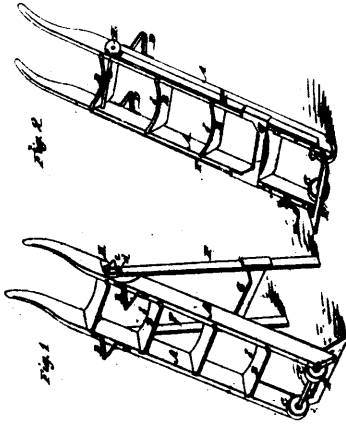
21439 New's Spool Cabinet.



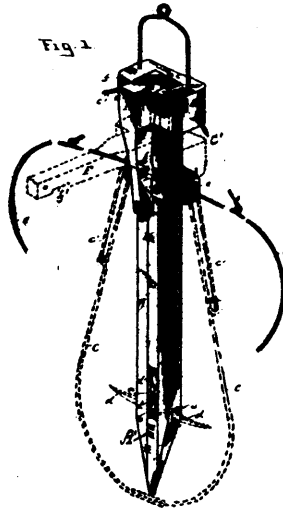
21440 Burrows' Oscillating Fan.



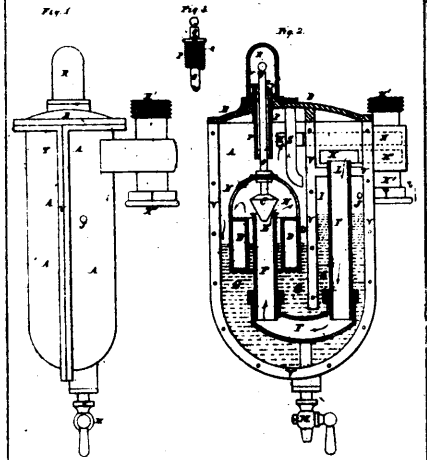
21441 Chase's Lifting Jack.



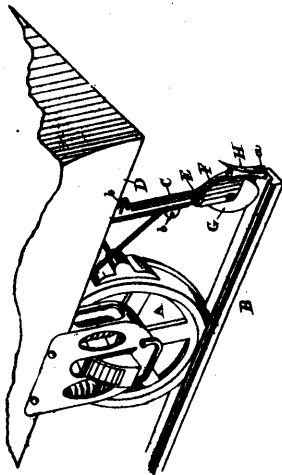
21443 Lowen's Combined Truck and Ladder.



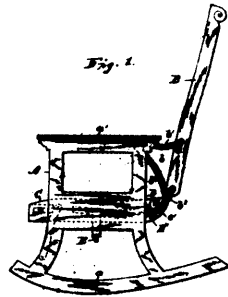
21444 Wilson's Hay Fork.



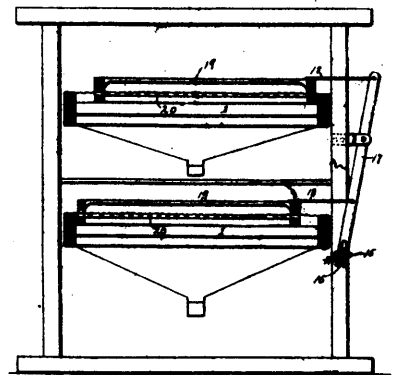
21445. Averell's Gas Governor.



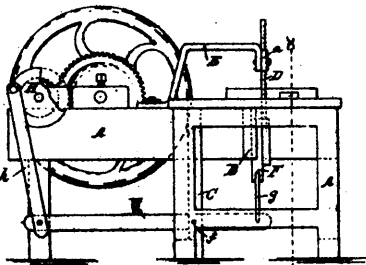
21446 Robertson's Railway Rail Scraper.



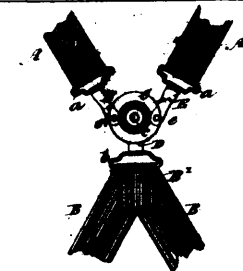
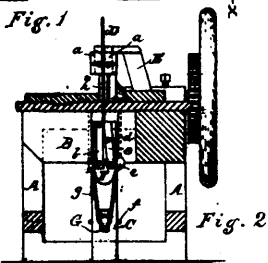
21447 Maddox's Reeling Chair.



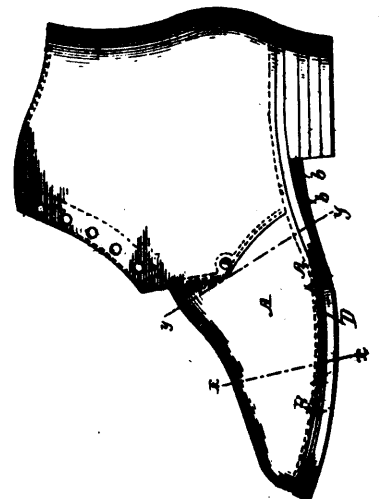
21448 Case's Middlings Purifier.



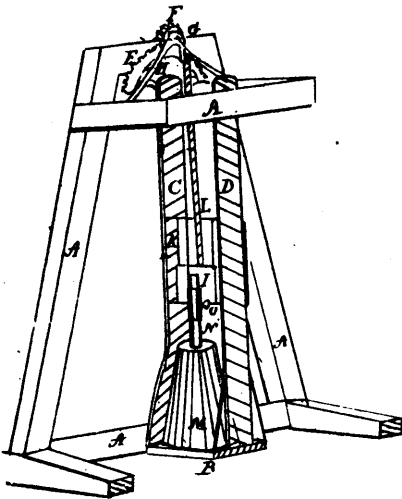
21449 Beaudry's Wood Sawing Machine.



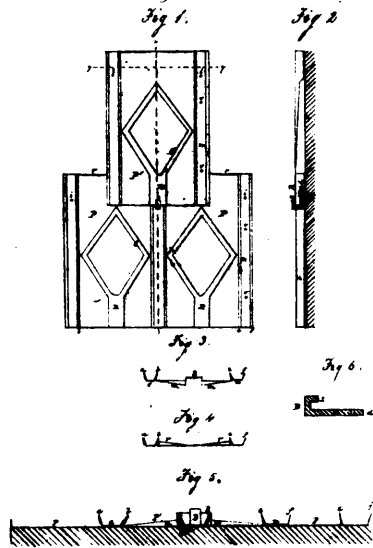
21450 Byrne's Suspender.



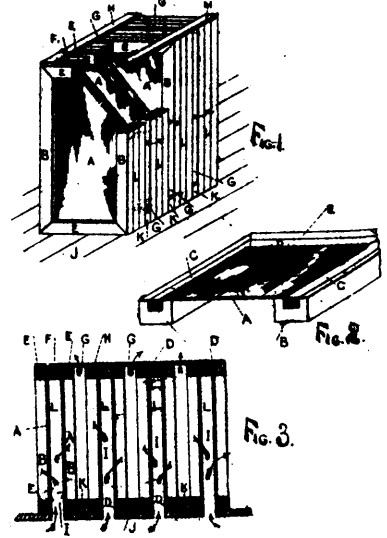
21451 Wetmore's Boots and Shoes.



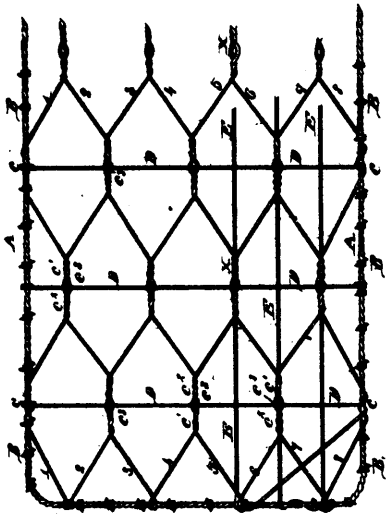
21452 Kew's Swinging Churn Motor.



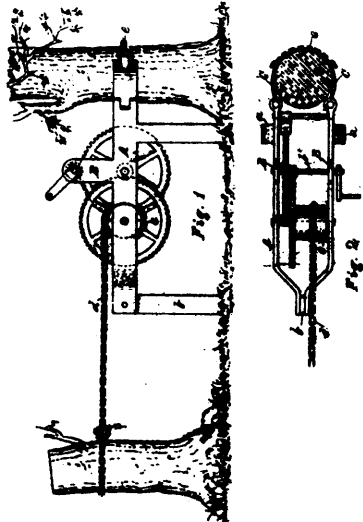
21454 Patten's Metallic Shingle.



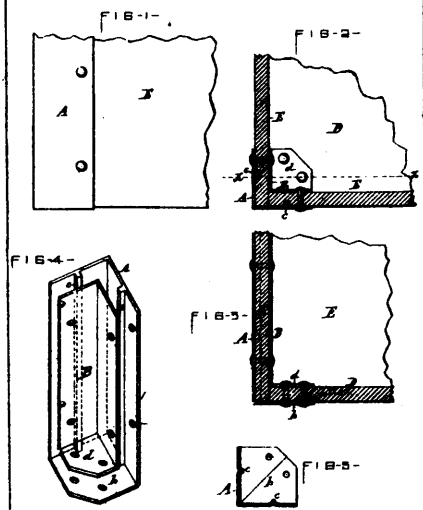
21455 Kutsche's Dust Arrester.



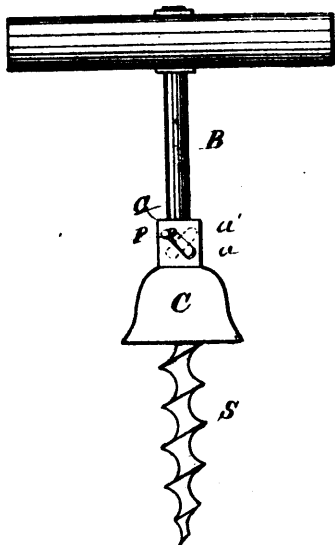
21456 Hulbert's Wire Netting for Fencing, etc.



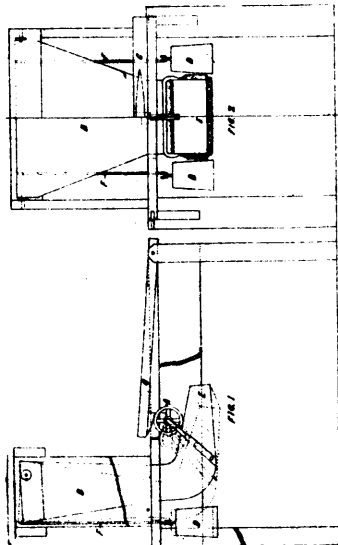
21457 Logan's Stump Extractor.



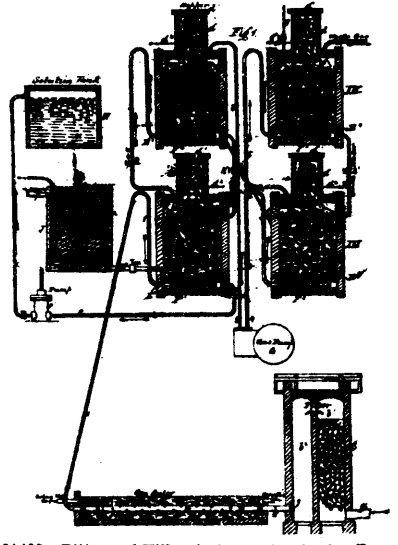
21459 Perkins' Corner Stay for Trunks, etc.



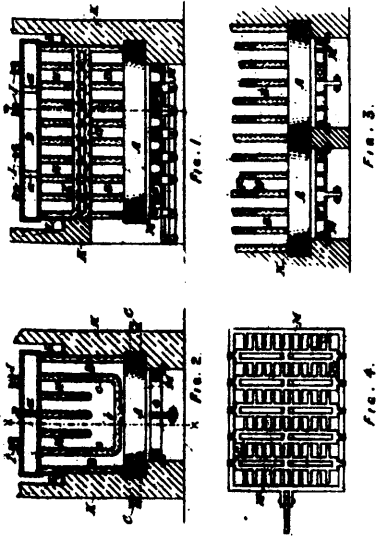
21460 Curley's Cork Screw.



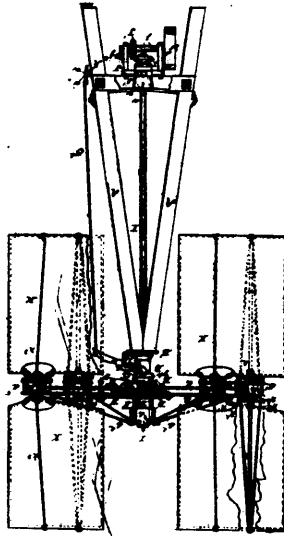
21461 Kennedy's Dry Earth Closet.



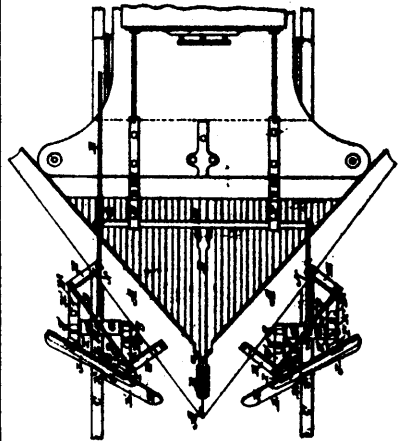
21462 Ritter and Killner's Apparatus for the Production of Sulphurous Acid Solutions and Salts.



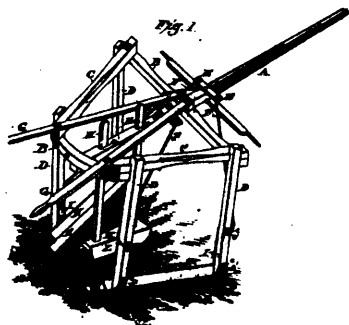
21463 Bolton's Hot Water Boiler.



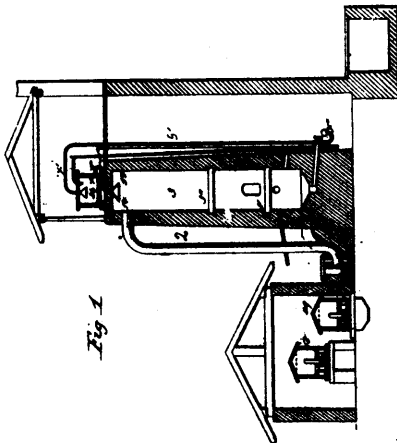
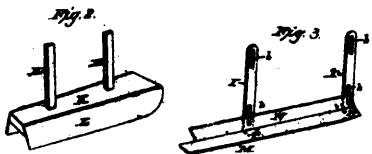
21464 Graham's Wind Engine.



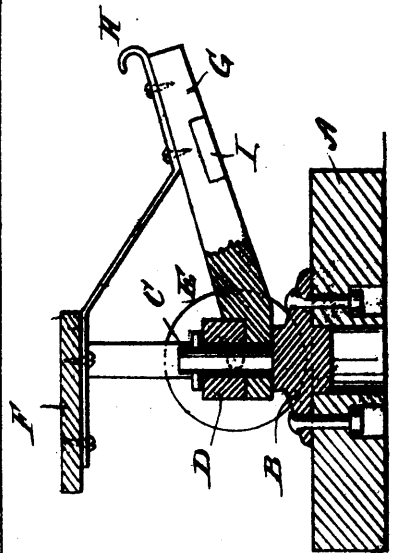
21465 Priest's Rail Clearer for Snow Ploughs.



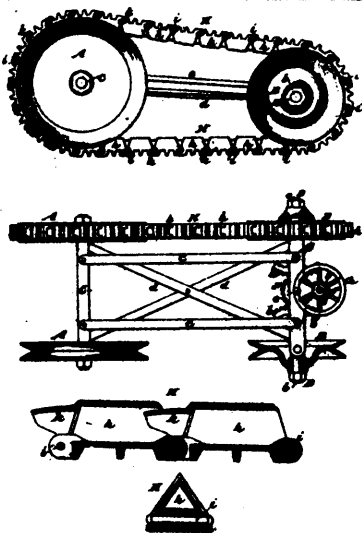
21466 Parmelee's Combined Corn and Potato Cultivator and Hiller.



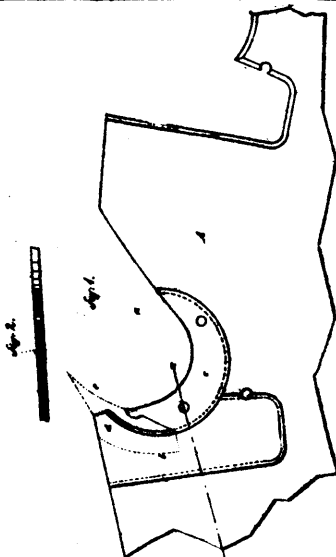
21467 Ritter and Killner's Apparatus for the Production of Polysulphites and Double Salts for the Manufacture of Cellulose, etc.



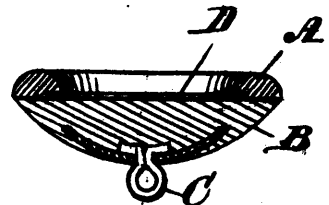
21468 Harris' Floor Grinding Machine.



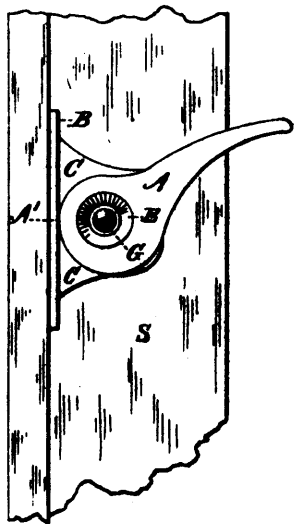
21470 Page's Road Engine.



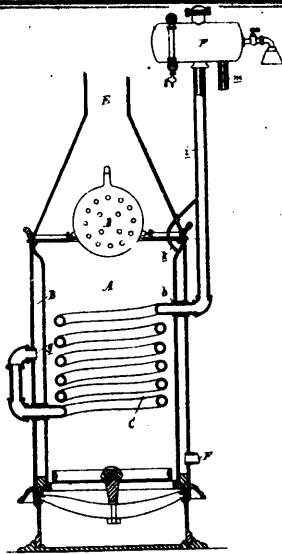
21471 Trullinger's Insertible Saw Tooth.



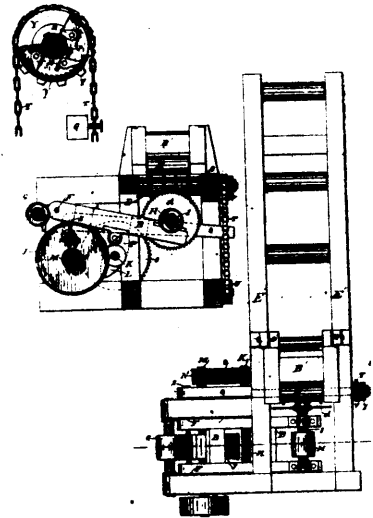
21472 Shantz's Button.



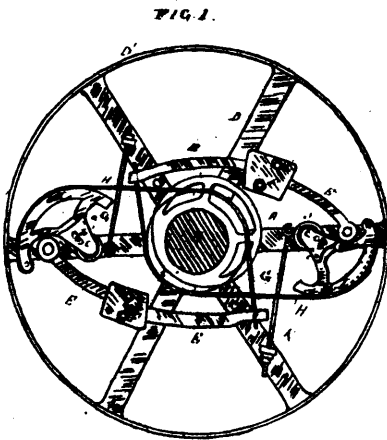
21474 Brown's Sash Lock.



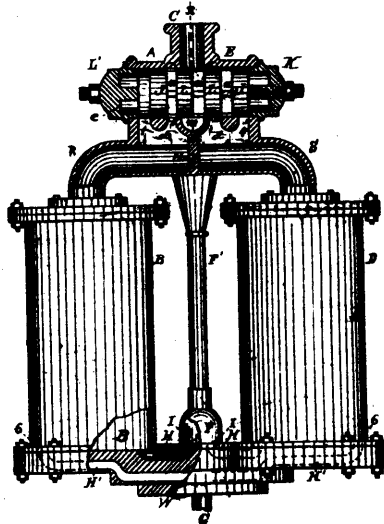
21415 Smith's Water Heater and Circulator.



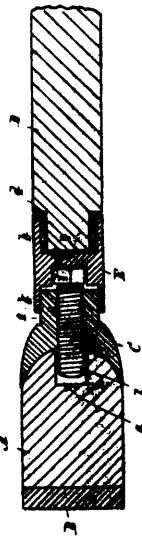
21476 Kautz's Circular Sawing Machine.



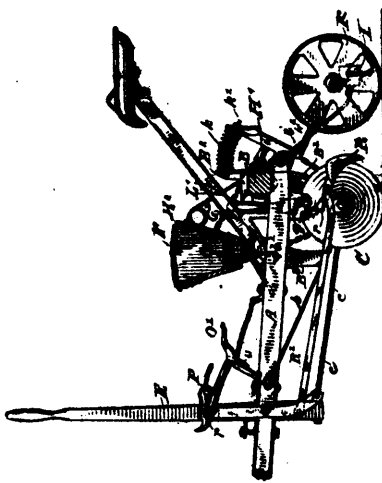
21477 Simmon's Engine Governor.



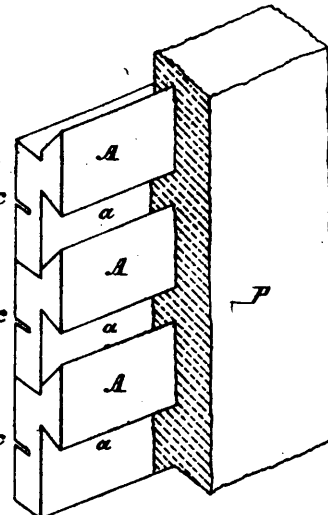
21479 Nye's Steam Vacuum Pump.



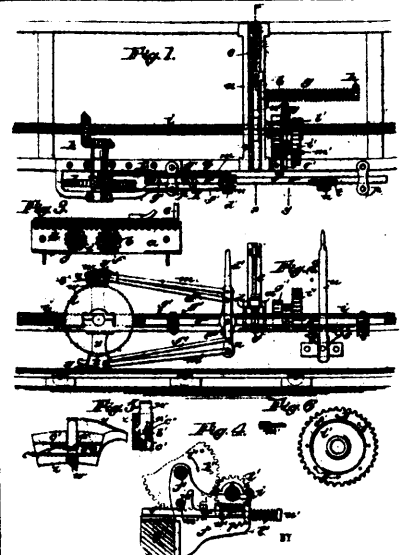
21480 Campbell's Wheel Expander.



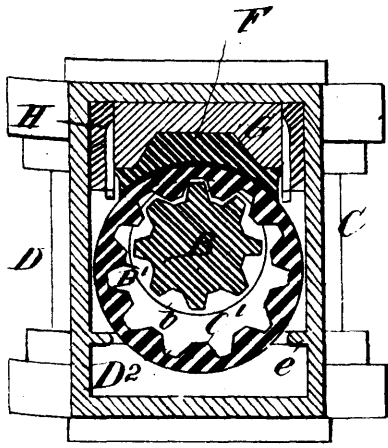
21481 Corbin's Harrow and Seeder.



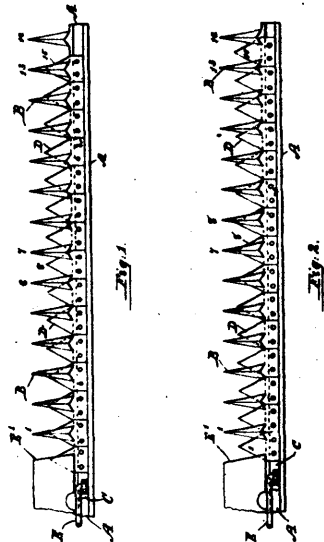
21482 Byrkit's Wooden Sheeting and Lath.



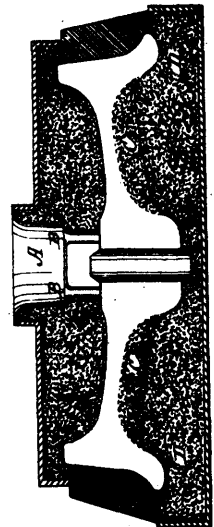
21483 Parso's Saw Mill Set Work.



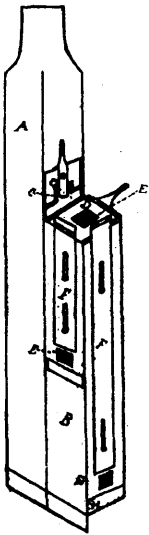
21484 Goulloud and Pagé's Journal for Axle Boxes.



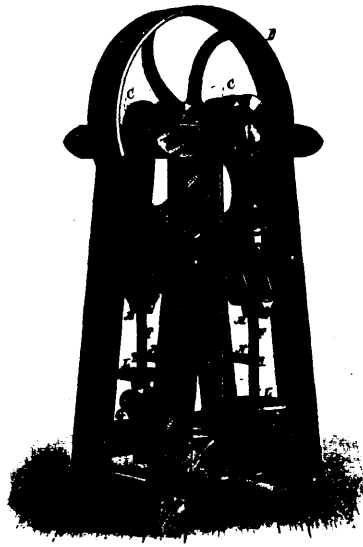
21485 Clough's Cutting Apparatus for Mowing Machines.



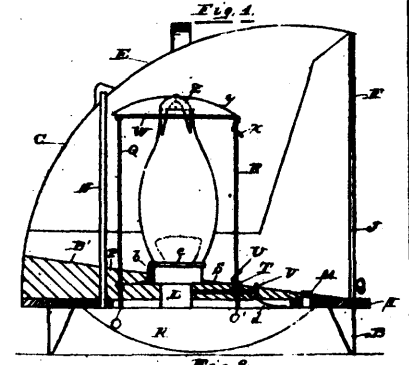
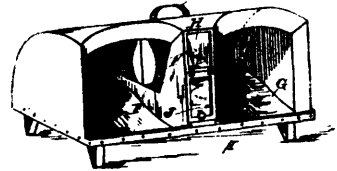
21486 Wilmington's Method of Casting Car Wheels.



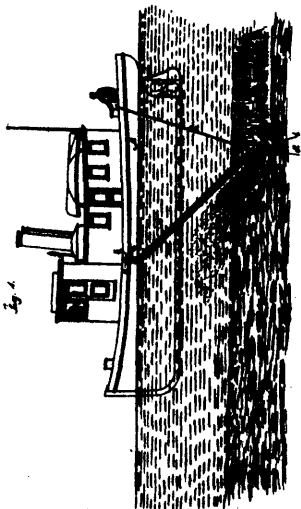
21487 Brokenshire's Filter for Cistern or Well Pumps.



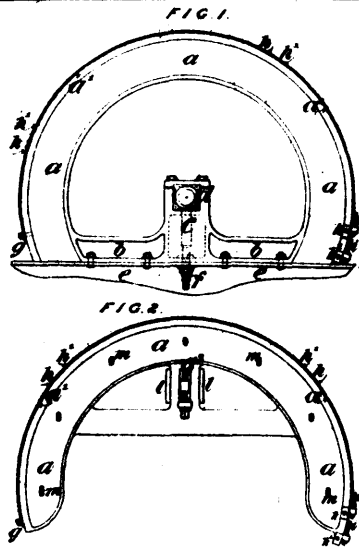
21488 Hildreth's Machinery for Splitting Wood,



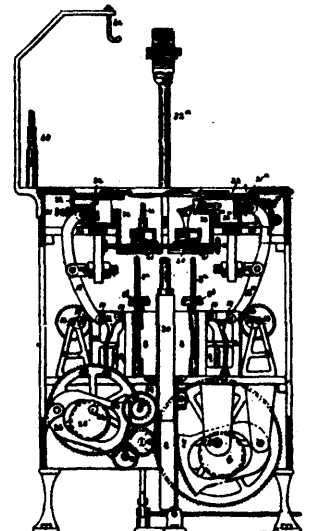
21489 Hired's Foot Warmer.



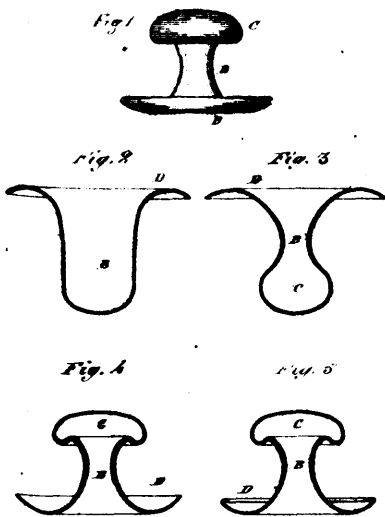
21490 Stone's Hydraulic Apparatus for Removing Sand Bars, etc.



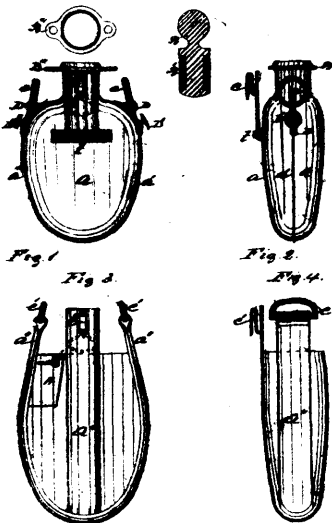
21491 Ashworth's Bend for Carding Engines.



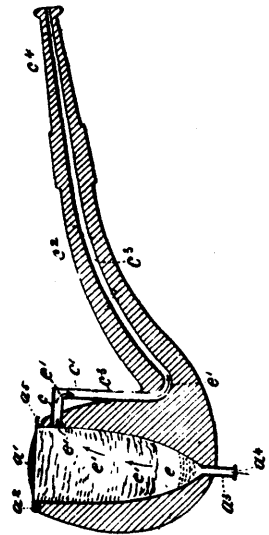
21493 Hawkes' Machine for Lasting Boots and Shoes.



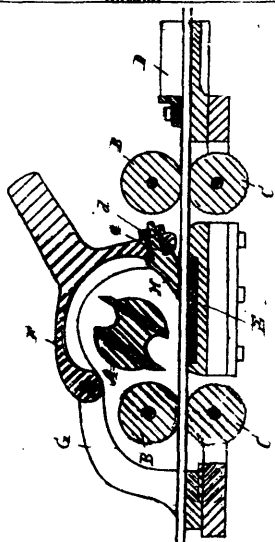
21503 Krementz's Collar Button.



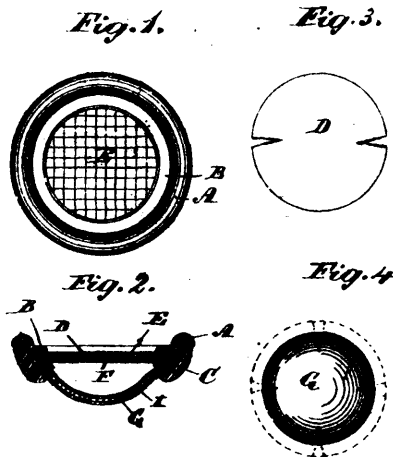
21504 Barnard's Military Water Bottle.



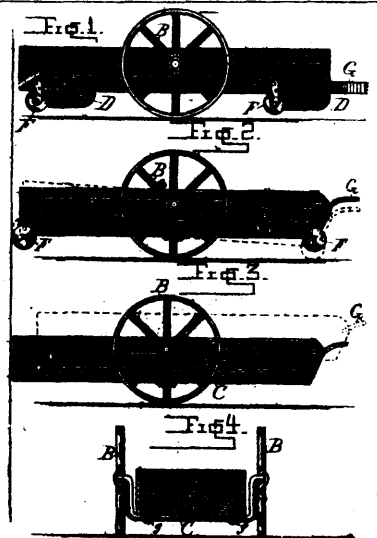
21505 Pfeiffer's Tobacco Pipe.



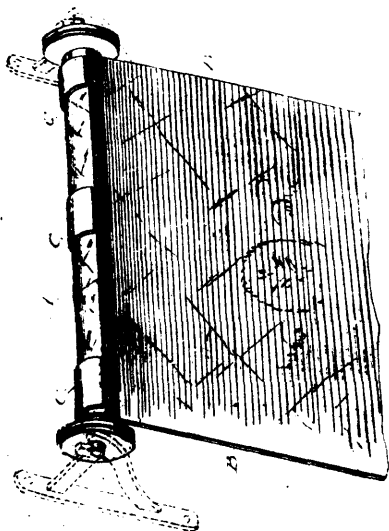
21506 Ward's Hoop Planing Machine.



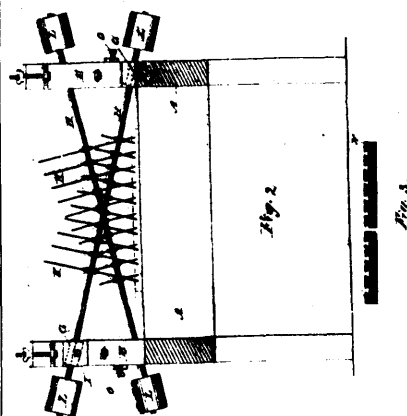
21507 Shantz's Button.



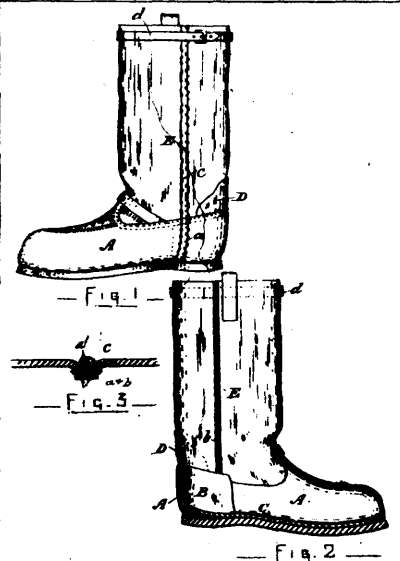
21508 Tiffany's Vehicle.



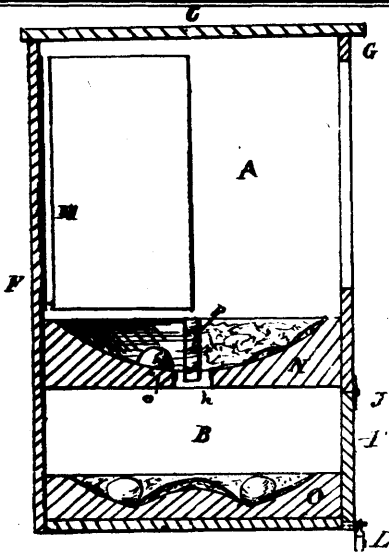
21509 Wyant's Curtain Fixture.



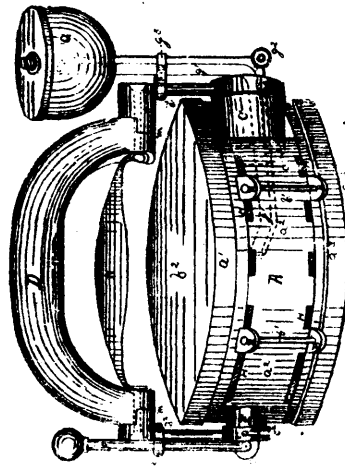
21510 Hoppins' Machine for Grooving the Surface of Boards.



21511 Boivin's Boots.



21512 Kreamer's Nest for Hens.



21513 Edwards' Oscillating Flat Iron.

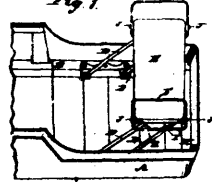
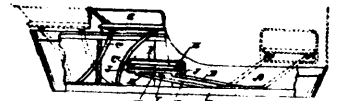


Fig. 2.

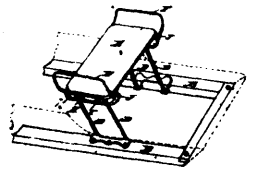
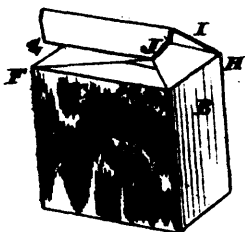
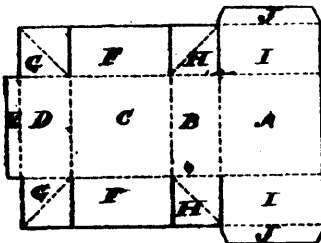
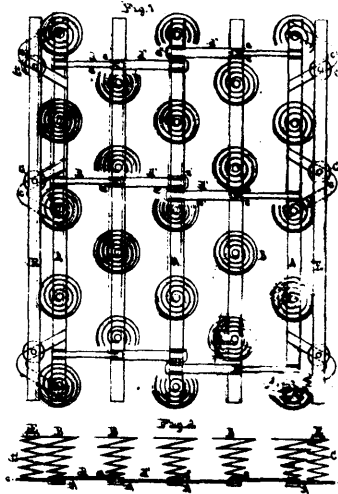


Fig. 3.

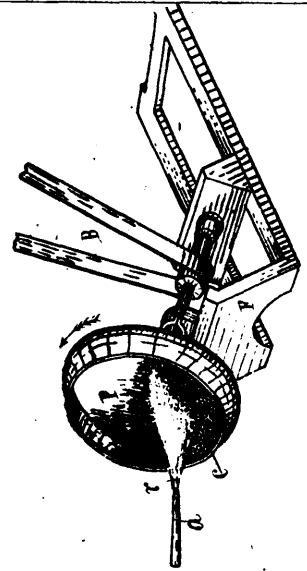
21514 Armstrong's Carriage and Sleigh Body.



21515 Birley's Paper Box.



21516 Ham's Spring Bed.



21517 Upjohn's Process for Making Pills.



Fig. 2.



Fig. 3.

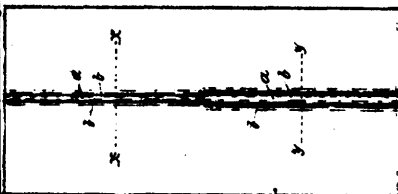
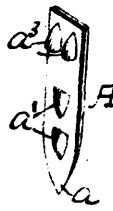
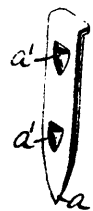
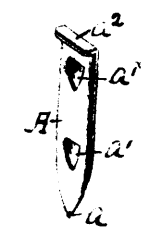


Fig. 1.

21618 Bolvin's Seam for Boots.



21519 Newman's Hoop Fastening.

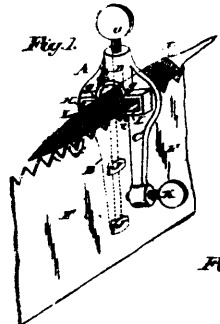


Fig. 1.

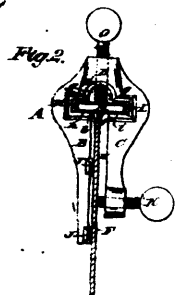
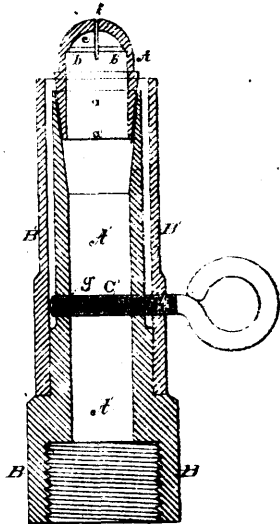
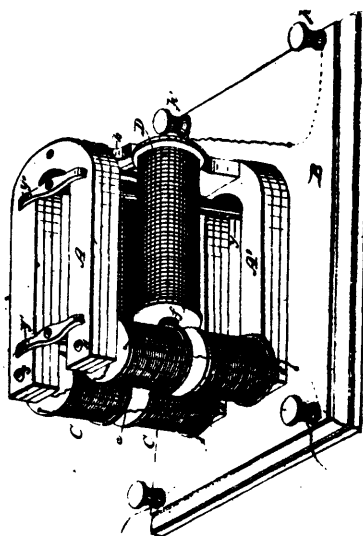


Fig. 2.

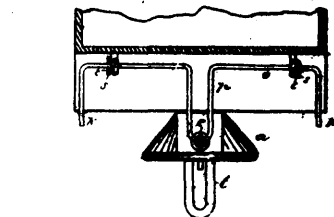
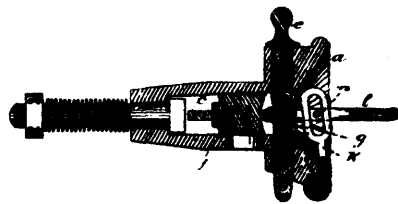
21520 Mayer's Saw Jointer.



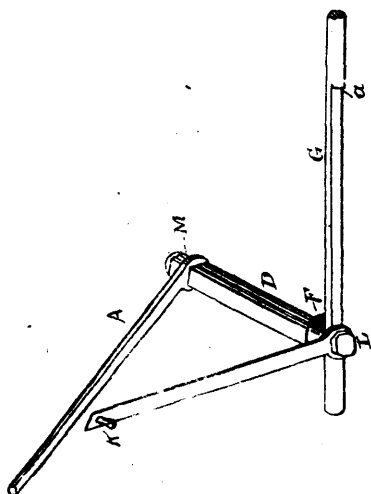
21521 Clough's Gas Burner.



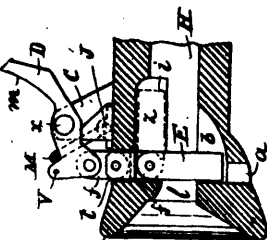
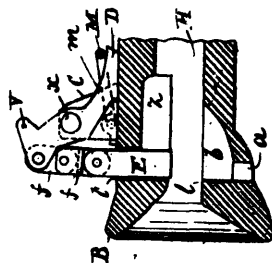
21522 Ludwig's Apparatus for Telegraphy.



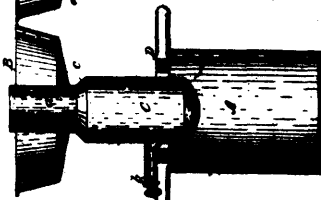
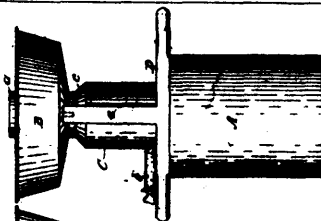
21523 Smillie's Car-Coupling.



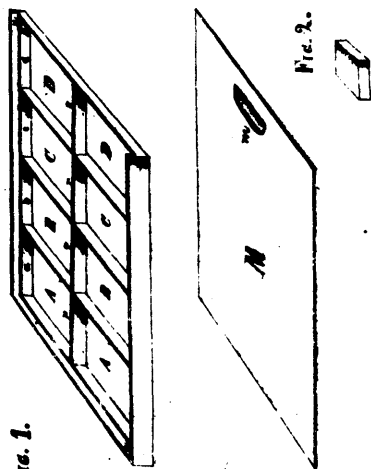
21524 Hess' Buggy.



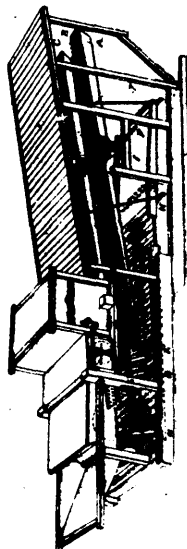
21525 Cowen's Car-Coupler.



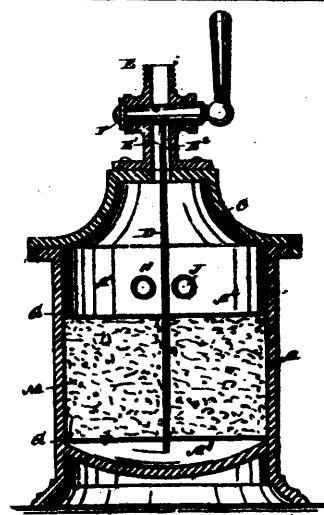
21526 Nash's Dairy Utensil.



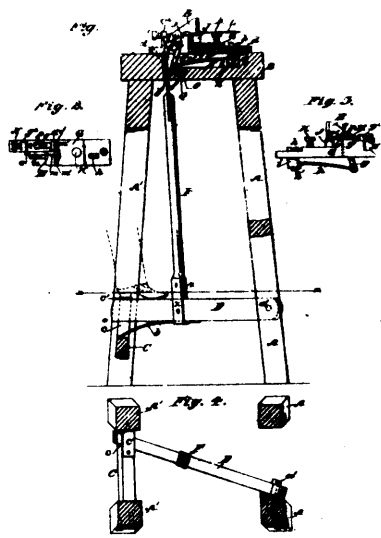
21527 Ward's Class Register for Schools.



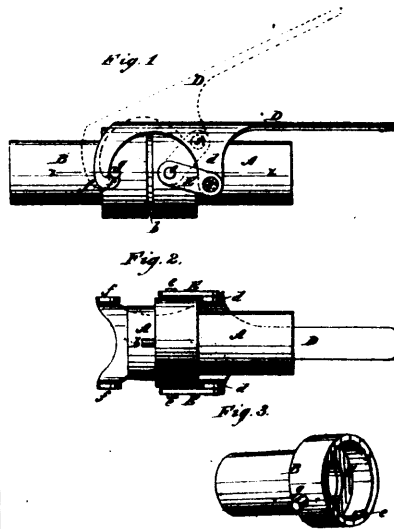
21528 Morris' Threshing Machine.



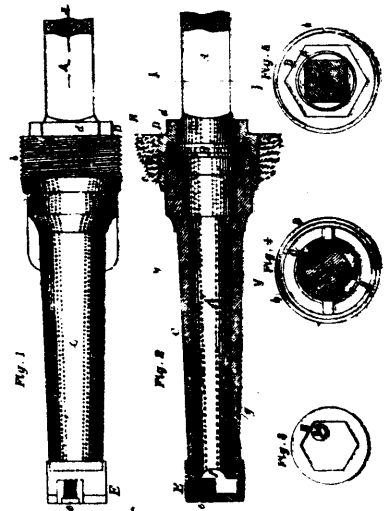
21529 Biggs' Filter.



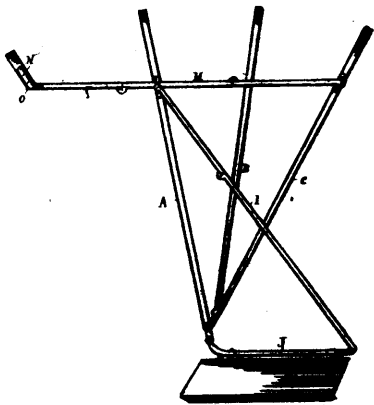
21530 Long's Saw Set.



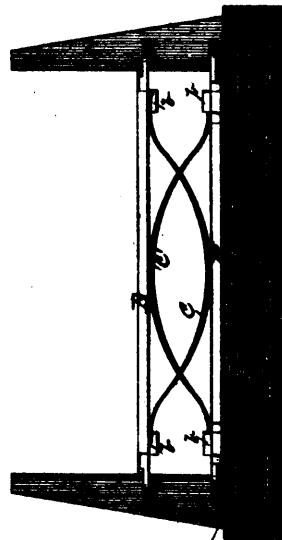
21531 Van Riper and St. Clair's Hose-Coupling.



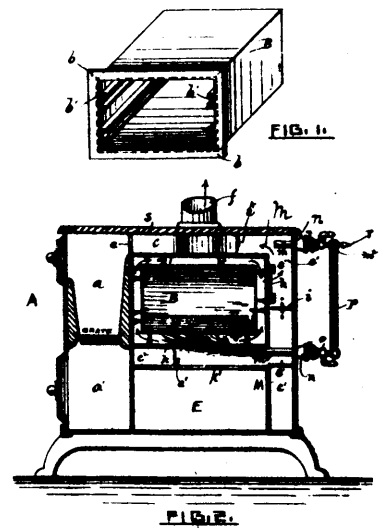
21532 Fowler's Axle and Axle Box.



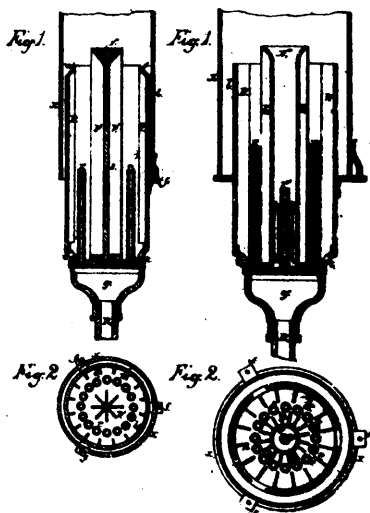
21533 Buchholz and Morris' Carriage Top.



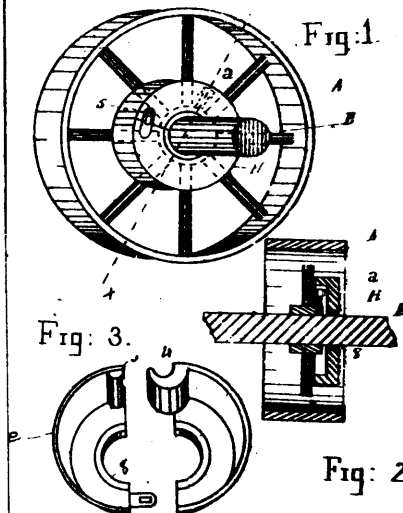
21534 Howard's Bolster Spring for Vehicles.



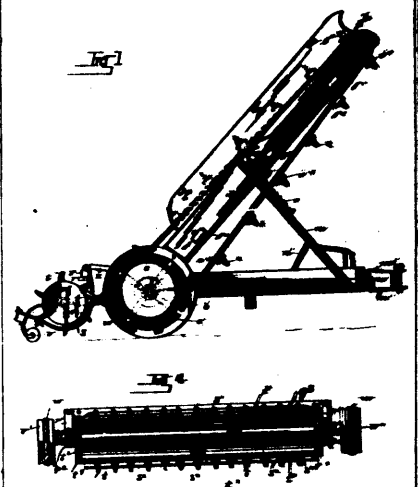
21535 Sheldon's Oven for Coal and Gas Stoves.



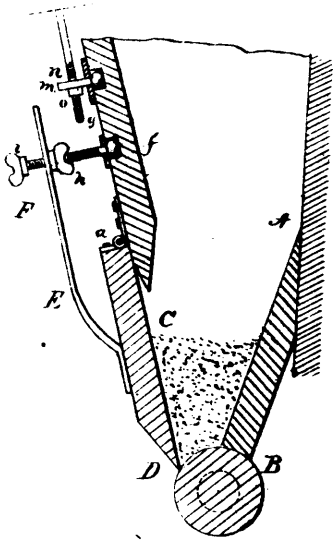
21536 Siemens' Gas Lamp.



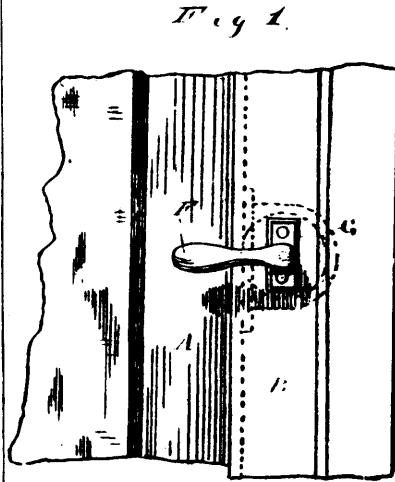
21537 Woodbury's Device for Shielding Set Screws in Pulleys.



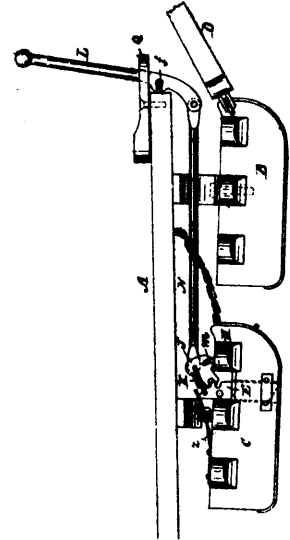
21538 Macy's Hay Loader.



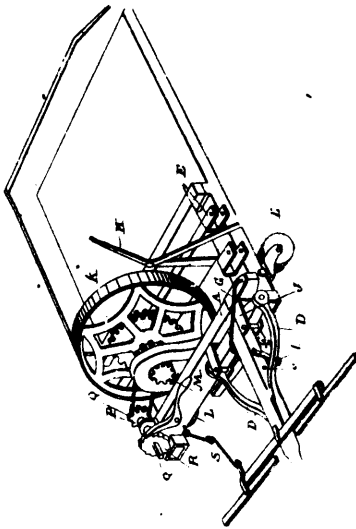
21539. Rand's Feed Hopper for Roller Mills, etc.



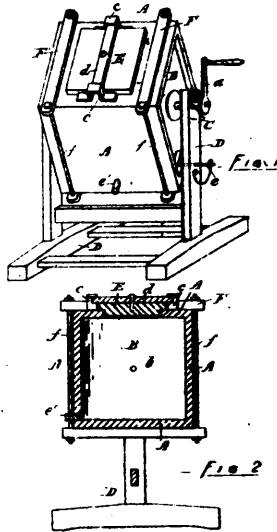
21540 Smith's Sash Holder.



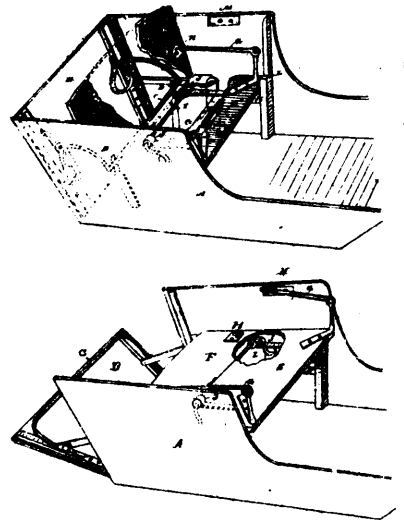
21541. Bradbury's Sled.



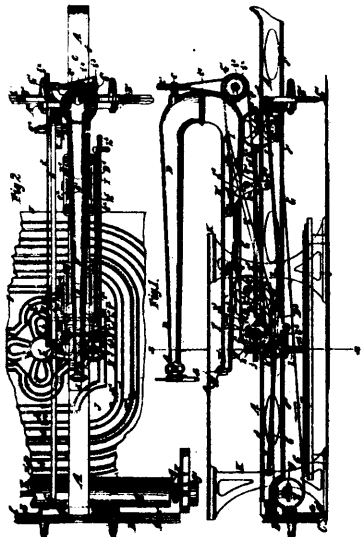
21542 Mercer's Harvester.



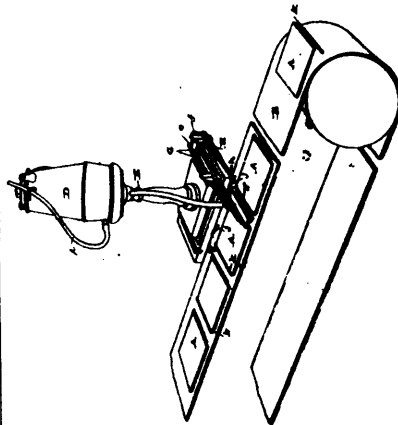
21543 Falardeau's Washing Machine.



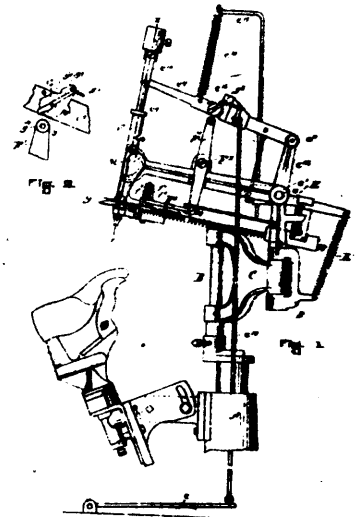
21544 Penfold's Adjustable Seat for Vehicles.



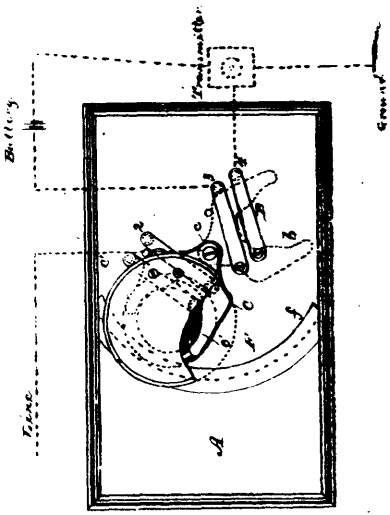
21545 Palmer's Sewing Machine.



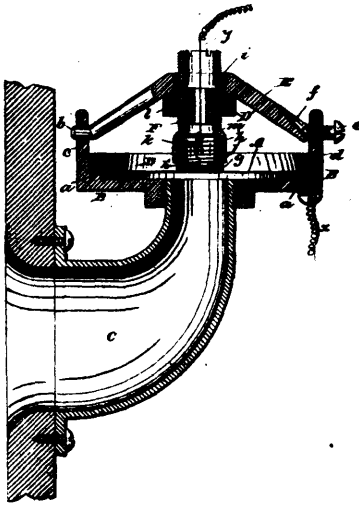
21546 Palmer's Machine for Applying Photographic Emulsion to Plates.



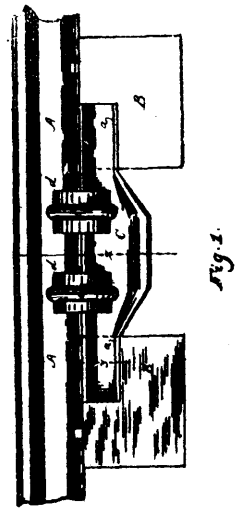
21547 Woodward's Tacking Machine for Lasting Boots and Shoes.



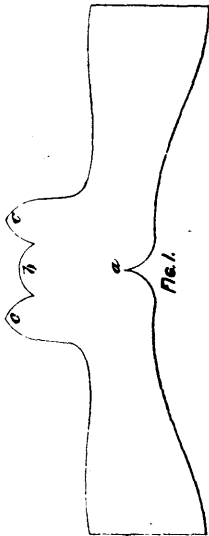
21548 Harlan's Telephonic Connection.



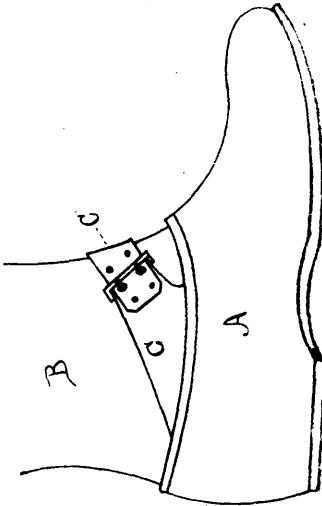
21549 Long's Telephone Transmitter.



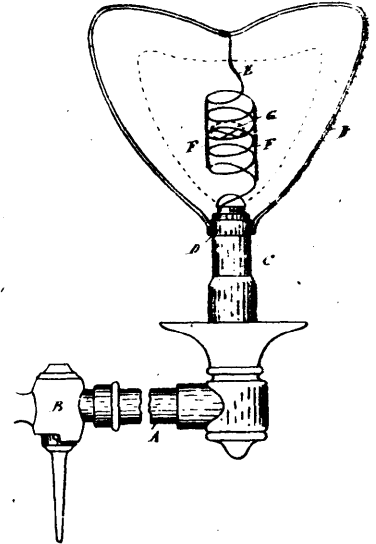
21550 Morgan's Railway Rail Joint.



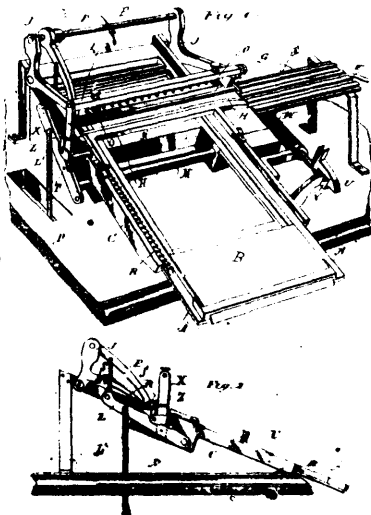
21551 Hall's Cloth Boot.



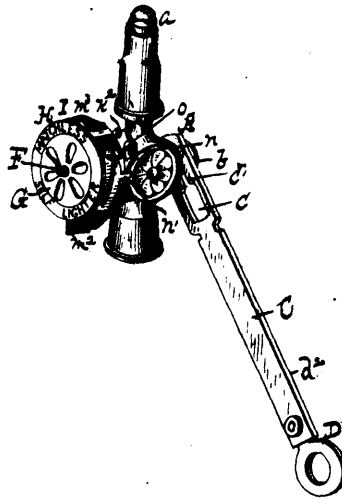
21552 Wilkey's Rubber Shoe.



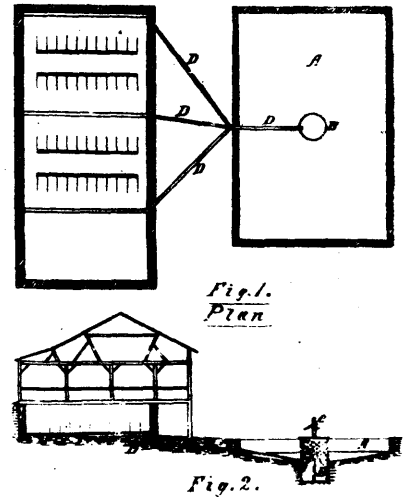
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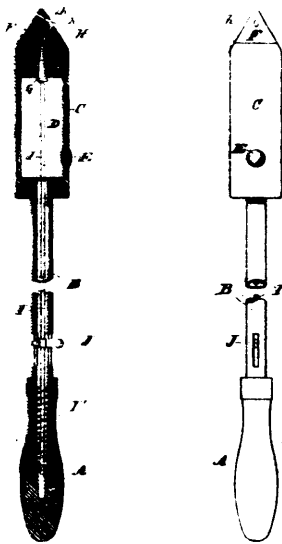
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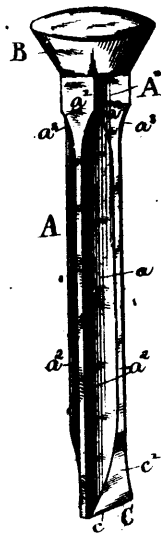
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21556 Zimmer's Apparatus for Gathering Liquid Manure.



21557 Gillis & McDonald's Soldering Tool.



21558 Perkin's Rose Head Spike.

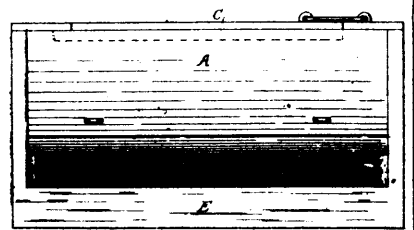
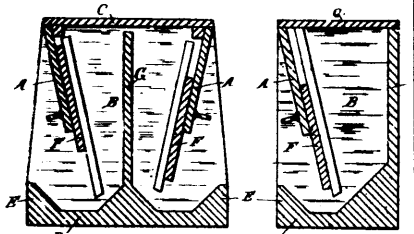
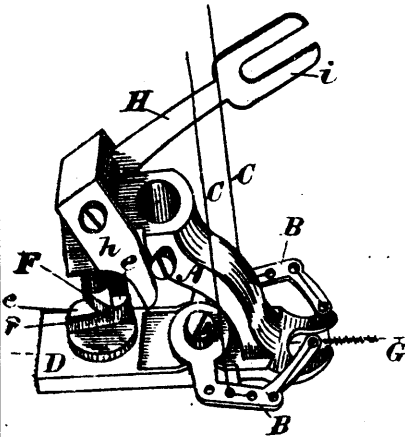


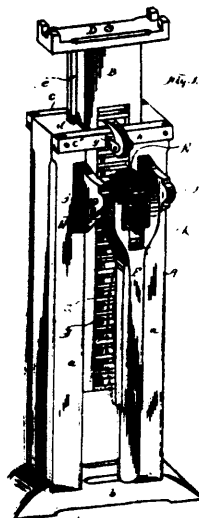
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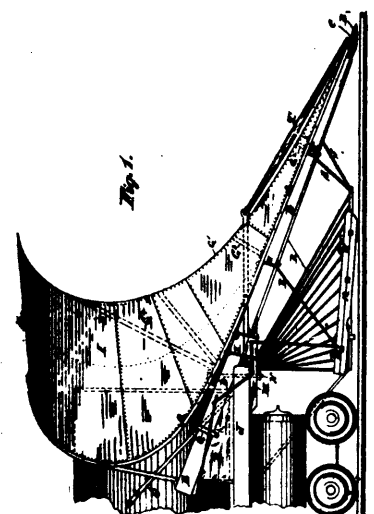
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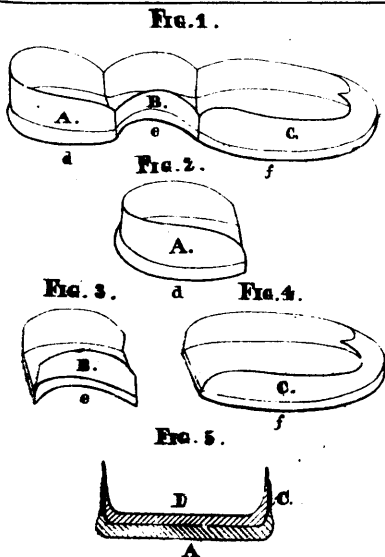
21560 Raymond's Embroidering Attachment for Sewing Machines.



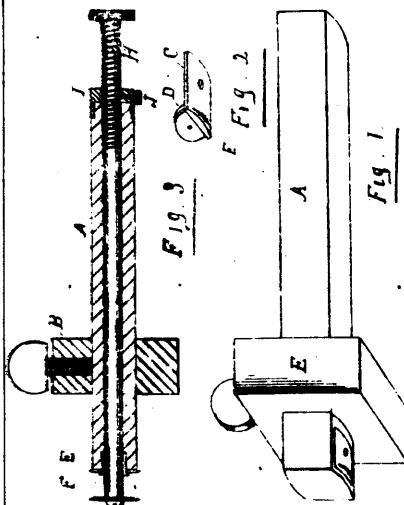
21581 Hood's Lifting Jack.



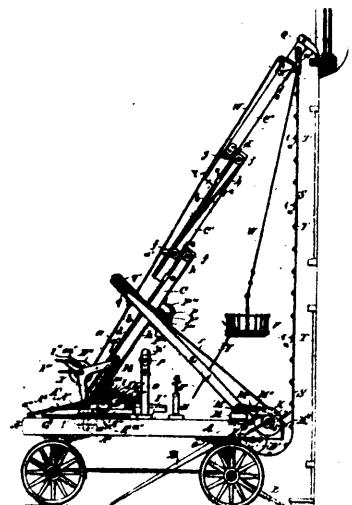
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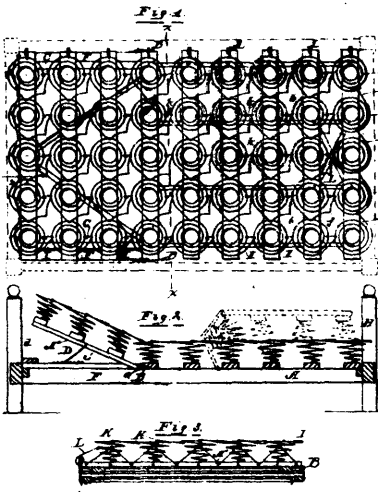
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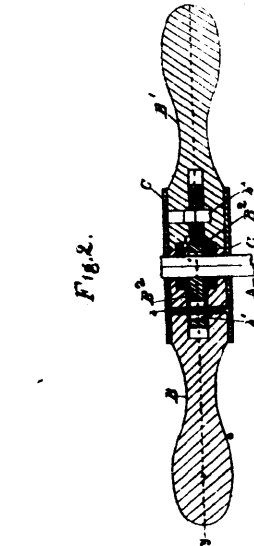
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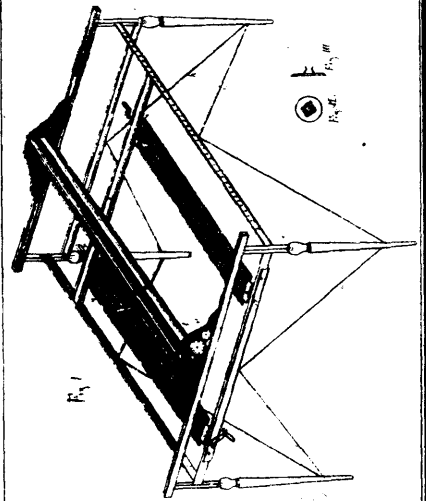
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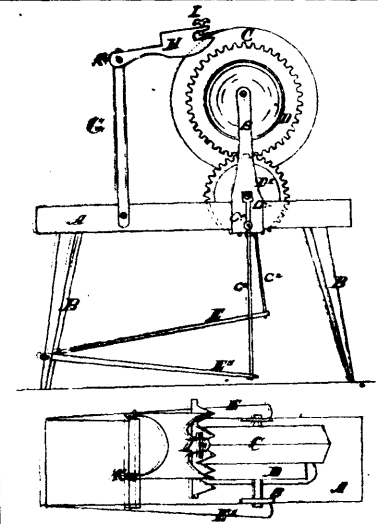
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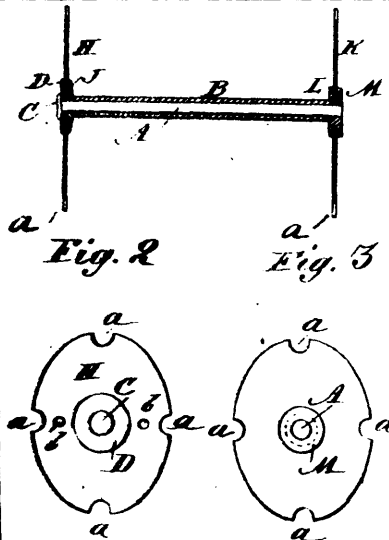
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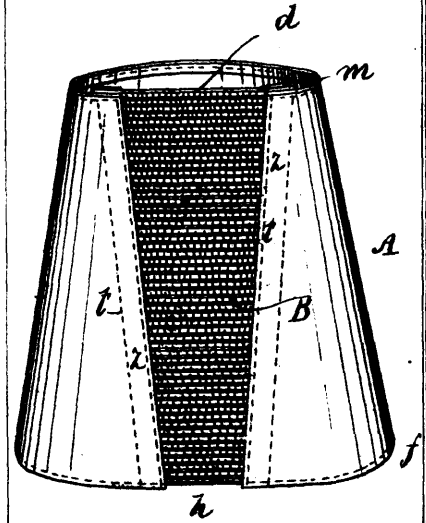
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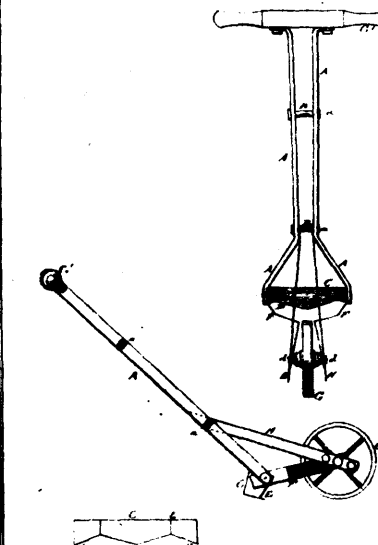
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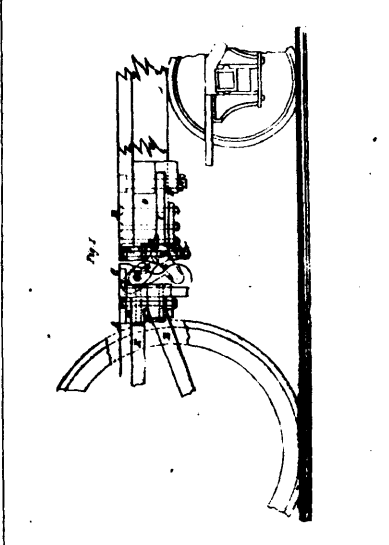
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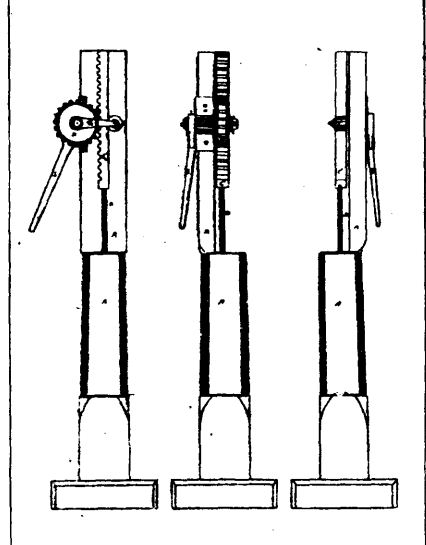
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