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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. 18,377. Centrifugal Separator.
(Separateur Centrifuge.)
 Winslow P. Northway and Joseph L. Willford, Minneapolis, Minn., U.S., 3rd January, 1884; 5 years.

Claim.—1st. In a centrifugal separator, the combination of a revolving bolting reel, longitudinal ribs on the interior surface of the reel having bevelled rear surfaces, a series of beaters revolving inside said reel, and means for rotating the reel and beaters at different speeds. 2nd. In a centrifugal separator, a horizontal revolving reel covered with bolting cloth and provided with ribs having bevelled rear surfaces, in combination with a series of heaters arranged horizontally in a circle within said reel and connected to a central shaft, adapted to be revolved in the same direction and at a greater speed than said reel, and a series of angular flights *h*, substantially as described. 3rd. In a centrifugal separator, a horizontal revolving reel covered with bolting cloth and provided with ribs having bevelled rear surfaces, and with angular flights *h* attached to said bevelled surface, in combination with a series of beaters arranged horizontally in a circle within said reel, and connected to a central shaft and adapted to be revolved in the same direction, and at a greater speed than said reel, substantially as and for the purpose set forth. 4th. In a centrifugal separator, the combination of the beaters, the bolting reel, the end ring *H*² and the end plate *P*, covering the entire end of the bolting reel between the beater shaft and the end ring *H*² and provided with radial discharge slots *i*, *1*, and hoods *12*, *12*, covering the several slots on all sides except at their rear edges, substantially as and for the purpose set forth. 5th. The combination of a revolving bolting cloth-covered reel provided with ribs having bevelled rear surfaces, angular flights *h* attached to said bevelled surfaces, a series of circularly arranged revolving beaters within said reel means for feeding material to said reel and one or more angular revolving wings *N*², *N*³, substantially as set forth. 6th. The combination of a reel covered with bolting cloth and mounted upon sleeves *F*¹, *F*², sprocket ringed beaters *E*, connected to a central revolving shaft *C* within said reel, screw conveyor *H* attached to said shaft, outside of said *e*₃ attached to its shaft, and chains *e*₂, *e*₅, adapted to connect said sprocket wheels and pinions, whereby the parts operate substantially as and for the purpose specified. 7th. A stationary ring *L* having a groove *d*₁, with a flexible packing secured thereon, in combination with a revolving bolting cloth-covered reel, substantially as described. 8th. The combination of a stationary ring *L* having a groove *d*₁, a flexible packing strip secured in said groove, and a bolting cloth covered reel having ring *H*¹ provided with bevelled inner surface adapted to revolve in contact with said packing, substantially as set forth. 9th. The combination of the reel ribs *K*, *K*, sheet metal strips attached thereto, and flights *h*, *h* formed from said strips, substantially in the manner hereinbefore specified. 10th. The combination of the journal sleeves *F*¹, *F*², reel mounted thereon, circularly arranged ribs *K*, *K* on the reel, and metallic hoops *R* imbedded in the revolving bolting reel, as described. 11th. The combination, with a revolving bolting reel, a series of beaters revolving inside of said reel, a feed hopper *M*¹, feed reel *M*² and screw feeder *M*³, substantially as and for the purpose set forth.

No. 18,378. Hame Fastener. (*Attache-attelles.*)

David G. Miller, Frankfort, Mich., William W. Sly, Cleveland, Ohio, and Christian C. Miller, Frankfort, Mich., U.S., 3rd January, 1884; 5 years.

Claim.—1st. In a hame-fastener, the combination, with the hinged shank *B*, of the lever *E* pivoted to the case, at the point on the lever *E* stated and described, and provided with the end-bearing, all substantially as shown and described. 2nd. The catch *C*, in combination with the hinged shank *B*, the locking device *D*, the lever *E* pivoted as shown, and case *A*, all substantially as described and for the purposes specified.

No. 18,379. Leather Splitting Machine.
(Machine à fendre les cuirs.)

Eustace Cummings, Woburn, Mass., U.S., 3rd January, 1884; 5 years.

Claim.—1st. In a leather splitting machine, in combination with the feed and gauge rolls *b*¹, *b*² and belt knife *A*, the positively operated revolving drawing rolls *C*, *C*¹, all substantially as and for the purposes described. 2nd. In a leather splitting machine, in combination with feed rolls *b*¹, *b*² and belt-knife *A*, the drawing rolls *C*, *C*¹, revolved at a greater speed than the feed rolls, whereby the material split is kept taut during the splitting operation, all substantially as and for the purposes described. 3rd. The combination, in a leather splitting machine, of the feed rolls *b*¹, *b*², the belt-knife *A*, and the drawing rolls *C*, *C*¹, located in relation to the splitting knife as described, all substantially as and for the purpose set forth. 4th. The combination, in a leather splitting machine, of the feed rolls *b*¹, *b*², the belt-knife *A* and the drawing rolls *C*, *C*¹, one of which is adapted to be moved vertically in relation to the other roll, substantially as and for the purpose described. 5th. The combination, in a leather splitting machine, of the feed rolls *b*¹, *b*², the belt-knife *A*, the drawing rolls *C*, *C*¹, and connecting mechanism, whereby the rolls are brought together, all substantially as and for the purposes described. 6th. In a leather splitting machine, in combination with suitable feeding and gaging devices, and a revolving belt-knife *A*, of the drawing roll or rolls *C*, *C*¹ located in relation to the belt-knife, as set forth, all substantially as and for the purposes described. 7th. In a leather splitting machine, in combination with suitable feeding and gaging devices and a revolving belt-knife *A*, the drawing rolls *C*, *C*¹ located in relation to the belt-knife as set forth, one of which roll is automatically moved from the other and that is adapted to be brought in contact therewith by a foot-treadle, all substantially as and for the purposes described. 8th. The combination, in a leather splitting machine, with suitable feeding and gaging devices and a revolving belt-knife *A*, of the drawing roll *C* having a rubber, felt or other suitable equivalent working surface, and a smooth surface, of drawing roll *C*¹, arranged over the same and adapted to be revolved therewith, the said rolls being located in relation to the revolving belt-knife as set forth, all substantially as and for the purposes described.

No. 18,380. Waterproof Paint.
(Peinture hydrofuge.)

Albert Sorg and Franklin D. Phillips, Ann Arbor, Mich., U.S., 3rd January, 1884; 15 years.

Claim.—A compound made of the herein specified ingredients, viz: coal-tar, sulphur, hematite, litharge, alum, salt and asphaltum, substantially in the proportions and for the purposes specified.

No. 18,381. Process for Extracting the Oxides of Cobalt and Manganese from their Ores. (*Procédé pour extraire de leurs minerais les Oxydes de Cobalt et de Manganèse.*)

Henri Herrenschmidt and Marmaduke Constable, Sydney, N.S.W., 3rd January, 1884; 5 years.

Claim.—The use of sulphate of iron, or any substance or compound, which will form sulphate of iron, for the purpose of extracting the oxides of cobalt and manganese from their ores, in the manner substantially as herein described and explained.

No. 18,382. Mitering Machine.*(Machine à onglet.)*

John B. Young, Toronto, Ont., 3rd January, 1884; 5 years.

Claim.—1st. In a mitering machine, the combination of the frame A provided with ribs *d*, and the socket lever bar B provided with one or more sockets for levers *m*, and a knife C attached to the socket lever bar B, all arranged substantially as and for the purpose specified. 2nd. In a mitering machine, pivoting the socket lever bar B at the point *u*, and the lower inner vertical face made smooth and constructed to operate on the smooth vertical surface *n* of the part *a* of the frame A, also the stops *o*, *o* on said frame, to prevent too much play of the knife, substantially as and for the purpose specified. 3rd. In combination with the frame plate A, of the adjustable gauge D, substantially as and for the purpose specified. 4th. The combination of the frame A, adjustable gauge D, socket lever plate B, levers *m*, substantially as and for the purpose specified.

No. 18,383. Expansive Rubber Bucket for Chain Pump.*(Godet en caoutchouc expansible de pompe à chapelet.)*

Charles H. Miller, Columbus, Ohio, U.S., 3rd January, 1884; 5 years.

Claim.—1st. The combination of the screw-threaded stem *a* made elliptical in cross-section, with the cone B and the cap C having a cavity in its under side, substantially as shown and described. 2nd. In an expansive bucket for chain-pumps, the screw-threaded link or stem *a* made elliptical in cross-section between the threads, substantially as shown and described. 3rd. In an expansive bucket for chain pumps, the conical elastic or yielding nut B, having a central bore adapted to fit the elliptic stem of the connecting link *a*, substantially as shown and described.

No. 18,384. Safety Hook.*(Crochet de sûreté.)*

Edward H. Smith, Rutherford, Cal., U.S., 3rd January, 1883; 5 years.

Claim.—1st. The hook C having a stilled shank A, and the closing supplemental short arm F fitted to enter a socket in the hook, and having its opposite end provided with a T-shaped head to slide in the slot in the shank, substantially as herein described. 2nd. A safety-hook consisting of a longitudinal slotted shank A and a curved hook portion C perforated at its outer end, to receive the point of the supplemental short-arm F, the rear end of which is provided with a T-shaped head, to fit the slot in the shank, in combination with a spring acting against the rear of the part F, substantially as herein described.

No. 18,385. Hot Air Flue for Heating Stoves and Furnaces.*(Tuyau à air chaud des calorifères.)*

James A. Watrous, Green Spring, Ohio, U.S., 3rd January, 1883; 5 years.

Claim.—1st. The combination, with the stove A, of the hot-air flue comprising the sections D, D1 and D2 arranged as described, the latter having the dampers *d*, substantially as shown and described. 2nd. The combination of the back plate having the damper C3 and exits C, C1, the sections D and D2 having the exit-openings communicating with the exit C, C1, and the section D1 having the dampers *d*, substantially as shown and described.

No. 18,386. Lamp Case.*(Lampe.)*

Edward S. Piper, Toronto, Ont., 9th January, 1884; 5 years.

Claim.—A screwed flange A, formed around the aperture in the top of a lamp-case, and arranged to receive the screwed top B, in combination with a detachable cone-shaped draft protector C, arranged substantially as and for the purpose specified.

No. 18,387. Hernial Truss.*(Bandage herniaire.)*

Alva S. Armstrong, (Assignee of James L. Armstrong.) Ottawa, Ont., 10th January, 1884; 5 years.

Claim.—1st. The spring truss frame A bent to conform (when placed horizontally) to the body of the wearer, and maintained by tension of the posterior ends provided with disks B, B1, said frame carrying the anterior sliding spring pad E, adjustable to be in contact with a hernia for its reduction, as set forth. 2nd. The truss pad E, supported on a coiled spring K placed within the concavity of the pad, as set forth.

No. 18,388. Baby Jumper.*(Escarpolette.)*

Charles T. Gardner, Napanee, Ont., 10th January, 1884; 5 years.

Claim.—1st. In a baby jumper, the zigzag spring H provided with hook L for suspending it, suspending adjuster rope F and hook K1, as shown and described for the purpose set forth. 2nd. In a baby jumper, the suspended adjuster F, frame B having back rest N, suspended cushion C, regulating slits C1 and fastening strap O, the whole as described and for the purposes set forth.

No. 18,389. Boat.*(Bateau.)*

Henry F. Coombs, Charlottetown, P.E.I., 10th January, 1884; 5 years.

Claim.—1st. The combination, in a boat, of the rods, ropes or pipes C fitted to a boat, below or at the water line, as shown and described, and for the purposes set forth. 2nd. A rowlock having the oar bed M, the base flange H, the fastener I and the chain K, combined and arranged and for the purposes set forth. 3rd. The combination, in a boat, of the rubber or other air tight bags B and B1, fitted with screw caps and partially filled with cork, and inflated with air, the tubes G and D filled as described and attached to the boat, inside the gunwale, and for the purposes set forth and described. 4th. The combination, in a boat, of the bread and water vessels E1, E2, provided with tap P, screw covers R and R2, and fastenings F and sliding bolt L, the whole arranged as shown and described for the purposes set forth.

No. 18,390. Animal Shears.*(Forces.)*

Lorenzo D. Gleason and Robert A. Holt, Lebanon, Mo., U.S., 10th January, 1884; 5 years.

Claim.—1st. The shear-blade C having the extension or attachment C1, as and for the purpose set forth. 2nd. The combination of the bow or handle A having the blade B, and the blade C having the extension or attachment C1, as and for the purposes set forth, and described. 3rd. The combination of the bow or handle A having the blade B, and the blade C having the extension C1, and the stops *c* and *c*2, as described.

No. 18,391. Cut-Out for Magnets in Telephone Circuits.*(Interrupteur des aimants dans les circuits de téléphones.)*

Hugh C. Baker, Hamilton, Ont., 10th January, 1884; 5 years.

Claim.—1st. The combination, with a magnet, of shunt wires, for automatically cutting out the magnet and, thereby, removing the resistance of the coil from the circuit, substantially as herein shown and described. 2nd. The combination, with a magnet and a hinged plate, of two wires connected with the two conducting wires and having their free ends so located that the hinged plate can rest on them when it is lowered, substantially as herein shown and described. 3rd. The combination, with a magnet and an annunciator plate, of wires connected with the conducting wires connected with the magnet, which free ends are so located that the annunciator plate can rest on them when lowered, substantially as herein shown and described. 4th. The combination, with a magnet and an annunciator plate, of wires connected with the conducting wires connected with the magnet, which wires have springs on the free ends, which free ends are located in such a manner that the annunciator can rest on them when it is lowered, substantially as herein shown and described.

No. 18,392. Steam Jet Apparatus for the Mixing of Steam Vapours, Air or Gases, with Water or Equivalent Liquid.*(Appareil à jet de vapeur pour mêler les fumées de vapeurs, l'air ou le gaz avec de l'eau ou un liquide équivalent.)*

Ernst Korting, Hanover, Germany, 10th January, 1884; 5 years.

Claim.—1st. In a jet apparatus, the combination of a liquid supply nozzle, a fluid supply and a combining tube provided with annular holes or perforations having a forward inclination, said combining tube or throat having a substantially uniform diameter from end to end. 2nd. The combination, substantially as described, of a liquid supply nozzle A, a corresponding delivery tube C and an intermediate mixing or combining tube B having a cylindrical, or substantially cylindrical bore and provided with inlets or perforations having a forward inclination towards the axis. 3rd. A jet apparatus embracing the following elements: a liquid supply nozzle, a corresponding delivery tube, an intermediate mixing or combining tube provided with a series of forwardly inclined inlets or perforations, adapted to cause the surrounding vapor to pass inward at numerous points upon and against a central water jet, and thereby urge the same forward.

No. 18,393. Automatic Electric Cut-out.*(Interrupteur automatique électrique.)*

Charles G. Perkins, New York, N. Y., U.S., 10th January, 1884; 5 years.

Claim.—1st. In combination with an automatic electric cut-out, a roller provided with each end thereof, for the reception of a metallic strip, the whole held in position by a stud mounted with a retracting spring arranged in a recess made in a binding post arranged opposite a second binding post, both of which support the aforesaid roller. 2nd. In combination, with an automatic electric cut-out, the roller C, metallic plug E, stud E1, catch pin I, spring G, recess H, opening O and binding post B1, substantially as shown and described. 3rd. In combination with an automatic electric cut-out, the roller C, central combination with an automatic electric cut-out, the roller C, central projections D D1, metallic strip or wire K, with eyes L L on the ends thereof, substantially as shown and described. 4th. The combination, substantially as shown and described, box A, binding posts B B1, metallic plug E, opening O, stud E1, catch pin I, spring G, roller C, projections D D1, metallic strip K, the whole forming an automatic electric cut-out, substantially as shown and described.

No. 18,394. Heating Furnace.*(Calorifère.)*

David W. Robb, Amherst, N. S., 10th January, 1884; 5 years.

Claim.—1st. The combination, with a fire-pot, of a lining formed of a series of sections provided with hook projections from the lower end, and with inwardly curved prongs, projecting from the lower edges, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the fire-pot A provided with projecting angular flanges B, C, of the lining sections D provided with hook projections E and with ribs F, having the lower ends curved inward and having notches *a*, in the lower ends of the outer edges, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the fire-pot A and the grate H, of the flanged wheels J mounted on the grate, and of the rails K, substantially as and for the purpose hereinbefore set forth. 4th. The combination, with the fire-pot A and the grate H, of the flanged wheels J, mounted on the grate, and of the rails K, provided with lateral curvatures M, substantially as and for the purposes hereinbefore set forth. 5th. The combination, with the fire-pot A and the grate H, of the flanged wheels J mounted on the grate, and of the rails K, provided with lateral curvatures M, which are also curved upward, substantially as and for the purpose hereinbefore set forth.

No. 18,395. Underground Conduit for Electric Wires. (*Conduit souterrains pour les fils électriques.*)

Josiah S. DuBois, Camden, N. J., U. S., 10th January, 1884; 5 years.

Claim.—1st. In an underground conduit for electric wires, sheathing E, support J and the coating of cement enveloping them, in combination with the outer wall K and foundation G of masonry, and the shelves and their standards or supports within said sheathing, substantially as and for the purpose specified. 2nd. An underground conduit for electric wires, provided with a vault or station formed of inner and outer walls with foundations, a cap or lid, and a coating enveloping said inner wall and its foundation, and said cap or lid, substantially as and for the purpose set forth. 3rd. An underground conduit for electric wires formed with a cap or cover having hinges at each end, substantially as and for the purpose set forth. 4th. An underground conduit for electric wires, provided with a pipe formed in sections, with a hinge on each side, whereby the sections may be swung to the right or left and provide means for ventilating the pipe and access to the interior thereof, substantially as and for the purpose set forth.

No. 18,396. Ball Governor for Steam Engines. (*Gouverneur à boulet pour les machines à vapeur.*)

William E. Badger, Quincy, Mass., U. S., 13th January, 1884; 5 years.

Claim.—1st. In a ball governor, a bent spring Q, in combination with two levers, each having three arms C, D and E, the balls P on the lower arms E of said levers, the pulley R which engages with the inner arms d, f, said levers and the valve rod movable up and down with said pulley, substantially as set forth. 2nd. In combination with an adjustable governor-ball and its actuating devices, a suspensory for said ball having a scale of numerals marked upon it, to indicate the number of revolutions of the engine, substantially as set forth. 3rd. The valve-stem B and the disk J, which it terminates, in combination with the plate h, which bears against said disk, the rod i rising from said plate, the hub R held against the under side of said disk, the arm j rigid with said hub and having upper end sleeved on said rod i and the screw k, which holds said arm and pin together, substantially as set forth.

No. 18,397. Drying Kiln. (*Touraille.*)

Garret F. Speer, Philadelphia, Pa., U. S., 13th January, 1884; 5 years.

Claim.—1st. A drying kiln provided on its end with vertical air condensers, in combination with a fan, a main or nozzle to admit fresh air into the kiln chamber and condensers, and exits from said condenser, whereby all of the air is drawn from the atmosphere outside the kiln, and part forced through the condensers back into the air, substantially as set forth. 2nd. A drying kiln provided on its end with vertical air condensers having inlets and exits, in combination with a fan, an oblique blast nozzle and heating apparatus, substantially as and for the purpose specified. 3rd. In a drying kiln, a broad or flattened blast nozzle, in combination with an escape flue and valve mechanism, for directing the current of air into the chamber, or into the flue, or part into each, substantially as and for the purposes specified. 4th. In a drying kiln, a broad or flattened blast nozzle set at an inclination, in combination with a trough at its bottom, an air escape tube and valve mechanism for directing the current of air into the chamber, or into the flue, substantially as and for the purpose specified. 5th. In a drying kiln, a broad or flattened air or blast nozzle set at an inclination, in combination with vertical air condenser mechanism for controlling the air and causing it to pass into the chamber or into the flue, substantially as set forth. 6th. In a drying kiln, a broad or flattened air or blast nozzle set at an inclination, in combination with vertical air condensers, a trough at the bottom of the nozzle, an air escape flue, valve mechanism for causing the air to pass into the chamber or flue, and heating apparatus, substantially as and for the purpose specified. 7th. In a drying kiln, doors provided on their inner sides with condensing surfaces, in combination with means for directing air currents up between said condensing surfaces and doors, substantially as set forth. 8th. The combination of flattened nozzle G, trough g, valve plate O, valve K, an air escape tube P, substantially as and for the purpose specified. 9th. In a drying kiln, the combination, with the drying chamber, of an air escape rotary fan, a fan to continually force fresh air therein, means to cause rotary currents of air in said chamber, and refrigerating apparatus to cool the air fed to the fan, substantially as set forth. 10th. In a drying kiln, the combination, with the drying chamber, of a fan to force air therein, means to cause rotary currents of air in said chamber, and apparatus for impregnating the air fed to the fan with preserving gases or vapors, substantially as and for the purpose specified.

No. 18,398. Cut-Off Valve for Steam Engines. (*Soupape de détente pour les machines à vapeur.*)

George V. Conway, Milwaukee, Wis., U. S., 13th January, 1884; 5 years.

Claim.—1st. The beam H pivoted between the upper ends of the valve rods, in combination with trips, one on each valve rod adapted each to engage with one end of the beam, and other trips connected with the governor stem and engaging with the first named trips, as set forth. 2nd. The combination of trips d, d' and M, M' connected by chains or cords, and a winding device with rods E, E', connecting therewith the governors stem, as set forth. 3rd. The valve rods having enlargements b₁ for receiving the returning impact of the steam, and having caps g on their lower ends, in combination with the stationary heads, each head having a

central cylinder h₂ apertured to permit the escape of air through it, from between the cap and head, into an annulus about it (the said cylinder), as set forth. 4th. Cap g, the wall of which is grooved on its inside vertically, in combination with the head having its wall reduced on its outside, and having a packing ring about it, just above its reduced portion, as set forth. 5th. The cap g, in combination with the head g₁, having a central cylinder h with apertures leading from between the head and its cap into an annular chamber, between the cylinder and the outer wall of the head, for deadening the sound occasioned by the expulsion of the air, as set forth.

No. 18,399. Railroad Car. (*Voiture de railroute.*)

Thomas L. Wilson, Port Hope, and Eugene H. Davis, Toronto, Ont., 13th January, 1884; 5 years.

Claim.—1st. In a railroad box car having the end studs removed, the posts A mortised into the roof rail B and head stock C, in combination with the truss strap D and bolts F and G, substantially as and for the purpose specified. 2nd. In a railroad box car having the end studs removed, and doors hinged to the posts A, the combination of the bolts L connected to, and operated by the lever M, substantially as and for the purpose specified. 3rd. In a railroad box car having the end studs removed, and doors hinged to the posts A, as described, a pivoted cross-bar N, in combination with a clasp O having a projecting piece Q welded on its back, and a bolt P for locking the bar to the clasp, as specified.

No. 18,400. Combined Thill Coupler, Detacher and Brake. (*Armon de limonière et frein combinés.*)

Duby Green, Cincinnati, Ohio, U. S., 13th January 1884; 5 years.

Claim.—1st. In a thill-coupling, the clip A having on its forward side the chamber E, in combination with the elastic cushion C, having the curved socket L and seat O, substantially as herein set forth. 2nd. In a thill-coupling, the clip A having the chamber E and the elastic cushion, as shown, with the yoke P provided with the upturned end Q and scroll R, substantially as herein set forth. 3rd. In a thill-coupling, an elastic cushion C cast or moulded with a circular or curved socket, to receive a curved hook, as described, thereby preventing said hook from coming in contact with metal in the housing or chamber, substantially as shown. 4th. The elastic cushion C having the curved socket L and seat O, in combination with the curved thill iron and the upturned yoke, substantially as herein shown and described. 5th. In thill-couplings and detachers, the clip A having the transverse aperture F, in combination with the shaft bar or rod G extending from clip to clip, having the arm I provided with the right angled side projection J at the forward end, and the rearwardly projecting arm J' with the standard K attached thereto, substantially as herein set forth. 6th. In thill-couplings and detachers, the detaching arm I having, at the forward end, the side projection J extending under the thill iron N and in combination therewith, substantially as and for the purpose herein shown. 7th. The clip A having the housing B on the forward side lid H, elastic cushion C provided with the curved socket L and seat O, in combination with the yoke P having the upturned extension Q and scroll R, and with the curved thill iron M, substantially as herein set forth. 8th. The rod G having the forwardly projecting detaching arm J, provided at each end with an arm or cam S designed to give lateral pressure to the hubs, when the rod G is turned, substantially as herein set forth. 9th. The cushion C provided with the curved slot L and having, on the forward underside, the recess O to receive the upturned end of the yoke, to thoroughly encase it, substantially as herein set forth.

No. 18,401. Jacketed Vessel. (*Vaisseau enveloppé.*)

Louis Fritz, Memphis, Tenn., U. S., 13th January 1884; 5 years.

Claim.—1st. The combination, with a metallic bilged barrel, of a sectional or two-part bilged jacket removably secured around the same, as set forth. 2nd. The combination, with a metallic bilged barrel, of a sectional or two part jacket made up of staves of irregular lengths and secured around the barrel, as set forth. 3rd. The combination, with a crimped metallic barrel, of a jacket A composed of the sections a, b and the hoops D, D₁, as set forth. 4th. The combination, with a vessel provided with the thr added standard E and the screw-cap B, of the pump of less length than the vessel, and having a lower threaded end and a spout adapted to be drawn up above the opening, as set forth.

No. 18,402. Spring Bed Bottom. (*Sommier élastique.*)

Hiram Benedict, Detroit, Mich., U. S., 13th January 1884; 5 years.

Claim.—1st. A section of a spring bed-bottom consisting of the slat A, springs B, cross-riders C and the elastic bands D, combined and operating substantially as and for the purposes set forth. 2nd. A spring bed-bottom composed of a series of independent slats, each of said slats supporting a series of springs and riders, and all the riders on each slat being secured together by means of the elastic woven-wire straps, substantially as described.

No. 18,403. Stove Truck and Carrier. (*Charriot de transport des poêles.*)

Mark K. Leavenworth, Bridgeport, Ct., U. S., 13th January 1884; 10 years.

Claim.—1st. The socket C, case D, arm E having the socket H cast in one piece, as and for the purpose specified. 2nd. The combination, substantially as described, of the handles A, A, tie B, socket C, case D and arm E, bar G having the handles R, R, axle F, wheels I, L, as and for the purpose specified. 3rd. As an article of manufacture, a combined truck and carrier having the wheels encased and small, to bring the tulerum low down, and provided with a secondary lifting bar, as and for the purpose specified.

No. 18,404. Force Pump. (Pompe foulante.)

John Bedford, Rossville, Tenn., U. S., 13th January 1884; 5 years.

Claim.—1st. In a pump for artesian or bored wells, the combination of the vertically sliding bail or stirrup F having an offset at its top, and a horizontal bottom portion, and the hollow plunger A having a transverse opening for the passage of the horizontal portion of the bail, with the pump cylinder C, provided with vertical bottom slots c, for the reception of the sliding bail, the check valve D, the rod G, the tube E, the stock H and the lever I, all constructed and relatively arranged as herein set forth, for the purpose specified.

No. 18,405. Fire-Place and Fire-Back.

(Foyer et fond de foyer.)

James H. Burnham, Fayetteville, Tenn., U. S., 13th January 1884; 5 years.

Claim.—1st. The combination, with a fire-place having an opening extending centrally through it, of a reversible concave metallic fire-back having an inclined plane at its upper end, forming a rigid extension thereof, said fire-back being thus adapted to project into the adjoining room and close the draft opening in the fire-place of said room, substantially as described. 2nd. The combination, with the fire-place α provided with the central opening c, extending centrally through it and having the flanges h, of the reversible concave metallic fire-back l having flanges m and inclined plane q, substantially as described and for the purpose set forth. 3rd. The combination, with the cast iron fire-place or frame a having flanges b, recesses c, smoke passages t and opening e extending centrally through it and provided with the flanges h, of the reversible concave metallic fire-back l having flanges m and inclined upper and q, and removable grate n, substantially as described and for the purpose set forth.

No. 18,406. Abrading Machine.

(Machine de friction.)

George H. P. Flagg, trustee for the Globe Buffer Company, (assignee of Frederick W. Coy.), Boston, Mass., U. S., 14th January 1884; 5 years.

Claim.—1st. The sleeve A, in combination with shaft B and its abrading wheels, substantially as and for the purpose specified. 2nd. The described combination of the hood D and fan case J, with the opening from the hood close to the opening into the fan case, as and for the purposes specified. 3rd. The bell-shaped pulley J, in combination with shaft J1 and pulley F1, and shaft f, one shaft being at right angles with the other, and the two pulleys connected by a belt, all substantially as described.

No. 18,407. Rotary Plough and Pulverizer.

(Charrue rotatoire et brise-motte.)

Columbus Johnston, Clarksville, and Sylvester T. Johnston, St. Louis, Mo., 14th January 1884; 5 years.

Claim.—1st. The combination of adjustable frame G, oblique shaft S and cutter wheel U, V, substantially as and for the purpose set forth. 2nd. The combination of ground wheels A, B, tongue frame or hounds E, axle C, adjustable frame G, drive wheels Q, R, oblique shaft S and wheel U having cutters V, substantially as and for the purpose set forth. 3rd. A rotary plow and pulverizer having an obliquely arranged plow shaft S carrying wheel U with cutter blades V, having cutting edges from the points to, or nearly to the wheel U, substantially as and for the purpose set forth. 4th. The combination of wheels A, B, shaft or axle C, frame E and G, oblique plow or cutter S, U, V and adjusting device I, K, L, substantially as set forth. 5th. The combination of wheel A, cog-wheels Q, R, oblique shaft S, clutch W and plow or cutter wheel U carrying cutters V, constructed and arranged substantially as set forth.

No. 18,408. Pocket Inkstand. (Encrier portatif.)

Olof Jansson, West Sweden, Wis., U. S., 14th January 1884; 5 years.

Claim.—1st. The case A, having hemispherical seat c and cover B, in combination with the hemispherical shape glass ink-receptacle C, confining-disk D and hinged plate E, carrying packing g, substantially as and for the purpose set forth. 2nd. The case A, having cover B and slotted plate or disk D, and the spring-catch F, in combination with the ink-receptacle C and hinged plate E, having downwardly-curved extensions h, i and packing g, substantially as and for the purpose specified.

No. 18,409. Car-Coupling. (Accouplage de wagons.)

Crowell M. Clancy, Wallaceburg, Ont., 14th January 1884; 5 years.

Claim.—1st. In combination with a draw-head, a shuttle enclosed in a chamber therein and provided with a recess in the front-face, and having the two movements under the operation of the pin and link, therein described and for the purposes set forth. 2nd. A draw-head provided with the bell-mouth B and chamber C, in combination with a shuttle E, provided with a recess e co-incident, when the pin and link are in place, with the pin-hole α , the parts constructed and operated, substantially as specified.

No. 18,410. Boot. (Botte.)

William Brown, Toronto, Ont., 14th January 1884; 5 years.

Claim.—1st. In a boot, the combination of the vamp A and back B, with the strap C passing under the ankle, and buckle D, as shown and for the purpose specified.

No. 18,411. Car-Coupling. (Accouplage de wagons.)

John D. Kiely, Toronto, Ont., 14th January 1884; 5 years.

Claim.—1st. In combination with a draw-head, the counter-balanced hook-coupling hung upon a transverse rock-shaft, the turning of which regulates the movements of such coupling hook substantially as set forth. 2nd. In a car-coupling, the coupling hook E provided with the arms h, i, and a counter-balance k hung upon a transverse rock-shaft, with which it has a partial rotary movement, substantially as and for the purposes described. 3rd. In combination with a draw-bar A provided with a stop-block D, the coupling hook E provided with the arms h, i, and counter-balance k, and hung upon a transverse rock-shaft F, substantially as described. 4th. In a car-coupling, the combination of the draw-head A, recessed portion C and stop-block D, the coupling hook E, rock-shaft F and rods H, when constructed, arranged and operating substantially in the manner and for the purpose specified.

Claim.—1st. In a gas engine, the combination, with the cylinder, of the block R having an aperture Q provided with a cavity W, a slot S on the block, a channel U extending from the aperture to the explosion chamber, of the plug N adapted to rock in the aperture Q, and provided with a slot O and channels P extending sideways from each side of the slot, and of a cam for operating the valve plug, substantially as herein shown and described and for the purpose set forth. 2nd. In a gas engine, the combination, with the cylinder, of the block R having an aperture Q, a cavity W and the channel U, of the plug N having a slot O and side channels and the burners T and S, substantially as herein shown and described and for the purposes set forth. 3rd. In a gas engine, the combination, with the cylinder, of a rocking valve plug and a wheel provided with a cam groove suddenly extended at one point toward the rim of the wheel, and of devices for transmitting the motion from the cam wheel to the rocking valve plug, substantially as herein shown and described and for the purpose set forth.

No. 18,412. Gas Engine. (Machine à gaz.)

Harmer Denney, Brooklyn, N. Y., U. S., 14th January 1884; 5 years.

Claim.—1st. In a gas engine, the combination, with the cylinder, of the block R having an aperture Q provided with a cavity W, a slot S on the block, a channel U extending from the aperture to the explosion chamber, of the plug N adapted to rock in the aperture Q, and provided with a slot O and channels P extending sideways from each side of the slot, and of a cam for operating the valve plug, substantially as herein shown and described and for the purpose set forth. 2nd. In a gas engine, the combination, with the cylinder, of the block R having an aperture Q, a cavity W and the channel U, of the plug N having a slot O and side channels and the burners T and S, substantially as herein shown and described and for the purposes set forth. 3rd. In a gas engine, the combination, with the cylinder, of a rocking valve plug and a wheel provided with a cam groove suddenly extended at one point toward the rim of the wheel, and of devices for transmitting the motion from the cam wheel to the rocking valve plug, substantially as herein shown and described and for the purpose set forth.

No. 18,413. Combined Condenser and Separator, for Condensing and Separating the Vapour eliminated from Petroleum Oils. (Condensateur et séparateur combinés pour condenser et séparer la vapeur éliminée des huiles de pétrole.)

John Brake and George Brake, Petrolia, Ont., 14th January, 1884; 5 years.

Claim.—1st. A combined condenser and separator C provided with tubes D, D, for condensing and separating the vapour eliminated from petroleum oils, constructed and arranged substantially as hereinbefore set forth. 2nd. The combination of a combined condenser and separator C provided with tubes D, D and heads C1, C2, with packing E and plate F, to allow said tubes to contract and expand without injury to themselves or said condenser, substantially as shown and described. 3rd. The combination of a combined condenser and separator C provided with tubes D, D, with vapour pipes B, B, packing E, plate F, reservoirs G, G1, stack H and outlet pipes J, J, substantially as shown and described and for the purpose specified.

No. 18,414. Stave Jointer.

(Jointeur des douves.)

Julius F. Vogt and William C. Vogt, St. Louis, Mo., U. S., 14th January, 1884; 5 years.

Claim.—The combination, with a stave-holder, of a disk having a circular channel in its face, concentric with the centre of the disk, made concave to suit the bilge of a stave and having two sets of jointing-cutters, both inclined backwardly from the bilge-line l, one inwardly and the other outwardly, whereby each stave will be jointed from the bilge-line toward both ends, as described.

No. 18,415. Cut-off for Conductors of Liquids. (Branchement pour les conduits des liquides.)

William F. B. Fisher, Springfield, Ohio, U. S., 14th January, 1884; 5 years.

Claim.—1st. In a cut-off of the character described, the combination, with the cut-off C, provided with arms or extensions e2 adapted to bear yieldingly against the body A, of a tilting or pivoted deflector B, substantially as specified. 2nd. In a cut-off, the combination of the body A, collar A1 secured as described, and tilting deflector B arranged between the body and the collar, substantially as shown and described. 3rd. The combination of the body A cut away on the line a, a, the cut-off C having an arm or arms e2, the deflector B and the collar A1 secured throughout half its circumference to the body, substantially as described. 4th. In a cut-off, the combination of a tilting deflector and a cut-off having a curved arm or arms, adapted to bear against the inner surface of the body of the cut-off, whereby the cut-off proper is held in an open position against the tendency of the wake falling thereon back of its pivots to close the same, substantially as shown and described.

No. 18,416. Boring Bit. (Trépan.)

Hiram E. Fuller and Edmund C. Bramhall, New York, N. Y., U. S., 14th January, 1884; 5 years.

Claim.—1st. In a bit, the combination, with a screw or gimlet point, of downwardly curved cutters, depending spurs or cutters arranged at the outer edges of said cutters, and upwardly projecting lips arranged opposite to said spurs, substantially as set forth. 2nd. In a bit, the combination, with a screw or gimlet point, of outwardly curved cutters, depending spurs or cutters, and depending spurs and upwardly projecting lips, substantially as set forth.

No. 18,417. Hub-Attaching Device.*(Appareil pour retenir les Roues.)*

James W. Nunn and John A. Kelly, Kingstree, S. C., U. S., 14th January, 1884; 5 years.

Claim.—An improvement in hub attaching devices for vehicle axles consisting of the nut having enlarged base provided with holes *e*, and within which base is formed the chamber *E*, in combination with the washer *D* having smooth and equal bore, and provided with pins *g* and the set screw plug, substantially as described.

No. 18,418. Hatchet. (Hachette.)

William P. Cutter, Everett, Mass., U. S., 14th January, 1884; 5 years.

Claim.—The herein described improvement on hatchet and similar tools, consisting of the poll *b* with its internal recess or mortise *bi*, in combination with the detachable bit *c* having shanks *ci*, locking recess or notch *ciii* and fastening screw *d di*, substantially in a manner and for the purposes set forth.

No. 18,419. Self-Binding Harvester.*(Moissonneuse-lieuse.)*

John F. Seiberling, Akron, Ohio, U. S., 14th January, 1884; 5 years.

Claim.—1st. In a self-binding harvester, in which the grain is carried on the grain-table by travelling carriers, towards the main drive-wheel, the combination of a series of circular conveyors carried on a revolving shaft suitably journaled above the grain table, between the inner end of the travelling carriers and the binding needle, the said conveyors being provided with hinged teeth, operating substantially as and for the purpose specified. 2nd. In a self-binding harvester, in which the grain is carried on the grain table by travelling carriers, towards the main drive-wheel, and is elevated by the binding mechanism by an inclined table, a series of circular conveyors carried on a revolving shaft suitably journaled above the grain-table, between the inner end of the travelling carriers and the binding needle, each conveyor being provided with hinged teeth arranged to carry the grain up the inclined table, in combination with a bifurcated bracket for stripping the grain off the teeth and a cam, arranged to fold the teeth as they pass the bracket, and to hold them extended while acting on the grain, substantially as and for the purpose specified. 3rd. In a self-binding harvester, in which the grain is carried on the grain-table by travelling carriers towards the main drive-wheel, and is elevated by revolving conveyors, a vibrating conveyor arranged beneath and at the rear end of the inclined table, the work in conjunction with the packers and carry the head end of the grain clear of the revolving conveyors, in combination with a yielding retaining bar or spring located above the inclined table, and arranged to hold the head end of the grain during the binding of the shaft, substantially as and for the purpose specified. 4th. In a self-binding harvester, in which the grain is elevated towards the binding mechanism by an inclined table, beneath which is located the needle, *E* and one or more horizontal bars extending from the front of the machine to its rear, and connected to the frame supporting the binding mechanism, in combination with brackets fixed to the frame of the machine arranged to support the horizontal bar or bars so that the binding mechanism may be adjusted longitudinally, to accommodate the length of the grain being bound. 5th. In a self-binding harvester, in which the grain is elevated towards the binding mechanism by an inclined table, beneath which is located the needle and packer-shafts and above which is located an overhung knoter-shaft, one or more horizontal bars extending from the front of the machine to its rear, and connected to the frame supporting the binding mechanism, and independently carried by brackets fixed to the frame of the machine, with a lever pivoted on the frame of the machine and connected to the frame of the binding mechanism, for the purpose of longitudinally adjusting the said binding mechanism, substantially as and for the purpose specified. 6th. In a self-binding harvester, in which the grain is carried on the grain-table, towards the binding mechanism, by travelling toothed carriers, the combination of an inclined table, cleaner located at the point where the toothed carriers descend below the table, substantially as and for the purpose specified. 7th. In a self-binding harvester, in which an adjustable inclined binder-table is arranged between the grain-table and top of the driving-wheel, and in which the grain is carried to the foot of the inclined table by travelling toothed carriers, an inclined tooth-cleaner located at the angle formed between the grain and binder tables, in combination and arranged to act on the grain at the point where the travelling toothed carriers leave it, substantially as and for the purpose specified. 8th. The plate *L*, shaped as shown and having a slot *K* cut in it, as specified, in combination with the bridge *t* extending across the angle of the plate *L*, substantially as specified. 9th. The plate *L*, shaped as shown and having a slot *K* cut in it, with a curved recess *bridge* *t* located on the opposite side of the slot, substantially as and for the purpose specified. 10th. In a self-binding harvester, in which the grain is carried towards the binding mechanism by travelling carriers, an adjustable clutch located on the shaft supporting the main driving mechanism and carriers, in combination with an arm actuated by the needle mechanism, substantially as and for the purpose specified. 11th. In a grain-binding harvester, in which the grain is elevated from the grain-table toward the binding mechanism by revolving conveyors, an adjustable clutch located on the shaft carrying the main driving mechanism and conveyor-shaft, in combination with a rod actuated by the needle mechanism and arranged to throw the clutch out of gear during the period that the binding is being effected, substantially as and for the purpose specified. 12th. In a self-binding harvester provided with revolving conveyors and reel, an endless chain arranged to convey the motion of the main driving mechanism to the conveyors and reel, a clutch connection

being formed between the conveyor-shaft and its sprocket-wheel actuated by the endless chain, in combination with the bar *t* connected to the needle-shaft and arranged to break the clutch connection, substantially as and for the purpose specified. 13th. In a self-binding harvester, a needle 2 having a curved back about one half the ordinary length, in combination with an arm 3 journaled on the needle-shaft and having a curved guard attached to its end fitting against, and corresponding in shape to the curved back of the needle, substantially as and for the purpose specified. 14th. In a self-binding harvester, a needle 2 fixed to its shaft and having a clip end *r* formed on the end of its curved back, in combination with an arm 3 journaled on the needle-shaft and shaped as specified, with a clip 4 on its end so that on the upward movement of the needle, the end 4 comes in contact with the clip 4, so that the curved guard forms a continuation of the needle-back. 15th. In a self-binding harvester, in which the binding mechanism is put into operation by the pressure of the grain on the trip-lever, an arm or hammer 6 fixed to the trip-lever shaft and arranged to come in contact with an angle plate, to prevent the second movement of the binding mechanism. 16th. In a self-binding harvester, a grain-table provided with travelling carriers for conveying the grain to the foot of the binder-table, revolving conveyors located above the grain-table between it and the needle, in combination with adjustable clutch mechanism arranged to connect the revolving conveyors and travelling carriers to the main driving mechanism, so that the motion of the conveyors and carriers shall be simultaneously stopped during the period that the binding is being effected, substantially as and for the purpose specified. 17th. In a self-binder harvester, in which the binding mechanism is attached to, and moves with a frame adjustably connected to the frame carrying the grain-table, a butter pivoted at its lower end to a bracket fixed to the frame of the grain-table, and connected at its upper end to the adjustable frame, in combination with mechanism for imparting an oscillating movement to the butter, substantially as and for the purpose specified. 18th. In a self-binding harvester provided with rotary conveyors attached to, and moving with a frame adjustably connected to the frame carrying the grain-table, a butter-bar journaled at its lower end on a crank deriving motion from the shaft of the rotary conveyors, which crank is held in a bracket attached to the grain-table frame, and its upper end adjustably held in a bracket attached to the adjustable frame, in combination with a wing-board connected to the cutter-bar at its lower end, its upper end being connected by a link to the bar from which the conveyor shaft is suspended.

No. 18,420. Nut Lock. (Arrête-écrou.)

George Grover, London, Eng., 14th January, 1884; 5 years.

Claim.—The locking-trough *E* locking the nuts upon bolts, by which fish-plates are secured to railway rails, or locking other similar parts under like circumstances.

No. 18,421. Process for Collecting Metallic Particles, &c. (Procédé pour recueillir les parcelles métalliques, &c.)

Jonathan Miller, Concord, N. H., U. S., 14th January, 1884; 5 years.

Claim.—The method, herein described, of recovering metals in suspension in liquid, consisting essentially in forcing such liquid through a filtering medium having a capacity of expansion and resisted by a rigid inclosing vessel or medium, and then burning the filling material, or otherwise separating the metal therefrom, substantially as set forth.

No. 18,422. Radiator for Furnaces for Heating Buildings, &c. (Radiateur des calorifères pour chauffer les maisons, &c.)

Dwight S. Richardson, Brooklyn, N. Y., U. S., 14th January, 1884; 5 years.

Claim.—1st. The combination, with the body of an air-heating furnace, of a solid cast-iron radiator having a diaphragm or partition extending through the same, with an opening therein connecting the two chambers of the radiator, substantially as and for the purpose set forth. 2nd. The combination, with the body of an air-heating furnace and encircling the dome of the combustion chamber of the same, of a solid cast-iron radiator having a diaphragm or partition extending through the same, with an opening therein connecting the two chambers of the radiator, substantially as and for the purpose set forth. 3rd. The combination, with the body of an air-heating furnace, of a cast-iron radiator cast in one piece, having a diaphragm or partition extending horizontally through the same, whether cast solid therewith or separate therefrom, with an opening therein, as described, substantially as and for the purpose set forth.

No. 18,423. Treatment of Cotton Seed.*(Traitement de la graine de coton.)*

James F. O'Shaughnessy, New York, N. Y., U. S., 14th January, 1884; 5 years.

Claim.—The hereinbefore described process of reducing cotton seed and separating the fiber from the hull and kernel, consisting in first grinding in a suitable mill the seed and adhering fibre, then separating the fibre from the ground hull and kernel, as and for the purpose set forth.

No. 18,424. Fruit Dryer. (Séchoir à fruits.)

The Steam Heat Evaporator Company, (Assignee of Frank S. Belcher and John B. Belcher), Charlotte, Mich., U. S., 15th January, 1883; 5 years.

Claim.—1st. In an evaporator, the supporting trays arranged in vertical series on opposite sides of an intermediate air passage and inclined from their inner to their outer edges, and a vertical partition dividing the air passage, substantially as set forth. 2nd. In an evaporator, the steam pipes and fruit trays, the latter supported be-

tween the former arranged in vertical series on opposite sides of a centrally located air passage, and inclosed from their inner to their outer edges and an intermediate continuous vertical partition dividing the air passage, the whole being arranged and combined to effect the purpose intended, substantially as set forth.

No. 18,425. Improvements on Lined Conduits and on Machinery for making the same. (*Perfectionnements aux conduits doublés et aux machines pour les fabriquer.*)

Calvin Detrich, Brooklyn, N. Y., U. S., 15th January, 1884; 5 years.

Claim.—1st. The mode herein described of forming conduits, the said mode consisting in clothing a lining pipe with cement compacted within a tubular casing by ramming it into the end thereof, as set forth, and advancing the casing from time to time all substantially as specified. 2nd. The within described conduit, the same consisting of a lining tubing clothed with continuous coating of cement compacted to a defined external form, as set forth. 3rd. The combination of the casing A, its hopper, the ram B and mechanism for operating the same with the guiding tube H, substantially as set forth. 4th. The combination of the casing A, the ram B and operating lever D, with the duplex toggle joint devices, through the medium of which the ram is reciprocated by the said operating lever, substantially as described.

No. 18,426. Safety Gate for Railroad Cars, &c. (*Barrière de sûreté pour voitures de railroads, &c.*)

Edwin L. Tevis, Philadelphia, Pa., U. S., 15th January 1884; 5 years.

Claim.—1st. The combination of the platform and platform steps of a railway car, with the vertical guides D, D', the base A, sliding rail B and lazy-tong connections, substantially as set forth. 2nd. The combination of the system of lazy-tongs, levers and bars forming a safety gate, with the operating lever I, the shaft H having arm n, and the bar M, connected to said system of levers, and the bar n, as set forth. 3rd. The within described safety gate, the same comprising the base A, the opposite guides D, D', the sliding rail B and lazy-tongs connections between said rail and the base, as set forth.

No. 18,427. Telephonic Transmitter.

(*Transmetteur Téléphonique.*)

George E. Shaw, Chicago, Ill., U. S., 15th January 1884; 5 years.

Claim.—1st. In a microphone, a diaphragm carrying one electrode, in combination with a bar susceptible of magnetic induction freely supported, and carrying another electrode, and two other bars acting magnetically upon the supported bar, so as to attract or repel the same in opposite directions, substantially as described. 2nd. In a microphone, a bar magnet carrying an electrode and pivoted at one end so as to allow the other end to freely move, in combination with a diaphragm carrying another electrode, and one or more adjustable radial magnets arranged, as shown, to act on the free end of said bar magnet, so as to attract or repel the same in opposite directions, for the purposes described and substantially as set forth. 3rd. In a microphone, a diaphragm of mica pierced to receive an electrode, in combination with such electrode, a bar magnet carrying another electrode and pivoted at one end so as to allow the other end to freely move, and one or more adjustable radial magnets acting on the free end of said bar magnet, so as to attract or repel the same in opposite directions, substantially as described and for the purposes set forth.

No. 18,428. Printing Types.

(*Caractères d'imprimerie.*)

Linn B. Benton, Milwaukee, Wis., U. S., 15th January, 1884; 15 years.

Claim.—1st. A font of types, the bodies of the characters of which are runningwise all multiples of a unit, and the spaces of which are similarly equal to said unit and multiples thereof. 2nd. A font of types, the bodies of the characters of which are runningwise all multiples of a unit. 3rd. A font of types, the bodies of the characters of which are runningwise all multiples of a unit, and the spaces of which are equal to said unit.

No. 18,429. Apparatus for Carrying and Unloading Hay and Grain. (*Appareil pour transporter et décharger le foin et le grain.*)

Robert Griswold, Woody, Ks., U. S., 15th January, 1884; 5 years.

Claim.—1st. A hay rack consisting of a waggon having open work frame sides and ends, the sides adapted to be readily removed, in combination with a lining net provided with loops at its edges, whereby the whole load may be lifted in a body from the waggon, as specified. 2nd. In apparatus for unloading hay and grain, the portable platform C constructed, substantially as herein shown and described, with ropes E attached at one end to the upper edge of the platform, and provided with snap hooks F at their lower ends, to engage with rings G, attached to the inner edge of the netting H placed upon the waggon rack beneath the load, as set forth. 3rd. In an apparatus for unloading hay and grain, the draw rope I constructed, substantially as herein shown and described, with the branches L graduated in length, each outer branch terminating sooner than its adjacent inner branch and provided with snap hooks M, to engage with the rings G at the outer edge of the netting H, whereby the ends of the load will be made to move a little in advance of the body of the said load, as set forth. 4th. The combination, in an unloading apparatus, of the portable platform C having attached ropes E, F, the netting H having rings G and the draw-rope I, with branched end ropes L having hooks M arranged with the outer hooks nearer the point of draft than the successive adjacent inner hooks, substantially as shown and described.

No. 18,430. Ore Roasting Furnace.

(*Fourneau de grillage du minéral.*)

Thomas Walker and John F. Carter, Philadelphia, Pa., U. S., 15th January, 1884; 5 years.

Claim.—1st. In an ore roaster, the combination of one feed pipe I'', retorts B B' B'' B''', vanes or rakes D' D'' D''', for spreading the ore in a thin sheet, passages I' I'', for carrying the ore from one retort to another discharge passage I', dust chamber N, air opening Q and a fume passage O'', into dust chamber N in the ore discharge end of lower retort B'', and a fume passage and an air opening from the ore receiving end of upper retort B, into a contiguous dust chamber N, whereby the draft can be directed from the lower retort through the series to the upper, or vice versa, substantially as described. 2nd. In an ore roaster, a series of retorts B B' B'' B''', connected one with the other by suitable ore passages I' I'', the said retorts being provided at one or both ends with air passages Q, provided with suitable regulating covers Q'', and also provided near one or both ends with fume conduits or passages O'' into a dust chamber N, said fume passages being capable of being closed or opened by dampers or valves P, whereby, by the opening of any fume passage O, when an air passage Q has been opened, a draft will be induced from the air passage to the fume passage, substantially as described. 3rd. In an ore roaster, a series of retorts B B' B'' B''', connected one with the other by suitable ore passages I' I'', the fume passages O'', &c., located at ends of the successive retorts in each series and connecting the interiors of the retorts with a suitable dust chamber N, and provided with suitable mechanism P, to regulate draft or close the fume passages, substantially as described. 4th. In an ore roaster, a double vertical series of retorts B B' B'' B''', the retorts in each series being connected one with the other by suitable ore passages I' I'' and dust chambers N N', each adjoining one of said two series of retorts and connected thereto by fume passages O'' O'' O''', substantially as described. 5th. In an ore roaster, the combination of a retort B, centrally revolving longitudinal shaft D, rakes D', mounted in a series of longitudinal sections rigidly upon said shaft, by means of the sectional rings E, the sections of each of said rings being joined by ears and bolts, and the bases of the rake sections being secured to lugs projecting from said rings, by means of bolt screws or rivets, substantially as described.

No. 18,431. Ore Concentrator.

(*Concentrateur de minéral.*)

Jonathan Miller, Concord, N. H., U. S., 15th January, 1884; 5 years.

Claim.—1st. In an ore concentrator, the combination, with the frame A, of the ore pan D, an axle or rock shaft e, a rod d, sliding through said axle, rock shaft n, rod l, the rails e, a screw-rod m, adjusting nut r, the guide-rod q attached to the rock shaft n, and sliding through rod l, the cam I, springs k and concussion block or buffer K, all constructed to operate, substantially as set forth. 2nd. In an ore concentrator, the pan D provided with a series of laminae i with overlapping plates i' and having a discharge opening for the concentrates in a line with the point of concussion, in combination with a buffer K, and adjustable support or axle and suitable means for producing the concussion, substantially as set forth. 3rd. In an ore concentrator, the combination, with the ore pan D and the rod l, of the rod d secured to the end of the pan, the rock shaft e, the cylinder i' attached to the shaft e, their flanged pistons h, springs k, the cross-head g and the guides l for the rod d, arranged to have a space 18 between the end of the rod and the guide, when the springs k have completed their movement, all constructed to operate, substantially as set forth. 4th. The pan D having its discharge opening d' for the concentrates, in a line with the point of concussion, and a series of their laminae i with overlapping edges forming its working bottom, substantially as herein described for the purpose set forth. 5th. In an ore concentrator, the pan D constructed as described, and provided with the yielding contact point 14 r, in combination with the actuating cam I, as set forth. 6th. In an ore concentrator, the combination, with the reciprocating ore pan D and the axle e capable of adjustment in the arc of a circle, of the concussion block or buffer K, having its surface 20 curved in the arc of a circle concentric to that described by said front end of the pan, when raised or lowered, substantially as and for the purpose described. 7th. In an ore concentrator, the combination, with the ore pan D constructed as described, and having the discharge outlet e' of the float L arranged in close proximity with the said discharge outlet e', for the purpose of catching the slimes or light metallic particles floating upon the water in the pan, substantially as set forth. 8th. In combination with an ore concentrating pan, the supporting device for the rear end thereof consisting of rod d, axle e, posts n, guides f, cross-head g, having attached to its opposite ends two flanged pistons h, cylinders i, i' secured to axle e, and springs k, substantially as set forth. 9th. The ore pan D, in combination with rails e, rod l, transverse rock shaft n, socket or boxes p, vertical guide rod q, sliding through rod l, vertical m, provided with a screw thread and nut r, all arranged to operate substantially as described.

No. 18,432. Method of Recovering Metals.

(*Méthode pour faire revenir les métaux.*)

Jonathan Miller, Concord, N. H., U. S., 15th January, 1884; 5 years.

Claim.—The improved method herein described for recovering metallic particles, slimes and similar material containing metal, from liquids, consisting essentially in conducting the liquid and metal bearing material to a settling tank, allowing the ganque to fall to the bottom, drawing off the liquid and forcing it under hydrostatic pressure through a filter press, and removing and drying the filtrate, as set forth.

No. 18,433. Car-Coupling. (*Accouplage des wagons.*)

John P. Lancaster, Goshen, Ind., U. S., 15th January, 1884; 5 years.

Claim.—1st. A draw-head having an open-front upper chamber above the link chamber, and communicating therewith by a longitudinal slot, in combination with a removable T-shaped pin journalled

in the open front of the upper chamber, and a removable fastening covering the open front, as and for the purpose shown and set forth. 2nd. A draw-head having a recess in the bottom of the link chamber, a transverse rib in the rear end of the chamber forming two recesses, and an inclined upper side, as and for the purpose shown and set forth. 3rd. The combination of a draw-head having a bevelled shoulder at the lower forward end of its link chamber, with a pin having the forward edge of its lower end bevelled and pivoted at the upper forward end of the draw-head, as and for the purpose shown and set forth. 4th. The combination of a draw-head forming a link chamber having a slot at its top, an upper chamber having a longitudinal slot at its top forming a circular aperture, and a bearing at the ends of its T head, and a fastening pivoted over the open end of the upper chamber having a rearwardly extending plate forming a circular plate, as and for the purpose shown and set forth.

No. 18,434. Clothes Washer.
(*Laveuse à linge.*)

John B. Bell, Pittsburg, Penn., U.S., 15th January, 1884; 5 years.

Claim.—1st. The beater frame consisting of side pieces connected at their upper ends by a cross-bar, and having, at their lower ends, a series of parallel rings and weighted rings having solid ends or heads provided with flanges and bolts adapted to be nutted to the beater frame, substantially as set forth. 2nd. The improved clothes-washer shown and described, consisting of a suds-box having inclined sides, a concavo bottom strips, and rungs forming open spaces at opposite sides of the machine, in combination with a beater-frame consisting of sides having trunnions, a handle-bar, parallel rungs and fixed weighted bottom rungs, substantially as set forth. 3rd. The beater-frame, comprising side pieces connected at their upper ends by a cross-bar and extending above said bar, adjustable weights on said extensions, and rings connected to the side pieces at the bottom of the frame, substantially as set forth.

No. 18,435. Apparatus for Treating Incandescents.
(*Appareil de traitement des incandescents.*)

Charles G. Perkins, New York, N. Y., U. S., 15th January, 1884; 5 years.

Claim.—1st. In combination, with an apparatus for treating carbon filaments, an oil reservoir having a delivery tube with stop cock and internal concentric delivery jet D, said delivery tube being adapted to enter a heated chamber or carbonizing box and having a stop cock thereon, one of said tubes enters a chamber wherein the oil drops when producing hydro-carbon vapours, the aforesaid outer tube having a projecting tube connected therewith leading into a condenser provided with a stop cock on the base thereof, and having an extending tube on its top and extending horizontally therefrom, and a pipe leading into a chamber, wherein carbon filaments are placed for final treatment. 2nd. The combination, substantially as shown and described, the oil reservoir A, stop cock U, tapering tube D, tubes B and E, chamber H, tubular projection F, condenser G, stop cock G', tubular extension H, condensers I, L, I, stop cocks 1, 2, 3, tubes L and M, chamber M, or their equivalents, for the purpose set forth.

No. 18,436. Waterproofing Fabrics.
(*Imperméabilisation des tissus.*)

William H. Horner and Francis Hyde, Baltimore, Md., U. S., 15th January, 1884; 5 years.

Claim.—1st. The improved method of treating textile fabrics to render them acid-proof, which consists in saturating and impregnating the fabric with a composition consisting principally of rosin and paraffine, or other mineral oils, which are reduced to a proper consistency, with a volatile liquid, and in removing the surplus quantity of the composition from the fabric, for the purpose set forth. 2nd. A composition for treating textile fabrics having as a base paraffine and rosin, assimilated or mixed with each other, substantially as described. 3rd. An improved textile fabric coated or impregnated with a composition consisting of paraffine, or equivalent mineral oils, and rosin, substantially as described.

No. 18,437. Commode Attachment.
(*Lavabo-siège d'aisance.*)

Charles B. Basford, Malden, Mass., U. S., 15th January, 1883; 5 years.

Claim.—1st. A commode attachment consisting of a holder for a chamber vessel having an apertured seat at the top, legs or supports at the bottom, brackets for attachment to interior of the wash stand, two links pivotally connected at each side to the holder and brackets, as set forth, whereby the holder may be placed within the wash stand or withdrawn for use, and the legs afford a support for it in either position, as and for the purposes stated. The combination, with a wash stand or similar article of furniture having a receptacle as *r*, of a commode attachment consisting of a holder *f*, a chamber vessel having an apertured seat at the top, legs or supports at the bottom, brackets for attachment to the interior of the receptacle, and two links pivotally connected at each side to the holder and brackets, as described, whereby the holder may be placed within the receptacle or withdrawn for use, and the legs afford a support for it in either position, substantially as described. 3rd. The combination, with a vessel or holder having an apertured seat, of the links pivotally connected to the holder, and brackets for attachment to the cabinet or other article as described, and provided with means for keeping their parts at any length which they may be caused to assume.

No. 18,438. Hand Washing Rubber.
(*Machine pour laver à la main.*)

Rubin L. Hitchcock, Cornwall, Ont., 15th January, 1884; 5 years.

Claim.—A hand washing rubber composed of parallel sides A, A1, hand-bar B, stay-bars C, C1, and two or more fluted rollers D, D1 journaled to run below the lower edge of the sides A, A1, as set forth.

No. 18,439. Farm Gate. (*Barrière.*)

Rubin L. Hitchcock, Cornwall, Ont., 15th January, 1884; 5 years.

Claim.—1st. In combination with the pivoted bars B and styles A A1, the diagonal and parallel braces C, pivoted to the lower bar of the gate and engaging with a notch or notches in an upper bar, as set forth, for the purpose described. 2nd. The combination, with the bar B, having slot K, of the latch-bar G, and diagonal bars H pivoted to the top bar of the gate, whereby the gate is fastened, as set forth. 3rd. The hinge portion L having a diagonal yoke M, connecting the inner ends, as set forth.

No. 18,440. Shell Dovetail for Use to Produce Soft Metal Lining for Dovetail Sockets in Stove Plates.

(*Queue d'aron le creuse employée pour produire une doublure en métal doux pour les mortaises en queue d'aronle des plaques de poêles.*)

Norman Burdick and James A. Sandford, Albany N. Y. U. S., 15th January, 1884; 5 years.

Claim.—1st. A sheet metal shell A formed with portions *a*, *a'* and *a2*, and having perforations *a3*, whereby the shell is adapted to form a part of the pattern for forming the cleat prints of dovetail sockets in the mold, when the pattern is being molded, and the lining of the overhanging inclined sides of the cleats of the cast dovetail sockets, when produced, substantially as described. 2nd. The combination, in molding for producing molds for dovetail sockets, of fixed cleats C1, made with pattern C and provided with projections on guiding pins *c2*, with the separate or disconnected sheet metal shells A provided with perforations *a3*, substantially as and for the purpose set forth.

No. 18,441. Manufacture of Lactic Acid and Lactates. (*Fabrication de l'acide lactique et des lactates.*)

Thomas S. Nowell, Boston, Mass., (assignee of Charles O. Thompson Terre Haute, Ind.) U.S., 15th January, 1884; 5 years.

Claim.—1st. The improvement in the method of forming neutral calcium lactate crystals described, consisting in first digesting corn-meal or other amylaceous matter in warm water, then converting a portion of the same into glucose and adding to this glucose, liquor still mixed with the nitrogenous matters and other residues of the meal, etc., pure white glucose dissolved in water without increasing the nitrogenous matter fermenting the same, with lactic ferment and neutralizing the lactic acid as it forms with carbonate of lime, substantially as set forth. 2nd. The method of obtaining acid crystals from neutral calcium lactate crystals, consisting in digesting the latter with hot water, mechanically filtering this solution, adding sulphuric acid thereto, again filtering and concentrating the last solution, and next setting the concentrated solution in a cold chamber to crystallize, substantially as set forth.

No. 18,442. Railroad Torpedo.
(*Torpille de railroute.*)

Walter S. Phelps, Wortendyke, N. J., U. S., 15th January, 1884; 5 years.

Claim.—In a railway-signal torpedo, the combination, with the plate A provided with the slot C and the ridge D on its upper surface, of the caps or cartridges B, B secured on its said plate, substantially as herein shown and described, and for the purpose set forth.

No. 18,443. Fog Signal for Railways.
(*Signal de brume des chemins de fer.*)

Walter S. Phelps, Wortendyke, N. J., U. S., 15th January, 1884; 5 years.

Claim.—1st. In a safety fog signal for railways, a box for containing torpedoes provided with a spout, having a slotted bottom, in combination with a sliding-bar provided with a downwardly projecting prong, substantially as herein shown and described. 2nd. In a safety fog signal for railways, a box for containing torpedoes provided with a spout, having a slotted bottom and a gate for closing said spout, in combination with a sliding-bar provided with a downwardly projecting prong, and means for automatically locking the gate, substantially as herein shown and described. 3rd. In a safety fog signal for railways, the combination, with a box for containing torpedoes, of a bar for carrying the torpedoes out of the box and holding them on the rail, a spring in front of the end of the said bar, and of devices for automatically raising the said spring before the bar is projected out of the box, substantially as herein shown and described and for the purpose set forth. 4th. In a safety fog signal for railways, the combination, with the box A, of the sliding bar E for carrying the torpedoes out of the box and holding them on the rail, the gate Q, the bail R pivoted to the same, and the hook *c* on the end of the bar E, substantially as herein shown and described and for the purpose set forth. 5th. In a safety fog signal for railways, the combination, with the box A, of the guide casing J for receiving the torpedoes, the spring M and the sliding-bar E, for grasping the torpedoes, carrying them out of the box and holding them on the rail, substantially as herein shown and described, and for the purpose set forth. 6th. In a safety fog signal for railways, the combination, with the box A, of the bar E for carrying the torpedoes out of the box and holding them on the rail, of the spring O and the sliding-bar P, for raising the spring *o* before the bar E is moved out of the box, substantially as herein shown and described and for the purpose set forth. 7th. In a safety fog signal for railways, the combination, with the box A, of the bar E for carrying the torpedoes out of the box and holding them on the rail, of the sliding plate C, the shaft D, provided with the nib D1 and

the crank arm *d*, the spring *c* and the sliding plate *P*₁, connected with the arm *d*, substantially as herein shown and described and for the purposes set forth. 8th. In a safety fog signal for railways, the combination, with the box *A*, of the bar *E*, the plate *C* provided with a guide flange *c* and with a notch *c*, the shaft *D* provided with a nib *D* and a crank arm *d*, the spring *c* and the sliding plate *P*, substantially as herein shown and described and for the purpose set forth. 9th. In a safety fog signal for railways, the combination, with the box *A*, of the guide casing *B*, provided with guide cross-pieces *E*₁, *E*₂, and a guide groove *a* of the shaft *D* provided with a nib *D* and a crank arm *d*, the sliding bar *E*, the plate *P* and the spring *O*, substantially as herein shown and described and for the purpose set forth. 10th. In a safety fog signal for railways, the combination, with the box *A*, of the guide casing *B*, the plate *C* and sliding bar *E*, for carrying the torpedoes out of the box and holding them on the rail, of the pintle *F* and the connecting bar *G*, substantially as herein shown and described and for the purpose set forth. 11th. In a safety fog signal for railways, the combination, with the box *A*, of the guide casing *B*, the plate *C*, the sliding-bar *E* for carrying the torpedoes out of the box and holding them on the rail, of the pintle *F*, the connecting bar *G*, and the bell crank lever *T*, and the transverse connecting bar *U*, substantially as herein shown and described and for the purpose set forth. 12th. In a safety fog signal for railways, the combination, with the box *A* having the spout *A*₁ of the gate *Q*, the bail *R*, the sliding-bar *E* for carrying the torpedoes out of the box and holding them on the rail, the hook *e* and the bevelled projection *f*, substantially as herein shown and described and for the purpose set forth.

No. 18,444. Car Mover. (*Pousse-Char*)

Charles T. Barnes, (Co-inventor with William H. Barnes,) Chicago, Ill., U. S., 15th January, 1884; 5 years.

Claim.—1st. In a car mover, a knob having a removable bearing plate, substantially as and for the purpose set forth. 2nd. In a car mover, a knob formed with a recess having a dovetailed flange, in combination with a removable bearing block formed with an angular bearing face and a dovetailed rib, adapted to fit the recess, substantially as and for the purpose set forth. 3rd. A car mover provided with a lip *A*₂, a riser upon a projecting nose *A*₁ at one of its forward corners, and a knob upon the opposite corner and having its body cut away or made thinner between the knob and lip and towards the base of the riser, substantially as and for the purpose set forth. 4th. The mover *A*, having the nose *A*₁ formed with a bevelled and angular riser, the lip *A*₂ having its under surface formed with an angle α , with one portion of its base extending transversely of the main body of the casting, and the other portion extending rearwardly at an obtuse angle to the first, a knob also formed with an angle of having one face extending transversely and the other running forward at an obtuse angle therewith, and a rib *b*₁ upon its back adapted to throw the knob away from the spokes as the wheel revolves, all combined, constructed and arranged to operate, substantially as and for the purpose herein specified. 5th. In a car mover, a rib *b*₁ formed upon the back of the main portion and having bevelled or rounded ends adapted to cause it to slide easily over the spokes of a car wheel, substantially as shown and described. 6th. In a car mover, a bevelled knob or riser adapted when power is applied to wedge the flange of the wheel between two bearing points, substantially as shown and described. 7th. A car mover having three bearing points by which the flange of the wheel is gripped, substantially as shown and described. 8th. A car mover having a knob adapted to rest behind and beneath one side of the flange, a lip adapted to overlap the periphery of the flange and bear upon the side opposite to the knob, and a bevelled projection or riser adapted to force a flange of any thickness up between the lip where it will be securely grasped, substantially as shown and described. 9th. A car mover formed with two or more gripping or bearing points upon each side, whereby it may be used upon either side of the car, as may be most convenient, substantially as shown and described. 10th. A car mover cast hollow and formed with an interior connecting rib upon the inside, connecting the main bearing points, whereby the mover is lightened but strengthened at its point of strain, substantially as shown and described.

No. 18,445. Harvester. (*Moissonneuse*.)

The McCormick Harvesting Machine Company, (Assignee of Henry E. Pridmore), Chicago, Ill., U. S., 15th January, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the platform, the draft-tongue pivoted thereto, the frame-bar pivoted to the draft-tongue and connected at its rear end to the rear inner corner of the platform, a connection between said frame-bar and the platform at the front of the latter, and a lever pivoted to a bracket sleeved upon the main axle and connected to said frame-bar, at a point between the two points of attachment of the platform. 2nd. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform, a draft-tongue hinged thereto, the frame-bar pivoted to the draft-tongue and connected to the platform at the rear inner corner of the latter and also near the finger-bar, a lever pivoted to a bracket upon the main axle and the link connecting said lever with the frame-bar. 3rd. The combination, substantially as hereinbefore set forth, of a main wheel, its axle, the platform, the draft-tongue hinged thereto, the frame-bar hinged to the draft-tongue and at its rear end playing within a keeper at the rear inner corner of the platform, a lever mounted upon a bracket on the axle, a link connected to said frame-bar and the second lever mounted upon the frame-bar, in advance of the connection of the former, and link connected to the front of the platform. 4th. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform, the draft-tongue hinged thereto, the frame-bar hinged to said draft-tongue and at its rear end playing within a keeper at the rear inner corner of the platform, the bracket sleeved upon the axle and at its rear, connected to the prime pinion shaft by means of a radius-arm, and the raising and lowering lever pivoted to a segment extension of said bracket, in advance of the axle and link connected to the frame-bar. 5th. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform having brackets or standards for the prime pinion shaft, the draft-tongue hinged to said platform, the frame-bar pivoted to the draft-tongue and at its rear end playing within a keeper at the

rear inner corner of the platform, the bracket casting sleeved upon the main axle and connected by a radius-arm at the rear with the prime pinion shaft, the raising and lowering lever pivoted to a segmental extension of said bracket, in advance of the axle and the tipping lever pivoted to a segment bracket upon the frame-bar in advance of the connection of the other lever, and itself linked with the front of the platform. 6th. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform, suitable raising and lowering and tipping instrumentalities for the latter, a seat standard support sleeved to the axle outside of the main wheel, and the rigid bar passing from said support to a pendulum guide or keeper pivoted to the draft-tongue. 7th. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform, the draft-tongue hinged thereto, in a frame-bar pivoted to the draft-tongue and at its rear end playing in a keeper at the rear inner corner of the platform, an adjustable connection between said frame-bar and platform at the front of the latter, the raising and lowering lever pivoted to a bracket on the main axle and link connected with said frame-bar, and the seat-support sleeved upon the axle outside of the main wheel, and connected with the draft-tongue by an arm playing in a keeper on the latter. 8th. The combination, substantially as hereinbefore set forth, of the main wheel, its axle, the platform, the draft-tongue hinged thereto, the frame-bar pivoted to said draft-tongue and connected to the platform at its rear end, means whereby said frame-bar is supported from the main axle, a segment-rack bolted to the lever pivoted above, or nearly above the finger-bar of the platform, a lever pivoted to said segment rack and a connection between said lever, and the front of the platform for the purpose of tipping the latter. 9th. The combination, substantially as hereinbefore described, of the main wheel, its axle, the adjustable platform, a shaft journalled in hangers beneath said platform and running parallel with the finger-bar, an arm or crank at the outer end of said shaft in which the grain-wheel is supported, and another arm or crank at the inner end of said shaft connected directly with the main axle by means of a link or radius-arm, whereby the main wheel and the grain-wheel will rise and fall together, and co-ordinately in relation to the platform as it is adjusted. 10th. The combination, substantially as hereinbefore described, of the main wheel, its axle, the platform, the draft-tongue hinged thereto, the frame-bar pivoted to the draft-tongue, connections between said frame-bar and platform at both front and rear of the latter, a lever pivoted to a bracket on the main axle and connected with said frame-bar intermediate of the points of attachment thereto of the platform, whereby the frame-bar and platform may be raised and lowered, and a crank-shaft running beneath the platform supporting, in the arm or crank at its outer end, the grain-wheel and having a direct connection by means of a link or radius-bar between the arm or crank, at its inner end, and the main axle. 11th. The combination, substantially as hereinbefore described, of the main wheel, its axle, the platform, the draft-tongue hinged thereto, a frame-bar pivoted to the draft-tongue and at its rear end, playing within a steeper at the rear inner corner of the platform, the raising and lowering lever pivoted to a bracket on the main axle and connected with said frame-bar, the tipping lever mounted upon said frame-bar in front of the connection of the other therewith and connected to the front of the platform, and the crank-shaft journalled in bearings beneath the platform supporting the grain-wheel by means of the arm at its outer end, and having a direct link-connection between the arm, at its inner end, and the main axle. 12th. The combination, substantially as hereinbefore described, of the main wheel, its axle, the platform supporting the prime pinion shaft on brackets at its rear, the draft-tongue hinged to said platform, the frame-bar pivoted to the draft-tongue and playing in a keeper at the rear inner corner of the platform, the bracket sleeved upon the axle and connected at its rear by a radius-arm with the prime pinion shaft, the raising and lowering lever pivoted to a segment-extension of said bracket in advance of the axle and connected with the frame-bar to support it, the tipping lever pivoted to a segment bracket upon the frame-bar and connected to the front of the platform, the grain-cranked shaft mounted in hangers beneath the platform, the main wheel supported in the outer arm or crank of said shaft, and the link or radius-bar directly connecting the inner arm or crank of the latter with the main axle. 13th. The combination, substantially as hereinbefore set forth, of the main or driving wheel, the platform, the grain-wheel at the outer end of said platform, supported upon a link connected to a cranked shaft running longitudinally there beneath, a link connecting a second arm from said cranked shaft at its inner end with the main axle, the draft-tongue hinged to the front of the platform, the bracket for the seat-standard and foot-rest sleeved to the axle at its end of the main axle, an arm rigid with said bracket taking at its front end into a keeper upon the draft-tongue, a supporting bar pivoted at its front end to the draft-tongue, and at its rear end playing in a keeper at the rear of the platform, a bracket mounted upon the main axle inside the wheel connected by means of a rearwardly extending radius-arm with the prime pinion shaft, and by a second forwardly extending arm affording a pivot and rack for the lever connected with the frame-bar, and a second lever pivoted with the frame-bar latching into a rack therefrom and connected with the front of the platform. 14th. The combination, substantially as hereinbefore described, of the main or driving wheel, the axle keyed thereto and turning therewith, the bracket sleeved upon said axle inside of the main wheel and connected by a rearwardly extending radius-arm with the prime pinion shaft mounted in bearings upon the platform, the prime pinion upon said shaft, the main gear wheel mounted loosely upon said axle inside of the bracket and a clutch or backing ratchet between said wheel and the axle. 15th. The combination, substantially as hereinbefore described, of the main wheel, its axle keyed thereto and turning therewith, the bracket sleeved upon said axle inside of the main wheel and connected by a rearwardly extending radius-arm with the prime pinion shaft mounted in bearings upon the platform, the prime pinion upon said shaft, the two bevel-gears connecting said shaft with the cutter-crank shaft, the main gear-wheel mounted loosely upon the axle inside of the bracket and the clutch or backing ratchet between said gear-wheel and the axle. 16th. The combination, substantially as hereinbefore set forth, of the main wheel, the axle keyed thereto and turning therewith, the main gear-wheel mounted loosely upon said axle, and the clutch or backing ratchet between said axle and wheel, and the tambling

shaft pinned to lugs on the outer face of said wheel and driving the rake. 17th. The combination, substantially as hereinbefore set forth, of the main wheel, the axle keyed thereto and turning therewith, a radius-arm connecting said axle with the prime-pinion shaft mounted in bearings upon the platform, the prime-pinion keyed to said shaft, the two bevel-gears connecting it with the cutter-crank shaft, the main gear-wheel mounted loosely upon the axle and meshing with said prime-pinion, the clutch or backing ratchet between the axle and said wheel, and the tumbling shaft pinned to lugs on the outer face of said wheel and driving the rake. 18th. The combination, substantially as hereinbefore set forth, of the main wheel, the axle keyed thereto and turning therewith, the main gear-wheel mounted loosely upon said axle and driving upon an intermeshing, train the cutter-crank shaft, the tumbling shaft pinned to lugs on the outer face of said gear-wheel and driving the rake, and the controllable clutch or backing ratchet between the axle and gear-wheel, whereby cutting and raking mechanisms may be simultaneously thrown out of action. 19th. The combination, substantially as hereinbefore set forth, of the main-wheel, the main axle keyed thereto, the main gear ratchet clutched to said axle, the prime-pinion shaft mounted in bearings upon the platform, the bracket sleeved upon the axle between the main wheel and the main gear and connected by a rearwardly extending radius-arm with said shaft, a segmental front extension of said bracket-arm having back set or ratchet teeth, and the lever and its dog pivoted upon said extension and latching into the series of ratchet-teeth. 20th. The combination, substantially as hereinbefore set forth, of the wheel formed with a ratchet chamber, the disc pinned to the shaft upon which said wheel is mounted and closing said chamber, the dog pivoted to the inner face of said disc, from the point of the dog through an elongated recess in the disc, whereby said dog may be pushed out of engagement, and a locking device whereby it may be fixed in said disengaged position. 21st. The combination, substantially as hereinbefore set forth, of the gear-wheel formed with a ratchet chamber, the disc pinned to the shaft upon which said wheel is mounted and closing said chamber, the dog pivoted in or to an extension of the hub of said disc within the chamber, the spring pressing said dog into engagement, the cam-button having a spindle which passes through an elongated slot in said disc and enters the point of the dog, and the cam of which sits upon the outer face of said disc, and the recessed rib on said outer face to receive the cam, whereby the dog may be thrown out of engagement by pushing the button and locked against return by rotating it until the cam takes into said recess. 22nd. The combination, substantially as hereinbefore set forth, of the gear wheel, its ratchet chamber, a disc pinned to the shaft upon which said wheel is mounted and closing said chamber, an offset from the hub of said disc within the chamber having a cylindrical recess with an opening to one side, a dog having a cylindrical head which sits in said recess and permits the tongue to play through said opening, a spring urging the dog towards engagement with the ratchet teeth of the chamber and the cam-button, the spindle of which passes through a slot in the disc and enters the point of the dog, and the cam of which rests against the outer face of the disc and may be latched into a recess in a projecting rib therefrom, whereby the dog may be thrown out of engagement and locked in its disengaged position. 23rd. The combination, substantially as hereinbefore set forth, of the gear-wheel having a ratchet chamber, the disc pinned to the shaft or axle upon which said wheel is mounted and closing said chamber, the offset from the hub of said disc within the chamber having a cylindrical recess with an opening to one side, the dog with its cylindrical head situated in said recess and playing through said opening, and the annular seat within said head receiving the coil of a spring, one end of which presses against the hub and the other against the dog, to force the latter into engagement. 24th. The combination, substantially as set forth, of the gear wheel, the ratchet chamber, the disc pinned to the shaft upon which said wheel is mounted and closing the chamber, with a cylindrical form recess having an opening through one side, the dog seated within said recess by means of its cylindrical head and playing through said opening, the annular seat within such head to receive the coil of a spring pressing the dog into engagement with the ratchet, the cam-button having a spindle which passes through an elongated slot in the disc and is pivoted to the end of said dog, and the rib upon which rests against the outer face of the disc and the rib upon said outer face having a recess to receive said cam, whereby the dog may be thrown out of engagement by pushing the button laterally, and locked against return by rotating it until the cam or spring takes into said recess. 25th. The combination of the seat, its support sleeved to the outer end of the main axle, and the brace extending from said support to a sliding connection with the tongue. 26th. The combination of the seat, its support and foot-rest to the outer end of the main axle, the foot-rest and the brace extending from said support and foot-rest to a sliding connection with the tongue. 27th. The combination of the seat, its support and foot-rest sleeved to the outer or stable end of the main axle, the hinged tongue, the brace rigid with said support and extending therefrom to the tongue, and a keeper upon the tongue in which the end of said brace plays. 28th. The combination of the seat, its support and foot-rest sleeved to the outer or stable end of the main axle, the hinged tongue, the brace rigid with the said support and extending therefrom to the tongue, and a pendulum keeper upon the tongue in which the end of said brace plays. 29th. The supporting or frame-bar pivoted in front to the inner corner of the platform, and at its rear end taking into a keeper at the rear corner of the platform. 30th. The supporting bar pivoted to the inner corner of the platform, and at its rear end taking into a keeper at the rear corner of the platform, and bevelled at said end, as and for the purpose described. 31st. The dished main gear-wheel provided with a rim within the dish, to receive the ears of the swivelling member or combination of the tumbling-shaft, substantially as set forth. 32nd. The form thereof, and the prime pinion shaft, substantially as described. 33rd. The combination of the dished main wheel, the sleeved bracket and its radius-arm bent to conform to said dish, the prime-pinion shaft, the dished main gear and the tumbling-shaft attached thereto within the dish. 34th. The tongue-hound frame-bar and arm from the seat bracket, all connected to the draft-tongue by a single through-bolt, substantially as described.

No. 18,446. Burglar Alarm. (Alarme-voleur.)

Frederick D. Hill, New York, N. Y., U. S., 15th January, 1883; 5 years.

Claim.—1st. The combination, with an alarm gong, clock-work for sounding it, an escapement in the clock work and a jointed connection adapted to suspend the alarm upon a door knob, the portion above the joint being provided with a fixed catch, of a vertically sliding rod, a spring forcing said rod downward, a finger at its top to rest on said fixed catch, and a finger at the lower end adapted to hold the escapement, whereby the turning of the knob will disengage the catch from the upper finger, freeing the rod, releasing the escapement, and allowing the gong to be sounded, as described. 2nd. In a burglar alarm, the combination, with the suspending bar D F carrying the operating parts of the mechanism, of the forked arms E, G, substantially as herein shown and described, whereby the alarm can be readily secured to, and suspended from a door knob, as set forth. 3rd. In a burglar alarm, the combination, with the suspending bar D, F, the finger M and the fixed catch N, of the cap R, substantially as herein shown and described, whereby the said finger can be locked in place upon the said catch, as set forth.

No. 18,447. Electric Lamp and Switch.*(Lampe et commutateur Electriques.)*

Charles G. Perkins, New York, N. Y., U. S., 15th January, 1884; 5 years.

Claim.—1st. In combination with an electric incandescent lamp, a spiral spring mounted on the ends of the leading-in wires, the upper portion of the said spring fitting the said wires tightly, the lower portion thereof operating free from the end of the conductors, when brought in contact with the circuit connection of the switch box. 2nd. In combination with an electric incandescent lamp, the plaster of Paris disk c, provided with apertures, spiral springs e fastened to the ends of the conductors of the lamp, and plaster of Paris e. 3rd. In combination with an electric incandescent lamp and switch, the circuit connection composed of a series of metallic rings or plates insulated from each other by plaster of Paris, the whole forming one solid mass when mounted on the top of the switch box. 4th. In combination with an electric incandescent lamp and circuit-closing mechanism, an attachment made of glass provided with grooves having the circuit connections embedded therein, the line of the grooves corresponding with the sweep of the circuit-closing device engaging therewith, the angular metallic bar provided with an upright screw on the upper portion thereof, for holding the lamp in position and forming one of the circuit connections therefor, and the slot on the lower portion of said angular bar corresponding with the suitable mechanism, for holding it rigid therewith and forming one of the circuit connections of the lamp. 5th. In combination with an electric incandescent lamp and circuit-closing mechanism, the glass attachment h, provided with the grooves g, having the metallic wires 5, 6, 7, 8 embedded therein, the upright metallic screw i integral with the angular bar t and slot l, substantially as shown and described. 6th. In combination with an electric incandescent lamp and circuit-closing mechanism, a disk of fiber mounted with a metallic upright having a tightening screw or spring near the top thereof, for locking it with suitable mechanism, for holding it rigid thereto and for forming the circuit-connections of the lamp, the circuit-connection, consisting of a metallic spring or screw mounted on said disk diametrically opposite the metallic upright, the whole held rigid to the glass base by means of a metallic nipple passing up and through the glass base and fiber disk. 7th. In combination with an electric incandescent lamp and circuit-closing mechanism, the fiber disk v, metallic upright w, tightening screw x, metallic screw y and central threaded aperture of the aforesaid disk, substantially as shown and described. 8th. In combination with an electric incandescent lamp, a circuit-closer having one or more fingers all bent on the same circular alignment and forming a cylindrical shell, the whole mounted on suitable mechanism to be controlled thereby. 9th. In combination with an electric incandescent lamp, the circuit-closer m provided with the finger 9, 10, 11, 12, swivel sleeve n, notch n, spindles o, p, spindle head q, spiral spring Q, metallic sleeve r, stop collar t, spring 13 and handle s, substantially as shown and described. 10th. In combination with an electric incandescent lamp and circuit-closer, the metallic rings f, glass top A, screw nut n, metallic screw i, integral with the angular bar t, slot l, glass attachment h, grooves g and metallic wires 5, 6, 7, 8. 11th. In combination with an electric incandescent lamp, the glass cylinder B provided with apertures, metallic sleeve r, spindle p, stop-collar t, spring 13, spindle c, swivel-sleeve n, notch n, multiple circuit-closer m and spiral spring Q, substantially shown and described. 12th. In an electric incandescent lamp and circuit-closer, the combination, substantially as shown and described, of the fiber disk v, metallic upright w, tightening screw x, metallic screw y, metallic nipple w and glass base B.

No. 18,448. Revolving Show Stand.*(Montre à marchandises tournante.)*

Samuel T. Culp, Toronto, (Co-inventor with Thomas Tieknor, Arkona, Ont., 15th January, 1884; 5 years.

Claim.—1st. A cylindrical case supported by water or other fluid contained within a vessel, in combination with driving mechanism arranged to impart a rotary movement to the cylindrical case, substantially as and for the purpose specified. 2nd. A cylindrical case, having a cone-shaped bottom, designed to extend below the surface of the fluid supporting the said case and contained within a vessel, in combination with driving mechanism arranged to impart a rotary movement to the said case, substantially as and for the purposes specified. 3rd. A cylindrical case supported by water or other fluid and having a hole centrally located in its bottom, and a tube extending upwardly from the said hole, in combination with a tube surrounding a hole in the bottom of the vessel containing the water and extending upwardly into the tube attached to the cylindrical case to protect the spindle or the driving mechanism, substantially as and for the purpose specified. 4th. A cylindrical case supported by water or other fluid contained within a vessel, the said vessel having a tube

extending upwardly from, and enclosing a hole in its bottom, to protect the spindle of the driving mechanism, as specified, in combination with a head adjustably fitted to the spindle and flexibly connected to the tube which encircles the spindle's tube and is connected to the floating case, substantially as and for the purpose specified. 5th. The spindle G connected at its lower end with the clock movement H, and provided with the head I adjustably fitted on to the said spindle, in combination with the cords or wires J arranged to flexibly connect the head I to the floating cylindrical case B, substantially as and for the purpose specified.

No. 18,449. Mordant for Dyeing, &c.

(Mordant pour teindre, &c.)

Thomas S. Nowell, Boston, (assignee of Charles N. Waite, Medford.) Mass., U. S., 15th January, 1884; 5 years.

Claim.—As a mordant for dyer's use, a mixture consisting of four parts of lactic acid with one part of oxalic acid, substantially as set forth.

No. 18,450. Manufacture of Lactates and Lactic Acid. (Fabrication des lactates et de l'acide lactique.)

Thomas S. Nowell, (assignee of George A. Marsh, Littleton,) Mass., U. S., 15th January, 1884; 5 years.

Claim.—1st. The method of manufacturing lactic acid and the lactates by the fermentation of dextrin, or other gums of vegetable origin, isomeric therewith, in the presence of water, and of an active lactic ferment sufficiently charged with a substance to neutralize the acid and preventing agitation during the fermentation, substantially as set forth. 2nd. The method of forming lactic acid and the lactates by the fermentation of dextrin, or other gums of vegetable origin, having the same constitution, consisting in adding an active lactic ferment thereto, together with a substance to neutralize the lactic acid as fast as formed, in the presence of water at a temperature of about 104° to 113° Fahrenheit, maintained continuously, and preventing agitation during such fermentation until a crude neutral mass of lactate is thereby produced, substantially as set forth.

No. 18,451. Buck-Board Waggon.

(Wagon planche.)

John M. Mayer, Rondout, N. Y., U. S., 15th January, 1883; 5 years.

Claim.—1st. The combination, with a buck-board and the axle, of one or more braces fastened to the axle and jointed to the buck-board, and one or more springs connected to the axle and fastened to the buck-board, at some distance from the axle and upon the same side of the axle as the braces, as set forth. 2nd. The combination, with the buck-board A and the axle, of the U-shaped spring having its ends fastened to the buck-board and its round part to the axle, and one or more braces connected to the axle and jointed to the buck-board upon the same side of the axle with the U-shaped spring, substantially as and for the purpose described. 3rd. The combination, with the buck-board, of the axles E, E', the U-shaped springs F, F', and the braces G, G', substantially as and for the purpose described. 4th. The combination, with the bottom of a wagon body, the seat and the dasher, of a cast metal detachable railing C arranged between the seat and dasher, as and for the purpose described. 4th. The combination, with the buck-board, of the reinforcing transverse strips S and S' glued and bolted to the ends of the same, as and for the purpose described.

No. 18,452. Housing and Insulation of Electrical Wires Beneath the Surface of the Ground. (Conduit et insulation pour fils électriques souterrains.)

Charles C. Gilman, Eldon, Iowa, U.S., and William C. Evans, Montreal, Que., 15th January, 1884; 5 years.

Claim.—An underground insulating water-tight conduit composed of the described cellular terra cotta, saturated with asphaltum, enclosing and insulating one or more electrical conductors, as described.

No. 18,453. Rubber Boots and Shoes.

(Chaussures en caoutchouc.)

Frederick M. Shepard, East Orange, N.J., U.S., 16th January, 1883; 15 years.

Claim.—1st. An india rubber boot or shoe having the sole turned up over the upper, around the whole boot or shoe, forming a protector for the upper, substantially as described. 2nd. An india rubber boot or shoe having the sole turned up around the back and sides of the heel, substantially as described.

No. 18,454. Power Hammer.

(Marteau vertical.)

Alexander Beaudry, East Boston, Mass., U.S., 16th January, 1883; 5 years.

Claim.—1st. The combination, with the hammer head, the driving shaft, and a suitable frame supporting the same, of the rock shaft I, bar G, springs O, O and the bars or arms P, Q, connecting the rock shaft with the hammer head by a suitable connection. 2nd. The combination, with the hammer head and a suitable machine frame and the driving crank shaft, the rock shaft I, bar springs O, O, etc., the arms P, Q and an elastic connection between said arms and the hammer head. 3rd. Means for imparting rocking motion to the shaft I, consisting of the bar G secured at one end to such shaft, or an intermediate head or boss secured rigidly to such shaft, the pitman J pivoted to the opposite end of such bar and connected with the crank

by the driving-shaft, and the springs O, O, etc., interposed between the bar G and rock shaft; the said rock shaft being connected with, and operating the hammer head. 4th. The herein described means for connecting head E and beam H of a power hammer, consisting in arms P, Q, of the beam embracing opposite sides of such head, with the extremity of these arms connected by a flexible strap R, which extends through an eye S in the hammer head. 5th. The mechanism herein described for varying the effective stroke of the hammer head, the same consisting of the head a, pitman /, bar A, shipper b, pitman J, bar G and crank shaft L, arranged, connected and operating as hereinbefore described. 6th. The head H having its guides a, a, formed in halves, bolted together with the intermediate strips n, n, the grooves l, l and the V-shaped or approximately formed edges of the hammer head playing in side grooves, substantially as stated. 7th. The springs o, in combination with the bed D of the machine frame, and the hammer head E, substantially as explained. 8th. The means herein shown and described for determining the correct position of the anvil F, consisting of the V-shaped or approximately grooved abutment r, and the anvil with its rear edge formed to fit the groove of such abutment, substantially as explained. 9th. The crowing seat or bearing upon the head N, of the shaft I, in combination with the bar G and springs j, j, as and for the purposes stated. 10th. The arms P, Q, in combination with the shaft I and hammer head D, when such arms are connected with the hammer head by a flexible band at front, and at rear by an adjustable connection for tightening such band, substantially as explained. 11th. The pitman J, connected adjustably to the bar G, as and for the purposes stated. 12th. The shipper bar connected with the machine by compound leverage, bars C⁵, D⁵, E⁵ and their pivots a⁵, F⁵, G⁵, substantially as explained.

No. 18,455. Harvesting Machine.

(Moissonneuse.)

Hiram McCarthy, Mount Forest, Ont., 16th January, 1884; 5 years.

Claim.—1st. In combination with a harvester, a revolving reel having its beaters so connected that the diameter of the circle described by them may be readily increased or decreased without stopping the machine, substantially as and for the purpose specified. 2nd. In combination with a harvester, a reel formed by a series of beaters held parallel to the revolving shaft by lazy tongues, substantially as and for the purposes specified. 3rd. In combination with a harvester, a revolving reel, the end of its shaft being carried in front bearings attached to a plate, eccentrically pivoted on a standard in front of the finger-beam, substantially as and for the purpose specified. 4th. The revolving reel-shaft D supported at its inner end in a bearing E, and having fixed to its outer end a collar C with a correspondingly-shaped collar H, adjustably held on the said shaft by a feather key or its equivalent, in combination with a series of lazy tongues I connected at their inner ends to the collars G and H, and at their outer ends to their respective beaters J, substantially as and for the purpose specified.

No. 18,456. Device for Raising and Lining Tracks on Railroads. (Appareil pour soulever et repêrer les voies de fer.)

William R. Dickerson, North Bond, Neb., U.S., 16th January, 1883; 5 years.

Claim.—The herein described device for raising and lining railroad tracks consisting of toothed standard and base-block A, B, lever C fulcrumed to said standard, and having pivoted lifting-hook D in front of said standard, and pivoted pawl in rear thereof, and a small pivoted bell-crank lever F at its rear end, and the rod e, for connecting the lever F with the pawl E, substantially as specified.

No. 18,457. Telephone Receiver.

(Récepteur Téléphonique.)

Seth E. Beedy and John J. Linscott, Farmington, Me., U.S., 16th January, 1883; 5 years.

Claim.—1st. A telephone-receiver provided with a single diaphragm having one or more perforations as described, in combination with an adjustable soft-iron core having a concave or cup-shaped extremity next the diaphragm and a stem which passes through the extremity and into the permanent magnet as set forth. 2nd. In a telephone-receiver provided with a perforated diaphragm, the combination, with an adjustable permanent magnet adjustably secured to a telephone handle at one end, the opposite end being provided with a soft-iron core having a cup-shaped extremity, of the substantially as set forth to the permanent magnet and soft-iron core, substantially as set forth. 3rd. In a telephone-receiver having a diaphragm adjacent to, and larger than the opening or openings in the diaphragm, said core being secured to the permanent magnet and adjustable with relation to the diaphragm, substantially as set forth. 4th. The combination, with the permanent magnet and the soft-iron core, of the concave disk and perforated diaphragm as set forth. 5th. In a telephone-receiver having an adjustable permanent magnet, a cup-shaped detachable core adjustably secured to the permanent magnet, substantially as set forth.

No. 18,458. Electric Low-Water Indicator and Alarm for Steam Boilers. (Indicateur électrique à sonnerie du niveau d'eau pour les chaudières à vapeur.)

John E. Blake, (co-inventor with Charles A. Hall, Jersey, N.J., and Benjamin Blossom, Brooklyn, N.Y., U.S., 16th January, 1883; 5 years.

Claim.—1st. In an electric low-water indicator or alarm, the following elements in combination: a thermometer tube A with bulb a at its lower end, and a reservoir b at its upper end, with platinum wires B and C inserted through the sides of said tube, a reservoir D,

tube F connecting said reservoir with a steam-boiler, and air tube H within said tube F, a protecting tube K with an insulated cap L fitted in the upper end thereof, and a current wire h passing through said insulated cap and connected with the platinum wires B and C, and a galvanic battery and electric bell, all arranged and constructed as and for the purpose described. 2nd. In an electric low-water alarm, the combination of a gage-cock with the tube F, reservoir E and thermometer-tube A, as and for the purpose described. 3rd. In an electric low-water alarm, the combination of the gage-cock f and the pipe F, with a thermometer A, wires B and C inserted in the sides thereof, and a galvanic battery and alarm-bell, as and for the purpose described. 4th. In an electric low-water alarm, the thermometer tube thereof, in combination with a perforated guard D surrounding its bulb, and a reservoir b at its upper end, as and for the purpose described. 5th. In an electric low-water alarm, the combination of a tube K and an insulated cap L, with the wires h and B and C, a thermometer tube, the tube F and an electrical battery and alarm bell, as and for the purpose described. 6th. In an electric low-water alarm, the combination, with the tubes F and F_1 , of the water-gage N held between the ends of the tubes F and F_1 , a thermometer projecting upward from the tube F and held in a suitable casing, and wires for connecting the thermometer at different points with an alarm bell, as and for the purpose described.

No. 18,459. Automatic Magneto-Signalling Apparatus for Telephones. (Appareil automatique à magneto-signal pour les téléphones.)

William Painter and Louis R. Weizer, Baltimore, Ind., U.S., 16th January, 1884; 5 years.

Claim.—1st. In a magneto-call apparatus for telephone lines, the combination, with the telephone supporting device and the mechanism for generating the magneto impulse, of means, substantially as described, whereby the act of replacing the telephone on its support shall, without volition to that end on the part of the user, cause said mechanism to generate a magneto impulse and notify the central office that the line is no longer in use, as set forth. 2nd. In combination with a magneto-call apparatus, means, substantially as described, for storing a reserve force by the act of making a call or answering one, which force, upon being brought into action, generates a magneto impulse, as and for the purpose set forth. 3rd. In combination with the armature of a magneto-call, a spring arranged to be brought and held under tension by the act of making a call or answering one, and means, substantially as described, for releasing said spring by the replacing of the telephone, whereby the armature is given the necessary sudden movement, and the magneto signalling impulse is generated, as set forth. 4th. In a magneto-call apparatus, an armature mechanism, substantially as described, for revolving the same through the medium of a force which is stored in the act of making or answering a call, and a telephone supporting device adapted to arrest the movement of the revolving mechanism and to release the same, when the instrument is replaced, whereby a magneto-signal is automatically transmitted, as set forth. 5th. In a magneto-call apparatus, a crank shaft for actuating the call, and independent actuating mechanism, substantially as described, normally in engagement with said shaft, which, in the act of sending the call, is thrown out of engagement with the shaft, but falls into engagement again and revolves the shaft and armature, upon replacing the telephone, as set forth. 6th. In a magneto-call apparatus, independent mechanism for actuating the call, a reserve force is stored, in combination with a telephone supporting device, adapted to arrest the movement of the parts active in storing force, and to release the same in the act of, or incidental to replacing the telephone on its support, as set forth. 7th. In combination with a magneto-call apparatus, a spring actuated disk normally in engagement with the shaft for revolving the armature, which disk is carried in the act of sending the call and against the resistance of the spring to a position in which its motion is arrested, and its engagement with the armature moving mechanism is suspended pending the making of a call, a stop and releasing mechanism connected with the telephone supporting device, substantially as described, whereby, in the act of replacing the telephone on its support, the disk is released leaving the spring free to actuate the signal, as set forth. 8th. In a magneto-call apparatus, a crank-shaft for actuating the call, a toothed wheel secured thereto and a disk which supports a pawl normally in engagement with said wheel, whereby the shaft and disk are caused to revolve together, in combination with means for arresting the motion of the disk and for disengaging the pawl and mechanism for automatically moving the stop and releasing the disk, as set forth. 9th. In a magneto-call apparatus, a disk normally cooperating with the armature, in combination with the telephone supporting device constructed as described, whereby it is adapted to maintain engagement with said disk pending the removal of the telephone from its support, and only to release it when the instrument is finally replaced as set forth. 10th. In a magneto-call apparatus for telephone lines' mechanism, substantially as described, for automatically transmitting a signal by the release of a reserve force stored in the act of sending or answering a call, in combination with a shunt device constructed substantially as set forth, and adapted to cut out the armature coil while the apparatus is in its normal condition, to insert it into circuit while the call is being made, and to retain the connections in circuit until the automatic signalling impulse has been transmitted, as and for the purpose set forth.

No. 18,460. Lawn and Field Mower. (Fauçonne de jardin et de prairie.)

Henry D. Martin and David B. Dodge, Ypsilanti, Mich., U.S., 16th January, 1884; 15 years.

Claim.—The combination, in a lawn and field mower, of a rotating knife-wheel A, guard-teeth spindle L, collar e , the bed plate and adjusting screws passed through the table, all constructed and adapted to operate substantially as described.

No. 18,461. Manufacture of Lactic Acid and the Lactates. (Fabrication de l'acide lactique et des lactates.)

Thomas S. Nowell, Boston, (Assignee of George A. Marsh, Littleton, Mass., U.S., 16th January, 1884; 5 years.)

Claim.—The method of manufacturing lactic acid and the lactates by the fermentation of a starch containing vegetable substance in its original form, in the presence of water, and of an active lactic ferment sufficiently charged, a substance to neutralize the acid, substantially as set forth.

No. 18,462. Spike Extractor. (Arrache-clou.)

Phillip A. Hall, Chicago, Ill., (Assignee of John Ebbert, Rockaway Beach, N.Y.) U.S., 16th January, 1884; 5 years.

Claim.—1st. A spike extractor constructed with two undermeshing toothed sectors, connected at the angles by links or radius bars, to one of which sectors is connected a working lever and a pivoted hook or claw for engaging the spike, the whole adapted to be sustained by a suitable support, substantially as shown and described. 2nd. The combination of sector a having handle lever g and pivoted hook or claw h_1 , and the relatively stationary sector b connected to sector a by radius bars e , with the fulcrum shoe or support k secured to sector b , substantially as shown and described. 3rd. The combination, with sector a having handle lever g and pivoted hook or claw h_1 , and the sector b connected to sector a by the radius bar e , of the fulcrum rest or support k and the pivoted foot or rest m , substantially as shown and described. 4th. The combination, with the support k and the intermeshing sectors a , b and connecting radius bars e , the lever and claw h_1 , of the stop J on the sector a , substantially as shown and described. 5th. The combination, with the support k , the intermeshing sectors a , b , radius bars e , the lever g and hooks or claws h_1 , of the guards d and the sides of the sector teeth, substantially as shown and described. 6th. The claws h_1 made separate from, and adjustable upon the connecting bolt h_2 , substantially as and for the purposes set forth. 7th. The rocking sector a formed with the socket a_1 , for receiving the lever g , substantially as and for the purposes set forth. 8th. The combination, with sectors a , b and connection h_2 , of the pivoted jaws h_1 , substantially as and for the purposes described. 9th. The combination, with the sector a and screw-threaded connecting bolt h_2 , of the internally screw-threaded sleeve g_1 having the claws attached thereto, substantially as described. 10th. The combination, with the sector a , connecting bolt h_2 , sleeve j and pivoted claws h_1 formed with the stems h_3 , of the cam ring o placed upon the sleeve and adapted to act in conjunction with said stems, substantially as and for the purposes set forth. 11th. The claws h_1 formed with the stems h_3 and pivoted to the sleeve j , substantially as and for the purposes set forth.

No. 18,463. Machine for Pressing Cloth. (Machine à presser les draps.)

John Shearer, Preston, Ont., 16th January, 1884; 5 years.

Claim.—1st. A hollow bed-plate A heated by steam and resting on the collars a formed on the posts B, a hollow plate C heated by steam and resting on the shoulders b formed on the posts B, in combination with mechanism for intermittently bringing the plates together, and springs E on the posts B, arranged substantially as and for the purposes specified. 2nd. In a cloth-pressing machine, in which the cloth is pressed between hollow-plates heated by steam, automatic mechanism arranged to draw the cloth intermittently through the space between the hollow-plates, substantially as and for the purpose specified. 3rd. The hollow-plates A, C and D carried, as described, on the posts B and acted upon by the springs E, in combination with the jointed arms F connected, as described, to the bed plate A and acted upon by the cams H, substantially as and for the purpose specified. 4th. The hollow-plates A, C and D carried, as described, on the posts B and actuated by the arms F and cams H, in combination with the steam pipe W and drain pipe x connected to the hollow plates A, C and D by independent short-pipes provided with flexible joints, so that the plates A, C and D may be vertically adjusted. 5th. In a cloth-pressing machine, in which the cloth is pressed between hollow-plates heated by steam, a frame arranged to carry the cloth over a revolving damping brush and intermittently operated from the gearing of the machine, so that the cloth is raised clear of the damping brush, during the period that pressure is being exerted on the cloth between the plates, substantially as and for the purpose specified. 6th. In a cloth-pressing machine, the rollers T driven by mutilated gearing connected to the main gearing of the machine, in combination with the rollers U connected to the rollers T by the straps or cords V, substantially as and for the purpose specified. 7th. In a cloth-pressing machine, in which the cloth is subjected to pressure between plates heated by steam, the combination of a perforated pipe extending across and in front of the plates, when the cloth, after being pressed, leaves them, the said pipe being connected to a pressure fan for the purpose of forcing a current of cold air against the cloth at the point specified.

No. 18,464. Animal Trap. (Trappe à bête.)

James A. Williams, Fredonia, Texas, U.S., 16th January, 1884; 5 years.

Claim.—The combination of a suitable frame provided with standards, a fire-arm, the lever D having the rod connected to its front end to operate the trigger, a spring and a treadle which forms a trigger, substantially as shown and described.

No. 18,465. Miner's Safety Lamp. (Lampe de sûreté de mine.)

John L. Williams, Shenandoah, Penn., U.S., 16th January, 1884; 5 years.

Claim.—1st. The combination, with a lamp, of a sleeve or tube adapted to slide on the wick-tube, and a wire secured to the said

sleeve or tube and passing through the lamp from top to bottom, substantially as herein shown and described. 2nd. The combination, with a lamp having a recess in the bottom, of a sleeve or tube on the wick-tube, and a wire extending from the said tube into the recess, in the bottom of the lamp, substantially as herein shown and described. 3rd. The combination, with a miner's lamp, of the tube D extending from top to bottom, the wire D in the said tube, and the sleeve G secured to the upper end of the wire D, and adapted to slide on the wick-tube, substantially as herein shown and described. 4th. The combination, with a miner's lamp, of the tube D extending from top to bottom, the wire D in the said tube, the sleeve G secured on the upper end of the wire and of the wick-tube B, having a flange B₁, provided with a notch *a*, for the tube D, substantially as herein shown and described.

No. 18,466. Iron Kettle. (*Bouilloire.*)

Lewis R. Thomas, Biddeford, Me., U. S., 16th January, 1884; 5 years.

Claim.—The combination of the hereinbefore described kettle with a pot-hole of less diameter, the relation of the kettle flange to the stove-hole being such that the kettle is prevented from entering the hole, and at the same time provides a combustion chamber in the base of the kettle, above the surface of the stove, substantially as and for the purpose hereinbefore set forth.

No. 18,467. Apparatus for Warming Railway Cars and Buildings. (*Appareil de chauffage pour les chars de chemin de fer et les bâtiments.*)

John Q. C. Searle, Chicago, Ill., U. S., 16th January, 1884; 5 years.

Claim.—1st. The combination of fitting G, G₁, provided with diaphragms *g*, *g*₂ and orifices *g*₁, *g*₂, with the coil C and leading pipes D and E, and expansion chamber F₁ of a hot water warming apparatus for railway cars, when arranged and operating substantially as and for the purpose described. 2nd. The combination of fitting I, provided with a fixed diaphragm or tongue *i*, with the return pipes D₁ and E₁, and coil C of a hot water warming apparatus for railway cars, when arranged and operating substantially as and for the purpose described. 3rd. The combination of coil C, fittings G, G₁ and I, with the pipes D, D₁ and E, E₁, constituting the short and long circuits of a hot water warming apparatus for railway cars, when arranged and operating, substantially as and for the purpose described. 4th. In hot water warming apparatus for railway cars, the combination of a coil as C, with the short circuit pipes as D, D₁, and the long circuit pipes as E, E₁, and an expansion chamber as F₁, whereby two separate systems of circulation are maintained by one heating coil, when arranged and operating in the manner substantially as described. 5th. The combination of fitting G₁ provided with a diaphragm *g*₂ and orifice *g*₁, with the coil C, expansion chamber F₁, pipes E, E₁ and the customary heat radiators under the car seats, to form a single circuit for the hot water in the warming apparatus of railway cars, when arranged and operating in the manner substantially as described. In combination with the heating and circulating devices of hot water warming apparatus of a railway coach, the feed pump H and stop cock *h*₅, when arranged and operating substantially as and for the purpose described.

No. 18,468. Gold and Silver Amalgamator.

(*Amalgamateur de l'or et de l'argent.*)

Thomas Walker, Philadelphia, Penn., U. S., 16th January, 1884; 5 years.

Claim.—1st. In the amalgamation of metals, the process of treating the ore in a continuously moving mass with the vapours of the mercury or amalgamating agent, continuously vaporizing the latter in the body of the retort containing the ore being treated, continuously re-condensing the residuary surplus of vapor within the said retort, by means of the incoming mass of cool ore, before the latter reaches the point where it is heated and continuously passing the mass of tailings and amalgam out of the apparatus, whereby the operation may be carried on without interruption, substantially as described. 2nd. In an amalgamator, the combination of the retort C, ore hopper D set above, and feeding to the upper end of the same, the said retort being plain and free from obstructions within, to permit a continuous flow of ore down and through the retort, the lower part of the latter being set in a heat chamber or space, the upper part projecting up through the top of said heat chamber so as to remain cool, whereby the descending ore at and near the top of the retort will be cool, to condense the mercurial vapors, and will be gradually heated as it descends, whereby the mercury may be vaporized below, substantially as described. 3rd. In an amalgamator, the process of continuously feeding ore to the retort, the retort being kept constantly full with a moving mass of ore and continuously discharging the same from the latter, whereby the ore is kept in constant motion and vaporizing mercury in said retort to saturate the mass of ore to amalgamate the precious metals contained in the same and condensing the residuary vapor above by the cooling effect of the incoming mass of fresh ore, and preventing the escape of any vapors with the mass being discharged, by condensing the same in a cooling chamber P connected with the retort, substantially as described. 4th. In an amalgamator, the ore hopper D and mercury supply basin F, provided with an automatic regulating mercury feed mechanism F₁, G, L, H, to supply the desired quantity of mercury to the ore moving down in the retort C, substantially as described. 5th. In an amalgamator, the ore hopper D and mercury supply basin F, provided with an automatic regulating mercury feed mechanism F₁, G, L, H, to supply the desired quantity of mercury to the ore moving down in the retort C and tube K, in said hopper D, to carry the mercury to the moving mass of ore, substantially as described. 6th. In combination with an amalgamator having a hopper D and retort C, the valve E having a curved face, as shown, of the form of a longitudinal part of the convex surface of a hollow cylinder to cut through and regulate the supply of ore from the hopper set within a cylindrical enlargement or shell, between the hopper D and retort C, so that the valves, when open, will turn into said enlargement so as to offer no obstruction to

the moving mass of ore, substantially as described. 7th. In an amalgamator, the combination of the retort C and cooling chamber P, and located between the said retort and said chamber, the passageway or cylinder O₁ provided with the close fitting discharge screw S₁, to check the too rapid discharge of the heating ore into cooling chamber P, substantially as described. 8th. In an amalgamator, the combination of retort C and cooling chamber P, provided with stirring and delivering vanes T, T set at right angle, as shown, to drive the mass of ore to the outlet and, by separating and stirring the mass, bring all the particles into contact with the cooling walls, substantially as described.

No. 18,469. Iron Chain Ladder and Fire-Escape. (*Echelle et appareil de sauvetage en chaîne de fer.*)

Richard Christie, Truro, N. S., 16th January, 1884; 5 years.

Claim.—1st. In a fire-escape, the combination of the chains or cables A and the rounds B into a ladder to be used on buildings as a fire-escape, substantially as herein shown and described, and for the purpose set forth. 2nd. In a fire-escape, the combination, with the chain ladder A B, of the guide plate D, the car F, the rod or bar H connecting the plate D and the car, the pulley K and the rope or chain J, substantially as herein shown and described, and for the purpose set forth. 3rd. In a fire-escape, the combination, with the chain ladder A B, of the guide plate D, the car F, the rod or bar H connecting the plate D and the car, the pulley K, to rope or chain J, and the winch or analogous device L, substantially as herein shown and described, and for the purpose set forth. 4th. In a fire-escape, the combination, with the chain ladder A B, of the guide plate D, the car F connected therewith, the pulley K, the rope or chain J, the hinged platform N on the car, and the chains O, substantially as herein shown and described, and for the purpose set forth. 5th. In a fire-escape, the combination, with the chain ladder A B, of the guide plate D, the car F connected therewith, the pulley K, the rope or chain J, the hinged platform N on the car, the chains O and the pivoted frame P, substantially as herein shown and described, and for the purpose set forth. 6th. In a fire-escape, the combination, with the chain ladder A B, of the winch C, the car F, the pulley K, the rope or chain J and the winch L, substantially as herein shown and described and for the purpose set forth.

No. 18,470. Electric Safety Switch and Cut-Out. (*Commutateur et interrupteur électriques de sûreté.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In combination with controlling mechanism of an electric switch having four poles and automatic cut-out, the cylindrical box *a*, notch *g*, swivel pin *d*, spring blades *b*, *b*₁, *b*₂, *b*₃, screws *c*, *c*₁, *c*₂, *c*₃, clamping springs *e*, *e* and cut-out wires *z*, substantially as shown and described. 2nd. In combination with the circuit closer and breaker of an electric switch and automatic cut-out, the circular block *m*, flat spring *n* and projection *n*₁, in combination with the upright projection *n*₂, handle *o* and cover *k*, substantially as shown and described. 3rd. The combination, substantially as shown and described, the cylindrical box *a*, swivel pin *d*, spring blades *b*, *b*₁, *b*₂, *b*₃, screw *c*, *c*₁, *c*₂, *c*₃, clamping springs *e*, *e*, cut-out wire *z*, block *h*₁, aperture *h*, metallic plates *i*, *i*₁, *i*₂, *i*₃, circular block *m*, flat spring *n*, projection *n*₁, handle *o* and cover *k*, all forming a complete safety switch with four poles and automatic cut-out.

No. 18,471. Incandescent Electric Lamp for Electroliers. (*Lampe Electrique Incandescente pour les Electroliers.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In an incandescent lamp, having mineral wool held within the neck of the globe. 2nd. In combination with an electric incandescent lamp, the mineral wool *c*, discs *d*, *d*₁, plaster of Paris plug *e*, cylindrical metallic projection *f*, bevelled edges *f*₁, metallic screw *g* and the electrical conductors *i*, *i*₁, the whole arranged within the neck *b*, substantially as shown and described. 3rd. In combination with an electric incandescent lamp, the mineral wool *c*, discs *d*, *d*₁, plaster of Paris plug *e*, cylindrical metallic projection *f*, bevelled edge *f*₁, metallic screw *g* and the electrical conductors *i*, *i*₁, the whole arranged within the neck *b*, substantially as shown and described. 4th. In combination with an electric incandescent lamp, the case *k*, bevelled projections *h*, provided with a metallic sleeve *l*, and bead *m*, forming a part of the circuit connections of the lamp, substantially as shown and described. 5th. In combination with an incandescent lamp, the disc *n* fastened to the glass base *o*, the metallic sleeve *l*, straddle screw *n*₁ at fastened to said disc *n*, for holding metallic spring *o*, *p*, provided with depressions *o*₁, *p*₁, for holding the leading in wires into position and making a perfect electrical contact therewith, the upright *p* integral with the flat spring *p*, and having a depression near its upper end corresponding and engaging with the bead *m* of the metallic sleeve *l* mounted on the case *k*, substantially as shown and described.

No. 18,472. Apparatus for Treating Incandescents. (*Appareil de traitement des Incandescents.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In a device for producing hydro-carbon vapors from heavy oils, an oil reservoir A, with an extending pipe B, in combination with a glass tube D having thereon the enlargement F and W, soft rubber pouches L, K and the pipe I, connected with a pipe leading into a chamber, wherein carbon filaments are placed for final treatment, substantially as shown and described. 2nd. In a device for producing hydro-carbon vapors, an oil reservoir provided with an

extending pipe, in combination with a tube having globular enlargements connected with elastic pouches, and a pipe leading from one of the pouches and connected with a second pipe leading into a chamber, wherein carbon filaments are placed for final treatment.

No. 18,473. Apparatus for Treating Incandescents. (*Appareil de traitement des Incandescents.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In an apparatus for treating carbon filaments, consisting of the carbonizing box C provided with perforated plates D, metallic tube E, substantially as shown and described. 2nd. In combination with a carbonizing box for treating carbon filaments, the tube F, secondary tube H, bulb I, tubular extensions K and L, gas-jet M and tube N, substantially as shown and described. 3rd. In combination with an apparatus for treating carbon filaments, a carbonizing box provided with a metallic tube at its top, a perforated plate near its base and supporting a number of perforated carbonizing discs. 4th. In a carbonizing box provided with a tube leading to an oil feeding device, and a secondary tube connected with the aforesaid tube and extending therefrom to a bulb having a tubular extension and stop-cock on the base thereof, and a tubular extension on its top, with a gas-jet mounted on the end thereof and connecting with a gas pipe leading therefrom.

No. 18,474. Sealing Carbon-Holders in Incandescent Lamps. (*Fermeture Hermétique des Porte-charbons des Lampes Incandescentes.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In combination with an electric incandescent lamp, a clamping device or holder having its shank provided with a glass bead, which is also provided with an annular glass rim integral therewith, the whole sealed in the base of the vacuum chamber of the lamp, substantially as shown and described. 2nd. The method of preparing the carbon-holders for sealing in the base of the vacuum chamber, in an incandescent lamp, which consists, first, in forming a glass bead on and around the shank of the holders, and then forming an annular or glass rim upon the bead.

No. 18,475. Carbon-Holder for Incandescent Electric Lamps. (*Porte-charbon pour Lampes Electriques Incandescentes.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—In combination with an electric incandescent lamp, the carbon filaments having one of their ends held within the central cup *f* by means of carbon paste, the remaining held in a similar manner in separate cups *c*, all having their shanks sealed in the base of the globe, substantially as shown and described.

No. 18,476. Carbonizing Box. (*Boîte de Carbonisation.*)

Charles G. Perkins, New York, N. Y., U. S., 16th January, 1884; 5 years.

Claim.—1st. In combination with a carbonizing box, a tube made of any suitable material, provided with means for clearing its inlet to the carbonizing box. 2nd. In combination with a carbonizing box, the combination, substantially as shown and described, the tube *e*, rod *f* with spiral formation *g* on the end thereof, and the stuffing box on the outer end of said tube. 3rd. In combination with a carbonizing box and feeding tube, a glass globe provided with two projections, one of which is connected with the aforesaid feeding tube, the other connected with a tube leading to an ordinary device for generating hydro-carbon vapor. 4th. In a carbonizing device, the box *a*, projections *b*, carbonizing box *d*, rabbet *c*, tube *e*, rod *f*, spiral formation *g*, stuffing-box *h*, glass bulb *i* and gas generator or vaporizer, the whole forming a complete device.

No. 18,477. Incandescent Electric Lamp and Switch. (*Lampe Electrique Incandescente et Commutateur.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In an incandescent lamp with the neck of the globe having an aperture in the wall thereof, the conductors therein in contact with the circuit connections in the top of the switch box and held in a suitable position by the plaster of Paris filling in the neck. 2nd. The combination, substantially as shown and described, the conductors 1 and 2, screw nut E, plaster of Paris D, all of which are placed on the interior of the neck B of the globe A, and the opening C in the wall of said neck B through which the plaster of Paris D is poured. 3rd. In an electric incandescent lamp, switch box made of glass and divided into two apartments, the upper apartment provided with annular grooves, in combination with the lower apartment filled with plaster of Paris, *f* holding suitable means in position therein, which will make a perfect electrical contact with the switch mechanism of the upper apartment when mounted thereon. 4th. In an incandescent lamp, the glass switch box described, consisting of upper apartment F having annular grooves 3 and 4, lower apartment G with plaster of Paris D and enclosed circuit connections, substantially as set forth. 5th. The combination, substantially as shown and described, the plaster of Paris D, spring plates H, H₁, tap I, apartments F and G, in combination with an electric incandescent lamp. 6th. The metallic plates L, L₁, springs 5 and 6, glass apartments F and G, in combination with the conductors of an electric incan-

descent lamp, substantially as shown and described. 7th. The cut-out wire M, insulated tube N, metallic tube O, studs 8, in combination with plates L, L₁ and glass apartments F and G of a switch box, for an electrical incandescent lamp, substantially as shown and described. 8th. The combination of the upright screw P, metallic strips 9 and 10, extension 13, insulated plate R, metallic plate S, in combination with metallic plates L, L₁ of a switch box, for an electric incandescent lamp, substantially as shown and described. 9th. The metallic strip 14 with foot on the upper end thereof, in combination with a switch spring V, key T, metallic pin 17, jam nuts 22 and glass partitions F and G of a glass switch box, for an electric incandescent lamp, substantially as shown and described. 10th. In an electric incandescent lamp, the combination of the screw nut E held in position within the walls of the neck B by plaster of Paris D, and the conductors 1 and 2 held therein in the same manner, in combination with the upright screw P, strips 9, 10, extension 13, insulated plate R, metallic plate S, grooves 3 and 4, plates L, L₁, cut-out wire M, insulated tube N, metallic tube G, switch spring V, upright strip 14, pin 18, jam nuts 22, spring plates H, H₁, plaster of Paris D₁, tap I, glass apartments F G and hinge K, substantially as shown and described.

No. 18,478. Electric Safety Switch.

(*Commutateur Electrique de Sécurité.*)

Charles G. Perkins, New York, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In an automatic switch and cut-out, a circular spring having a radial extension provided with slits L, L₁, turned portions or catches M, M₁ engaging with suitable means for operating the same, substantially as shown and described. 2nd. In an automatic electric switch and cut-out, the electro-magnet B having a segment-shaped end on its core, one end of the segment made thick, the other comparatively thin, in combination with the armature E, arm F, sleeve G, notch H, spindle I and switch spring K, substantially as shown and described. 3rd. In an automatic electric switch and cut-out, the combination, substantially as shown and described, the spring S, indicator shaft I, sleeve G, arm F, armature E and electro-magnet. 4th. In an automatic electric switch and cut-out, the disc P, track Pr, steps R and R₁, metallic plate Q, in combination with the spring K, handle O and notch Or, substantially as shown and described. 5th. In an automatic electric switch and cut-out, the combination, substantially as shown and described, the switch box B, electro-magnet C, armature E, arm F, sleeve G, notch H, spindle I, switch spring K, slits L and L₁, catches M and M₁, switch handle O, notch Or, disc P, track Pr, metallic plate Q, projection R, depression R₁, spiral spring S, indicator shaft T, indicator U, scale W and opening, substantially as shown and described.

No. 18,479. Grate for Cellar Windows.

(*Grillage pour les Soupiraux.*)

Lewis N. Byar, Pottstown, Pa., U. S., 19th January, 1884; 5 years.

Claim.—1st. The combination of the outer grating and its frame A, with inner frames D and F, the former carrying a screen and the frame F being glazed, as set forth. 2nd. The combination of the frame A, the frame D and the frame F having pins *h* adapted to openings in the frames A and D, and serving to pivot both frames D and F to said frames A, as set forth.

No. 18,480. Barn Door Hanger and Rail Bracket. (*Penture de Panneaux de grange et Porte-Coulisse.*)

William Cronk, Havana, N. Y., U. S., 19th January, 1884; 5 years.

Claim.—1st. In a wrought-iron door hanger, the extension *d* of the strap *a*, in combination with the rail *c* and bracket *e*, having the arm *f* and key-hole *g* at its upper end, point *f* and shoulder *a* at its lower end, substantially as and for the purpose set forth. 2nd. In combination, bracket *e* having arm *f*, pointed stud *f* and shoulder *a*, and rail *c*, substantially as and for the purpose specified.

No. 18,481. Fanning Mill. (*Tarare-Cribleur.*)

William A. Bickford, Brantford, Ont., 19th January, 1884; 5 years.

Claim.—1st. In a fanning mill, the disk wheel F having the driving crank *a* placed at, or near the centre of the machine longitudinally, and communicating motion to the fan by means of the chain or band *t*, substantially as shown and described. 2nd. In a fanning mill, the connecting rod *f* connected with the disk *c* passing through, and guided by the keeper *g*, having one of its ends inwardly inclined and passing through the lug *h*, which is fixed to the shaker D, substantially as shown and described. 3rd. In a fanning mill, the disk wheel F, having the driving crank *a* attached to it, and provided with the curved or cam groove *i*, as shown and described. 4th. In a fanning mill, the pitman G provided with the pin *j* and the slot *k*, substantially as shown and described. 5th. In a fanning mill, the rock shaft H provided with the arms *l*, pivoted to the shaker E, and the hangers M supporting the lower end of the shaker, substantially as shown and described. 6th. In a fanning mill, the roller I provided with the rope *o* for controlling the wind-board J, having its edge next to the fan pivoted to the lining or frame work of the machine, and its opposite or rear edge supported by an eccentric wheel, as shown and specified. 7th. In a fanning mill, the combination of the wind-board J with the eccentric wheel *p*, the ratchet wheel *q* and pawl *a*, substantially as shown and described. 8th. In a fanning mill, the combination of the shaker E with the hangers *m* supporting its tail end, the rock shaft H and arms *l*, rigidly secured and described. 9th. In a fanning mill, the combination of the upper shaker D and lower shaker E, connecting rod *f* made to work through G, rock shaft H, arms *l* and hangers *m*, roller I and rope *o*, wind-board J, shaft K, with the eccentric wheel *p*, ratchet wheel *q* and hand wheel *r*, substantially as shown and described.

No. 18,482. Drawing Knife. (Plane.)

John S. Cantelo, Boston, Mass., U. S., 19th January, 1884; 5 years.

Claim.—1st. The furcated hinge piece *c* provided with the two shanks *i* extended from it, as represented. 2nd. The hinge piece *c* provided with the two shanks *i* projecting from it, as represented, in combination with the body of the handle, grooved lengthwise to receive the blade and having the said shanks extended through it, the said body, and arranged with the groove between them, substantially as set forth. 3rd. Each metallic ferrule or cap of the handle provided with holes for reception of the shanks *i*, and also with the lips to enter the groove of the body at one end thereof, substantially and for the purpose specified. 4th. Each blade arm pivoted to the handle and provided with means of locking the arm in different positions relatively to the handle, as set forth. 5th. Each blade arm provided with a prismatic head, as described, in combination with the locking eccentric applied to such handle and adapted to operate with the said head, essentially as set forth.

No. 18,483. Fastening for Gloves, &c.*(Agrafe pour Gants, &c.)*

William S. Richardson, Boston, Mass., U. S., 19th January, 1884; 5 years.

Claim.—1st. A member of the fastening device having the spring sides forming a socket, and a lateral or downwardly projecting fastening portion, all substantially as and for the purpose described. 2nd. A member of a fastening device having a ball or equivalent shaped end, and the arm *c* integral therewith, all substantially as and for the purposes described. 3rd. The socket member of a fastening device having yielding sides *a* shaped, substantially as described, to form a socket, the flange *c* and a tubular or pronged extension for fastening the socket member in place, upon the article with which it is used, all substantially as and for the purposes described. 4th. A fastening for gloves and other articles comprising two members, one of which is a socket member, having the yielding sides *a*, the flange *c*, the tubular or pronged fastening extension and the other of which is a member having a ball or other suitable equivalent shaped device adapted to be enclosed by, and removed from the socket and having an arm by which it is adapted to be secured in place, all substantially as and for the purposes described. 5th. The process of making the socket member of a fastening device consisting in forming from sheet-metal a blank having the wings *a*, then in sticking down the central portion of said blank to form a tubular or flanged fastening, then in bending upward and inward the wings *a*, to form the flange *c* and the yielding sides of the socket, all substantially as and for the purposes described. 6th. The process of making a ball member of a fastening, consisting in forming a blank from sheet metal having the ball-forming portion *e* and the arm *e*, second, in forming a ball upon the end of the arm by bending the wings of the portion *b* in suitable dies, respectively to the shapes shown in Figs 12, 13 and 14, and also in forming the arm *e*, all substantially as and for the purposes described.

No. 18,484. Sash Fastener. (Arrête-Croisette.)

Frederick Eberlein, Chicago, Ill., U. S., 21st January, 1884; 5 years.

Claim.—1st. In a sash lock, a spring-actuated bolt hinged upon the lower sash and provided with a handle at one end, and a bent arm at the other, in combination with the bevelled catches arranged in pairs upon the upper sash, substantially as and for the purpose set forth. 2nd. In a sash lock, the bolt *c* pivoted upon the lower sash and having a handle *h* on its lower end, and a bent arm at its upper end, the spring *f* and guard *g*, in combination with the bevelled catches *e*, *l*, *m*, secured in pairs upon the upper sash, substantially as and for the purpose set forth.

No. 18,485. Plastering Compound.*(Composition pour Crépir.)*

Hannah E. Soales, Newton, Mass., U. S., 21st January, 1884; 5 years.

Claim.—The compound herein described, for plastering or stucco work, consisting of rice flour, sand, salt or lime and plaster of Paris, mixed with weak glue and compounded together, in the proportions substantially as stated.

No. 18,486. Refrigerator Car.*(Char Frigorifique.)*

Cassius C. Palmer, Oakland, Cal., U. S., 21st January, 1884; 15 years.

Claim.—1st.—The process of refrigerating the air in a chill room, which consists of compressing air within one or more compressed air compartments, compressing a volatile fluid in a compressor driven by the compressed air, cooling the compressed fluid and expanding the same under a partial vacuum in a refrigerator, substantially as described. 2nd. The process of refrigerating the air of a chill room, which consists of compressing air within one or more compressed air compartments, compressing chloride of ethyl in a compressor driven by the compressed air, cooling the compressed chloride of ethyl and expanding the same under a partial vacuum, substantially as described. 3rd. The method or process, substantially as described, of cooling air, which consists in compressing chloride of ethyl, condensing it by cooling, volatilizing it in a chamber of sufficient sectional area, wherein to deposit its crystals without obstructing the passage of the gas, and conducting the volatilized fluid through constructed passages adjoining which the air circulates. 4th. The method of driving an engine located upon a car, which consists in compressing and storing a gas by means of a pump operated by the motion of the car, and utilizing the gas for operating the engine, substantially as described. 5th. The method of cooling a refrigerator located upon a car, which consists in compressing and storing a gas by means of a pump operated by the motion of the car, and utilizing this gas for operating an engine to compress a volatile fluid, which is first compressed then passed through a condenser where it is cooled, and then expanded in the refrigerator, substantially as

described. 6th. The herein described method of cooling the air in a chill room, which employs two bodies of gas, the first of which is compressed and employed to drive the engine in which the second is compressed, and the second, after being compressed by the power of the first, being cooled in a condenser and then being expanded to produce the requisite cold in the refrigerator. 7th. The herein described method of cooling the air of a chill room, which employs two bodies of gas, one of which as air is less easily compressed than the other, as chloride of ethyl, the first of these bodies of gas being compressed and employed to drive the engine in which the second body of gas is compressed, and the second body of gas being expanded in the refrigerator for producing the requisite cold therein. 8th. The combination, substantially as described, with a railroad car, of an air compressor located on the car and operated by the motion thereof, and one or more compressed air storage compartments wherein compressed air may be stored to be used for driving apparatus located in the car. 9th. A refrigerator car divided into a compartment for containing the articles to be refrigerated, a compartment containing the air compressing and gas compressing engines, a compartment containing the condenser and a compartment containing the refrigerator, the last three being all arranged in a group and combined substantially as described. 10th. In combination, the chill room containing inlet and outlet air openings, the air circulating fan blower, the refrigerator arranged in the path of the current of air produced by the fan blower, the condenser, the gas compressor operated by compressed air, the compressed air storage compartment and the air compressor, substantially as described. 11th. In combination the mechanism, substantially as described, whereby the prime gas compressing pump is operated by the motion of the car, the prime gas compressing pump, the storage compartment, the pump wherein the gas used for cooling is compressed, the condenser, the refrigerator and the chill room. 12th. In combination with the gas compressor and condenser, the refrigerator constructed with the horizontal pipe or pipes *31*, and the branch pipes *32* leading upward therefrom, whereby its extended surface is exposed for the escape of the gas from the liquefied fluid, as set forth. 13th. The combination, substantially as described, with a railroad car, of a condenser, a refrigerator and a gas compressing engine connected with one or more compressed air storage compartments, wherein is stored a body of compressed air for driving the gas compressing engine, the body of compressed air having no communication with the gas which is compressed. 14th. In combination with the chill room and the gas compressing engine, a pipe leading from the expansion cylinder of said engine to said chill room, whereby the expanded air from the cylinder is conveyed to said chill room, to supply leakage and prevent the entrance of dust or warm air into the chill room, substantially as described. 15th. In combination with the car, the refrigerator and condenser arranged relatively to each other, substantially as described, so that the bottom of the condenser is above the level of the bottom of the refrigerator, whereby the liquefied gas will be prevented from collecting in any portion of the apparatus below the refrigerator. 16th. In combination with the gas compressing engine and the passage or pipe for conveying the compressed gas to the refrigerator, the said refrigerator containing gas passages in contact with the exterior of which the air of the chill room circulates, and provided with a passage or passages, substantially as described, of large area relatively to the supply passage, wherein the gas may expand and the obstructions of its passage be avoided. 17th. In combination, the air compressing pump, the gas compressing engine and suitable passages connecting the suction pipe of the air compressing pump, with the escape pipe of the expansion cylinder of the gas compressing engine, and other passage connecting the escape pipe of the air compressing pump with the induction pipe of the expansion cylinder of the gas compressing engine, whereby the same supply of air is used over and over again. 18th. In combination with the air compressing engine located upon a car, the casing surrounding the cylinder of the same and forming an air jacket, which is connected by air ducts with the exterior atmosphere, whereby the motion of the car causes a circulation of air within said casing and around the compression cylinder, substantially as described. 19th. In combination with the compression cylinder, the absorbent covering *7*, and the water tank from which water is supplied to the covering through the pipe *71*, substantially as described. 20th. In combination with a suitable compression cylinder, the absorbent covering *7*, the casing *f*, a suitable pipe for supplying the covering with moisture, and a suitable air duct for causing a current of air to circulate within the casing, substantially as described. 21st. In combination with the car body, the condenser located upon the car for cooling the compressed fluid, the water tank located at the top of the car and a suitable pipe for conveying the water from the tank and distributing it upon the condenser, substantially as described. 22nd. In combination with a car, inlet and outlet air openings connected with said enclosure, substantially as described, whereby the motion of the car causes a current of air to flow in contact with said condenser, substantially as described. 23rd. In combination with the condenser arranged upon a car, an absorbent covering in contact with said condenser, water pipes for conveying water from a suitable source of supply to said absorbent covering, and the ducts, arranged substantially as described, whereby the motion of the car induces a current of air to pass in contact with said covering. 24th. In combination with the condenser and the gas compressing engine located on a car, a pipe leading from the expansion cylinder of the engine to the condenser, whereby the cooled expanded air is brought into contact with the condenser, to cool the same, substantially as described. 25th. In combination with a suitable car, the air compressor, the compressed air storage compartment, the gas compressor, the condenser, the refrigerator and the chill room all arranged and located on the car, substantially as described. 26th. In combination with the cylinders 16 and 17, the compartment 22 connected with the cylinder 17 and surrounding with cylinder 16, substantially as described. 27th. In combination with the cylinders 16 and 17, the air passages 20 and 21 connected with the cylinder 16, and arranged with reference to the cylinder 17, substantially as described. 28th. In combination with the air cylinder 16, the gas compressing cylinder 17 constructed shorter than the cylinder 16, the pistons of the two cylinders being connected by suitable mechanism, whereby the expansion of the air in cylinder 16 compresses the gas in cylinder 17, as and for the purpose set forth. 29th.

In combination, the pulley connected with the axle of the car, the belt connecting said pulley with the air compressor, the air compressor and the compressed air storage compartment, substantially as described. 30th. In combination, the pulley connected with the axle of the car, the belt, whereby the motion of said pulley is communicated to apparatus on the car, reciprocating friction rollers bearing against said belt, and mechanism, substantially as described, whereby said rollers are caused to approach each other and exert a yielding pressure upon said belt, for the purpose set forth. 31st. In combination, the pulley connected with the car axle, the pulley whereby the motion of said belt is communicated to apparatus on the car, a reciprocating friction roller bearing against said belt and adjustable bearings, whereby said roller may automatically incline to adjust itself to the varying inclinations of the belt, substantially as described. 32nd. In combination with the pulley upon the car axle, the casing 15 secured to the spring timber *m* of the truck, substantially as described. 33rd. In combination with the pulley upon the car axle, the casing inclosing the same, and the flexible apron *n* connecting with the car body, substantially as described. 34th. In combination with the pulley connected with the car axle, and the belt connecting the same with apparatus located on the car, the friction rollers 12, 12 mounted on the guide 13, and the spring, whereby the rollers are caused to exert a yielding pressure against the belt, substantially as described. 35th. In combination with the pulley connected with the car axle, and the belt for driving apparatus on the car from the same, a friction roller arranged to be pressed against the belt by the yielding pressure of a spring, and the weighted lever 14 to which the spring is connected, whereby the belt can be released from the pressure of the spring by raising the lever whenever it is desired to stop the operation of the apparatus. 36th. In combination, the chamber surrounding the condenser, the air compressing pump having its suction pipe connected with said chamber, and the expansion cylinder of the gas compressing engine having its escape pipe also connected with said chamber, whereby the air is taken from one part of said chamber and after being compressed and expanded, is delivered into another part of said chamber, substantially as described. 37th. In combination with the compressing pump operated, substantially as described, by the motion of the car, the suction pipe provided with the cut-off valve *J*, whereby the compressing pump may cease compressing when the pressure produced has reached a predetermined intensity, substantially as described. 38th. The combination, with the gas compressing engine and supply pipe leading thereto, the pressure-regulating valve *K* and the reservoir *C* interposed between the valve *K* and the gas compressing engine, substantially as described. 39th. The combination of the fan blower with the compressing apparatus and suitable connections, whereby the operation of the compressing apparatus operates the fan blower, substantially as described.

No. 18,487. Folding Ladder. (*Echelle brisée.*)

John K. Landes, Caledonia, Ohio, U. S., 21st January, 1884; 5 years.

Claim.—1st. A ladder made substantially as herein shown and described, and consisting of a series of sections pivoted to each other by the rungs, which sections are provided with spring latches for locking them together automatically, as set forth. 2nd. A ladder composed of sections pivoted to each other by rungs, which sections are rabbeted on the outer surface at the upper end, and on the inner surface at the lower end, substantially as herein shown and described for the purpose set forth. 3rd. A ladder composed of a series of sections pivoted to each other by the rungs, which sections are rabbeted at the upper end on the outer surface, and at the lower end on the inner surface, the lower ends of the sections being tapered and rounded, substantially as herein shown and described, and for the purpose set forth. 4th. In a ladder, the combination, with a series of sections *A* provided at the lower end with a notch *D*, of the rungs *B* pivoting the sections to each other, and the springs *C* attached to the upper ends of the sections, substantially as herein shown and described and for the purpose set forth.

No. 18,488. Dynamo-Electric Machine. (*Machine Dynamo-Electrique.*)

Elihu Thomson, New Britain, Ct., U. S., 21st January, 1884; 5 years.

Claim.—1st. The combination, with a dynamo-electric machine, of a condenser, the separate foils or surfaces of which are continuously connected to separate segments of the commutator. 2nd. The combination with a dynamo-electric machine, of a condenser mounted upon the armature shaft, and connected to the commutator segments, in the manner described. 3rd. As a spark-absorber in a dynamo-electric machine, a set of condensing surfaces in continuous connection with terminals of the armature coils, and commutator segments attached to said terminals respectively. 4th. The combination, in a dynamo-electric machine, of an armature having three coils united in a common joint or electrical connection *J*, a three segment commutator connected, and a condenser connected to the segments, in the manner described. 5th. The combination, with a dynamo-electric machine, of a condenser consisting of a number of pairs or sets of condensing surfaces or plates connected, in the manner described, to the segments of the primary or main commutator, and to the segments of a secondary or supplemental commutator. 6th. The combination, with a three coil armature, of a primary or main three segment commutator, a secondary three segment commutator, a pair of condensing surfaces or plates inductively uniting the corresponding segments of the two commutators, and electrical connections substantially as described. 7th. In a dynamo-electric machine, the combination, inductively uniting through the plates or foils of a condenser, and arranged with relation to one another so that their segments shall leave their brushes, the segments of one commutator slightly in advance of those of the other. 8th. The combination, with a dynamo-electric machine, of a condenser, the separate foils or surfaces of which are in continuous electrical connection with the separate terminals of the armature, as and for the purpose described.

No. 18,489. Plough. (*Charrue.*)

Frank Chevalier, Lexington, Ky., U. S., 21st January, 1884; 5 years.

Claim.—In a plow, the combination of the mould-board having its upper portion divided into fingers or prongs and provided with flange *D*, with the share *C* which is attached thereto, and the brace *G*, having the upturned arm *I*, one end of the brace being secured to the land-side, the other to the mould-board, substantially as shown and described.

No. 18,490. Machine for Widening Channels through Snow-Drifts on Railways. (*Machine pour élargir les voies à travers les Bancs de Neige sur les Chemins de fer.*)

John L. Baker, Toronto, Ont., 21st January, 1884; 5 years.

Claim.—1st. The constructing of the platform or frame of a car with a recess, or the altering of a car so as to form a recess, for the reception of the plow when not in use, for the purposes hereinbefore set forth. 2nd. The plow-board, as herein described and for the purposes hereinbefore set forth. 3rd. The upright knife attached to the outer front corner of plow-board, as herein described and for the purposes set forth.

No. 18,491. Underground Conduit. (*Conduit Souterrain.*)

Joseph S. Du Bois, Camden, N. J., U. S., 21st January, 1884; 5 years.

Claim.—1st. An underground conduit consisting of frames having supports for the wires surrounded with brick work or cement, in combination with sheet metal pocket sections, having their ends bent down, and clamping plates to clamp said pocket sections end to end, substantially as and for the purpose specified. 2nd. An underground conduit for electric wires provided with frames *A* having arms *C*, in combination with pocket sections *H*, clamping plates *E* and bolts *G*, substantially as and for the purpose specified. 3rd. The frame *A*, in combination with pocket sections *H* having bent ends *I*, and clamping plates to clamp said sections together, substantially as and for the purpose specified. 4th. An underground conduit for electric wires provided with a railway, in combination with a motor or carriage *J* provided with an adjustable arm, immovable when once set, and adapted to be supported wholly by the motor, above any desired layer of pockets or wire supports, substantially as and for the purpose specified. 5th. An underground conduit for electric wire provided with a railway, in combination with a motor or carriage *J* provided with an adjustable arm furnished with wheels *R* on its ends, adapted to be supported above any desired layer of pockets or wire supports, substantially as and for the purpose specified. 6th. In an underground conduit for electric wires, a railway, in combination with a railway carriage or motor *J*, supports *K* having slots *L*, arm *M* and means to clamp said rod in any position on said supports, substantially as and for the purpose specified.

No. 18,492. Mining Machine. (*Machine pour Miner.*)

William Hilton, Du Bois, Cal., U. S., 21st January, 1884; 5 years.

Claim.—1st. In a coal-mining machine, a revolving cutter-bar carrying a cutter or cutters adapted to cut laterally and longitudinally, mounted in fixed bearings in a frame, which carries the driving mechanism and which is adapted to be adjusted vertically, a main-frame which carries the vertically-adjustable frame, and mechanism connected with the driving mechanism on the main frame, whereby the whole is moved laterally, as set forth. 2nd. The combination of the outer and inner frames, the rods *k* meshing into gears on the axle *a* by means of worm gears on their lower ends, and the pinions 9 splined to said rods and adapted to be thrown into, or out of connection with the gear-wheel 8 on the driving-shaft *B*, whereby, when one of said gears is in connection with said wheel 8, the rod to which the pinion is connected is revolved and, through the means described, gives corresponding movement to the axles to move the machine laterally, as set forth.

No. 18,493. Wrench. (*Clé à Erou.*)

John Lee, Mansfield, Ohio, U. S., 21st January, 1884; 5 years.

Claim.—1st. In a wrench, the combination, with the stem or shank having a fixed jaw of the sliding jaw *D* having bevelled recess *H*, and screw *K* provided with handle *L* and annular groove *M*, and the wedge *I* having claws *N*, as and for the purpose set forth. 2nd. In a wrench, the combination, with the sliding jaw *D* having bevelled recess *H*, of the wedge *I* having claws *N*, the screw *K* having annular groove *M*, and handle *L* provided with thumb-piece *Q* and recess *P*, and the spring *O*, as and for the purpose set forth.

No. 18,494. Railroad Safety Switch Stand. (*Bâti à Aiguille de Sécurité de Railroute.*)

The Railway Specialty Manufacturing Company, (Assignee of G. W. Horne.) New York, N. Y., U. S., 21st January, 1884; 5 years.

Claim.—1st. In a railroad switch stand, the lever fulcrum, in combination with a spring and with detents, whereby when the lever is locked, the fulcrum is free to yield, and when the lever is unlocked the fulcrum is fixed, substantially as described. 2nd. In a railroad switch stand, the moving fulcrum block *D* with the lever *C* pivoted thereto, and also connected with the safety spring *E*, substantially as described. 3rd. In a railroad switch stand, the pivoted locking arm *F* provided with projections *e*, *e* and detents, in combination with the lever *C* and the moving fulcrum block *D*, substantially as and for the purpose specified. 4th. In a railroad switch stand, the combination of a moving fulcrum block *D* and lever *C* pivoted thereto, the arch frame *B* with a device on it for locking lever *C*, and the locking arm *F* with its recesses *e*, *e* for the lever *C*, and with projections or detents

el, el, for embracing the ends of fulcrum block D and securely retaining it in such position until released, all to operate automatically, substantially as and for the purpose specified.

No. 18,495. Railroad Switch.

(*Aiguille de Railroute.*)

The Standard Switch Company, (Assignee of Edward J. Beard and Howard V. Hinckley,) Topeka, Kas., U.S., 21st January, 1884; 15 years.

Claim.—1st. In a railroad switch stand, the depending flange F combined and arranged with the shaft O H, crank K L M, connecting rod X united to the switch rail by means of the pin Y and the bridge bar Z, substantially as and for the purpose hereinbefore described, so that the line of travel of the axis of the connecting pin Y, when produced, shall bisect a horizontal line drawn from the axis of the shaft G H, the axis of the depending portion L of the crank, when set in the centre one of its three working positions. 2nd. The combination of the shaft G H with the crank K L M, and the stand casting E with its projecting flange I, substantially as and for the purpose hereinbefore set forth. 3rd. The connecting rod X with the eye of its crank end slotted at A¹ and connected with the switch rail by means of the pin Y on the bridge bar Z, the end of the rod extending beyond the pin Y and passing under the head of the switch rail Br, as and for the purpose hereinbefore set forth. 4th. The perforated lug U in combination with the hand section R of the lever R Q, the pivot V and the upturned bifurcations F of the shoulder section Q, substantially as and for the purpose hereinbefore set forth. 5th. The vertical pivot pin Y on the bridge bar Z, in combination with the connecting rod X and switch rail Br, substantially as and for the purpose hereinbefore set forth. 6th. The combination of the switch stand E, shaft G H, crank K L M, connecting rod X and switch rail Br, all constructed and arranged, substantially as and for the purpose hereinbefore set forth.

No. 18,496. Hydro-Carbon Generator and Process for Mixing Hydro-Carbon Vapour and Superheated Steam. (*Générateur à Hydrocarbure et Procédé pour mêler la vapeur d'hydrocarbure et la vapeur surchauffée.*)

Richard B. Avary, Washington, D.C., and Dewitt Stearns, Albuquerque, N. M., 21st January, 1884; 5 years.

Claim.—1st. The above described process of mixing hydro-carbon vapours with superheated steam and jets of air preparatory to ignition, and then burning said mixture in connection with a regenerator of heated solid matter, substantially as and for the purposes set forth. 2nd. The combination of a hydro-carbon vapour pipe or generator and a superheated steam pipe, for the purpose of mixing said vapour and steam preparatory to ignition, substantially as set forth. 3rd. In blast furnaces, two or more base channels, from the outer to the interior of the furnace walls, containing a net work of corrugated columns or fire-brick, to aid and assist in the combustion of the vapour, superheated steam and air either separate or in combination, substantially as set forth. 4th. The combination of the regenerator L with the pipe, for supplying the mixture of superheated steam and hydro-carbon vapour, substantially as set forth. 5th. In devices for generating hydro-carbon vapours and gas, the combination, with a superheated steam pipe, of an oil pipe arranged therein and delivering thereto, said oil pipe provided with a series of perforated diaphragms, substantially as and for the purpose specified. 6th. In a device for generating hydro-carbon vapours and gas, the combination with a superheated steam pipe, of an oil pipe arranged therein and delivering thereto, said oil pipe having a series of perforated diaphragms of gradually decreasing mesh, substantially as and for the purpose specified. 7th. In a device for generating hydro-carbon vapours and gas, the combination of a superheated steam pipe having one or more perforated diaphragms, and an oil pipe delivering into the superheated steam pipe, said oil pipe also provided with one or more perforated diaphragms, substantially as and for the purposes specified. 8th. In a device for generating hydro-carbon vapours and gas, the combination, with a superheated steam pipe having a series of perforated diaphragms of gradually decreasing mesh, substantially as and for the purposes specified. 9th. In a device for generating hydro-carbon vapours and gas, the combination, with a superheated steam pipe having one or more perforated diaphragms, of an oil pipe arranged within, and delivering into the superheated steam pipe, substantially as and for the purposes specified. 10th. In a device for generating hydro-carbon vapours and gas, the combination, with a superheated steam pipe, of an oil pipe arranged within, and delivering into the superheated steam pipe, and a branch pipe, which connects the superheated steam pipe with the oil pipe, substantially as and for the purposes specified. 11th. The combination, with a burner for hydro-carbon vapours and gas, of an air blast nozzle having a series of perforations or a gauze diaphragm, which divides the air blast into a series of fine jets, substantially as and for the purposes specified.

No. 18,497. Explosive Compound.

(*Composition Explosible.*)

The Rend Rock Powder Company, New Jersey, (Assignee of Silas R. Divine, Lock Sheldrake, N. Y.,) U. S., 21st January, 1884; 5 years.

Claim.—The herein described explosive compound composed of a solid ingredient consisting of chlorate of potash or its equivalent, and a liquid ingredient consisting of a fluid mixture of "dead-oil" or nitro-benzole, or their stated equivalents, or both, and nitro-glycerine, substantially in the proportions set forth, the said solid and liquid ingredients being mechanically united in the proportions named, as and for the purpose specified.

No. 18,498. Telephone Transmitter.

(*Transmetteur de Téléphone.*)

Seth E. Beedy and John J. Linscott, Farmington, Me., U. S., 21st January, 1884; 5 years.

Claim.—1st. The combination, with the wooden or metallic diaphragm, of the two carbons, one mounted upon the central part thereof, and another supported by an arm G attached to the box, said arm having a bent end d, and a set screw H bearing against the end d, whereby the said carbon may be adjusted towards the diaphragm, substantially as described. 2nd. The combination, with the hinged door carrying the mouth piece, of the separate diaphragm covering the whole face of the box, the carbon mounted thereon, the second carbon mounted on a spring arm, and a set screw bearing against the bent end of said arm, substantially as and for the purpose set forth.

No. 18,499. Car Axle Lubricator.

(*Boîte à Graisse de Char.*)

Thomas R. Gordon, Brooklyn, N. Y., (Assignee of Lyman D. Howard and Albert Chance, Philadelphia, Penn.,) U.S., 21st January, 1884; 5 years.

Claim.—In a lubricator for car axles, the combination of an open frame composed of end pieces united by traverses, and provided with depending lugs, a coiled spring having its upper coil attached to said lugs, and a wiper roller journaled in said lugs, substantially as and for the purpose set forth.

No. 18,500. Sewing Machine.

(*Machine à Coudre.*)

The Williams Manufacturing Company, (Assignee of Charles W. Davis,) Montreal, Que., 21st January, 1884; 5 years.

Claim.—1st. In a sewing machine, the combination of the shuttle lever and push rod, and the pivoted lever K, operated independently from the driving shaft and connected to the push rod. 2nd. The combination of the driving shaft and the pendent lever G, with the incline H and the sliding bar O. 3rd. The combination of the pendent lever, the incline H, having the pin, the bar O, the arm P and the screw Q. 4th. The combination of the pendent lever G, having the friction roller, the incline H and the lever K, having roller K, with peripheral grooves. 5th. The combination, with the lever K, with the pendent lever and connecting devices for giving said lever a horizontal oscillating movement, of the slotted link M, the set screw and the vertical bolt F. 6th. The combination, in a sewing machine, of the reciprocating lever G, operated from the driving shaft and provided, at its lower end, with roller g², working on inclined plane H, with the horizontal vibrating lever K, mounted on the same axis as shuttle lever D, and provided with grooved roller k, impinging on vertical lever G, at back end, and attached to adjustable link M, connecting with feed devices at front end, said lever K being controlled by roller support L and acted upon by push spring N, the whole being capable of adjustment to regulate length of stitch by means of shaft O, operated through arm P, by regulating screw Q, substantially as described. 7th. The self-threading device R R², formed of one piece of metal, of substantially the shape shewn, in combination with the take-up lever S.

No. 18,501. Smoke Consumer for Locomotives, and Stationary Boilers and Engines. (*Appareil Fumivore pour les Locomotives, et les Chaudières et machines fixes.*)

Henry A. Spear, Charlestown, Albion P. Wight, jr., North Adams, and Frank Brownell, Boston, Mass., U. S., 21st January, 1884; 5 years.

Claim.—1st. In combination with a boiler, the convex or bell front A, its damper B and means for operating the same, and the pipe D connecting the chamber ar, formed by the front, with the fire-box or ash-pan, as and for the purpose described. 2nd. In combination with the bell front A and with its damper B, and rod C for operating the fan blowers E and F, and their pipes G¹ and G², leading to the ash pan, all as and for the purpose set forth. 3rd. In combination with the blowers E, F, pipes G¹ and G², and the ash pan, the slide bottom of such pan arranged to be operated by a system of levers L, as set forth. 4th. The described method of and means for introducing a jet of steam into the return pipe to mingle with the smoke and superheat it, for the purposes described, said means consisting of a pipe L leading from the boiler to a pipe D, which leads from the front of the boiler to the ash pan or fire pot. 5th. The exhaust pipe C, as described, extending from the base of the exhaust T, or within the smoke stack, for the purpose set forth. 6th. The perforated air pipe 9 around the inside of the door, through which cool air is supplied to the fire, and through which pipe air is forced, for the purpose set forth, combined with a blower pipe G and a steam actuated blower. 7th. In a locomotive, stationary engine or boiler, the grate 18 made as described, that is, inclining at both of its sides away from the pipe of the fire box, and admitting the air through such sides, for the purpose set forth. 8th. The double arch in the fire box, consisting of the two overlapping arches or parts 15, 16, placed at the back and front end of the box, and with a space or passage between them, and without the hollow stay bolts in this space, all as set forth.

No. 18,502. Skate. (*Patin.*)

George R. Marble, Boston, (Assignee of John A. Dodge, Somerville,) Mass., U. S., 21st January, 1884; 5 years.

Claim.—1st. In combination with a skate runner having a heel plate B, heel clamp C and a screw-threaded bar g, the screw nut a connected to said heel clamp for operation, substantially as described. 2nd. In combination with a skate runner, slide clamping jaws F and G, arranged one in advance of the other, to slide across the skate runner, and each provided with a pin y to engage with circular cam slots w, z,

of a rotating disk N, substantially as and for the purpose described. 3rd. In combination with a skate runner, side clamping jaws F and G, arranged to slide across the skate runner and each provided with a pin *v*, to engage with circular cam slots of a rotating disk H, which pins are placed one in advance of the other, substantially as and for the purpose described. 4th. In combination with a skate runner, side clamping jaws F and G, arranged one in advance of the other and to slide across the skate runner, and each provided with a pin *y* to engage circular cam slots *w*, *x*, of a rotating disk A, which pins are also placed one in advance of the other, substantially as and for the purpose described. 5th. In combination with a skate runner provided with side clamping jaws F and G, arranged to slide across the skate runner and operated upon by cam slots in a rotating disk of a removable lever *k*, arranged to be connected with, and to operate said rotating disk, substantially as described. 6th. In combination with a skate runner, of the detachable lever K, square headed and angularly arranged centre pin *o*, rotating disk H and side clamping jaws F, G, said lever being provided with holes *g* in the arc of a circle, and the disk H being provided with a pin *h*₂, to engage with one of the holes *g* of said lever, and having circular cam slots *w*, *x*, for engaging with pins *v* of said jaws, substantially as and for the purpose specified. 7th. The combination of the skate runner, guide piece fixed thereon, and clamping jaws in guides thereof, with the cam plate pivoted upon the said runner and guide piece, and its actuating lever mounted upon the pivot of the cam plate and adapted to be disengaged by, and detached from the said pivot, when in a certain position, and means to connect the said cam-plate and lever, when in various different relative positions, substantially as described. 8th. The combination, with a skate runner, of the detachable lever *k*, having a notched pivot socket, its pivot *v* having portions of its head removed, rotating cam plate H and side clamping jaws F, G, said lever being provided with holes in the arc of a circle, and a plate H being provided with a pin *h*₂, to engage with one of the holes *g* of said lever, and having circular cam slots *w*, *x*, for engaging with pin *v* of said jaws, substantially as and for the purpose specified.

No. 18,503. Harrow. (Herse.)

Alexander C. Watt, Gananoque, Ont., 22nd January, 1884; 5 years.
Claim.—1st. The combination, in a harrow or cultivator, of the tubular bails A, connecting bars B and teeth D having a bifurcated head provided with screw-cut tangs F, F and nuts G, to rigidly bind the bails and bars by passing through the bars and spanning the bails, as set forth. 2nd. The harrow teeth D having a bifurcated head and tangs F, F screw-threaded, to receive nuts G, as and for the purpose set forth.

No. 18,504. Fountain Writing Pen-Holder. (Porte-Plume Fontaine.)

Moïse Marcoux, St. Eugene de Grantham, Que., 22nd January, 1884; 5 years.
Claim.—1st. In a fountain writing pen-holder, the stem B, crotches C and D having respectively the arms *a* and *b*, and the standard *d*, substantially as shown and described. 2nd. In a pen-holder, the clamp lever E, fulcrumed in the arms *a*, *a* and having the tightening screw *c*, substantially as and for the purpose set forth. 3rd. In a pen-holder, the ink regulator F composed mainly of the upright arm *e* pivoted to the standard *d*, the forward arm *g* overhanging the pen near the nib, and the board base at the angular junction of said arms, substantially as described. 4th. In a pen-holder, the regulator F, pivoted to the standard *d* and held in place by the spring *h*, substantially as and for the purpose set forth.

No. 18,505. Vehicle Seat Spring. (Resort de Siège de Voiture.)

Samuel Hunt, Lookport, N. Y., U. S., 22nd January, 1884; 5 years.
Claim.—1st. A vehicle seat spring consisting of a loop for securing it to the vehicle seat, by means of metallic straps, and a double coil spring articulated to a bracket by means of hinge joints, for securing it to the wagon bed, and flaring supports terminating in eyes, substantially as shown and described. 2nd. In a vehicle seat spring, the combination of the double coil spring A having flaring supports *a* and eyes *b*, loop B, metallic straps C, hinge joints *h* and bracket E, substantially as and for the purpose described.

No. 18,506. Snow Plough. (Charrue à Neige.)

Orange Jull, Orangeville, Ont., 22nd January, 1884; 5 years.
Claim.—1st. A fan blade fixed to, and radiating from a shaft carried horizontally in bearings, and deriving a rotary movement from a conveniently-located motor, in combination with a cutting blade, the main plane of which lies at about right angles to the plane of the fan-blade, the said cutting blade being pivoted on the same centre and immediately in front of the fan-blade, while deriving a rotary movement in the opposite direction to that in which the fan-blade revolves. 2nd. A fan-blade fixed to a horizontal shaft and caused to revolve within an open-front cylindrical case having an opening in its circumference, in combination with a cutting-blade pivoted in the same centre as the fan-blade, but revolving in the opposite direction immediately at the open face of the cylindrical case, substantially as and for the purpose specified. 3rd. In an improved snow-plough in which a cutting-blade is caused to revolve in front of, and in the opposite direction to a revolving fan-blade, a hollow shaft arranged to support and revolve with the fan-blade, in combination with a shaft journaled within the hollow shaft, and arranged to propel the cutting-blade, substantially as and for the purpose specified. 4th. The fan-blades C fixed to, and propelled by the hollow shaft D, the cutting-blades B fixed to, and propelled by the shaft F, which is journaled within the shaft D, in combination with a cylindrical case A having an opening *a* in its circumference, and flaring side flanges *c* with a bottom flange *d*, blades G, substantially as and for the purpose specified. 5th. A series of fan-blades revolving within an open-front cylindrical case

having an opening *a* in its circumference, and an opening *e* in it-back, in combination with a revolving disc formed by a series of cutting-blades B, and located at the open front of the cylindrical case, substantially as and for the purpose specified.

No. 18,507. Dash Wheel. (Roue Élévatoire.)

John B. Pike, Chatham, Ont., 22nd January, 1884; 5 years.
Claim.—The combination of the pinion P and cog wheel C, and the position and shape of floats F, substantially as and for the purpose hereinbefore set forth.

No. 18,508. Method and Apparatus for Moulding Desigus in Glass. (Méthode et Appareil de Moulage des Dessins dans le Verre.)

Achille H. V. Bazerque and Léon V. Hue, Montreal, Que., 22nd January, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a piece of glass-ware having ornamental designs formed in the interior of its substance, substantially as specified. 2nd. The process or method of ornamenting glass ware, which consists in printing or impressing designs upon one part of the glass body, while in a softened state, and then covering such designs with a second piece of softened glass and uniting same at the edges, so that the designs remain intact, substantially as specified. 3rd. A figured punch or stamp, in combination with a mould for holding the softened glass, and a device for uniting an extra piece of softened glass with that contained in the mould, substantially as described.

No. 18,509. Holder for Flat Irons. (Porte-fer à Repusser.)

Julie R. Loomans, Hamilton, Ont., 22nd January, 1884; 5 years.

Claim.—1st. An iron-holder consisting of a standard A and prongs F, F, for the handle of the iron to pass between and be held thereby. 2nd. In an iron-holder, the combination of the standard A, prongs F, F, projections B, C, constructed to be secured to a table or its equivalent, by a thumb-screw E, substantially as specified.

No. 18,510. Machinery for Lasting Boots and Shoes. (Machine pour Enformer les Chaussures.)

Martin R. Ethridge, Lynn, Mass., U. S., 22nd January, 1884; 5 years.

Claim.—1st. In a lasting machine, the combination of the inner sets of jaws and their clamps, with the outer sets of jaws and their sole gauges, such inner jaws having stop slides and being applied to the outer ones, the latter having mechanism for forcing them inward, and the spring for supporting the inner jaws, all being to operate, substantially as set forth. 2nd. In a lasting machine, the combination of the posts B, C and the fork K adjustable as described, with the inner and outer sets of jaws provided with clamps and sole gauges, mechanism for operating the said jaws, the inner jaws having stop slides and the spring for supporting such jaws, substantially as set forth. 3rd. In a lasting machine, the combination of the toothed pawl *p* with each of the jaw clamps *a*, such pawl being applied to the clamp in manner and to operate, substantially as set forth. 4th. In a lasting machine, the combination of the sliding posts B, C with the adjustable standards D and the rotary cams E thereof, arranged with such posts, as set forth.

No. 18,511. Manufacture of Boots or Shoes. (Fabrication des Chaussures.)

Martin R. Ethridge, Lynn, Mass., U. S., 22nd January, 1884; 5 years.

Claim.—The process, substantially as described, of making a shoe or boot, it consisting in, first, lasting the upper and securing its laps down to the insole at intervals by clamps, next laying the outer sole upon the clamps, the lap and insole, and driving nails through the outer sole and laps, and into the insole between the clamps, and next separating the clamps from the laps and extracting the last from the shoe, and connecting the sole and laps by sewing or stitches going through them, as set forth, the nails, if preferable, being subsequently extracted from the soles.

No. 18,512. Machine for Loosening Earth and Removing Weeds. (Sarcloir.)

Spurzheim I. Huseltine, Springfield, Mo., U.S., 22nd January, 1884; 5 years.

Claim.—1st. A hand weeder and scraper composed of a handle and a blade B C set off therefrom, the blade extending at an angle with the line of the handle and turning back upon itself at an acute angle, substantially as shown and described. 2nd. An improved hand-weeder and scraper composed of a handle A and a sharp cutting blade B C set off therefrom, the extending part of the blade B having the cutting edges *b*, *b*₂ in a line at an angle with the line of the handle and turning back upon itself at an acute angle *e*, and a returning cutting blade C having cutting edges *c*₁, *c*₁, substantially as herein shown and described. 3rd. An improved hand-weeder and scraper composed of a handle A, and a sharp cutting blade B C having the cutting edges *b*₂, *b*₂, *c*₁, *c*₁, the extending part of the blade B making an acute angle with the line of the handle and at a point *e*, being in a line with the line of the handle, turning back upon itself at an acute angle and forming the returning blade C, substantially as shown and described.

No. 18,513. Three Square File. (Tiers-point.)

Crawford M. Fairbanks, Lincoln, R.I., U.S., 23rd January, 1884; 5 years.

Claim.—The method of cutting three square files herein described

consisting in, first, cutting the sides or faces thereof, and subsequently the edges, in the manner and for the purposes substantially as described.

No. 18,514. Pump. (*Pompe.*)

John Wock, Canton, Ohio, U.S., 23rd January, 1884; 5 years.

Claim.—1st. The combination of the piston, the working barrel having a single water entrance only on one side of the piston, the receiving chamber, the two ducts between the working barrel and the receiving chamber, and a permanently open passageway from the lower side of the piston to the upper, through which some of the water can pass, when the piston is forced downward. 2nd. The combination of the working barrel and the receiver having two ducts leading from the working barrel to the receiver, each having a valve, with the piston constructed to allow a passage, by which some of the water can pass directly from the lower side of the piston to the upper, substantially as set forth. 3rd. In a force pump, a cylinder having an induction valve at its lower end, and discharge openings near its upper and lower ends, in combination with a piston of less diameter than the cylinder, and arranged to traverse the space between the discharge openings, substantially as set forth.

No. 18,515 Preservative for Organic Substances and Process for Making the same. (*Préservatif pour les substances organiques et procédé pour le fabriquer.*)

William F. Grier, Treconyn, Wales, 25th January, 1884; 5 years.

Claim.—1st. The hereinbefore described process of obtaining a preservative for organic matter, consisting essentially in heating together eleven hundred and sixteen parts by weight of boracic acid, and then hundred and eighty-two parts of prismatic borax, in a finely divided condition and intimately commingled, until the evolution of water has fully taken place, and then drying off the evolved water by means of a current of dry hot air, substantially as set forth. 2nd. As a preservative for food and organic substances, the product of the hereinbefore described process of treating boracic acid and borax.

No. 18,516. Boat Hull. (*Coque de Bateau.*)

Thomas T. Hodson, Lansing, Mich., U.S., 23rd January, 1884; 5 years.

Claim.—1st. In a boat, in combination with the hull thereof, a series of diagonal strips of planking extending continuously from gunwale to gunwale. 2nd. A boat hull, the body of which is composed of inner diagonal strips of planking extending continuously from gunwale to gunwale, and of outer diagonal strips nearly at right angles to the inner strips and extending from gunwale to gunwale. 3rd. In a boat hull, the combination of the keel A, the stern post B, the gunwales C, C, the double series of diagonal strips X, X and Y, Y at right angles to each other and extending from gunwale to gunwale, and the outer diagonal strips Z, Z parallel to the strips X, X, and extending from gunwale to keel substantially as and for the purpose set forth.

No. 18,517. Shingle. (*Bardeau.*)

Henry S. Reynolds, Brooklyn, N.Y., U.S., 23rd January, 1884; 5 years.

Claim.—1st. A diamond-shaped metallic roofing shingle formed of a square piece of metal having pointed ends *b, b*, and a tapering dovetailing rib *c* extending from end *b* to end *b*, as set forth. 2nd. A diamond-shaped metallic roofing shingle formed out of a square piece of metal having pointed ends *b, b*, and a tapering dovetailing rib *c* extending from end *b* to end *b*, provided with external grooves *d* and having edges *e, e* inclined inwardly, as and for the purpose set forth. 3rd. The combination, to form a roofing, of a series of diamond-shaped metallic shingles formed out of square pieces of sheet metal, and each having pointed ends *b, b*, a tapering dovetailing rib *c* extending from one of said ends to the other, external grooves *d*, inclined edges *e, e* and ribs *f, f* and *g, g*, substantially as shown and described.

No. 18,518. Machine for Extinguishing Sparks from Portable Engines. (*Machine pour éteindre les flammèches des machines portatives.*)

Albert E. McCaw, Oshawa, Ont., 23rd January, 1884; 5 years.

Claim.—The movable heads D, D in combination with the strap or cranks C, C and shaft and lever G, together with the lip H, substantially as and for the purpose hereinbefore set forth.

No. 18,519. Printing Press. (*Presse d'Imprimerie.*)

Rudolph M. Hunter, Philadelphia, Penn., U.S., 23rd January, 1884; 5 years.

Claim.—1st. In a printing press, two impression cylinders provided with a series of impression surfaces and spaces, and an endless chain of carriages adapted to carry the type forms, one of said cylinders printing from every alternate type form, and the other printing from those omitted, in combination with an air box arranged between said cylinders and having its face perforated, and means, substantially as described, acting intermittently to create a partial vacuum or pressure in said box, by which the sheets are fed from one cylinder to the other after being printed on one side. 2nd. In a printing press, two impression cylinders provided with a series of impression surfaces and spaces, and an endless chain of carriages adapted to carry the type forms, one of said cylinders printing from every alternate type form and the other printing from those omitted, in combination with an air box, means, substantially as described, to create a suction and pressure therein, and valved orifices opening from said air box and shaped to cause intermittent suction through said orifices, by which the sheets, when being fed from one cylinder to the

other, are transferred without blurring or smutting, after being printed upon one side. 3rd. In a printing press, two impression cylinders, each provided with a series of impression surfaces and spaces, and an endless chain of type form carriages, one of said cylinders being adapted to print from every alternate carriage and the other printing from those omitted, in combination with an air box having a perforated face, a valve intermittently actuated to control the orifices of said box, and means, substantially as described, actuated intermittently to create a partial vacuum or pressure in said air box, by which the sheets, when being fed from one cylinder to the other, are transferred without smutting, after having been printed on one side. 4th. In a printing press, two impression cylinders provided with a series of impression surfaces and spaces, said surfaces being furnished with automatically acting nippers or clamps to hold the paper sheets, and an endless chain of type form carriages, one of said cylinders printing from every alternate type carriage, and the other printing from those omitted, in combination with a feed table from which the paper is fed to one of said cylinders, and upon which the sheets are held by said nippers, an air box provided with a suction surface, intermittently acting valves to control the suction or passage of air through said suction surface, by which said sheet of paper is held for a period of time only sufficient to allow the nippers upon the other cylinder to clamp the lower edge of said sheet, the suction surface then releasing said paper, mechanism, substantially as described, to actuate the nippers upon one cylinder to free the paper when before the suction surface, and mechanism, substantially as described, to cause the nippers on the other of said cylinders to clamp the paper and draw it off said suction surface, (the air blast aiding to effect the transfer without smutting,) and cause it to be printed upon the other side. and means, substantially as described, to create currents of air through said suction surface, 5th. In a printing machine, the combination of cylinders D and E, having surfaces *d* and *e*, and spaces *d* and *e*, type form carriages C, nippers F, means, substantially as described, to actuate said nippers, suction or air box M, having perforated surface *m*, valve plate *M*, fan N, and means, substantially as described, to intermittently actuate said valve-plate, substantially as specified. 6th. In a printing machine, the combination of cylinders D and E, having surfaces *d* and *e*, and spaces *d* and *e*, type form carriages C, nippers F, means, substantially as described, to actuate said nippers, suction or air box M, having perforated surface *m*, valve plate *M*, arm *M*, shaft *M*, cam O² and connecting mechanism, substantially as described. 7th. In a printing machine, the combination of cylinders D and E, having surfaces *d* and *e*, and spaces *d* and *e*, type form carriages C, nippers F, means, substantially as described, to actuate said nippers, air box M, having perforated surface *m*, ports N₁, N₂ and N₃, fan N, means, substantially as described, to actuate said valve, and valve N, means, substantially as specified. 8th. In a printing machine, the combination of cylinders D, E, having surfaces *d* and *e*, and teeth D and E, nippers F, means, substantially as described, to actuate said nippers, type form carriages C, air box M, ports N₁, N₂ and N₃, means, substantially as described, to alternately connect two of said ports to create a suction, or blast in said air box, fan N, shaft O and intermediate gear *Ip*, substantially as set forth. 9th. In a printing machine, the combination of cylinders D and E, having surfaces *d* and *e*, type form carriages C, nippers F, means, substantially as described, to actuate said nippers, air box M, having perforated surface *m*, valve plate *M*, ports N₁, N₂ and N₃, valve N₄, fan N and mechanism to actuate the valves, substantially as specified. 10th. In a printing machine, the combination of cylinders D and E, having surfaces *d* and *e*, type form carriages C, nippers F, means, substantially as described, to actuate said nippers, air box M, having perforated surface *m*, valve-plate *M*, said nippers, air box M, having perforated surface *m*, valve-plate *M*, fan N, and means, substantially as described, to intermittently actuate said valve-plate, fan N and adjustable stop *m*, substantially as and for the purpose specified. 11th. In a printing machine, the combination of cylinders D and E, having surfaces *d, e*, and nippers F, means, substantially as described, to actuate said nippers, type form carriages C, air box M, having perforated surface *m*, valve-plate *M*, and valve *M*, fan N, and means, substantially as described, to actuate said valves to control the currents of air through the surface *m*, substantially for the purpose specified.

No. 18,520. Regulator for Dynamo-Electric Machine. (*Régulateur des machines dynamo électriques.*)

Elihu Thomson, New Britain, Ct., U.S., 23rd January, 1884; 5 years.

Claim.—1st. The combination, with commutator cylinder for a dynamo-electric machine, of an adjustable collecting-brush and means for automatically shortening the collecting extent of said brush, simultaneously with its forward adjustment. 2nd. The combination, with the commutator cylinder in a dynamo-electric machine, of two differentially moving sets of springs moving differentially with relation to one another, in the manner described, so as to shorten the commutator space covered by them simultaneously with their forward movement. 3rd. The combination, with the kind described, of a commutator in a three-coil armature machine, of the kind described, of automatically adjusted commutator brushes, constructed in the manner described, to shorten the circumferential commutator-space covered simultaneously with their forward movement. 4th. The combination, with a three-coil armature machine and its three-segment commutator, of two pairs of commutator brushes, differentially adjusted, in the manner described, so that the space between them is shortened simultaneously with their forward movement. 5th. The combination, with the pairs of commutator brushes mounted on independent supports, of an adjusting lever to which the brushes are connected at different points, the support for the rear brushes being connected thereto at a point farther from the fulcrum than the support for the forward pair. 6th. The combination, with the lever E, of the links *3, b*, attached thereto at different points from the fulcrum, and the yokes D, F, each supporting at its opposite ends two commutator brushes.

No. 18,521. Dust Pan. (*Porte-ordures.*)

David A. White, Brantford, Ont., 23rd January, 1884; 5 years.

Claim.—1st. A dust pan having a socket extending upwardly from

its top surface and forming a short handle, in combination with a long handle made to fit the said socket, substantially as and for the purpose specified. 2nd. A dust-pan having a handle extending from its top surface in combination with a rest extending below the bottom surface of the pan, substantially as and for the purpose specified.

No. 18,522. Fence Post. (*Pieu de clôture.*)

Daniel Schweikhard, Batavia, N.Y., U.S., 23rd January, 1884; 5 years.

Claim.—1st. A fence post consisting of an artificial stone part or stub A, to be permanently set in the ground, made of concrete, clay burned and glazed, or other material that may be molded or cast, and a wooden part or post B, for holding the boards placed above the ground, and secured to the stub A by means of a suitable clamp C, in combination with suitable means for holding the boards to the post B, substantially as specified. 2nd. In a fence post, the combination, with the post B, of a clamping bar C secured to the said post B by suitable bolts or fastenings F, and an artificial stone part or stub A secured to the post B by means of a suitable clamp C, said stub being cast hollow, as shown at G, substantially as shown.

No. 18,523. Waggon Bolster. (*Selle de wagon.*)

Alpheus O. Wilbur, Romeo, Mich., U. S., 23rd January, 1884; 5 years.

Claim.—A waggon bolster formed of the channel iron A having closed bottom, the springs C and the bed-plate D, the springs being located in the channel iron, the bed plate resting on the springs and guided by the posts D, and the whole combined and adapted to serve as and for the purposes set forth.

No. 18,524. Door Spring. (*Ressort de porte.*)

Warren S. Barlow, New York, N.Y., U.S., 23rd January, 1884; 5 years.

Claim.—1st. The combination of the studs C, D and a spiral spring arranged to turn on, or with both of said studs, whereby the spring will hold the door open or closed, as described. 2nd. The combination, with a door-spring, of a rigid bar D and a stud C, adapted to slide on and be clamped thereto, at different points, whereby the tension of the springs may be regulated, as described.

No. 18,525. Leather Washer and Machinery for Manufacturing the Same. (*Rondelle en cuir et machine pour la fabriquer.*)

Timothy Gingras, Buffalo, N.Y., U.S., 23rd January, 1884; 5 years.

Claim.—1st. A leather-washer having one end provided with a barb, and the other end constructed with a central opening to receive and interlock therewith, the two ends being practically united by compression to complete the article, substantially as set forth. 2d. In combination with a punch and a yielding die, a carrier having a series of openings for receiving washers and successively presenting them under a punch and over a die, for the purposes set forth. 3rd. In combination with a punch, die and fixed stud H, a carrier C, having guide-notches E, at regular intervals, in one of its edges, said notches being adapted to engage with said stud, for the purposes set forth.

No. 18,526. Caster Attachment. (*Roulette élastique de Meuble.*)

Hugh McDonald, Plattsburgh, N.Y., U.S., 24th January, 1884; 5 years.

Claim.—1st. The combination, with the leg of a table, or stand, of a caster capable of adjustment to the floor, substantially as and for the purpose specified. 2nd. The combination, with the leg of a table or stand provided with a fork and recess, of a caster having a vertical spindle and a spring arranged within said recess, and a set screw for forcing. 3rd. The combination, with the frame A having a slotted fork C and spring D, of the pivoted leg B having fixed caster C, set screw E and thumb-nut F, substantially as and for the purpose set forth.

No. 18,527. Double Tree. (*Maitre-Palonnier.*)

William J. Danby, Hillsburgh, Ont., 24th January, 1884; 5 years.

Claim.—1st. A self-regulating double tree, constructed as described, having a stationary hammer-strap secured to the double tree and pivoted to the tongue backward of the said double tree, and a tension bar leading from the pivot to the extreme back end of the tongue and bent down over the end thereof, to strengthen the pivot, and with a bracket secured to the front edge of the double tree provided with a curved slot limited in range by closed ends and a screw-bolt with head spanning the slot and secured to the tongue, so that, when one end of the double tree is behind the other end, the leverage of the hindmost end is increased, as specified and shown. 2nd. In a self-regulating double tree constructed with a stationary hammer-strap E with pivot E, the combination of the tension bar F and of the tongue A, as shown and described and for the purpose specified. 3rd. In a self-regulating double tree, constructed as described, with a bracket C with curved slot D secured thereto, and a screw-bolt D secured to the tongue A, the head of said bolt spanning the slot D for securing the double tree in a horizontal position, the whole constructed and arranged and operating in combination, substantially as set forth.

No. 18,528. Boots and Shoes. (*Chaussures.*)

John H. Parker, Malden, Charles F. Parker and Charles E. Tinsley, Boston, Mass., U.S., 24th January, 1884; 5 years.

Claim.—In a boot or shoe having a rubber upper and a leather sole, the combination, with the marginal portions of the rubber upper, of

strips of canvas or any other fibrous material secured to the marginal portions, to prevent their yielding and to afford a desirable holding for the fastenings, substantially as set forth.

No. 18,529. Process for Treating Calcareous Phosphorites or Ores, for Converting the Carbonate of Lime contained in the same into Phosphate of Lime. (*Procédé de traitement des phosphates ou minerais calcaires pour convertir le carbonate de chaux qu'ils contiennent en phosphate de chaux.*)

Joh. Cox, Mulheim, Germany, 24th January, 1884; 5 years.

Claim.—1st. The above described process consisting essentially in converting, by means of phosphoric acid, the carbonate of lime contained in calcareous phosphorites or ores, either into phosphate of lime soluble in water, or into assimilable bibasic phosphate of lime, or into tribasic phosphate of lime, or into a mixture of these substances. 2nd. In the said process, either of the above described modes of treatment, that is to say, the treatment A consisting in separating the soluble phosphate of lime in such a manner that the remaining substance contains a relatively large proportion of tribasic phosphate of lime, or the treatment B consisting in converting the tribasic phosphate of lime contained in the mixture either into free phosphoric acid and sulphate of lime, or into phosphate of lime (soluble in water) and sulphate of lime, which remain mixed in the product, or into bibasic phosphate of lime and sulphate of lime, which also remain mixed in the product or the treatment C, consisting in supplementing the operation B by separating from the mixture the soluble portions leaving a residue containing only phosphated matters.

No. 18,530. Car-Coupling. (*Accouplage de Wagon.*)

The Archer Automatic Car-Coupling Company (Assignee of Samuel B. Archer), Saratoga Springs, N.Y., U.S., 24th January, 1884; 5 years.

Claim.—1st. In a car-coupling, the combination of the spring and rivet or bolt F, with the buffer-head and draw-bar connected together by a loose toggle-joint, substantially as described. 2nd. In car-couplings, the draw-bar provided with lugs A, in combination with grooves D in the buffer-head, substantially as and for the purpose set forth. 3rd. The combination of the draw-bar provided with lugs A, moving in guides D in the buffer-head, with spring C and rivet or bolt F, arranged substantially as and for the purpose specified. 4th. In car-couplings, the combination of a hooked draw-bar B and buffer-head A, attached together by a toggle-joint, with a spring C arranged within the buffer-head, as and for the purpose specified. 5th. In car-couplings, the combination of a hooked draw-bar B having lugs A, moving in guides D in the buffer-head A, and a spring C arranged above said draw-bar, as shown and set forth. 6th. In car-coupling consisting of a hollow buffer-head A, having an opening D in its upper side and guides D, and a hooked draw-bar B provided with lugs A and connected together to form a toggle-joint, in combination with the follower-plates F, G, spring H, key N, spring C and rivet F, all constructed and arranged for operation substantially as shown and specified.

No. 18,531. Machine for Forming Heel Counters. (*Machine pour former les Contre-forts des Chaussures.*)

Napoléon J. Côté, Francis M. Pepin and Joseph Normandin, Montreal, Que., 9th January, 1884; 5 years.

Claim.—1st. In a machine for forming heel counters, the combination, with a punch or former, of two rollers carried so that said punch may pass between them, said rollers and punch being of such configuration as will ensure the formation of a counter from a straight blank forced between said rollers by the punch, substantially as and for the purpose set forth. 2nd. In a machine for forming heel counters, the combination, with the bed A having suitable bearings, of the screwed shaft B having pulley mounted thereon, and cross-heads B₁, B₂, with two or more punches or formers C, C₁, connected to said cross-heads, substantially as and for the purpose described. 3rd. In a machine for forming heel counters, the combination, with the bed plate A, of the lozenge-shaped sliding bed B, two or more punches C, C attached to said sliding bed, two or more pair of rollers D, D carried vertically in suitable boxes or frames d, d sliding in the bed plate, substantially as and for the purpose set forth. 4th. In a machine for forming heel counters, the combination of two or more pairs of rollers D, D carried vertically and adjustably in suitable boxes or frames d, d sliding in the bed plate A, the springs F and the standards f and f₁, substantially as and for the purpose set forth. 5th. The combination, with a pair of rollers D, D and their boxes d, d, and springs F, of the gates E₁, E₂, having central orifice e and springs e₁, arranged and operating substantially in the manner and for the purpose described. 6th. The rollers D, D having projections d₂ curved on their face, so as to form front of counter, in combination with springs or their equivalents, for opposing the rotation of said rollers, and a punch or former, substantially as specified. 7th. The combination, with a punch or former, rollers D, D and sliding boxes d, d, of the threaded roller G and plain roller H, for forming the upturn, substantially as specified. 8th. The punch or former having elongated slot e₂ and set screw c₁, in combination with its cross-head and the strap C₂ having set screw c, substantially as and for the purpose described.

No. 18,532. Ironing Board. (*Planche à Repasser.*)

John D. Talbot, Barnesville, Ohio, U. S., 24th January, 1884; 5 years.

Claim.—In an ironing board of the class described, the combination of the board proper A, the leg C and the removable cleats B, B, substantially as shown and described.

No. 18,533. Electric Incandescent Lamp.*(Lampe Electrique Incandescente.)*

Charles G. Perkins, New York, N. Y., U. S., 24th January, 1884; 5 years.

Claim.—1st. In an electric incandescent lamp, a washer placed on the interior of the neck of the globe, at a suitable distance below the base of the vacuum chamber, to prevent the plaster-of-Paris forming the plug from running thereon, said washer having a suitable number of openings for the leading-in wires of the lamp to pass through, whereby they are held in position, substantially as shown and described. 2nd. In an electric incandescent lamp, the combination, substantially as shown and described, of globe A, neck B, electrical conductors D, E, washer I, plaster-of-Paris G, metallic screw plug F and metallic rings H, all for the purpose herein described.

No. 18,534. Automatic Electric Circuit Maker and Breaker. *(Inducteur et Interrupteur Automatiques de Circuit Electrique.)*

Charles G. Perkins, New York, N. Y., U. S., 24th January, 1884; 5 years.

Claim.—1st. In combination with a clock-controlling mechanism, a ratchet-shaped block of insulating material, rigidly fixed to the main shaft of said clock mechanism, said block having a series of metallic plates mounted upon its periphery, at a suitable distance apart, leaving a space of insulation between their ends so that, when it passes from beneath the brush bearing thereon, it will cause said brush to snap from it quickly down on to the insulated space, and likewise snap down upon a metallic plate. 2nd. In combination with a clock-controlling mechanism, substantially as shown and described, the ratchet-block *c* of insulating material mounted with the metallic plates *d*, *dt*, projection *f*, metallic ring *g*, projections *h*, *ht*, metallic springs *e*, *et*, screws *ds* and base *b*. 3rd. In combination with a dynamo-electric machine and a series of storage batteries, a ratchet-shaped block of insulating material having a number of metallic plates, fixed on the periphery thereof, and a projecting metallic hub electrically connected with the aforesaid plates, by means of a metallic screw, the said ratchet-block rigidly fixed to the main shaft of a clock-controlling mechanism, the metallic brushes bearing upon the periphery of the ratchet-block and metallic hub, and the conductors connecting the brushes with the generator and the storage batteries. 4th. The combination, substantially as shown and described, of the clock mechanism *a*, ratchet-block *c*, base *b*, shaft *h*, metallic plates *d*, *dt*, projection *f*, metallic ring *g*, projections *h*, *ht*, springs *e*, *et*, screws *ds*, conductors *p*, *n*, storage batteries, and generator *t*.

No. 18,535. Improvements in Steam Boilers.*(Perfectionnements dans les Chaudières à vapeur.)*

James B. Hannay, Glasgow, Scotland, 24th January, 1884; 5 years.

Claim.—The combination of a shell of a steam boiler and hammered or pressed zinc blocks, of a spherical or other form, having small difference of thickness in different directions, supported in the boiler with a conducting wire distinct from the supports, connecting each block to the shell of the boiler, substantially in the manner and for the purpose described.

No. 18,536. Electric Low Water Alarm for Steam Boilers, &c. *(Indicateur d'eau Electrique à Sonnerie pour les Chaudières à vapeur, &c.)*

Harry W. Page and Harvey Carley, Long Branch, N. J., U. S., 24th January, 1884; 5 years.

Claim.—1st. An electric low water alarm, for steam boilers, employing mercury to complete the electric circuit, the apparatus being attached to the boiler in such manner that steam will reach the mercury-containing bulb, only when the water in the boiler falls below low-water mark, as and for the purposes set forth. 2nd. The combination, with the boiler C provided with the tube D, of the globe B enclosing the water and steam chamber *b*, mercury bulb *a* provided with mercury tube *d*, adjustable insulated wire *e* projecting into the bulb tube, alarm H, battery J and connecting wires *h*, *j*, substantially as described and for the purpose set forth. 3rd. In an electric alarm, the combination, with a mercury bulb enclosed within a chamber *b*, and provided with a tube *d* and plates F at its upper end, and adapted to be placed in communication with a boiler C, of the thumb nut *f*, bent wire E having adjustable insulated wire *e*, and graduated plate G, substantially as described and for the purpose set forth. 4th. In an electric alarm, the combination, with the globe B, of the mercury bulb *a* suspended within said globe, the tube *d* provided with the thumb nut *f*, and the insulated thread wire *e*, substantially as herein shown and described.

No. 18,537. Pulley. *(Poulie.)*

Harmon H. Fulton and Olaf R. Olsen, Indianapolis, Ind., U. S., 24th January, 1884; 5 years.

Claim.—1st. As a web for pulleys, a corrugated sheet-metal disk. 2nd. In a pulley, the combination, with the hub and rim, of a web formed of corrugated sheet-metal, substantially as set forth. 3rd. The combination of the hub B formed of two parts, with corrugated faces, the web C corrugated and formed to fit between the two parts of the hub, and the rim D secured to the periphery of the web forming a pulley, substantially as set forth. 4th. The combination, in a pulley, of the hub, the rim, the corrugated sheet-metal web and appropriate fastenings for uniting said web and said rim, substantially as set forth. 5th. In a pulley, the web of which is composed of sheet-metal, the ears *c* formed integrally with said web and serving as a means of fastening the same to the rim, substantially as set forth. 6th. In a pulley, the combination of a sheet-metal web C having ears *c* formed integrally therewith and extending out at right angles on

each side thereof, and the rim D secured to said web by means of said ears and the rivets *d*, substantially as shown and specified.

No. 18,538. Maize Grater.*(Egreinoir à Blé d'Inde.)*

Eliza M. C. Anderson, New York, N. Y., U. S., 24th January, 1884; 5 years.

Claim.—1st. A device for removing corn from cobs consisting of a holder or plate A, a cutter-bar provided with teeth arranged to conform to a curve, and a scraper-bar having a curved edge X extending above the points of the teeth, substantially as set forth. 2nd. A device for removing corn from cobs consisting of a holder or plate A, a cutter-bar provided with teeth arranged to conform to a curve, and a scraper bar having a curved edge X and recesses or channels between both bars and the plate, substantially as set forth. 3rd. The combination of the curved plate A and the curved bars B, C, and a handle applied to the plate A, substantially as set forth. 4th. The combination, with the holder or plate A, of a tooth-bar and a scraper, each pivoted to the plate, to be turned to vertical or horizontal positions, and a locking device for holding them when upright, substantially as set forth.

No. 18,539. Ice Boat Or.*(Aviron de Bateau à glace.)*

William J. Henley and Spencer T. Axtell, Oswego, N. Y., U. S., 24th January, 1884; 5 years.

Claim.—1st. An ice-boat propelling or provided, at its outer end, with a spur or spike projecting at right angles from the oar, for engaging with the ice, substantially as set forth. 2nd. An ice-boat propelling or consisting of longitudinally extensible sections, and means for engaging with the ice, on the end of the oar, as set forth. 3rd. An ice-boat propelling or composed of sections, joined end to end by a longitudinally-yielding splice, and a spring for normally holding said sections in a distended condition, substantially as and for the purpose set forth. 4th. The combination, with an oar, of the socket *g*, spur *t* and set screw *u*, substantially as and for the purpose shown and set forth.

No. 18,540. Attachment of Halter Weights.*(Courroie de Pesée-Enrèneiro.)*

Joseph Roy and Emile Waldt, Toronto, Ont., 24th January, 1884; 5 years.

Claim.—1st. A halter weight for one or more horses, constructed with anchors in the bottom thereof, in combination with a grooved pulley J, with handle K, a ratchet L with pawl M, and handle *ni*, a flexible cord or strap O, with guide pulleys *ot*, *bt*, *ct* and stopping ring *d*, all as shown and described and operating, as set forth. 2nd. In combination with the drag-weight N, a cord or strap *ot*, connecting the horses with the drag-weight, the guide rings *et*, *ft*, as specified and described and for the purpose set forth.

No. 18,541. Fifth-Wheel for Buggies and Waggon. *(Rond d'Avant-Train des Voitures.)*

Richard Green, Watertown, Ont., 24th January, 1884; 5 years.

Claim.—1st. The combination of the top circle *a* with the head-block E, bolts attached with the two cross-pieces N, N, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bottom circle B, with bolts attached, and the bed-pieces E and G, the gib M and the cross-pieces N, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the top circle A with the bottom circle B and the two segments I, all substantially as and for the purpose hereinbefore set forth.

No. 18,542. Telephone. *(Téléphone.)*

Webster Gillett, Flushing, N. Y., U. S., 24th January, 1884; 5 years.

Claim.—1st. In a telephone, the method of communicating simultaneous vibrations to a series of separate pins E, by means of the rigid concave disc B fixed to a point in the vibrating disc B, substantially as herein described in reference to Figs. 2 and 3 of the accompanying drawings. 2nd. In a telephone, the set of independent devices E, J, with suitable electrical connections as *d*, *e*, in combination with each other and with the single operating device B, Br, for receiving and communicating thereto the vibrations produced by the voice, substantially as herein described in reference to Figs. 1 and 5 of the accompanying drawings. 3rd. In a telephone, the method of communicating over a single wire, by a series of independent telephonic devices mounted on arms, holding them in close proximity near the centre of a diaphragm, substantially as herein described in reference to Figs. 1, 2, 3, 4 and 5 of the accompanying drawings. 4th. In a telephone, the use, in combination with a single line wire as M, of a series of independent telephonic devices as E, J, actuated by a single impulse of the voice communicated directly, substantially as described in reference to Figs. 1, 2, 3, 4 and 5 of the accompanying drawings. 5th. In a telephone, the use of a single wire and single switch, for putting on and taking off a series of local batteries, each connected with separate induction spools and controlled by separate telephonic devices, substantially as herein described in reference to Fig. 5 of the accompanying drawings. 6th. In a telephone, the use of a single ground connecting wire *f*, *h*, in combination with a series of separate telephonic devices *E*, *J*, separate induction spools F and independent telephonic devices E, J, for each, substantially as herein described in reference to Fig. 5 of the accompanying drawings. 7th. In a telephone, the series of independent arms D, carrying each a separate telephonic device E, J and suitable connections, in combination with the fastenings D₁, insulators D₂ and ring D₃, substantially as described in reference to Figs. 1, 2 and 3 of the accompanying drawings. 8th. In a telephone, the cylinders G carrying the carbon powder J, engaging by screw-threads in the arms D so as to allow the

adjustment to be effected by turning the cylinder, substantially as herein described in reference to Figs. 2 and 3 of the accompanying drawings. 9th. In a telephonic, the arms D, fastenings D1, insulators D2 and ring D3, in combination with the cylinder G carrying the electrodes E, J, and with the vibrating disk B carrying the rigid piece B1, substantially as herein described in reference to Figs. 1, 2, 3 and 4 of the accompany drawings.

No. 18,543. Vacuum Treatment for Lung Diseases. (*Traitement à vide des maladies des poumons.*)

Joseph Ketchum, Jr., Brooklyn, N.Y., U.S., 24th January, 1884; 5 years.

Claim.—1st. The hereinbefore described method of treating the respiratory organs, which consists in causing a forcible inflation of said organs by admitting thereto an atmosphere less rarefied than that surrounding the patient, and preventing an escape of air so admitted, except through a forcible exhalation against the superior pressure of the external atmosphere. 2nd. The hereinbefore described method of treating the respiratory organs, which consists in supplying said organs with an atmosphere charged or impregnated with a remedial, medicinal, germicidal, antiseptic, or other agent, surrounding the body of the patient by an atmosphere under less pressure than that with which the organs are supplied, and maintaining said organs in a state of constant tension or expansion. 3rd. The hereinbefore described process of treating the lungs, which consists in more or less forcibly inflating the ultimate cells of the lungs which, through disease or from other causes, are not aerated by the natural process of respiration, by establishing a differential pressure upon the interior and exterior of the same, and causing the inhalation and exhalation to be maintained under the superior tension thus occasioned throughout the cells and air passages of the same. 4th. The combination, substantially as hereinbefore set forth, of a vacuum chamber, means, substantially such as described, for rarefying the air contained therein, means, substantially such as described, for admitting air to an air-containing body placed within said chamber, and preventing the same from reducing the rarefaction in said chamber. 5th. The combination, substantially as hereinbefore set forth, of an air-tight chamber, means for exhausting more or less air therefrom, an inlet-tube for supplying atmosphere from without to the lungs of a person within said chamber, and means, substantially such as described, for preventing the escape into said chamber of the atmosphere so supplied, and securing the forcible expulsion of the said atmosphere from the lungs. 6th. The combination, substantially as hereinbefore set forth, of the air chamber A, the air pump P, the reservoir G and the inlet and outlet tube k. 7th. The combination, substantially as hereinbefore set forth, of the chamber A and the inlet and outlet tube k, and the gauge H.

No. 18,544. Draft-Bar for Sleighs. (*Barre de tirage des Traîneaux.*)

David N. Barker, Broadalbin, N.Y., U.S., 24th January, 1884; 5 years.

Claim.—In an adjustable draft-bar for sleighs, the combination of the runner cross-bar having forwardly and inwardly projecting clips separated at their inner ends, with the draft-bar D having means for connecting it to a pole or pair of thills, said means of connection being adapted to pass through slots or passages of the clips, and the holding or adjusting screw, substantially as and for the purpose set forth.

No. 18,545. Game Counter. (*Marque de Jeu.*)

David K. Horton, Boston, Mass., U.S., 24th January, 1884; 5 years.

Claim.—The above described improved game-counter consisting of the metallic tablet Y, made in two planes c and c1, having the half-round groove a1, the keys a, a1 and a2 having furcated shanks, and hinges as mounted on a pedestal, all substantially as described.

No. 18,546. Step Ladder. (*Echelle à Queue.*)

Rabin L. Hitchcock, Cornwall, Ont., 24th January, 1884; 5 years.

Claim.—A step-ladder constructed of two or more sections having converging sides A, A1 provided with notches C at the ends, and a projecting round bar D at top, whereby two or more sections can be inclinedly adjusted to be self-supporting, as set forth.

No. 18,547. Telegraphic and Telephonic Apparatus. (*Appareil Télégraphique et Téléphonique.*)

François Van Rysselberghe, Schaerbeck, Belgium, 24th January, 1884; 5 years.

Claim.—1st. The herein described method of rendering inaudible or imperceptible, in the telephonic, the currents used for telegraphy whether primary derived or induced, which method consists in rendering the said currents gradual, substantially as set forth. 2nd. The combination, with the telegraphic manipulator at the sending end of the wire, of a current graduator rendering inaudible, in a telephonic, for the purpose set forth, the said manipulator, substantially as and for the purpose set forth. 3rd. The combination, with the telegraphic manipulator or transmitter at the sending end of a wire, of two electro-magnets, one between the battery and the manipulator, the other placed between the battery and the line, in addition to a condenser substantially as and for the purpose set forth. 4th. The combination, with the telegraphic manipulator or transmitter at the sending end of the wire, of an induction coil and a condenser, one circuit of the coil being interposed between the battery and the manipulator, the other between the manipulator and the line, and the condenser in derivation on the line between the said circuits, substantially as and for the purpose set forth. 5th. The combination, with one or more telephonic wires, of any number of telegraphic wires attached to

the same posts and provided, each at their sending end, with a current graduator, substantially as and for the purpose set forth. 6th. The means, above described, for transmitting, simultaneously by the same wire or wires, telegrams and spoken messages, comprising the combination for this purpose of two telegraph wires, with two condensers and two induction coils coupled together on a differential system, in such a manner that one extremity of the primary wire of each coil is in communication with the earth, the secondary circuit being in communication with any telephonic station, as above set forth. 7th. The above described method for augmenting the intensity of telephonic currents, arising from the induction coil of the microphone, which method consists in reducing to a minimum the resistances of the microphonic circuit, especially the resistance of the battery and the resistance of the system of microphonic contacts, always provided that there should be a suitable proportion between the resistances both of the microphonic contacts and the inducing circuit of the coil. 8th. The combination, for augmenting the intensity of telephonic currents, of a secondary battery, or accumulator, or a thermo-electric pile, with feeble internal resistance with (a) a microphone with multiple contacts, all connected in quantity to offer the minimum resistance and (b) an induction coil, whose primary circuit has a resistance not exceeding 2 ohm. 9th. The employment simultaneously of the methods and combinations described in the preceding claiming clauses, to constitute a new system of simultaneous telegraphy and telephony, by the same wire or wires, over very long distances. 10th. The combination of a comparatively costly condenser, with a much smaller condenser of comparatively insignificant value, and with less resistance than the first condenser, so that the second will serve as a preservative to the first, substantially as set forth.

No. 18,548. Steam Engine. (*Machine à vapeur.*)

Franklin D. Cummer, Cleveland, Ohio, U.S., 24th January, 1884; 5 years.

Claim.—1st. In a condensing-engine, a secondary valve governing the admission of exhaust steam to an auxiliary-heater, and another valve governing the admission to the condenser and provided with a relative lap and lead, substantially as and for the purposes described. 2nd. In a condensing-engine, the combination of a steam-valve, exhaust-valve, heater-valve and condenser-valve, all arranged adjacent to the same face of the engine and directly accessible by removing said face and without disturbing the other valves, substantially as described. 3rd. In an engine, a main steam-valve with a vertical seat, and a main exhaust-valve located beneath the latter, with a horizontal seat, the two communicating with the cylinder by a single port or opening, substantially as described. 4th. In a condensing-engine, the main steam and exhaust auxiliary heater and condenser valves connected with, and operated by an eccentric and its rod, and in combination therewith, cut-off valves connected with, and operated by an independent eccentric and its rod, substantially as described. 5th. In a non-condensing engine, an eccentric-rod and rocker-arm, and in combination with said rocker-arm, a rod connected with its upper end to which the main steam-valves are attached, and another rod connected with its lower end to which the exhaust valves are attached, substantially as described. 6th. The combination, with a sliding-valve and its rod, of two independent driving-dogs, which are attached to the rod and enter a cavity in the valve, the combination being such that lost motion, at the points where the dogs enter the valve, may be compensated by loosening their connections with the rod, and forcing the dogs apart from each other, substantially as described. 7th. In a non-condensing engine, a steam-valve with a vertical-valve seat and an exhaust-valve beneath it, with a horizontal seat, the two valves connected with the opposite ends of a rocker-arm, which is moved by an eccentric and its rods, and in connection therewith, a cut-off valve connected with, and operated by an independent eccentric and its rod, substantially as described. 8th. A steam-engine provided with similar steam-exhaust and cut-off valves at each end of its cylinder, said valves and their operating rods all located upon the same side of the cylinder and rendered accessible by removing vertical face-plates, substantially as described. 9th. The combination, with the main steam-valves and cut-off valves of a cut-off engine, of independent hand-valves, for admitting steam to the cylinder at either end, and exhausting from the other end, whereby the engine may be started, when it has stopped, at a point where the ports of the main steam-valves are closed by the cut-offs, essentially as described.

No. 18,549. Quilting Attachment for Sewing Machines. (*Machine à coudre faisant le piqué.*)

Henry T. Davis, St. Louis, Mo., U.S., 24th January, 1884; 5 years.

Claim.—A quilting-frame made entirely of gas-pipe consisting of side pipes M, end pipes N, bent as shown, centre pipes J and O, grooved rollers T secured to the pipe J, arm L secured to the pipe J, grooved roller K on the outer end of the arm L, and supporting-frame B supporting the quilt-frame and clamped to the sewing-machine table, all as set forth.

No. 18,550. Combined Hay Fork and Lifter. (*Fourche et monte-foin Combinés.*)

John Moore, Amherst, N.S., 24th January, 1884; 5 years.

Claim.—1st. The combination of the slotted prongs A with the barbs B, pivoted to the slides C contained in the prongs, and by a lever E connected thereto by links D, and pivoted in the prongs near the shoulder. 2nd. The combination of the lever-arms E having a common shank or stem e1 terminating with the eye e2, the ends e bent and pivoted in the prongs A, all substantially as described and for the purpose set forth.

No. 18,551. Journal Box. (*Boite à Graisse.*)

Levi H. Roberts, Paris, Ill., U.S., 25th January, 1884; 5 years.

Claim.—1st. The axle A formed with a chamber, in combination

with a spring or its equivalent, and a plug resting thereon, substantially as and for the purposes described. 2nd. The combination, with the axle-box, of the axle A having a hollow journal containing the spring and plug, substantially as set forth. 3rd. The chamber *a* enlarged to form the shoulder *c* in the axle A, in combination with the spring *b* and the plug *d* formed with the offset *e*, substantially as and for the purposes set forth. 4th. The front and rear boxes C, C₁, in combination with anti-friction wheels B, B, journalled in and between them, the said boxes being coupled together, substantially as and for the purposes set forth. 5th. The combination, with the anti-friction wheels B, B and front and rear boxes C, C₁ coupled together, of the journal-block D, D, substantially as described. 6th. The boxes C or C₁ formed with the diagonal partition plates H, whereby the oil-boxes G are made triangular in form, substantially as described. 7th. The coupling for the boxes C, C₁ consisting of the guttered plates J and L, in combination with the clamp-plates K and bolts M or M₁, substantially as and for the purposes set forth. 8th. The end plates L formed with the claws *o*, in combination with the U-bolts M, substantially as and for the purposes described. 9th. The front and rear boxes C and C₁ formed with the lips *m*, *m*₁, in combination with the guttered plates J, L, clamp plates K and bolts M or M₁, substantially as and for the purposes set forth. 10th. The combination, with the boxes C, C₁, the wheel journals *b* and the journal blocks D, D, of the covers I formed with the ribs *t*, substantially as and for the purposes set forth. 11th. In a journal box, the combination of the box C or C₁ having the ledges E, the journal blocks D supported upon said ledges at their lower ends, and the cover I adapted to extend inward opposite the upper end of said blocks D, substantially as and for the purpose set forth. 12th. The boxes formed with the ledges E, in combination with the wheel journals *b*, the journal blocks D, the cover I formed with the ribs *t*, substantially as and for the purposes set forth. 13th. The boxes C or C₁ formed with the triangular oil cups G, substantially as and for the purpose set forth. 14th. The combination, with the boxes having the upwardly widening slot or opening, of the approximately triangular apertured guards or plates, as shown and described. 15th. The passages *i*, *i*₁, for the dust slides or plates, made wider at the top than at bottom, in combination with the triangular dust plates or slides F, F₁, substantially as and for the purposes set forth. 16th. The frame for holding the journal boxes C, C₁, consisting of the lower piece J and side pieces L, L, made in one piece with solid bent or welded corners, as and for the purposes set forth. 17th. The side pieces L bevelled off at their upper ends, in combination with the upper piece J formed with the cross slots *l*, *l*₁, substantially as and for the purposes set forth. 18th. The combination of the upper and lower clamp plates K, K, the lower one being provided with lugs *u*, with the U-shaped bolts M, plates N and nuts *q*, substantially as set forth.

No. 18,552. Wire Fence Lock.

(Lien de Clôture en Fil de fer.)

Abraham C. Scarr, Sterton, Ont., 25th January, 1884; 5 years.

Claim.—A fence lock consisting in the wire loop B, placed around the ends of the rails and close in the angles formed by them, and twisted tight by the leverage of the top rail.

No. 18,553. Car-Coupler. (Accouplage de Wagons.)

Gardiner Boyd, Toronto, Ont., 25th January, 1884; 5 years.

Claim.—1st. In an improved self-acting car-coupler, a draw-head having a bell-mouthed end, the inclined lower lip of which extends to a point where the interior diameter of the draw-head is increased, in combination with the draw-head shank F connected to the draw-head, as specified, and a rubber block E fitted into the draw-head, between the end of the draw-head shank F and the shoulder *a*, formed by the enlargement of the interior diameter of the draw-head, the said rubber block having a recess *b* formed in it for the reception of the coupling link, substantially as and for the purpose specified. 2nd. In a self-acting car-coupler having a bell-mouth end, and a recessed rubber block E inserted in it, a coupling pin B having its front edge bevelled towards the point, in combination with the coupling link D provided with a cross-bar *g*, substantially as and for the purpose specified. 3rd. A draw-head provided with a bevelled coupling-pin B having a longitudinal slot *c*, for the passage of the pin *d*, in combination with the link D provided with a cross-bar *g*, and fitting in the recess *c* formed in the rubber block E, substantially as and for the purpose specified.

No. 18,554. Combined Steam and Compressed Air Engine. (Machine à Vapeur et Air Comprimé Combinés.)

Hezekiah E. Depp, Sedalia, Mo., U. S., 25th January, 1884; 5 years.

Claim.—1st. The method of operating engines herein described, consisting in admitting steam from the boiler into the compressor engine cylinder, then exhausting it into the main engine cylinder and admitting additional steam into said cylinder, then exhausting the combined steam and air into a casing, jacket or pipe surrounding the compressed air pipes and the water pipes, and, by said combined air and steam exhaust, heating the compressed air and the water in the pipes on their way to the boiler, and, in this heated condition, mingling the compressed air from the compressing cylinder or cylinders and the said water with the body of steam and water within the boiler, substantially as described. 2nd. The combination of a boiler A and steam engine B, an air compressing engine C D E, suitable inlet pipes and the delivery pipes enclosed in a casing, jacket or pipe containing the exhaust products of the main and compressing engines, substantially as and for the purpose described. 3rd. The combination of a boiler A and steam engine B, and air compressing engine C D E, pipes *a*, *b*, *d*, having suitable valves, and a feed water-pipe *g*, substantially as and for the purpose described. 4th. In an engine operated by combined steam and compressed air, the method herein described of utilizing combined exhaust steam and air from compressing engine or both, the compressing and main engines consisting in introducing said combined exhaust steam and air into a casing, jacket or pipe containing the compressed air delivery pipes of the compressing cy-

linder or cylinders, and the feed water pipe or both, the feed water and lubricating water pipes, and heating the said compressed air and said water on their way to the boiler, introducing the same into the boiler and mingling them with the steam and water therein, substantially as described. 3rd. The combination of a boiler A, a main engine B, a compressing engine C provided with one or more air cylinders, with inlet pipes having suitable valves, and with outlet pipes for the air feed water pipes, and a casing, jacket or pipe F in which the outlet air pipe or pipes and the water pipes are enclosed, and the exhaust from the main and compressing engines is introduced, substantially as and for the purpose described.

No. 18,555. Brace Hinge. (Penture à Gousset.)

Amos W. Sangster, Buffalo, N. Y., U. S., 25th January, 1883; 5 years.

Claim.—1st. A trunk hinge consisting of the jointed hinge plates *a*, *a*₁, provided with the opening *e*₂, *e*₁, in combination with brace *c*, having the parts *e*₂, the bent portion *e*₂ and a spring *e*, for the purpose described. 2nd. The combination of the hinge plates *a*, *a*₁, having the opening *e*₂, *e*₁, with the brace plate *c*, adapted to open and close in the joint opening and to operate in the opening *e*₂, for holding the lid of the trunk from opening back too far, substantially as described. 3rd. The hinge *a*, *a*₁, having opening *a*₃, in combination with the brace plate *c*, provided with a narrow portion *c*₃, substantially as and for the purpose specified.

No. 18,556. Portable Fence. (Clôture Portative.)

John Eastwood, Socorro, N. M., U. S., 25th January, 1884; 5 years.

Claim.—In a portable fence, the series of panels, each of which is provided at one end with an oblong opening G, the longitudinal spring locking-bar forming one of the rails of said panel and provided with a notch on its underside, and the lower notched rail D¹, and at the other end with the series of projecting rails, the upper and lower ones of which are provided with notches, substantially as and for the purpose specified.

No. 18,557. Washing Machines.

(Machine à Laver.)

Stanislas Pariseault, St. Jean Baptiste, Que., 25th January, 1884; 5 years.

Réclame.—1o. Dans une blanchisseuse mécanique, la combinaison d'un moulinet portant des bras en croix D, D, avec le bras horizontal E, pour faire fonctionner ce moulinet, fixé à l'extrémité supérieure du pivot du moulinet, tel que décrit. 2o. La combinaison, dans une blanchisseuse mécanique, d'un moulinet portant les bras en croix D, D, avec des chevilles anguleuses ou cannelées F, fixées à demeure dans ces bras.

No. 18,558. Churn. (Baratte.)

William M. Jones, (Assignee of Daniel K. Pomeroy), Ottawa, Ont., 25th January, 1884; 5 years.

Claim.—1st. The described churn consisting of frame A, body C suspended by links or rods D, pivoted to ears projecting above the body, as shown and described, and crank-shaft F, journalled in the frame and connected with the body, said parts being combined and arranged to operate, substantially as set forth. 2nd. In combination with frame A, constructed substantially as described, rock-shaft B journalled in said frame, rods D passing through said rock-shaft, and the body C provided with ears projecting above the body and jointed to the rods D, all as shown and described.

No. 18,559. Welt Cutter. (Tranche-Trépointe.)

Alfred Hinchcliffe and Thomas Hall, Lawrence, Mass., U. S., 25th January, 1884; 5 years.

Claim.—1st. The improved welt cutter herein described, the same consisting of the body A provided with the side pieces E, D, the pivoted groover G provided with the gouge *r*, screws *l*, pins *h* and spring K, the bar B provided with the screws *i*, the gauge *g*, knives R, N and wheel T, constructed, combined and arranged to operate, substantially as set forth. 2nd. In a welt cutter, the pins *h*, spring K and screws *i*, as set forth. 3rd. For adjusting the pivoted groover G, substantially as specified. 3rd. A welt cutter provided with a wheel for indenting the welt, to indicate the position of the stitch holes, in combination with means, substantially as described, for skiving and trimming its edge and cutting, a welt cutter, a stitch groover adapted to be vertically adjusted, a knife arranged behind the cutting edge of the groover and adapted to bevel the edge of the welt, and adjustable presser-bar for holding the welt strip down to the bed of the cutter and arranged in advance of the groover, a knife for splitting the welt strip or trimming its edge, arranged in advance of the bevelling knife, and a gouge for determining the width of the welt, substantially as set forth. 5th. A welt cutter provided with a knife for splitting or trimming the welt strip, a knife for skiving or bevelling the edge of the welt, and a gouge for cutting a stitch groove in the welt, in combination with means, substantially as described, for properly guiding the welt strip and welt to the knives and gauge, substantially as set forth.

No. 18,560. Sewing Machine.

(Machine à Coudre.)

John B. Price, Wallaston, Mass., U. S., 25th January, 1884; 5 years.

Claim.—1st. The rotating shaft *u*, its arm or plate and attached ring or annulus *d*, and the shuttle-carrying lever *f*, combined with the oscillating rider in which the said ring travels, substantially as described. 2nd. The shaft *u*, its arm or plate, and the eccentrically placed ring *d* and the lever *f*, combined with the oscillating rider and its adjusting gib, as shown and described. 3rd. The bed plate *g*, connected hub, and the lever and conical-headed stud or screw *p*, combined with a setting device accessible from the top of the bed-plate, substantially as described. 4th. The bed plate and the conical hub

driven therein, and the conical-headed screw *g* and lever *f*, combined with a screw-setting device *m*, to hold the said screw *g* in adjusted position, substantially as described.

No. 18,561. Telegraphic Insulator.

(*Isoloir Télégraphique.*)

Charles C. Hinsdale, Cleveland, Ohio, U. S., 25th January, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a telegraph insulator constructed of paper pulp, or a pulp of other fibrous material, substantially as herein set forth and for the purpose specified. 2nd. A telegraph insulator constructed of a composition of paper pulp, or a pulp of other suitable material, and liquid silica or silicon, or other equivalent cementing agents, substantially as set forth and for the purpose specified. 3rd. A telegraph insulator consisting of an insulating head *C*, and supporting stem or holder *B*, formed in one piece and constructed of the same material, viz., paper pulp, substantially as set forth and for the purpose specified.

No. 18,562. Electric Motor. (Moteur Electrique.)

Levi W. Stockwell, Cleveland, Ohio, U. S., 25th January, 1884; 15 years.

Claim.—1st. The combination, substantially as set forth, of the opposite adjacent field magnet poles, the armature magnets arranged transversely to each other and rotating between said poles, the field on each side of the armature being of uniform polarity, the armature coils wound parallel with the poles of the field magnet and with their axis of rotation, and at right angles to their plane of rotation, the commutator contacts with which the armature coils are connected, and the brushes bearing on said contacts and connected with the source of electric energy. 2nd. The combination, substantially as set forth, of the opposite adjacent poles of the field magnet, the armature magnets arranged transversely to each other and rotating between the opposite effective faces of said poles, the polarity of the field on each side of the armatures being uniform, the commutator contacts with which the armature coils are connected, the brushes bearing on said contacts, and an electric circuit common to said brushes. 3rd. The combination, substantially as set forth, of the field magnet having elongated radially projecting poles, the armature magnets which rotate centrally between the poles, and are arranged transversely to each other and have their coils wound with the greatest length parallel with the elongated poles of the field magnet, the commutator contacts and the brushes bearing thereon, and arranged to send the current successively first through one of the armature coils, then through both of the coils, and then through the other armature coil, according to their positions relatively to the field magnet, as described. 4th. The combination, substantially as set forth, of the field magnet, the armature coils, a single commutator ring, the commutator contacts with which the coils are connected, and the commutator brushes arranged in pairs, one pair on each side of the commutator ring to give an extended or double point of contact on each side of the commutator ring to make connection with one contact before connection with the adjacent one is broken. 5th. The combination, substantially as set forth, of the field magnet, the armature coils, the commutator ring, and the commutator brushes arranged to make contact first with the contact plates with which one armature coil only is connected, and then with both sets of contact plates, for the purpose described. 6th. The combination, substantially as set forth, of the field magnet poles, the transversely arranged armature magnets and electrical connections and contacts by which each armature magnet is cut out of the circuit during a portion of a revolution. 7th. The combination, substantially as set forth, of the field magnet, the armature, the commutator ring and brushes, the switch or controlling device, and the contact buttons and plates, by which, when the switch is in one position, the current is shunted from the armature coils, and when moved in one direction from the neutral line, sends the current through the armature coils in one direction, and when moved over to the opposite side sends the current in the reverse direction. 8th. The combination, substantially as set forth, of the field magnet, the armature coils, the commutator ring, a switch lever pivoted concentrically with the commutator ring, the brushes carried by said lever, the contact through which the battery is shunted from the armature coils, but still flows through the field magnet coils, and the contacts by which the direction of the current through the armature coils may be reversed by moving the switch lever to change the direction of the motor. 9th. The combination, substantially as set forth, of the field magnet, the armature, the commutator ring, the switch lever, the brushes carried thereby, and electrical contacts through which, by the movement of the lever, the commutator brushes are adjusted on the ring and the direction of the current through the armature coil simultaneously reversed. 10th. The combination, substantially as set forth, of the casing or magnet supports, the field magnet, and the supporting extensions of the magnet from the neutral part. 11th. The combination, substantially as set forth, of the field magnet, the supporting projections extending from the neutral part, the supporting casing, and supporting bars of non-magnetic material extending from the poles of the magnet to the commutator. 12th. The combination, substantially as set forth, of an electro-motor, and a bolt or support of non-magnetic material, connected with the pole or active part of the field magnet for attaching the motor to its support. 13th. The combination, substantially as set forth, of a commutator ring, and an endwise-moving contact brush in contact therewith. 14th. The combination, substantially as set forth, of a commutator ring, and endwise-moving contact brushes, each having two points of contact. 15th. The combination, substantially as set forth, of a commutator ring, and a sectional endwise-moving contact brush having two points of contact. 16th. The pole-piece formed wider at one part than another, for the purpose described. 17th. The combination, substantially as set forth, of a field magnet, the armature pole of unequal width. 18th. The combination, substantially as set forth, of the field magnet having a pole widest in its central transverse line, and an armature having a pole of like shape. 19th. The combination, substantially as set forth, of the field magnet, its pole, the armature and its pole, the poles of the field

magnet and armature being so shaped as to bring a relatively increasing area of the pole-pieces into proper magnetic relation as the armature-pole approaches and travels part way across the face of the field magnetic pole.

No. 18,563. Magneto and Dynamo-Electric Machine. (Machine Magneto et Dynamo-Electrique.)

A. de Meuron and Cuenod, (Assignees of René Thury,) Geneva, Switzerland, 25th January, 1884; 15 years.

Claim.—1st. A dynamo or magneto-electric machine having an inductor of a polygonal shape, formed of an assemblage of rectangular magnetic cores united with pole pieces, in combination with an induction armature composed of a drum upon which are disposed, parallel to the axis, coils united together by wires, which pass across the bases of the drum as a chord corresponding with a fraction of the circumference determined by the number of sides of the magnetic polygon, as above described. 2nd. A revolving induction armature or drum upon which are disposed, parallel to the axis, wires united in such a manner that the currents, generated under the influence of the magnetic poles, are parallel but alternately of a contrary direction under each of these poles, the connections taking place upon the bases of the drum and following the chord corresponding with the fraction of the circumference adapted, as above described. 3rd. A revolving armature or drum composed of an axis and disks *K* fastened to this axis, an insulated magnetic cylinder *M* upon the circumference of those disks, the induced wires disposed parallel to the axis upon the magnetic cylinder and connected together in such a manner that the generated currents are transmitted by a number of collecting brushes equal to the number of inducing magnetic poles, as above shown and described. 4th. A dynamo or magneto-electric machine or electro-motor composed of an inductor with multiple poles formed of a double series of opposite magnets, parallel to the axis of rotation of the machine, between which an induced armature moves, composed of induction wires disposed radially around an axis and united together by means of connecting wires passing partly along near the circumference exterior of the disk thus formed partly inside of it, the said wires connecting each induced wire with another induced wire placed at a fixed distance equal to a fraction of circumference determined by the number of magnetic poles, as shown and described. 5th. An induced armature in the shape of a disk composed of wires placed perpendicular to the axis, connected together in such a manner that the currents run alternately in a contrary direction upon every fraction of the armature corresponding with the poles of the inducing magnetic system, and playing the part of an inductive armature in dynamo or magneto-electric machines or electro-motors, as shown and described. 6th. The combination of a revolving induction armature drum or disc divided into sections, with a collector upon which are brushes equal in number to the number of divisions of the armature, as shown and described. 7th. The combination, with a dynamo or magneto-electric machine, or electro-motor with multiple poles, provided with an armature formed of conductors disposed as above described, of brush-bearers, which can be adjusted at will, and a movable piece around the axis, whereby their position on the surface of the collector can be changed, permitting the reversal of the current so as to render equal the wearing of the positive and negative brushes, as described and shown.

No. 18,564. Oil Can for Oiling Machinery. (Godet à Huile pour Graisser les Machines.)

Octavia C. White, New Orleans, La., (assignee of James A. Campbell, Waco, Texas.), U. S., 25th January, 1884; 5 years.

Claim.—1st. In an oil-can, the combination, with the can *A* and nozzle *B*, of the wire *C* and the tube *D*, held within the can on the bottom of the same, substantially as herein shown and described and for the purpose set forth. 2nd. In an oil-can, the combination, with the can *A* and the nozzle *B*, of the wire *C*, the tube *D* provided with an aperture *E*, and the wire *I*, substantially as herein shown and for the purpose set forth.

No. 18,565. Boiler Furnace. (Fourneau de Chaudière.)

Ezra W. Van Duzen, New Port, Ky., U. S., 26th January, 1884; 5 years.

Claim.—1st. A boiler-furnace composed substantially of the furnace chamber *B* and the secondary furnace *G*, formed within the arch of the bridge-wall and provided with grate-bars *H* and air spaces *I* underneath said grate-bars, as set forth. 2nd. In a boiler-furnace, a secondary furnace *G* formed in the hollow bridge wall, which is provided with air openings *l*, and the perforated plate or grate-bars *H*, as set forth. 3rd. In a boiler-furnace, the bridge-wall *E* provided with the register *L*, and air passages *l* conveying air into the secondary furnace *G*, as set forth. 4th. In a boiler-furnace, the combination of the furnace *B*, the grate, the bridge-wall at the rear of the grate constructed with the chamber *G*, the grate *H* forming a bottom for the said chamber, a perforated ledge under the grate, and an air-space *I*, as set forth.

No. 18,566. Method of, and Apparatus for Utilizing an Explosive Compound. (Méthode pour utiliser une Composition Explosible et appareil pour cet objet.)

Robert Punshon and Robert R. Vizer, London, Eng., 26th January, 1884; 5 years.

Claim.—1st. The utilization of picric acid (pure or combined as above described) and nitric acid by enclosing them separately in cartridges, vessels or containers, in such a manner that said acids are kept apart for transit or storage, and can be liberated and combined at, or in the place where the explosive force of the compound is to be utilized, substantially as hereinbefore described. 2nd. An apparatus

for blasting or like purposes, consisting of cartridges, vessels or containers *a, b*, in which the picric acid (pure or combined), as above described, and nitric acid are separately contained, as described.

No. 18,567. Washing Machine.

(*Machine à Laver.*)

Alfred Genest, Montreal, Que., 26th January, 1884; 5 years.

Claim.—In a washing machine, the combination, with a spindle carried centrally in the lid of the vessel, and carrying plate *E* and pins *E'*, of horizontal bevel gear wheel *D* mounted on said spindle and turned alternately in opposite directions by wheels *F, F'*, rotating continuously one way, all substantially as herein described and for the purposes set forth.

No. 18,568. Fastening for Buttons.

(*Queue de Boutons.*)

Charles B. Maedel, Kansas, Mo., U. S., 26th January, 1884; 5 years.

Claim.—1st. A button-fastener or button-lock consisting of a disk *A*, having a slot *E* and ears *L, L*, and a bolt *B*, substantially as set forth. 2nd. The combination of the button having an eye *c* adapted to extend through the fabric, with a disk *a* having a slot *E* and ears *L, L*, and a bolt *B*, pivoted at one end to the disk, and adapted to extend through the eye of the button, and be fastened by the ears *L, L*, substantially as set forth.

No. 18,569. Match Splint Machine.

(*Machine à Allumettes.*)

Charles Martin, Toronto, Ont., 26th January, 1884; 5 years.

Claim.—1st. The combination, in a splint-making machine, of reciprocating knives which sever the splints from the blank, with reciprocating clearers which follow the cutters and force the splints therefrom, and suitable driving mechanism, substantially as described. 2nd. The reciprocating cutters, as arranged in series, as stated, the clearers also arranged in similar series, and driving mechanism, substantially as described, whereby the cutters sever the match splints from the blank, the clearers follow after the cutters and force the splints therefrom, and both cutters and clearers are caused to rise simultaneously, substantially as described and set forth. 3rd. The combination, with the tray support and its worm gear driving mechanism, of means, substantially as described, for throwing the worm gear out of engagement, so that the tray support can be retracted, as set forth. 4th. In a match splint machine, of the character described, suitable driving mechanism, a reciprocating cutter adapted to sever a number of matches from a blank and to divide them from each other, a reciprocating clearer adapted to force the match splints from the cutters described, and a reciprocating tray to receive the said splints, as and for the purpose set forth.

No. 18,570. Ruffle Attachment for Sewing Machines.

(*Machine à coudre faisant les fronces.*)

Joseph S. Sackett, New Haven, Ct., U. S., 26th January, 1884; 5 years.

Claim.—1st. The combination, with the presser-foot having the extension *O*, of the platform *B*, the wire-frame *M* constructed to form a slot *c* at its rear end, the plate *E* carrying the ruffling-blade *D*, the lever *F* and the adjustable arm composed of the sections *H, J* and *L*, substantially as set forth. 2nd. The frame *M* having wires *K, K*, and plate *E* carrying a ruffling-blade, in combination with the platform *B* having the orifices *d, d*, for the passage of the wires *K, K*, and orifice *j* for the insertion of the binding and piping devices, substantially as described. 3rd. The adjustable arm composed of three sections *H, J* and *L*, thumb-piece *I* and nut *f*, substantially as shown and for the purposes specified. 4th. The combination of the adjustable arm of three sections *H, J* and *L* operating a lever *F*, with the frame *M* carrying a ruffling-blade, substantially as set forth. 5th. The combination of the platform *B*, frame *M* carrying ruffling-blade *D*, with double-piper *P* having the double-plates *m* and *n*, substantially as described and set forth. 6th. The combination of the platform *B*, frame *M* carrying a ruffling-blade *D*, with the binder *R* having the double horse-shoe plates *p* and *r*, substantially as described and for the purposes herein set forth.

No. 18,571. Headlight.

(*Lanterne de Loc motive.*)

Edwin S. Jenny, Syracuse, N. Y., U. S., 26th January, 1884; 5 years.

Claim.—1st. The combination, with a headlight provided with transparent signal-plates or lenses, of an auxiliary lamp arranged in the headlight case outside of the main reflector, and adapted to illuminate said signal-plates or lenses, substantially as set forth. 2nd. The combination, with a headlight, of a reflector *C*, a lamp *D* adapted to illuminate the interior of said reflector, an auxiliary lamp *H* arranged outside of said reflector, and an oil reservoir *E* connected with both lamps, substantially as set forth. 3rd. The combination, with a headlight, of an auxiliary lamp *H*, arranged outside of the reflector and adapted to illuminate the signal-plates or lenses applied to the sides or top of the headlight-case, and one or more transparent plates *J* arranged in the rear wall of the headlight-case, substantially as set forth.

No. 18,572. Horse Shoe.

(*Fer à Cheval.*)

James B. Burr, Bayshore, N. Y., U. S., 26th January, 1884; 5 years.

Claim.—1st. A horse-shoe having extra weight attached thereto, to effect the purposes of a movable toe-weight, when the extra weight is placed at the toe, or forward of the centre of the shoe, and is united with, and forms a part of the shoe, substantially as described. 2nd. A horse-shoe having its web weighted to effect the purposes of a movable toe-weight, when the extra weight is placed at the toe, or forward of the centre of the shoe, and is united with, and forms a

part of the shoe, and having a drop-crease depressed or formed in a manner to prevent the nail heads, when the shoe is nailed to the foot, from extending below the bottom of the web of the shoe, substantially as described. 3rd. A horse-shoe having its web weighted at the toe, or forward of its centre, and which is widened or extended in the direction of the open space occupied by the frog of the foot, forming a plate for the protection of the sensitive sole, substantially as described. 4th. A horse-shoe having its web weighted at the toe, or forward of its centre, and extended in the direction of the open space occupied by the frog, when the said extended web is concave or dished on that side of the shoe, which comes in contact with the horse's hoof, substantially as described. 5th. A horse-shoe weighted at the toe, or forward of its centre, to effect the purposes of a movable toe-weight, and having the underside or that part of the shoe coming in contact with the ground made curved in form at the toe, substantially as described. 6th. A horse-shoe having its toe weighted, an extension of the toe web to protect the sensitive sole, and the quarters of the shoe reduced in size or diminished as they approach the heel, substantially as described. 7th. A horse-shoe having a weighted toe-web, a depressed or cut-away drop-crease, the underside of the web at the toe curved or convex in form, and the upper side of the web covering the sensitive sole or a part thereof, dished or concave, substantially as described.

No. 18,573. Metallic Packing for Piston Rods and Valve Stems in Stuffing Boxes.

(*Garniture métallique pour les tiges des pistons et les corps de soupapes dans les boîtes d'étoupe.*)

John Player, Marshalltown, Iowa, U. S., 26th January, 1884; 5 years.

Claim.—1st. The detachable jointed and flexible metallic packing composed of two cone-shaped soft-metal rings, two cup-shaped hard metal rings and one plain-faced hard-metal ring, in combination with a stuffing-box, an adjustable gland and a piston rod or valve-stem, to operate in the manner set forth, for the purposes specified. 2nd. The cone-shaped soft metal rings *C, C*, the cup-shaped hard metal rings *D, D*, the plain-faced hard metal rings *F* and the elastic rings *G, G*, arranged and combined relative to each other, and a stuffing-box, an adjustable gland and a reciprocating rod or stem, substantially as shown and described for the purposes specified.

No. 18,574. Saw Set.

(*Fer à contourner.*)

Henry Flater, Findlay, Ohio, U. S., 26th January, 1884; 5 years.

Claim.—1st. In a saw-set, the combination, with the base-plate having the downward extension *B*, of a swinging arm swivelled to the lower end of the extension, and a thumb-screw *E*, arranged and operating for the purpose set forth. 2nd. In a saw-set, the combination, with the base-plate, of a pivoted spring-actuated jaw and the adjustable guards *H*, as and for the purpose set forth. 3rd. In a saw set, the combination, with the base-plate provided with a thumb-extension *J*, of the arm *T*, pivoted in the base-plate and a thumb-screw *K* connecting the arm and extension, and adapted to adjust the level of the saw, as set forth. 4th. In a saw-set, the combination, with the base-plate, of the guards *H* having a projecting portion *L* against which the saw teeth are pressed, and an adjusting screw *I* arranged to adjust the gauge of the guards, as and for the purpose set forth. 5th. In a saw-set, the combination, with the base-plate, of a pivoted spring-actuated jaw, the adjustable guards *H* and the adjustable arm *T*, as and for the purpose set forth. 6th. In a saw set, the combination, with the base-plate, of a downward extension *B*, a swinging arm *C* and a thumb-screw *E*, of the pivoted spring-actuated jaw *F*, the rearward extension *J*, pivoted arm *T*, thumb-screw *K*, guards *H* and screw *L*, as and for the purpose set forth.

No. 18,575. Corn and Bunion Shield.

(*Bourrelet pour les cors et les oignons.*)

John J. George, Washington, D. C., U. S., 26th January, 1884; 5 years.

Claim.—As an improved article of manufacture, a corn-protector consisting of rings *A, B* of soft thin leather, forming an annular cushion filled with soft fibrous stuffings *C*, and provided with the oiled-silk disk *D*, to cover the central opening in the cushion, all constructed and arranged substantially as shown and described.

No. 18,576. Neck Yoke.

(*Joug.*)

Joseph T. Ramsay, Helena, Ark., U. S., 26th January, 1884; 5 years.

Claim.—The combination, with trussed yoke *A* sprung apart at its centre, of the block *B* secured by rivets *c, c* and formed with grooved upper and under edges, and an opening or eye passing through it at a slight incline and having a flaring outer end, substantially as and for the purpose set forth.

No. 18,577. Steam Engine Lubricating Attachment.

(*Graisseur continu de machine à vapeur.*)

Henry H. Westinghouse, Pittsburgh, Pa., U. S., 26th January, 1884; 15 years.

Claim.—1st. As an improvement in the class of engines in which the lubrication of the moving parts is effected, wholly or in part, by the splashing of the oil effected by the piston and valve-stem connections, the combination of a close oil-vat and a vent and return drip-pipe, substantially as set forth. 2nd. In combination with a close oil-vat *Y* of a steam-engine, a vent-pipe *a*, escape opening or funnel *c* and a drip-pipe *c*, substantially as set forth. 3rd. In combination with close oil-vat *Y* and the cylinders and valve chambers *A, V, a* water-escape pipe *e* entering the vat, at or near the bottom, and rising to the normal oil-level of the vat, substantially as set forth.

No. 18,578. Circular Knitting Machine.*(Machine à tricôt circulaire.)*

John Bradley, Chemsford, Mass., U.S., 26th January, 1884; 5 years.

Claim.—1st. The stitch-wheel D having a series of radial incline blades, formed with right angle ends having straight central portions c and projecting nibs s at each edge, substantially as described. 2nd. The combination with the series of needles B, of the stitch-wheel D, plate thread-holder P having the notch e, fixed cutter O and vibrating thread-guides M and N, substantially as specified. 3rd. The combination, with the course-wheel R provided with a series of holes t, of the removable and adjustable blocks T, vibrating arm V having the projecting pin U and pawl Y, and stripe-wheel A, substantially as described as and for the purposes set forth. The combination, with the stripe-wheel A, of the pattern cam-rings B, having a series of inclines and off-sets, which contact with the ends of the cam-rods E₁ and F₁, so as to vibrate the thread-guides M and N, substantially as described as and for the purposes set forth.

No. 18,579. Machine for Washing, Wringing and Mangling. *(Machine à laver, essorer et calendrer.)*

John P. Rothwell, Lytham, Eng., 26th January, 1884; 5 years.

Claim.—1st. The combination of the foot-treadle d, with friction gearing e, c, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the friction discs e, c, with the rollers h, i, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the shafts, of the roller h, of the anti-friction pulleys k, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the forked lever q with spring x and casing b, substantially as and for the purposes hereinbefore set forth. 5th. The combination of the cross-grained wood segments h' with the shaft and bushes i, substantially as and for the purpose hereinbefore set forth. 6th. The combination of the copper cylinder c, arms g₁, with shafts f, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the roller x, y, spring z, with squeezing roller h, substantially as and for the purpose hereinbefore set forth. 8th. The combination of the foot p, and pulley c₁, with frame o and stay-rod d₁, substantially as and for the purpose hereinbefore set forth. 9th. The combination of the hand-lever p₁, upright o₁, saddle m₁, with the washing-tub m₁, substantially as and for the purpose hereinbefore set forth.

No. 18,580. Organ Reed. *(Anche d'orgue.)*

William Munroe, Worcester, Mass., U.S., 28th January, 1884; 15 years.

Claim.—1st. In an organ-reed, the tongue of the reed secured to the reed block by means of a wire staple, the prongs of the staple being upset sufficiently to draw the butt of the tongue tightly down upon the face of the reed-block. 2nd. In an organ-reed, the tongue grooved across its butt, for receiving the bridge of the wire staple pressed therein, to aid in holding the tongue firmly in position. 3rd. The tongue of the reed perforated or recessed at the edges of its butt, and grooved from recess to recess, for receiving the staple, which holds it to the reed-block, substantially as set forth.

No. 18,581. Quilting Attachment for Sewing Machines. *(Machine à Coudre faisant le Piqué.)*

Henry T. Davis, St. Louis, Mo., U. S., 23th January, 1884; 5 years.

Claim.—The longitudinal rails F and I having rollers G, J, and secured to the end pieces of a quilting-frame intermediately of a side project and fabric-depressing rod to permit the sides of the frame to project beyond its supporting-strip, over the machine table, as set forth.

No. 18,582. Tubular Lantern.*(Lanterne Tubulaire.)*

George A Kennedy, Coaticook, Que., 28th January, 1884; 5 years.

Claim.—1st. The combination, with the tubes, globe and hood of a tubular lantern, the double disk D, having an under convex surface provided with arms or hangers D₂, supported in sockets d₁ secured to the tubes, the spring presser F holding the globe and secured to the edge of the hood or cap H, and having gap f to which is connected the loop pull I, the enlarged top chamber E provided with lateral perforations e and meeting the curved ends c of the tubes. 2nd. The disk D with its convex surface upward and provided with large perforations having connected underneath and at the edge a plate B; also perforated, the double disk so formed provided with arms or hangers D₂ bent upward and having downward deflected ends d₁, and filling the sockets d₁ secured to the tubes. 3rd. The perforated arms or hangers D₂ united to the edge of disk D, at its underside. 4th. The disk D and having downward deflected end d₁ to fit the socket d₁ attached to the tubes. 5th. The hot air chamber E provided with lateral perforations e, in combination with the tubes C. 6th. The chamber E. 7th. The spring presser F having gap f clasped by the ends of a staple pull I, in combination with the cap or hood H and the globe G, all substantially as described and for the purpose set forth.

No. 18,583. Grain Binding Harvester.*(Moissonneuse-Lieuse.)*

Lewis Miller, Akron, Ohio, U. S., 28th January, 1884; 15 years.

Claim.—1st. The inclined binder frame interposed between the main drive-wheel and the cutting apparatus and platform, one of the inclined transverse bars of said frame being provided with a pendent arm supporting the main drive-wheel axle. 2nd. The inclined trans-

verse bar of the binder frame provided with a pendent arm curved in an arc of a circle, of which the secondary or sprocket wheel shaft C is the center, in combination with the grooved block to which the main drive-wheel axle is secured, made adjustable thereon, substantially as and for the purpose described. 3rd. The combination, with the curved arm of the binder frame and the axle-block adjustable thereon, of the shaft E, chain E, worm-wheel E₁ and shaft E₂, with its worm or screw for adjusting said frame on the driving-wheel, substantially as described. 4th. The combination, with the shaft E and the worm wheel, and worm or screw for actuating the same, of the adjustable axle sleeve C₂ and the adjustable quadrant-lever F carrying the grain wheel axle, said block and quadrant being connected with the shaft E by chains E₄ and F₂, adapting them to be simultaneously adjusted relatively to the main binder and platform frames, substantially as described. 5th. The combination, with the transverse grain platform sills A, A₁, of the inclined binder frame and the brackets supporting the upper end of said inclined frame, substantially as and for the purpose described. 6th. The combination, with the forward platform sill, of the bracket B forming a support for the upper end of the inclined binder frame and a tongue socket, substantially as described. 7th. The combination, with the platform sill, of the bracket B₁ provided with a seat for the upper longitudinal bar of the inclined binder frame, and with bearings for the secondary or bevel wheel and counter shafts, substantially as described. 8th. The combination, with the platform sill or frame, of the brackets B, B₁, the inclined binder frame secured to said sill and brackets, the angular axle brackets B₄, and the brace A₄, all substantially as described. 9th. In a harvester machine having an inclined elevating binder table, interposed between the inner or delivery end of the horizontal carrier of the grain platform, and the drive-wheel, the combination, with such binder table, of a packing and binding mechanism adapted to gather and pack the grain upon the binding table and bind it into bundles during its travel up the incline of the table and while resting thereon, substantially as described. 10th. In a harvesting machine having an inclined elevating and binding table, interposed between the inner or delivery end of the horizontal carrier of the grain platform and the drive wheel, the combination, with such binder-table, of a packing and binding mechanism adapted to gather and pack the grain upon the binding table, and bind it into bundles during its travel up the incline of the table and while resting on the table, and a discharging mechanism for separately engaging each bundle as bound, substantially as described. 11th. In a harvesting machine having an inclined binder table, interposed between the delivery end of the horizontal platform carrier and the drive wheel, and having also a packing and binding mechanism, for binding the grain on and during its travel up the incline of the table, the combination, with said mechanism and with the cutting apparatus, of the continuously rotating shaft of the binder mechanism actuating the packers mounted in the binder frame F, in the triangular space beneath said table, and provided with a driving connection thence to the sickle bar, substantially as described. 12th. In a harvesting machine having an inclined binder table, interposed between the delivery end of the horizontal platform carrier and the drive-wheel, the combination, with such table, of a packing mechanism and a needle driving mechanism, both located in the triangular space beneath said table, substantially as described, whereby the grain is packed in a gravel while it is moving up said table, and bound into a bundle while under such compression and while resting on the table, substantially as set forth. 13th. In a binding machine having an inclined elevating and binding table, interposed between the inner or delivery end of the horizontal platform carrier of the grain platform and the drive-wheel, the combination, with such binder table, of a packing and binding mechanism, and picking and gathering mechanism, for moving the grain as carried from the horizontal carrier up the foot of the inclined table into or within the range of the packers, and a discharging mechanism for moving each bundle separately in regular succession from the place of binding up to, or over the upper end of the incline, substantially as described. 14th. In a harvesting machine having an inclined binder table interposed between the inner end of the horizontal platform carrier and the drive-wheel, the combination, with such table, of packers arranged to enter the up-flowing grain from beneath the table near the foot of the incline, and then to move the incline to carry the grain upward against its own gravity, but in the direction of discharge, and simultaneously to pack or press it against a stop or compressor arm, substantially as set forth. 15th. In a harvesting machine having an inclined binder table, interposed between the inner end of the horizontal platform carrier and the drive-wheel, the combination, with such table and with a stop or compressor arm, near the upper end, of packer arms and an oscillatory needle, both arranged to enter the up-flowing grain from beneath, near the foot of the incline and both arranged to move up the incline of the table and carry the grain upward against its own gravity, but in the direction of discharge, substantially as set forth. 16th. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, in combination with a needle shaft located beneath said table, in a plane above the plane of the platform carrier, and a needle adapted to enter the grain on a plane below the plane of said shaft and operating from beneath, to move the grain up the incline of said table to the place of binding thereon. 17th. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, in combination with packers and a needle, both operating from beneath, to move the grain up the incline of the table progressively, toward the point of discharge, in the process of compressing and binding the grain. 18th. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, in combination with a needle shaft located underneath said table, in a plane above the plane of the carrier, a needle operating from beneath said table, adapted to enter the grain near the foot of the incline, on a horizontal plane below the plane of the needle shaft, and to assist in moving the grain up said incline, and a guard for effecting a separation of the grain, checking the up-flow of the grain below the needle, during the operation of binding a bundle, and facilitating the withdrawal of the needle. 19th. The combination of the binder frame, the needle arm arranged to fall beneath the binder table and provided with a segmental needle guard and a shaft, for operating the binder mechanism, arranged beneath the binder table and between the needle guard and needle arm, substantially as and

for the purpose described. 20th. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, in combination with a needle shaft located underneath said table, a binder arm or needle operating from beneath said table, adapted to enter the grain on a plane below the plane of said shaft, and to assist in moving the grain up the incline of the table to the place of binding thereon, and a bundle ejector. 21st. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, and means for elevating the grain on said inclined table from the front of the incline to the mechanism for binding the grain on said incline, in combination with a rotary ejector and a secondary ejector arm operating from beneath the table, for discharging the bound bundles over the upper end of said inclined elevating table. 22nd. The inclined elevating binder table, interposed between the platform carrier and the driving-wheel, in combination with a packing mechanism operating from beneath the table, for packing the grain on said inclined table, and pickers or gatherers interposed between the platform carrier and the packing mechanism, for moving the grain from the delivery end of said carrier to within reach of the packing mechanism. 23rd. The inclined elevating binder table, interposed between the platform carrier and the drive-wheel, in combination with a packing mechanism operating from beneath the table, pickers or gatherers interposed between said carrier and packing mechanism, and a butting mechanism, said pickers and butting mechanism, both assisting to move the grain up the incline of the table to a point within the reach of the packing mechanism. 24th. The butting device arranged on the inclined binder, on the grain side of the drive-wheel, and pivoted at its lower end, in combination with the angular rack and handle bar secured to its upper vibrating end, for adjusting said butting device, substantially as described. 25th. The continuously operating first or main shaft of the binder mechanism, provided with cranks for actuating the packers, in combination with gearing for connecting said shaft with the reel cutting and raking mechanism, for operating the same, substantially as described. 26th. The combination of the pickers or gatherers, which overhang the grain in its passage from the platform to the binding mechanism, with a support attached to, and upheld by the binder gear standard, on the platform side of the driving-wheel. 27th. The combination and arrangement of the main frame, the binder-frame, the binder gear-standard and the reel actuated from a shaft, arranged between the binder gear standard and the revolving arms of the reel, and over the moving grain, substantially as described. 28th. The combination and arrangement of the binder frame, the butter and the shaft, arranged between the binder gear standard and reel, and over the moving grain, to give motion to the butter, substantially as described. 29th. The combination and arrangement of the binder frame, the binder gear standard and reel, the pickers and their shaft, arranged between the binder gear standard and over the moving grain, to give motion to the pickers, substantially as described. 30th. The binder frame and table, arranged to incline from the inner end of the platform and carrier, to and beyond the resting place of the gavel while being bound, in combination with the packers secured to, and arranged beneath said table, and a binder gear standard and reel standard, also secured to said table, in advance of the moving grain, substantially as and for the purpose described. 31st. The combination, with the main frame, of the binder frame and mechanism located between the platform carrier and drive-wheel, the binder standard located in advance of the moving grain and the pickers, with supports suspended over the moving grain in such manner that an unobstructed space is secured at the rear end of the table, for the moving heads of the grain. 32nd. The combination of the pickers or gatherers, which overhang the grain in its passage from the platform to the binding mechanism, with a support attached to, and upheld by the binder gear standard on the platform side of the driving wheel. 33rd. The driver's seat supported upon the binder standard or yoke, above the raking and binding mechanism, upon the grain side of the drive-wheel. 34th. In a harvesting machine, having an inclined elevating binder table interposed between the grain platform and the drive-wheel, the combination, with such table, of mechanism for binding the grain in its passage over the table, a reel post connected with a support arranged above said table and attached to the gear-standard, and butting device arranged between said reel-support and inclined binder-table. 35th. The inclined table located between the platform and the driving-wheel, in combination with a binder gear-standard located on the grain side of said wheel, in advance of the path of the grain, and a cross-bar connected with, and upheld by the gear-standard, and supporting mechanism for tilting the machine. 36th. The binder gear-standard located on the grain side of the drive-wheel and in advance of the path of the grain in being elevated over said wheel, in combination with a driver's foot board connected with, and upheld by said gear-standard, and provided with mechanism for rocking the machine in said drive-wheel, substantially as described. 37th. The combination, with the lever for tripping and setting in motion the binder mechanism, of the rock shaft and the pivoted and yielding arm, connected with the upper grain compressor, substantially as described. 38th. The pinion on the main binder shaft, for actuating the binder mechanism, in combination with means for coupling said pinion to, and causing it to rotate with its shaft, means for automatically releasing said pinion from its shaft and a foot lever for tripping said releasing mechanism, substantially as described. 39th. The reel supported on the reel post in a pivoted arm or yoke, in combination with a segment rack secured to the reel post, and a worm shaft secured to the yoke, for adjusting said pivoted arm and reel, substantially as described. 40th. The combination, with the rim of the ground or traction-wheel, of removable clips or socket-pieces for receiving the ends of the spokes of said wheel, said clips being each provided with a longitudinally-inclined floor or base upon which the spokes ride, with a rotary movement relatively to the rim for their adjustment, and means for securing the ends of the spokes in said clips, substantially as described. 41st. A ground or traction-wheel provided with removable clips or socket-pieces having each longitudinal flanges, and a longitudinally inclined floor or base, in combination with a transverse web provided with a hole for the reception of a bolt or fastening, for drawing the end of the spoke up the incline and securing it, substantially as and for the purpose set forth. 42nd. The combination, with a clip or socket-piece secured to the rim of a wheel and having longitudinal flanges, a transverse flange and a longitudinally-

inclined floor or base, of a spoke bevelled on its outer end, to conform to, and ride up said inclined floor, and secured to the transverse flange, substantially as described. 43rd. The hub and spokes cast in one piece, separate from the rim, in combination with a rim provided with clips or socket-pieces, for the reception of the ends of the spokes, said clips being each provided with longitudinal flanges, a transverse web or flange and a longitudinally-inclined floor or base, and means for securing said spokes adjustably to such transverse webs, substantially as described. 44th. The combination, with the inclined binder frame arranged between the grain platform and drive-wheel, of the binder gear-standard secured to the inclined binder-frame, the foot-bar arranged transversely, and the picker-bar, arranged longitudinally of the machine, and supported from the binder gear-standard. 45th. The combination, with the inclined binder-frame arranged between the grain platform and drive-wheel, of the binder gear-standard secured to the inclined binder-frame, the foot-board and picker-bar secured to the binder gear-standard, and the driver's seat bar secured to, and supported by the picker-bar and binder gear-standard, substantially as described. 46th. The inclined binder table, located between the grain platform and the driving-wheel, in combination with the binder gear-standard located on the grain side of said wheel, in advance of the path of the grain in being elevated over the same, mechanism for elevating and binding the grain upon the inclined table and for discharging the bundles over the drive-wheel, and an apron overhanging the latter, substantially as described. 47th. The inclined binder-table, located between the grain platform and the driving-wheel, in combination with the binder gear standard located on the grain side of said wheel, in advance of the path of the grain in being elevated over the same, the overhung knoter-shaft and a board hinged to the rear transverse rail of the frame of the machine, to support the overhanging heads of the grain, substantially as described.

No. 18,584. Parchment and other Blanks used with Paper Fasteners. (Renforts en parchemin et autres pour les oeillets à papier.)

Henry J. Morgan, Ottawa, Ont., 28th January, 1864; 5 years.

Claim.—1st. A sheet of blanks A, of parchment or other tenacious material or substances, outlined by dotted, full or perforated lines, each blank forming a double or a triple square and provided with eyelets B, as set forth, for the purpose described. 2nd. A sheet of blanks A, of parchment or other tenacious substance or materials, outlined, or dotted, or perforated in shapes of a double or triple square, for separation by cutting or tearing, and having an eyelet B, in two or more squares of each blank to coincide, when the blank is uniformly folded into a square of two or three thicknesses, as set forth, for the purpose described.

No. 18,585. Horse Hoe or Cultivator. (Houe à cheval ou cultivateur.)

Charles F. Bell, St. George, Ont., 28th January, 1864; 5 years.

Claim.—1st. In combination with a horse-hoe or cultivator, of the construction of the clips H as shown, to enclose a round shank b, of the teeth G and mould-boards, and provided with a slot c to allow one end of the clip to be raised or lowered, so as to adjust the teeth or mould-boards to any position or angle desired, substantially as described. 2nd. In a horse-hoe or cultivator, the combination of the round-teeth shanks b, clips H, slots c, bolts d and frame A, substantially as and for the purpose specified.

No. 18,586. Wind Engine. (Moulin à vent.)

Frank G. Carnell, Grand Rapids, Mich., U.S., 28th January, 1864; 5 years.

Claim.—1st. The combination, in a wind-engine, of the wheel mounted in rear of the head, a governor-vane in front of said head, and a rod connected to the governor-vane, and sections of fans connected to said rod by means of levers and links, substantially as described. 2nd. The combination, in a wind-engine, of the wheel mounted in rear of the head, and a governor-vane in front, and a rod connected to the governor-lever, and sections of fans connected to said rod by means of the links 4, 6 and the levers 5, substantially as described.

No. 18,587. Means for Supporting Electrical Wires. (Moyens pour supporter les fils Electriques.)

John W. Tringham, Windsor, Ont., 28th January, 1864; 5 years.

Claim.—1st. In combination with a pole or other suitable support, the means of securing the wire to such pole and of insulating said wire, such means consisting of a block or blocks, one or both ends of which are adapted to close upon the opposite end of the other, and sheet insulating material enclosing the wire, said wire and said insulating material being enclosed within the block as in a clamp, substantially as and for the purposes described. 2nd. A bifurcated block, the two sides of which are tapering, in combination with a support provided with a hole to receive said tapered end of the block adapted to enclose the wire and enclosing insulating material, substantially as set forth.

No. 18,588. Art and Process of Preserving Animal or Vegetable Substances. (Art et procédé de conservation des substances animales et végétales.)

John Echart, Munich, Bavaria, 28th January, 1864; 5 years.

Claim.—The herein described process of preserving articles of food by forcing into them, under a pressure greater than the atmosphere, while in a suitable vessel, a preservative solution, substantially as described.

No. 18,589. Cooking Utensil.*(Ustensile de cuisine.)*

James D. Storie, Oshawa, Ont., 28th January, 1884; 5 years.

Claim.—1st. A boiler A provided with a tube B, one end *a* of the tube entering about on a level with the bottom of the boiler A, while the other end *b* of the tube enters the boiler at a point above the end *a*, in combination with the fire-pot of a stove, arranged substantially as and for the purpose specified. 2nd. A boiler A provided with a tube B connected to it, as described, and fitting into the fire-pot of a stove, as specified, in combination with the pot D, steamer F and tea-drawer G, arranged substantially as and for the purpose specified.

No. 18,590. Production of Surfaces for Printing, Stamping or Embossing. *(Production des surfaces pour imprimer, estamper ou graver en relief.)*

Joseph J. Sachs, London, Eng., 28th January, 1884; 5 years.

Claim.—1st. The production of designs or the like, upon surfaces for printing, stamping, embossing, or the like, by covering the said surfaces with resist, and (either before or after this) securing on the same the design to be produced, then clearing out by etching or depositing metal on the exposed bare parts of the surface, all substantially as herein set forth and for the purposes described. 2nd. In the production of surfaces for printing or the like, the deposition, after the surface has been covered by the design or resist, of a thin film of metal which is then removed from the outstanding part and remains on the other, substantially as hereinbefore described. 3rd. The production of a rough surface engraving by depositing a thin coating of metal on the surface which has been treated as described, and then roughening it, and afterwards polishing or smoothing the raised part, so as to form rough sunk portions suited for retaining ink or colour, substantially as hereinbefore described.

No. 18,591. Automatic Electric Regulator for Storage Batteries. *(Régulateur Electrique Automatique pour les Accumulateurs.)*

Charles G. Perkins, New York, N. Y., U. S., 28th January, 1884; 5 years.

Claim.—1st. The combination of a series of storage batteries and a generator of electricity, their circuit-closer in the main electrical circuit between the generator and batteries, said circuit-closer closing and opening the circuit automatically by means of electro-magnets in the main electrical circuit of the generator, and a circuit closing switch and cut-out in the lamp-circuit of the batteries, said circuit-closer and cut-out suitably connected with the aforesaid circuit-closer of the generator circuit, so as to be operated automatically and simultaneously therewith, thereby causing it to cut out a number of the batteries in accordance with the electro-motive force of the generator. 2nd. In combination with a generator of electricity and a series of storage batteries, a circuit-closer in the main electrical circuit of a generator, said circuit-closer adapted to be operated automatically by electro-magnets, one of which is in the main circuit of the generator, the other in the derived circuit thereof, the whole connected and operating automatically and simultaneously with a circuit-closing switch and cut-out, engaging with a series of metallic plates electrically connected with one pole of each battery, the whole forming a complete device for regulating the current, charging the storage-batteries during the illumination of the lamp in the battery circuit. 3rd. In an automatic circuit-closer and circuit-closing switch and cut-out, the combination, substantially as shown and described, of the storage-batteries, a generator *e*, contact spring *p*, metal spring *s*, screw *r*, frame *p*, regulating screw *q*, levers *o*, shaft *k*, levers *o*, *o*, *o*, circuit-closing switch and cut-out *d*, conductor *b*, metallic plates *e* and conductors *b*, all forming a complete device for the purpose herein set forth. 4th. In combination with circuit-closer operated automatically by electro-magnets, both in the main electrical circuit between the generator and a series of storage-batteries, a circuit-closing switch and cut-out in the lamp-circuit of the batteries, said circuit-closing switch and cut-out connected with the aforesaid circuit-closer of the generator-circuit by means of levers, so as to be controlled thereby, and operated automatically therewith, said circuit-closing switch and cut-out engaging with metallic plates, each of which is electrically connected with a pole of the batteries. 5th. In combination with an automatic circuit-closer, in the main electrical circuit between a generator and a series of storage-batteries, the circuit-closing switch and cut-out *d*, levers *o*, *o*, *o*, metallic plates *e*, conductors *b* and *b*, substantially as shown and described. 6th. In combination with a series of storage batteries having automatic circuit-closing switch and cut-out, in the main electrical circuit thereof, a circuit-closer operated automatically by electro-magnets, one of which is in the main circuit between a series of storage-batteries and generator, the other placed in the derived circuit thereof. 7th. In combination, with a series of storage batteries having a switch in the discharging circuit of the battery, *g*, *g*, and *g*, and the connecting links *o*, *o*, *o*, the levers *o*, the springs insulated disk *i*, shaft *k*, electro-magnet *m*, *m*, cores *n*, *n*, spring *s*, screw *r*, frame *p*, adjusting screw *p*, substantially as shown and described.

No. 18,592. Railroad Car. *(Wagon de Railroute.)*

Thomas L. Wilson, Port Hope, Ont., and Austin D. Cable, Montreal, Que., 28th January, 1884; 5 years.

Claim.—1st. In combination with the intermediate longitudinal timbers A, of angle-brackets C, one arm of each being bolted to its respective intermediate timber A, while the other arm extends *d*, to project behind the truck transom D and is provided with a flange *e*, to project below the bottom of the said transom, and a diagonal brace E. 2nd. In combination with the side timbers F of a truck, of

angle-brackets C bolted to the top side of the said timbers F, as specified, and provided with a flange *d*, to project over the body bolster G of the car, with a brace E, substantially as and for the purpose specified.

No. 18,593. Sash-Holder. *(Arrête-Croisée.)*

Henry Cutting and Thomas J. DeLaney, Buffalo, N. Y., U. S., 28th January, 1884; 5 years.

Claim.—1st. In a sash-holder, the combination, with a screw-bolt having a right hand and a left hand screw-thread, of a fixed screw-nut receiving one of said screw-threads, and a movable bearing piece working on the other screw-thread, substantially as set forth. 2nd. The combination, with a screw-bolt C provided with a right hand and a left hand screw-thread, of a screw-nut D provided with a screw-thread *e* and a cavity *f*, and a bearing-piece G, provided with a screw-thread *h* and guided in the cavity *f*, substantially as set forth. 3rd. The combination, with a screw-bolt C having right and left hand screw-threads *i* and *j*, of a fixed nut D having a screw-thread *e*, a recess *f* and a longitudinal groove *l*, and a bearing-piece G constructed with a screw-thread *h* and rib *k*, and arranged in the recess *f*, substantially as set forth.

No. 18,594. Self-Adjusting Bearing for Railway Car Axles. *(Coussinet Automatique pour Essieux de Char de Railroute.)*

Oscar S. Stearns and Joel S. Potter, New York, N. Y., U. S., 28th January, 1883; 5 years.

Claim.—1st. The housing D extended around the axle B and provided with the bearing C, interposed between the upper part of the said housing and the said axle, the saddle E capable of a limited turning movement with reference to the housing D, the said parts being constructed and arranged, in relation with each other, to prevent the binding of the bearing C upon the axle B, all substantially as and for the purpose set forth. 2nd. The housing D constructed with the cavities C and extended around the axle B, the bearing C interposed between the top of the housing and the axle, the saddle E constructed with the series of cavities C placed upon the housing D and capable of a limited turning movement with reference thereto, and the rollers F placed in the coincident cavities, and the whole arranged for joint use and operation, substantially as and for the purpose set forth. 3rd. The combination of a saddle E constructed with a socket F, the equalizing bar G, housing D, bearing C, the journal B and rollers F interposed between the saddle E and the top of the housing D, all substantially as and for the purpose herein set forth. 4th. The combination of the housing having cavities C on its upper side and provided below with the studs M, the pedestal I, the saddle E constructed with the cavities C, the rollers F, the equalizing bar G, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

No. 18,595. Signal Lantern. *(Lanterne à Signal.)*

Christian E. Metzler and John H. Burrell Jr., Philadelphia, Pa., U. S., 28th January, 1884; 5 years.

Claim.—1st. A signal lantern having a transparent body formed of two parts or globes of different colours, rotatable on a horizontal axis, and a lamp therein, intermediate of said parts, whereby, when the body is rotated, either colour of the globes may be displayed by illumination without similarly displaying the other, substantially as and for the purpose set forth. 2nd. A signal lantern having a transparent body formed of two parts or globes of different colours, a connecting rim for the parts of said body, a lamp within the body, horizontal gudgeons on which the body is adapted to rotate, and a bail or support, substantially as and for the purpose set forth. 3rd. A signal lantern having a transparent body formed of two parts or globes of different colours, mounted on a horizontal axis, a flagstaff on each part, a support for said body, a sheath for the flag, and means for locking the sheath, substantially as and for the purpose set forth.

No. 18,596. Machinery for Moving Ground in Sewer Ditches. *(Machine pour Transporter le Sol dans les Canaux des Egouts.)*

Patrick H. McCauley, Des Moines, Iowa, U. S., 28th January, 1883; 5 years.

Claim.—1st. The portable elevated railway-track and dump composed of the rails A, B, cross-pieces C, frame D, D, hinged track-section F having wheel supports B₁, B₂, the pivoted brides H and pins or bolts L, substantially as shown and described, to operate in the manner set forth for the purposes specified. 2nd. The hoisting and conveying apparatus composed of the portable elevated railway track A, B, A₁, A₂, the pivoted track-section and dump F, having wheel supports B₁ and hinged brides H, the derrick consisting of three legs pivoted together at their top ends, a suspended bucket having a hinged bottom and a truck M, substantially as shown and described. 3rd. A bucket having two hinged bottom sections, a revolving shaft N, chains N₁, connected with the hinged bottom sections and also with the shaft, a perforated disk N₂ fixed to the shaft, and a latch-lever O carrying a pin *o*, arranged and combined to operate in the manner set forth, for the purposes specified.

No. 18,597. Vehicle. *(Voiture.)*

Henry Hortop, Rutherford, Cal., U. S., 28th January, 1884; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination of shafts secured to the axle, the spring secured to the axle and having cross-bars E, the body attached to the cross-bars and extending down and forward between the shafts and independent of the same, and the supports or braces G connected to the cross-bars and to the forward lower portion of the body, as and for the purpose set forth. 2nd. In a two-wheeled vehicle, the combination of shaft C bent as shown

and rigidly secured to the axle, the seat-supporting springs clipped to the axle, and connecting links or other suitable means pivoted to the springs and to the shafts, as and for the purpose set forth. 3rd. In a two-wheeled vehicle, the arrangement and combination of the shafts C, bent as shown and secured to the axle, the springs D having cross-bars E, body F secured to said bars, supports or braces G bolted to the bars and adjustably attached to the lower forward end of the body, and the pivoted or journalled connecting links I, substantially as and for the purpose set forth. 4th. In a two-wheeled vehicle, the combination of shafts rigidly secured to the axle, the springs clipped to the axle and having adjustable cross-bars E, the body F hinged as at *m* to one of the cross-bars and extending down and forward between and independent of the shafts, and the supports or braces G bolted to both bars E and attached to the forward lower end of the body, as herein described. 5th. In a two-wheeled vehicle, the combination of the shafts secured to the axle, the seat-supporting springs also secured to the axle and provided with cross-bars, the body attached to the cross-bars and extending down and forward, between the shafts and the supports or braces G, connected to the cross-bars and having a slotted plate or extension at its front end, and a brace or bar attached to the front end of the body and adjustably secured within said plate or extension, as and for the purpose set forth.

No. 18,598. Grain Cleaner. (*Nettoyeur des Grains.*)

John E. Cummins, Arlington, Ky., U. S., 30th January, 1884; 5 years.

Claim.—In a grain cleaner, the chute H having an outlet *i*, and an interposed upwardly extending screen *k*, in combination with the frame or box A, hopper G, inclined spout I, sieve F and fan C, substantially as set forth.

No. 18,599. Hay Unloader. (*Monte-Foin.*)

Dewitt C. Jewett, Sand Spring, Iowa, U. S., 30th January, 1884; 5 years.

Claim.—1st. In a rake-frame for hay loaders, the combination, substantially as before set forth, of the longitudinal bars provided with mortises, and the rake teeth loosely secured at their shank ends to the top of, and having their point ends protrude through to the lower side of said bars, through the mortises cut therein. 2nd. The combination of rake-frame D, having a cross-bar *d*, the pivoted tracks, the crank axle and means controlled by the cranked axle for simultaneously operating said rake-frame and track, substantially as before set forth. 3rd. The combination, substantially as before set forth, of the rake-frame E, having a cross-bar *e*, pitman *e'*, horizontal levers C and pitman *c*. 4th. The combination, substantially as before set forth, of the incline, the reciprocating rake-frames D and E, and the supplementary reciprocating rake-frame. 5th. The combination, in a hay-loader, of the axle, the incline balanced over the same, the tongue and hounds extending some distance in rear of the axle, and devices connecting the rear end of the hounds and rear end of the incline, substantially as and for the purpose set forth.

No. 18,600. Wind Mill. (*Moulin à vent.*)

Frank G. Cornell, Grand Rapids, Mich., U. S., 30th January, 1884; 5 years.

Claim.—1st. In a wind-mill, the combination of the rigid wind-wheel mounted in front of its bearings, the pivoted tail-vane and a regulating-vane pivoted in front of the main wheel, and connected directly to the tail-vane, whereby the movement of the said regulating-vane, under excessive pressure of the wind, will turn the tail-vane to one side and tend to throw the wheel out of the wind, substantially as described. 2nd. The combination of the main casting B supporting the shaft of the main wheel on one branch, and provided with arms 7 and 8 on the other, in combination with the shaft 9 of the tail-vane, the pivot 10 and the rack and pinion connection, whereby the said tail-vane is connected to the regulating-vane, substantially as described. 3rd. The combination, with the main wheel, of the hollow-shaft supported in the main casting B, the sleeve 5 and eccentric thereon, the tube 14 and bracket 17, whereby the regulating vane is supported in front of the main wheel, substantially as described. 4th. The combination, with the main shaft-pipe 14 and bracket 17, of the spider 16, substantially as described. 5th. The

pivoted lever 13 supporting the regulating-vane and having the stops 21, 21, in combination with the bracket 17.

No. 18,601. Flour Bolt and Middlings Purifier. (*Blutoir et Epurateur des gruaux.*)

James J. Faulkner and Eliza T. Faulkner, McMinnville, Tenn., U. S., 30th January, 1884; 5 years.

Claim.—1st. In a middlings purifier, the bolting cloth or sieve C, having a lateral incline, and provided with a central supporting bar B, in combination with the elastic strip D, substantially as and for the purpose described. 2nd. In a middlings purifier, the sieve C, having a lateral incline and provided with the central supporting bar B, in combination with the knocker H, and eccentric *g* at one end, and the spring I at the other, substantially as and for the purpose described. 3rd. In a middlings purifier, the sieve C having a lateral incline, in combination with the elevator box E and elevator buckets L, with suitable machinery for operating the same, substantially as set forth. 4th. The sieve C and elevator box E, in combination with the belts K, carrying the elevator buckets L, and the wicket board P, all constructed to operate substantially as and for the purpose set forth. 5th. The sieve C, provided with the supporting bar B, on the ends of which the knockers H and spring I operate, to give an oscillating motion to the sieve 6th. The sieve C having a lateral incline, substantially as and for the purpose set forth. 7th. The knocker H, in combination with the rocker shaft H', set screw *h* and eccentric *g*, all constructed to operate substantially as and for the purpose set forth. 8th. The double-wire spring I, constructed as described, as a lever to bear against the supporting bar B, in combination with set screws *h*, substantially as described. 9th. The process described for separating fluff from middlings, the same consisting in treating the middlings with the bran, substantially as set forth and described.

No. 18,602. Hay Loader. (*Monte-foin.*)

Malcolm McDonald, Ekfrid, Ont., 30th January, 1884; 5 years.

Claim.—1st. The combination of the upper reverse carrier *c c c c* with the lower carrier *b b b b*, substantially as and for the purposes set forth. 2nd. The combination, with the upper reverse carrier *c c c c* and lower carrier *b b b b*, of the long front receiving teeth *d d d d d d* and upper feeder *c c*, and the rear projecting teeth *e e e e e e*, substantially as and for the purposes set forth.

No. 18,603. Automatic Holder for Knives, Pens, Pencils, &c. (*Manche de couteau, crayon, plume, etc., automatique.*)

Henry Berolzheimer, (Assignee of Joseph Hoffman,) New York, N. Y., U. S., 30th January, 1884; 5 years.

Claim.—1st. In an automatic holder, the combination of the case or handle, the grasping or clamping mechanism, the retracting spring and a reversible pressure cap, substantially as and for the purpose set forth. 2nd. The combination of the case or handle, the receiver and grasping mechanism longitudinally movable therein, and a pressure cap which engages and moves with said receiver, and is removable therefrom, substantially as set forth. 3rd. The case or handle, the holding mechanism and the tubular extension connected therewith, and adapted to slide in the case, in combination with the pressure cap adapted to fit and close said extension, and removable therefrom, substantially as and for the purposes set forth. 4th. The removable and reversible pressure cap having at one of its ends a lead holding device or other instrument, in combination with the case or handle, the grasping mechanism and the retracting spring, substantially as and for the purpose set forth. 5th. The removable and reversible pressure cap and automatic lead-holder combined, in combination with the handle, the grasping mechanism and the retracting spring, substantially as and for the purposes set forth. 6th. The combination, with the grasping jaws and the spring-impelled tip of an automatic holder, of a detent, whereby the tip, when retracted or moved back from the jaws, can be maintained in that position, substantially as set forth.

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

147. J. W. HEWITT and W. J. HEWITT, 2nd 5 years of No. 9622, from the 31st day of January, 1884. Improvements in Carriage Springs, 3rd January, 1884.
148. M. N. LOWELL, 2nd 5 years of No. 9539, from the 7th day of January, 1884. Improvements in Wringers, 7th January, 1884.
149. F. E. DIXON, 3rd 5 years of No. 2990, from the 9th day of January, 1884. Window Fastener and support, 7th January, 1884.
150. D. A. STEVENS, 2nd 5 years of No. 9714, from the 3rd day of March, 1884. Improvements in Refrigerators, 11th January, 1884.
151. J. FAIR and P. B. HATCH, (assignees) 2nd 5 years of No. 9658, from the 14th day of February, 1884. Machine for swinging Barrels, Casks, &c., beneath Store Counters. 12th January, 1884.
152. G. T. STRONG, 2nd 5 years of No. 9600, from the 23rd day of January, 1884. Machine for Enriching and Economizing Illuminating Gas, 14th January, 1884.
153. A. HOSACK and J. M. HARRISON, 2nd and 3rd 5 years of No. 13,885, from the 23rd day of December, 1886. Improvements in Bridle Binders, 18th January, 1884.
154. J. L. CLARK and J. STANFIELD, 2nd 5 years of No. 9573, from the 22nd day of January, 1884. Improvements in Floating Docks, 18th January, 1884.
155. H. M. HOYT, 2nd 5 years of No. 9593, from the 23rd day of January, 1884. Improvement in Process for Book Binding, 18th January.
156. H. J. DAVIS and W. D. DAVIS, 2nd 5 years of No. 9588, from the 22nd day of January, 1884. Improvements in Alarm Clocks, 19th January, 1884.
157. S. COLLINSON, 3rd 5 years of No. 3063, from the 3rd day of February, 1884. Machine for Cutting Sickles, 19th January, 1884.
158. S. COLLINSON, 3rd 5 years of No. 3064, from the 3rd day of February, 1884. Improvement on Tongs used in Machinery, 19th January, 1884.
159. H. J. SMITH, 2nd 5 years of No. 9583, from the 22nd day of January, 1884. Improvement in Electric Fuses, 21st January, 1884.
160. J. L. BLAIN, (assignee) 2nd 5 years of No. 8579, from the 22nd day of January, 1884. Improvements on Twist Drill Rolling Machines, 21st January, 1884.
161. W. E. BROOKE, 2nd 5 years of No. 9610, from the 24th day of January, 1884. Improvements in Saw Teeth, 23rd January, 1884.
162. W. N. BARRIE, H. C. KENNEDY and B. B. PRENTICE, (assignees) 2nd 5 years of No. 9618, from the 31st day of January, 1884. Improvements in Milk Coolers, 25th January, 1884.

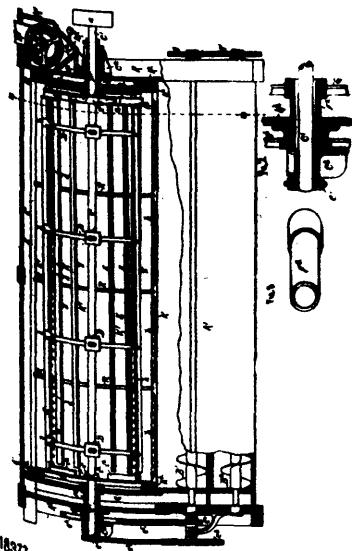
CANADIAN PATENT OFFICE RECORD

ILLUSTRATIONS.

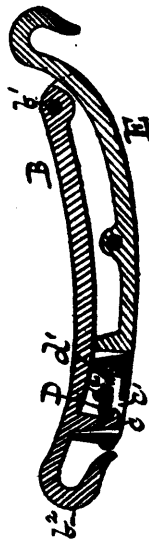
Vol. XII.

FEBRUARY, 1884.

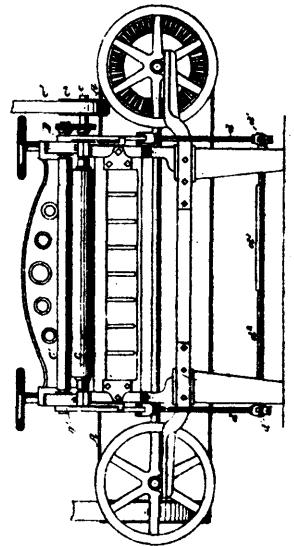
No. 2.



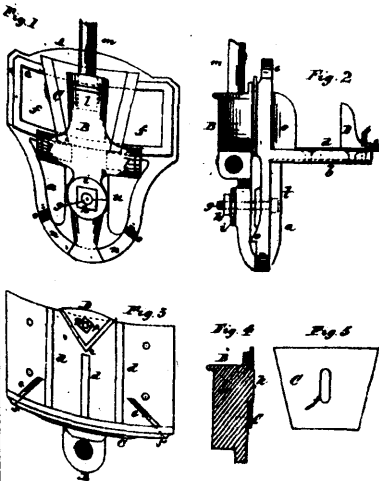
18377 Northway's Centrifugal Separator.



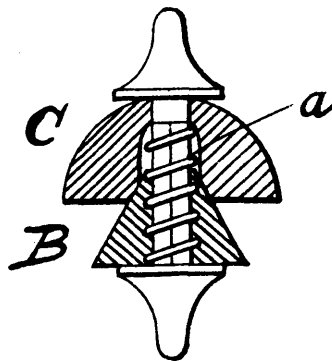
18378 Miller's Hame Fastener.



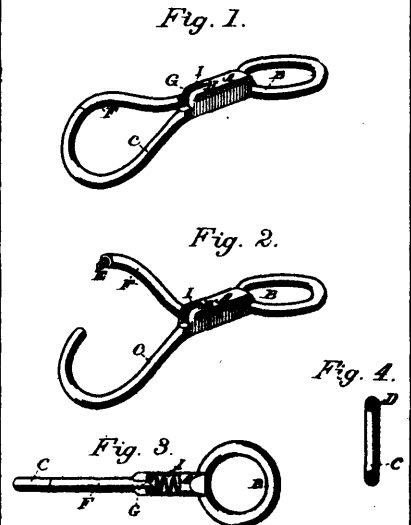
18379 Cummings' Leather Splitting Machine.



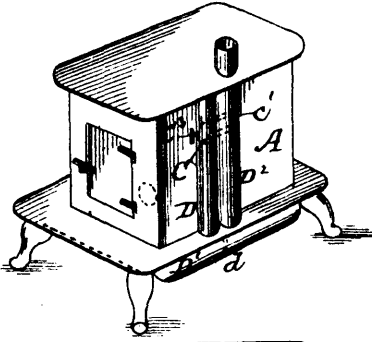
18382 Young's Mitering Machine.



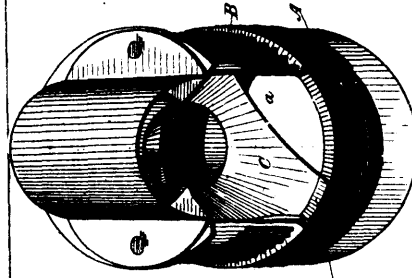
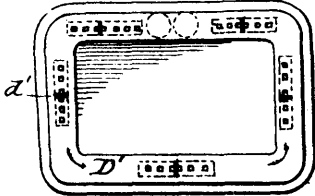
18383 Miller's Expansive Rubber Bucket for Chain Pump.



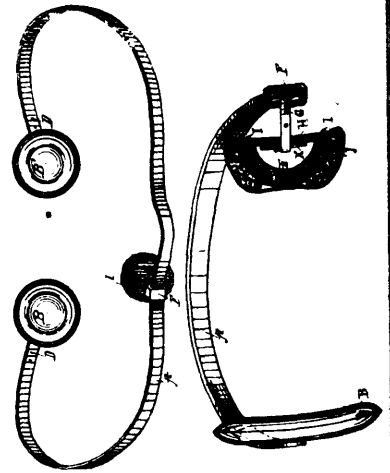
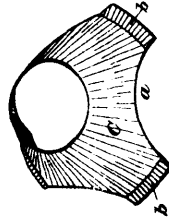
18384 Smith's Safety Hook.



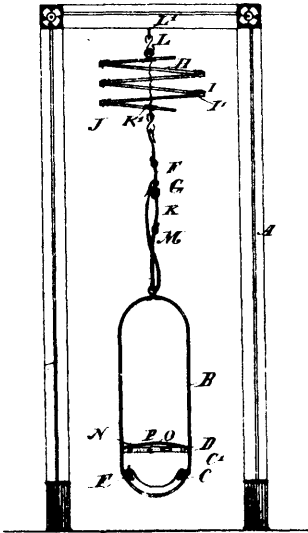
18385 Wabrous' Hot Air Flues for Heating Stoves and Furnaces.



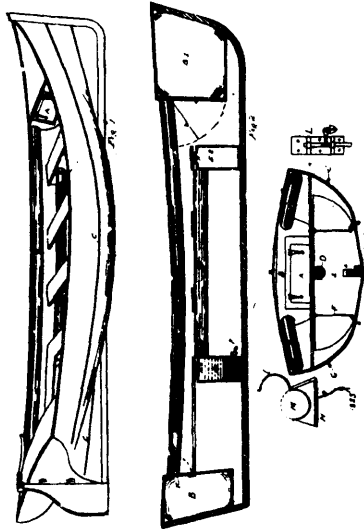
18386 Piper's Lamp Case.



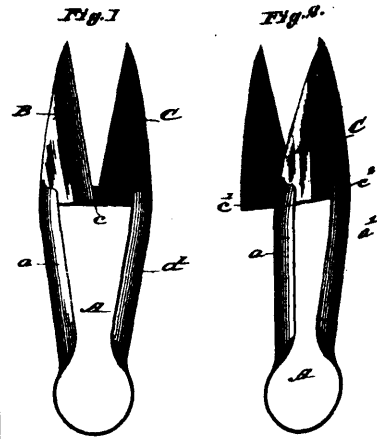
18387 Armstrong's Hernia Truss.



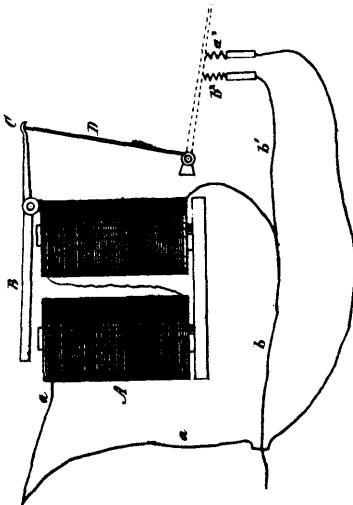
18388 Gardner's Baby Jumper.



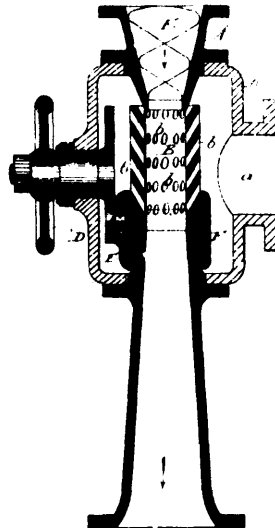
18389 Coombe's Boat.



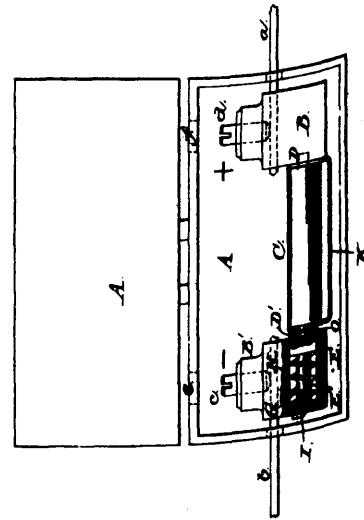
18390 Gleason & Hoet's Animal Shears.



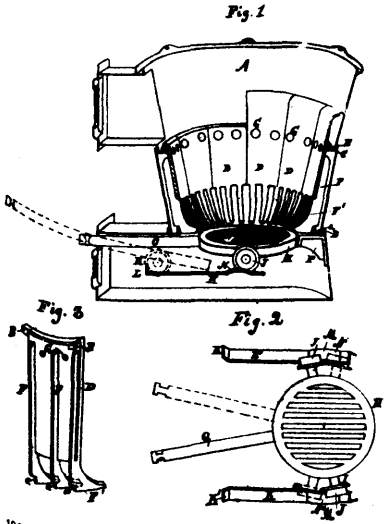
18391 Baker's Cut-Out for Magnets in Telephone Circuits.



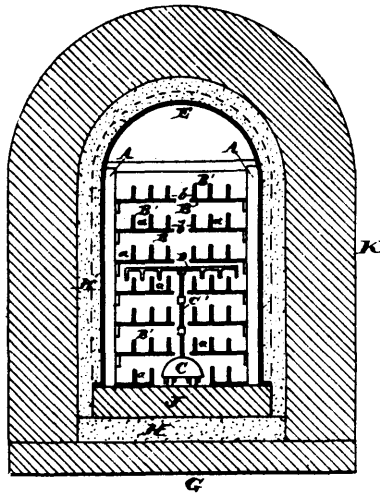
18392 Korting's Steam Jet Apparatus for the Mixing of Steam Vapours, Air or Gases with water or equivalent liquid.



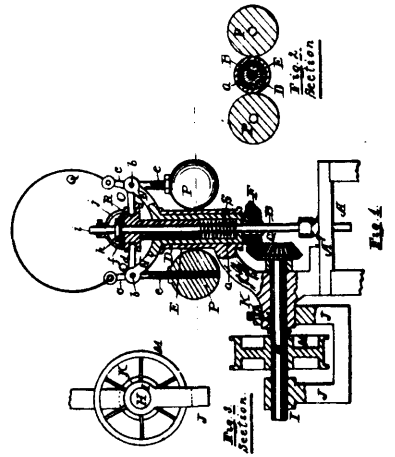
18393 Perkins' Automatic Electric Cut-Out.



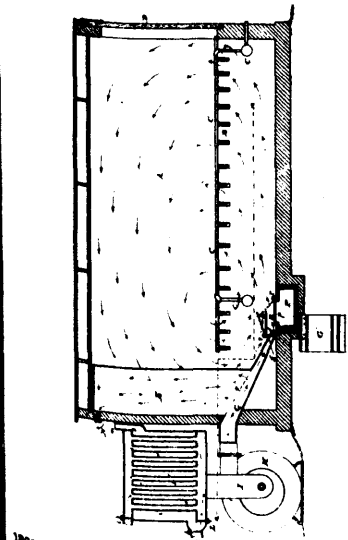
Robb's Heating Furnace.



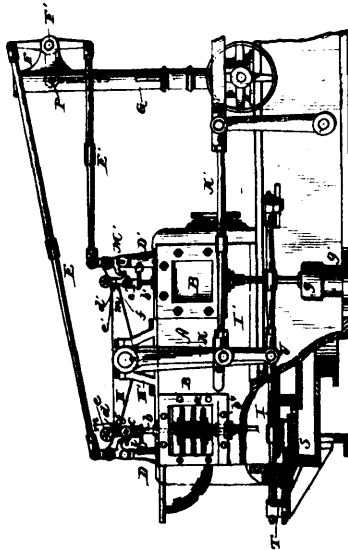
DuBois' Underground Conduits for Electric Wires.



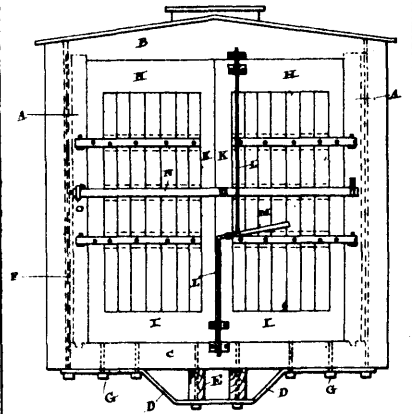
Badger's Ball Governor for Steam Engines.



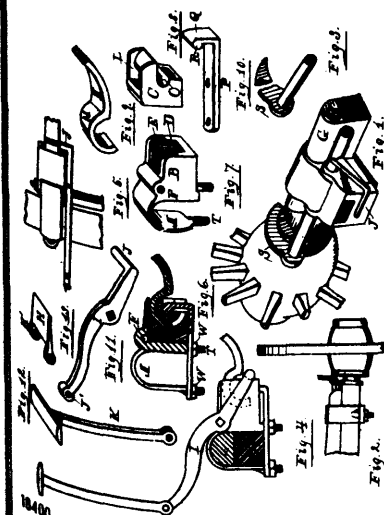
Speer's Drying Kiln.



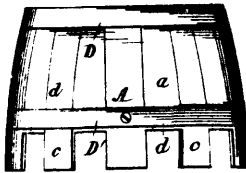
Conway's Cut-off Valve for Steam Engines.



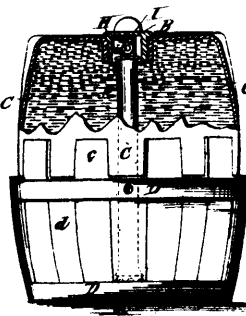
Wilson's Railroad Car.



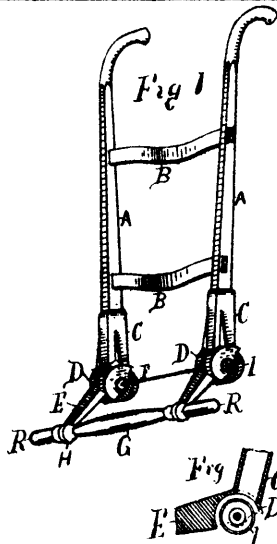
Green's Combined Thill Coupler, Detacher and Brake.



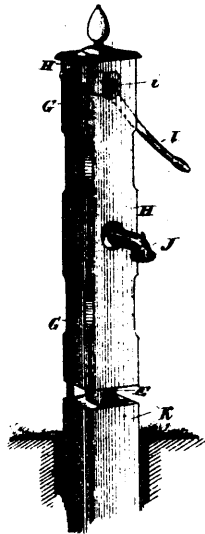
Fritz's Jacketed Vessel.



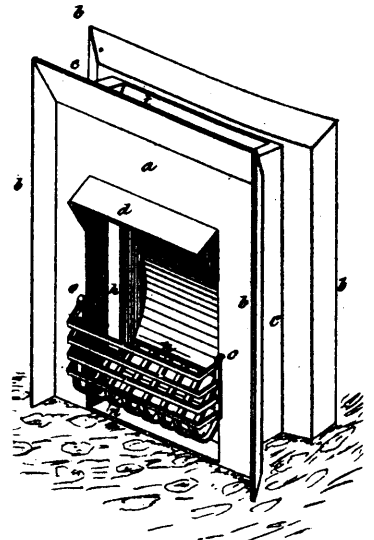
Benedict's Spring Bed Bottom.



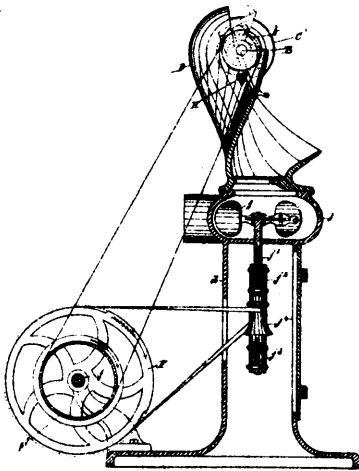
18403 Leavenworth's Stove Truck and Carrier.



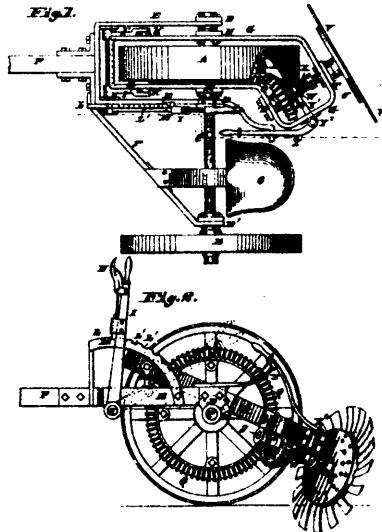
18404 Bedford's Force Pump.



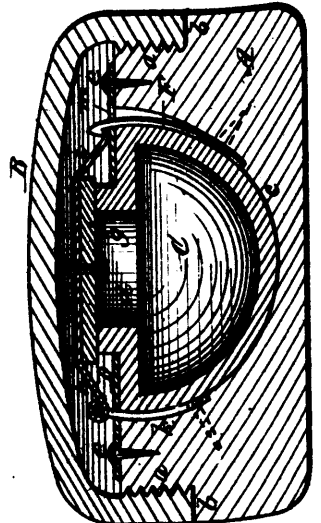
18405 Burnam's Fire Place and Fire Back.



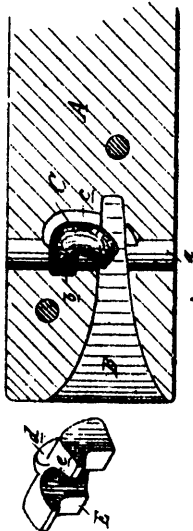
18406 Coy's Abrading Machine.



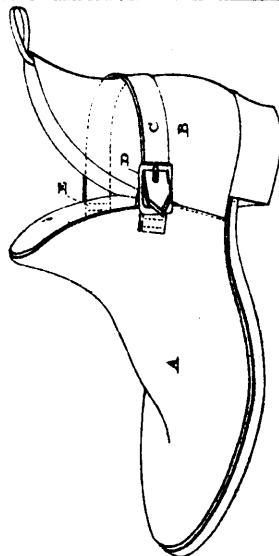
18407 Johnston's Rotary Plough and Pulverizer.



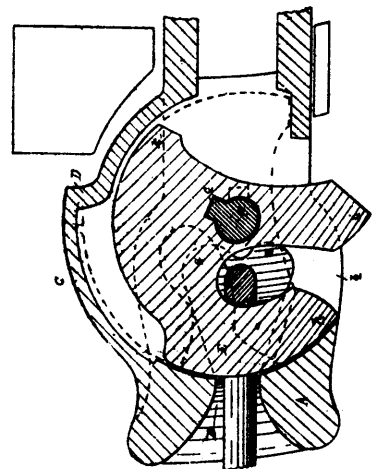
18408 Jansson's Pocket Inkstand.



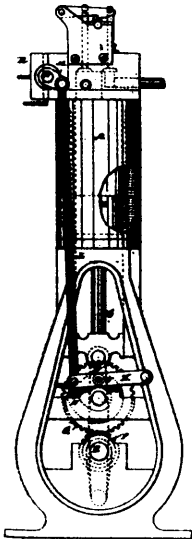
18409 Clancy's Car-Coupling.



18410 Brown's Improvements in Boots.

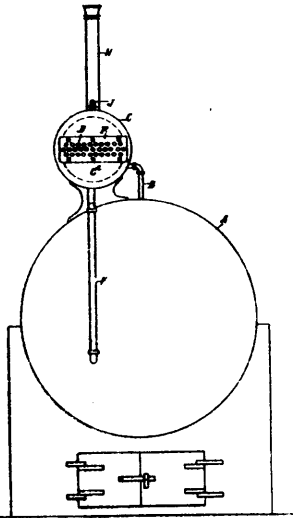


18411 Ktoly's Car-Coupling.



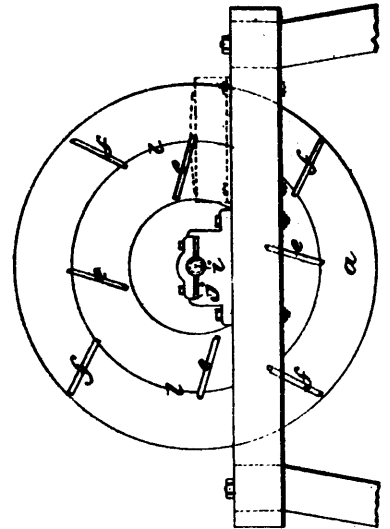
Denney's Gas Engine.

18412



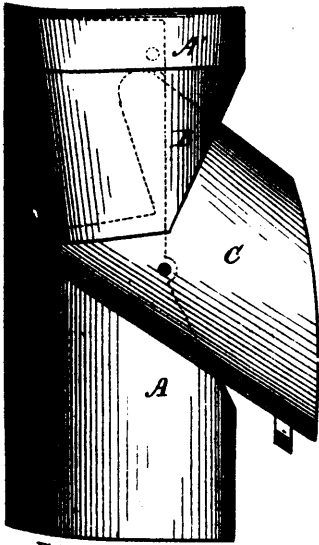
Brake's Combined Condenser and Separator for condensing and separating the vapour eliminated from Petroleum Oils.

18413



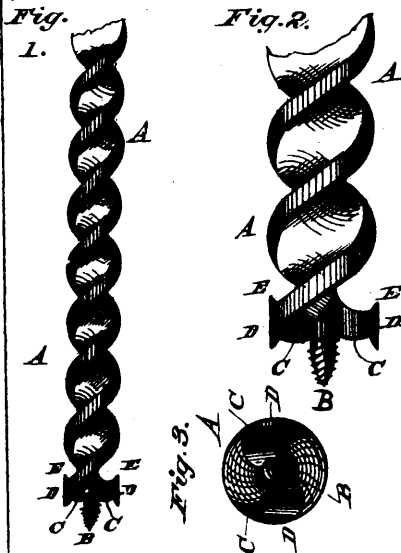
Voght's Stave Jointer.

18414



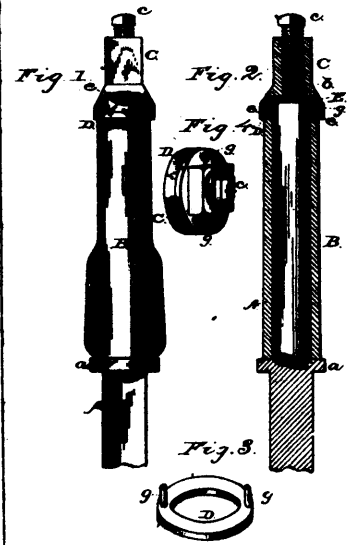
Fisher's Cut off for Conductors of Liquids.

18415



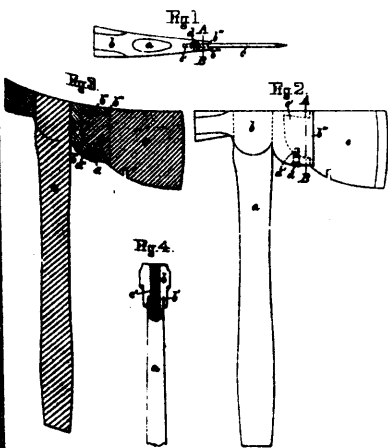
Fuller's Boring Bit.

18416



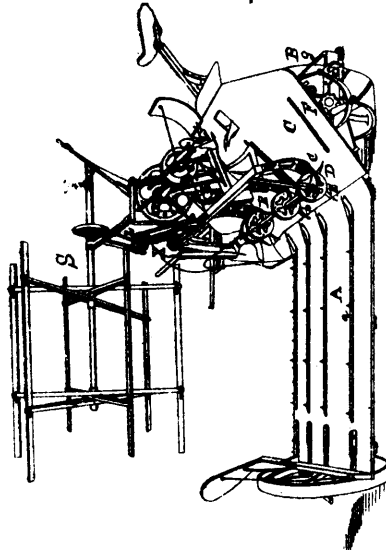
Nunn's Hub Attaching Device.

18417



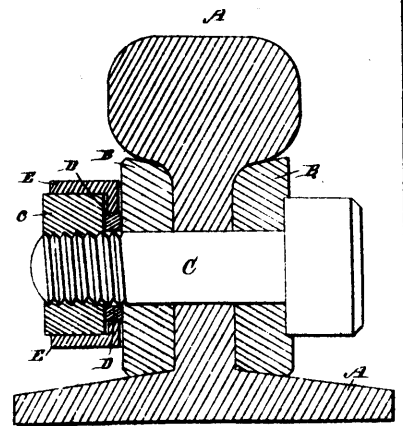
Cutter's Hatchet.

18418



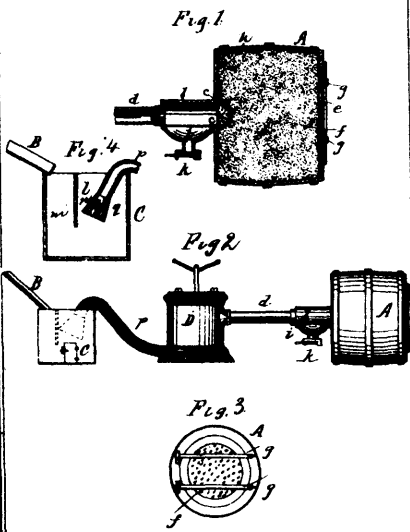
Selberling's Self-Binding Harvester.

18419

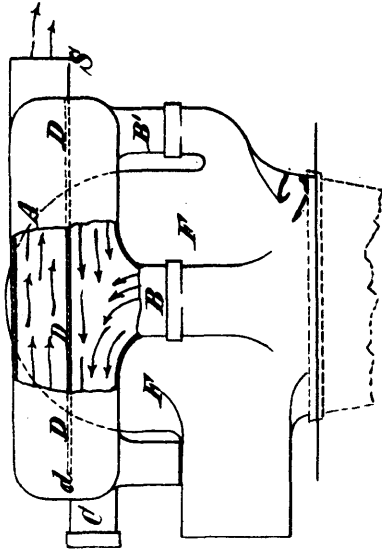


Grover's Nut Locks.

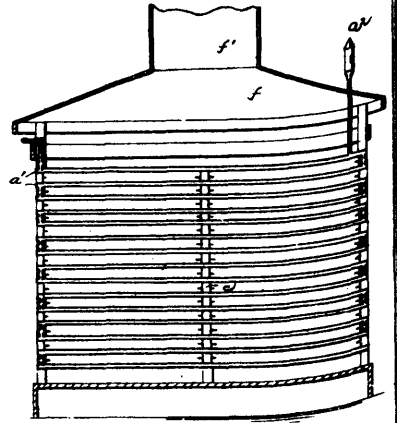
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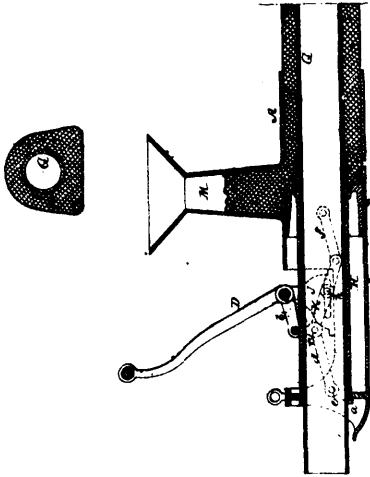
18421 Miller's Process for Collecting Metallic Particles.



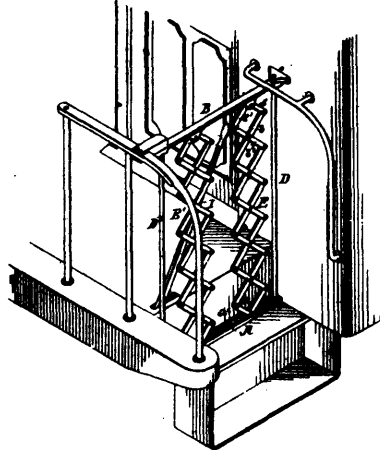
18422 Richardson's Radiator for Furnaces for Heating Buildings, &c.



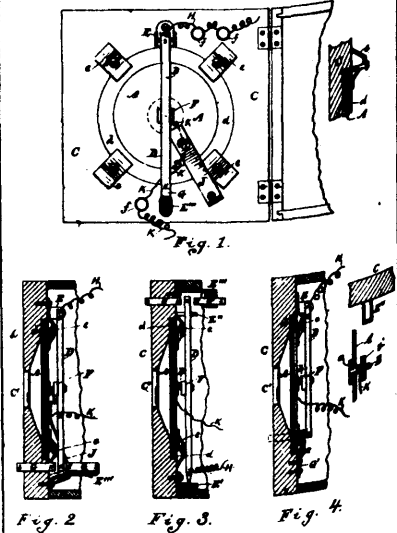
18424 Belcher's Improvements on Fruit Driers.



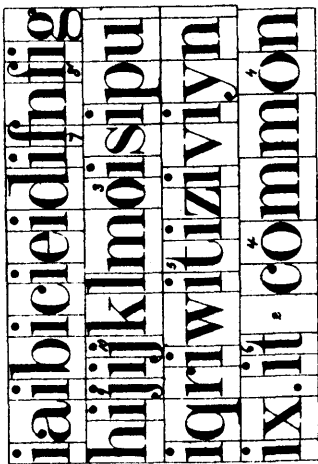
18425 Detrich's Improvements on Lined Conduits and on Machinery for making the same.



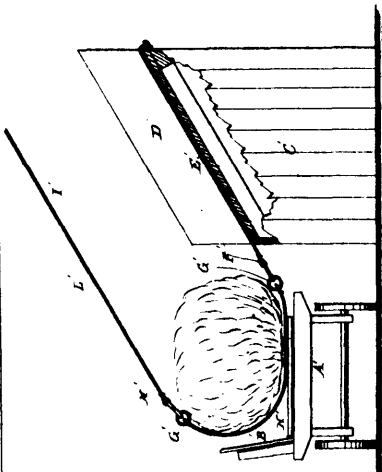
18426 Tevis' Safety Gates for Railroad Cars, etc.



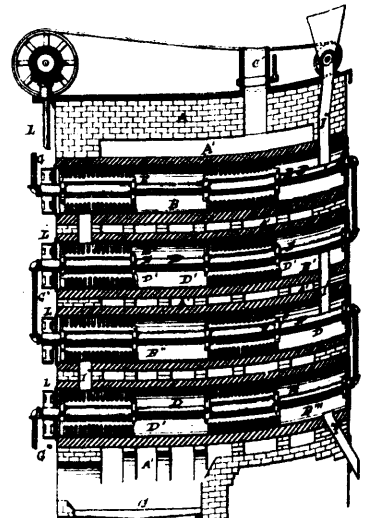
18427 Shaw's Telephonic Transmitter.



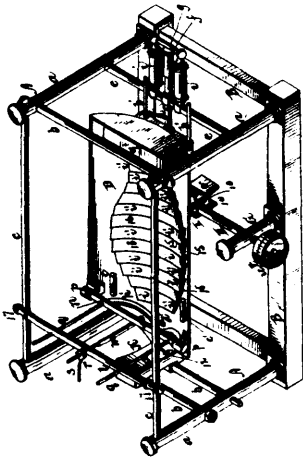
18428 Benton's Printing Types.



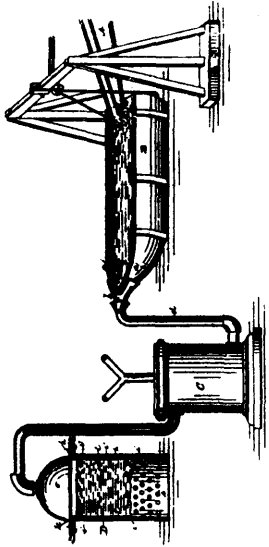
18429 Griswold's Apparatus for Carrying and Unloading Hay and Grain.



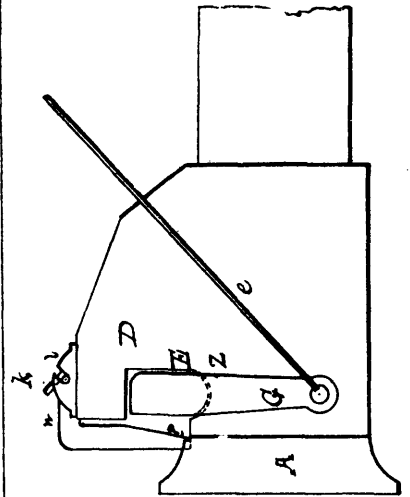
18430 Walker & Carter's Ore Roasting Furnace



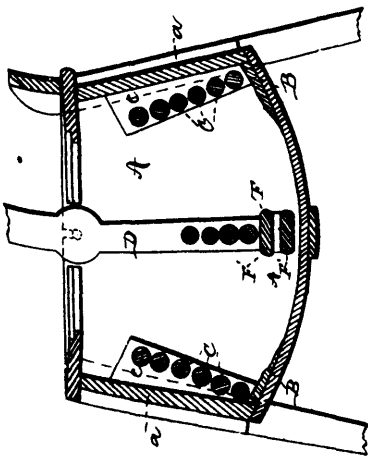
18431 Miller's Ore Concentrator.



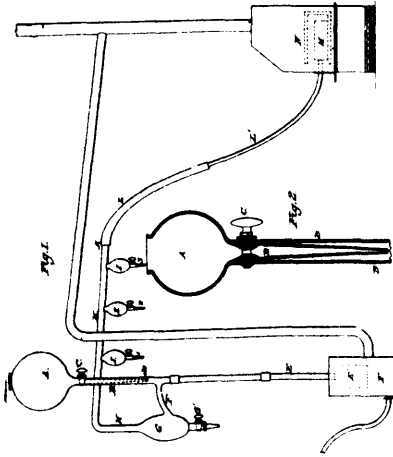
18432 Miller's Method of Recovering Metals.



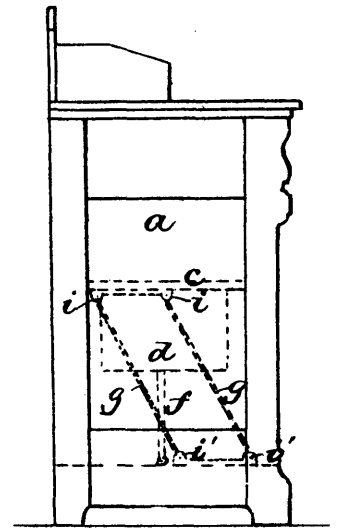
18433 Laucaster's Car-Coupling.



18434 Bell's Clothes Washer.



18435 Perkins' Apparatus for Treating Incandescents.



18437 Basford's Commode Attachment.

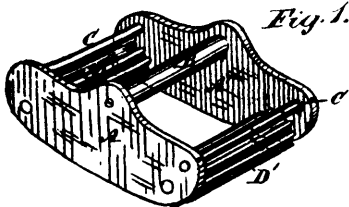


Fig. 1.

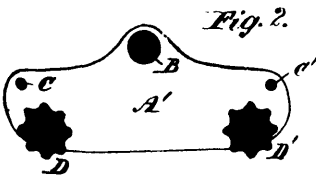
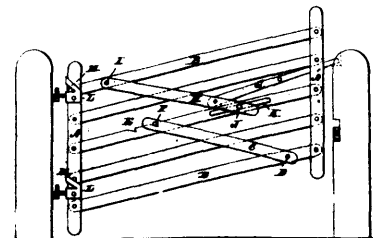
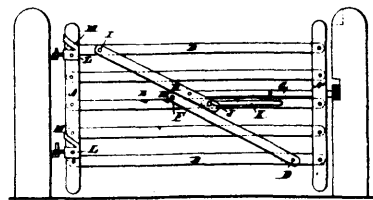
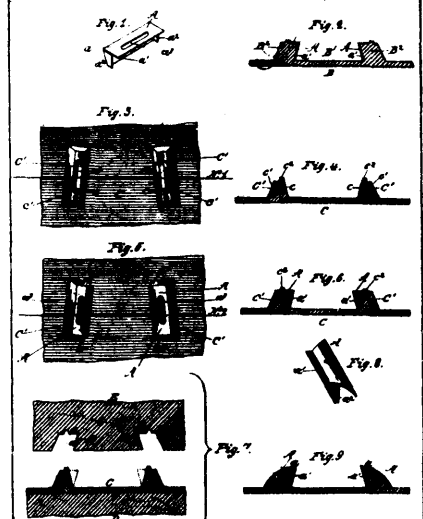


Fig. 2.

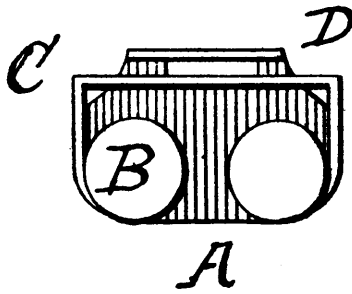
18438 Hitchcock's Hand-washing Rubber.



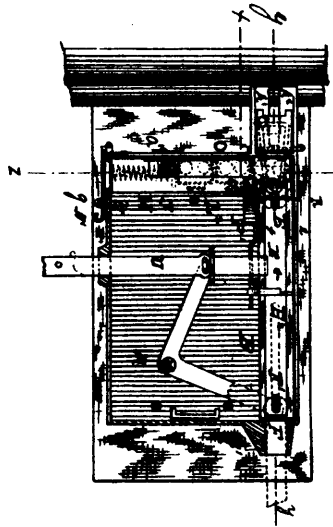
18439 Hitchcock's Farm Gate.



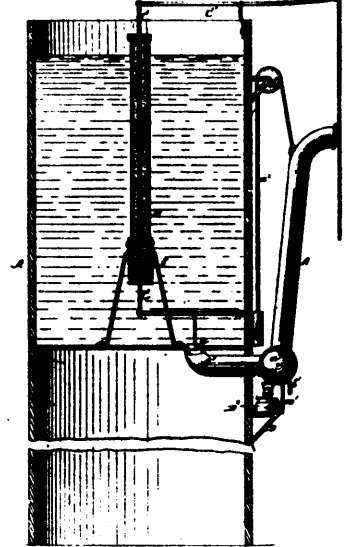
18440 Burdick & Sanford's Shell Dovetail for use to produce Soft Metal Lining for Dovetail Sockets in Stove Plates



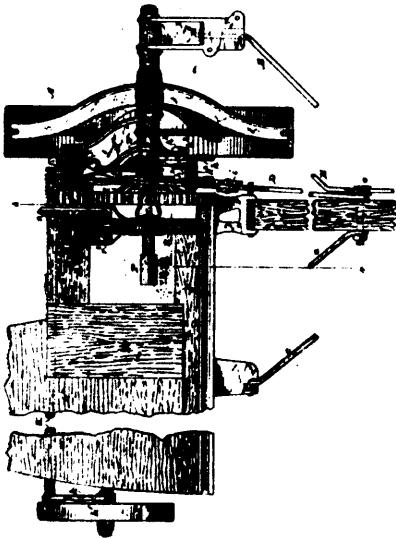
18442 Phelps' Railway Torpedo.



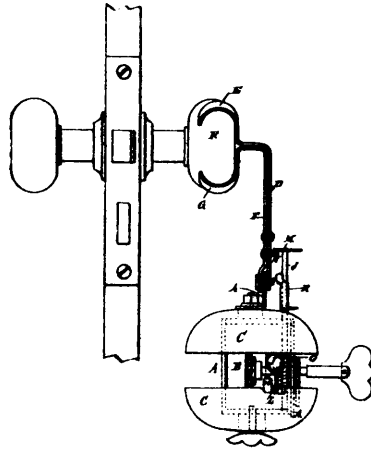
18443 Phelps' Fog Signal for Railway.



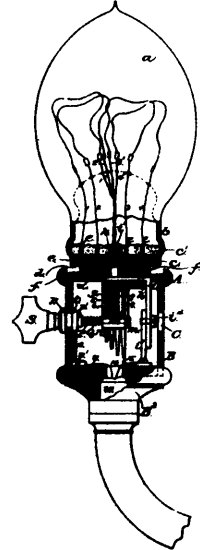
18444 Barnes' Car Mover.



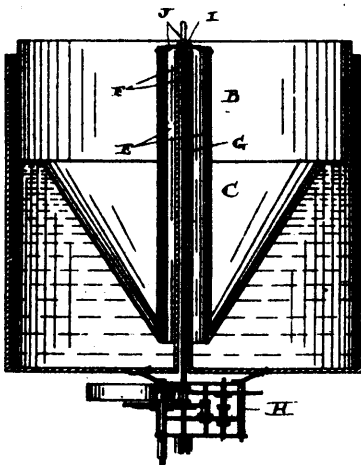
18446 Fridmore's Harvester.



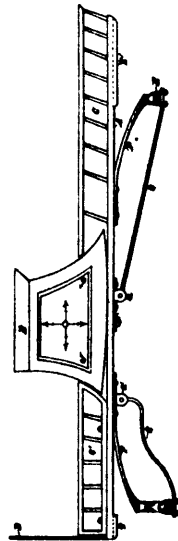
18446 Hill's Burglar Alarm.



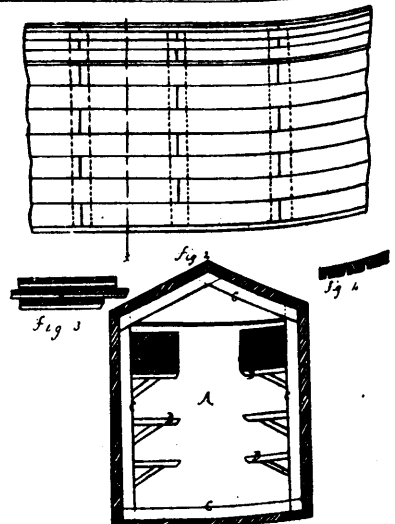
18447 Perkins' Electric Lamp and Switch.



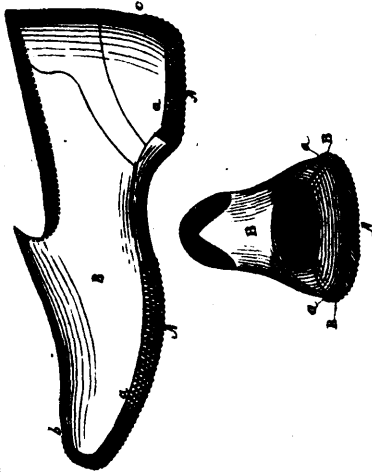
18448 Culf & Ticknor's Revolving Show Stand.



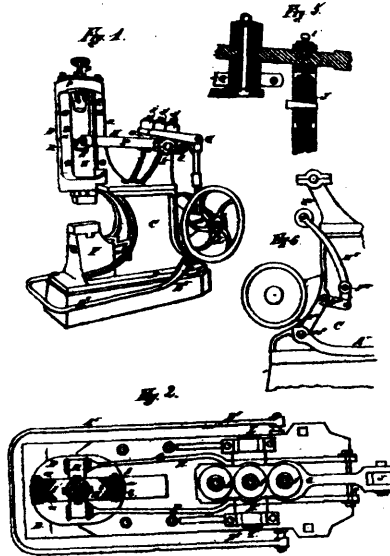
18451 Mayer's Buck-board Waggon.



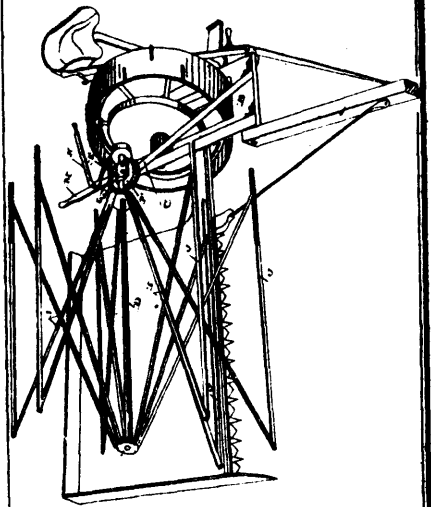
18462 Gilman's Housing and Insulation of Electrical Wires beneath the surface of the ground.



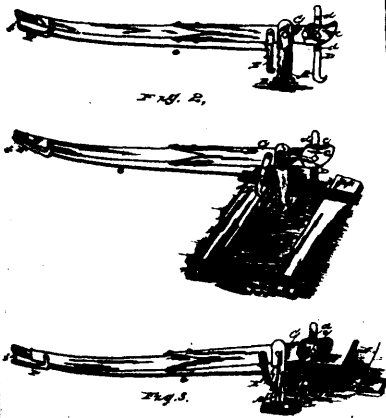
18463 Shepard's Rubber Boots and Shoes.



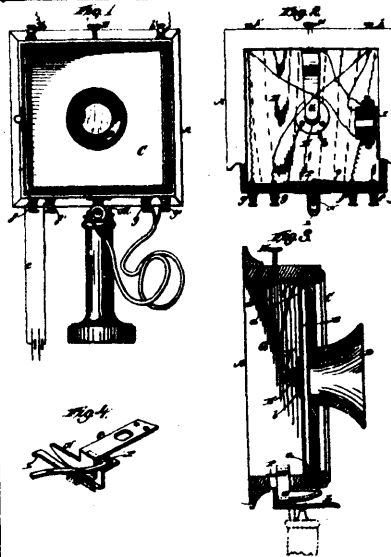
18464 Beaudry's Power Hammer.



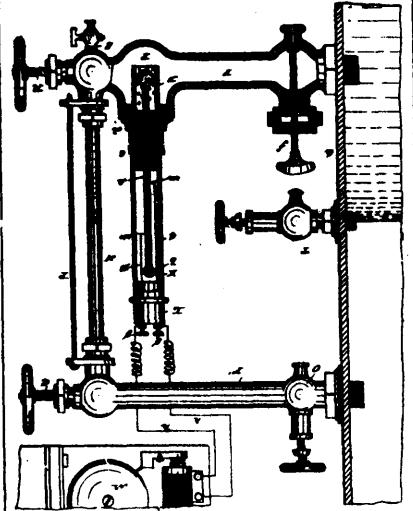
18466 McCarthy's Harvesting Machine.



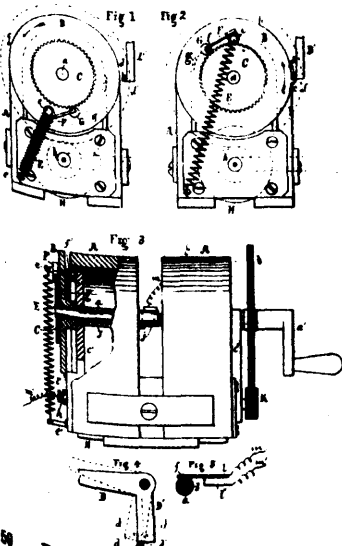
18465 Dickerson's Device for Raising and Lowering Tracks on Railroads.



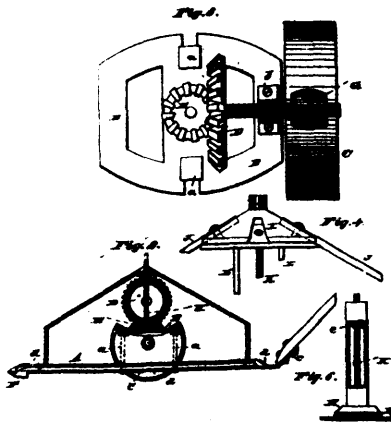
18467 Beedy's Telephonic Receivers.



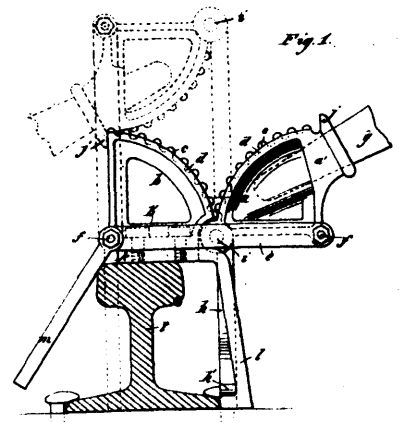
18468 Blake & Hall's Electric Low Water Indicator and Alarm for Steam Boilers.



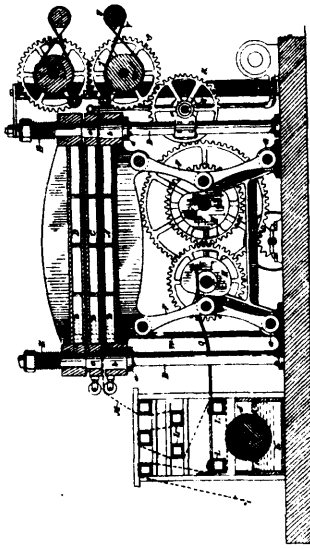
18469 Painter's Automatic Magneto Signalling Apparatus for Telephones.



18460 Martin's Lawn and Field Mowers.



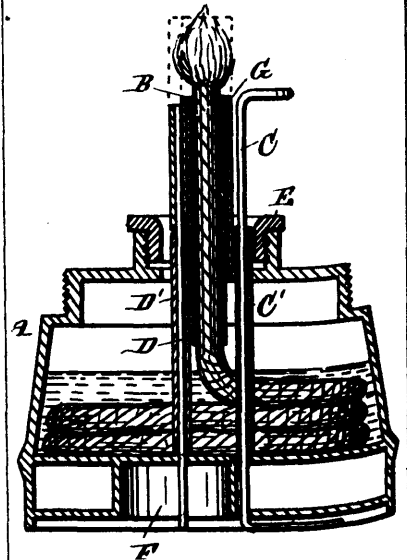
18462 Ebbert's Spike Extractors.



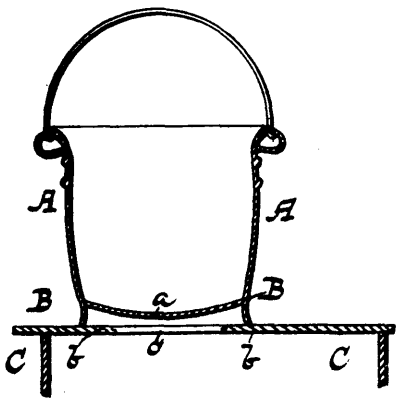
18463 Shearer's Machines for Pressing Cloth.



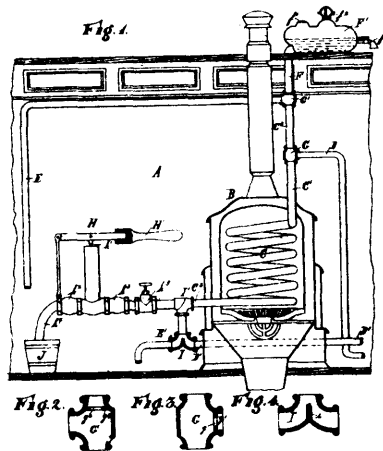
18464 Williams' Animal Traps.



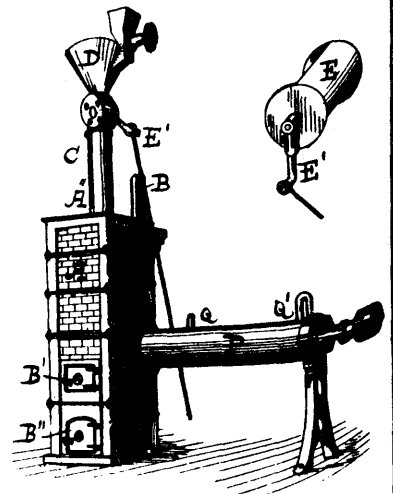
18465 Williams' Miners Safety Lamps.



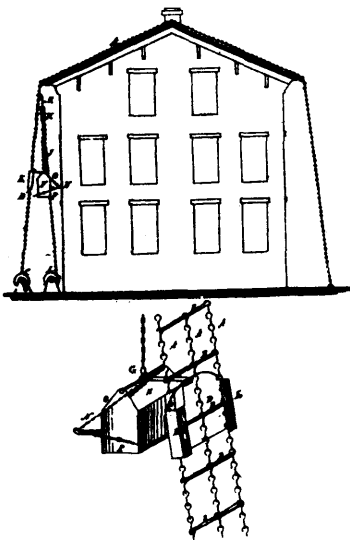
18466 Thomas' Iron Kettles.



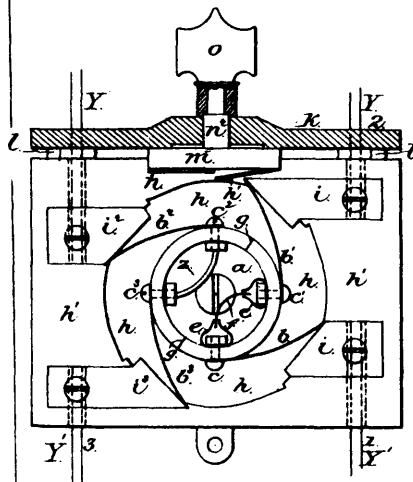
18467 Searle's Apparatus for Warning Railway Cars and Buildings.



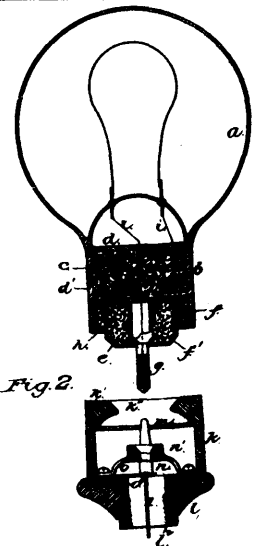
18468 Walker's Gold and Silver Amalgamators.



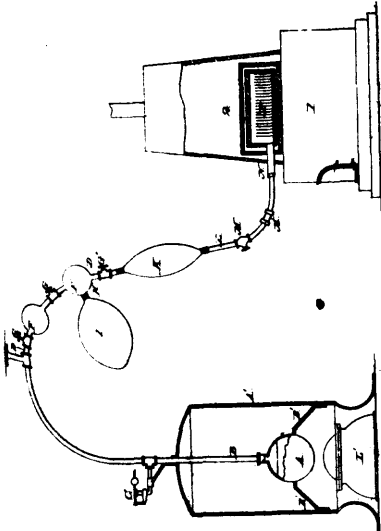
18469 Christie's Iron Chain Ladder and Fire Escapes.



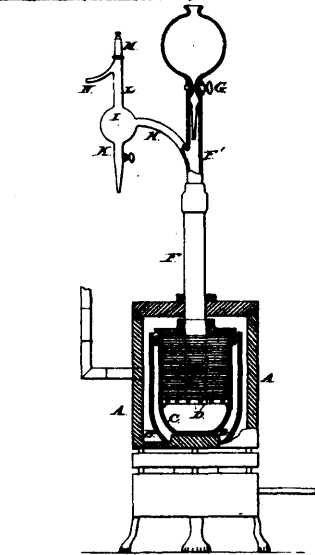
18470 Perkins' Electric Safety Switch and Cut-Out.



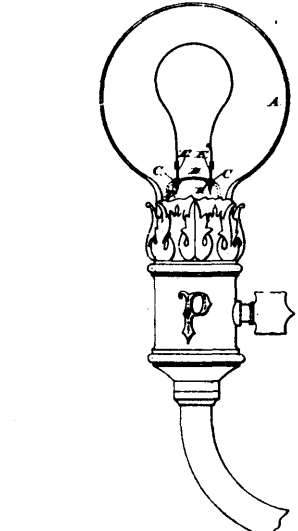
18471 Perkins' Incandescent Electric Lamp for Electrollers.



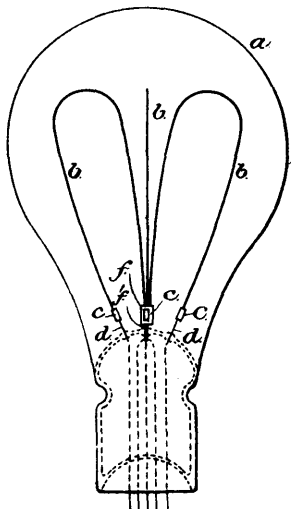
18472 Perkins' Apparatus for Treating Incandescents.



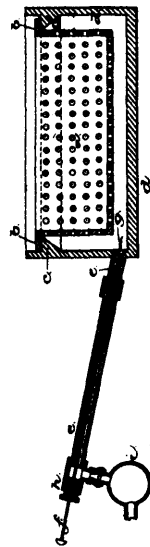
18473 Perkins' Apparatus for Treating Incandescents.



18474 Perkins' Sealing Carbon-Holders in Incandescent Lamp.

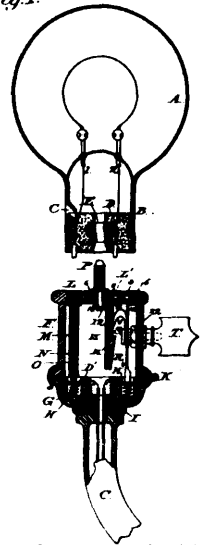


18475 Perkins' Carbon Holder for Incandescent Electric Lamps.

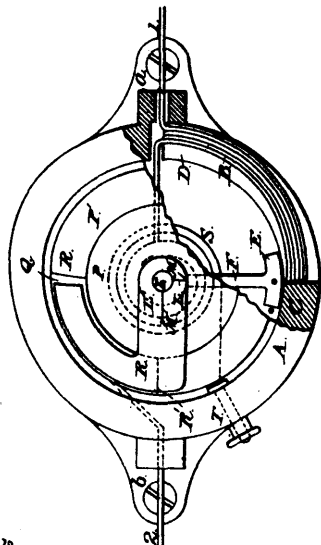


18476 Perkins' Carbonizing Box.

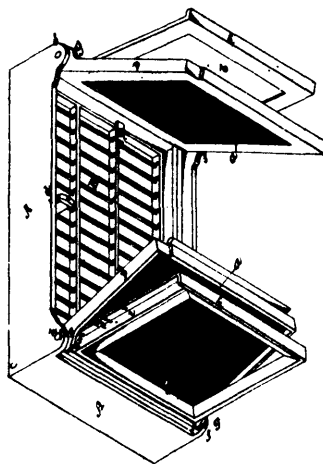
Fig. 1.



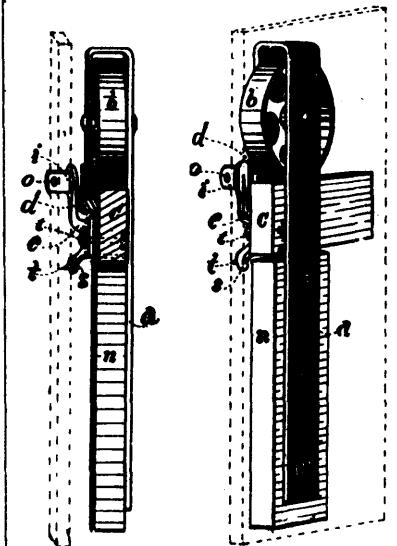
18477 Perkins' Incandescent Electric Lamp and Switch.



18478 Perkins' Electric Safety Switch.



18479 Byar's Grate for Cellar Windows.



18480 Cronk's Barn Door Hangers and Rail Brackets.

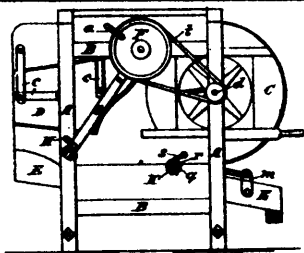


Fig. 1

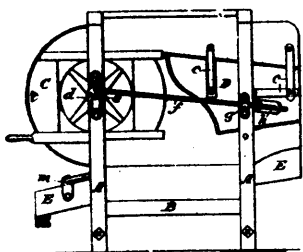
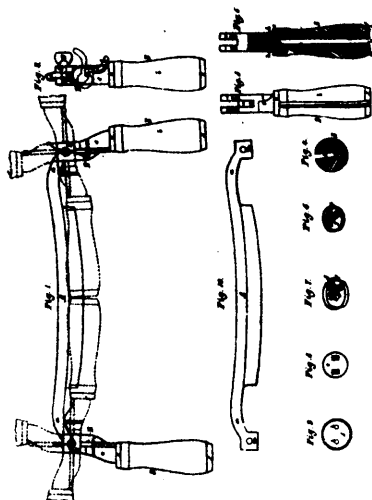
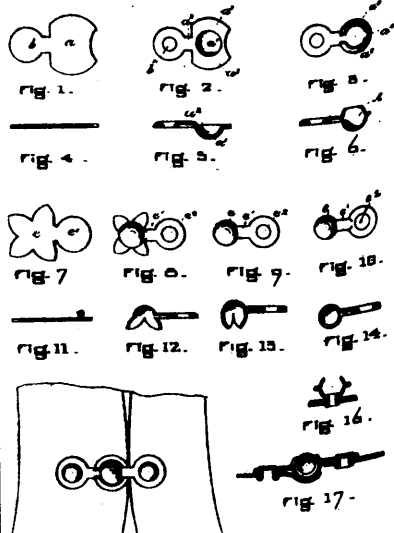


Fig. 2

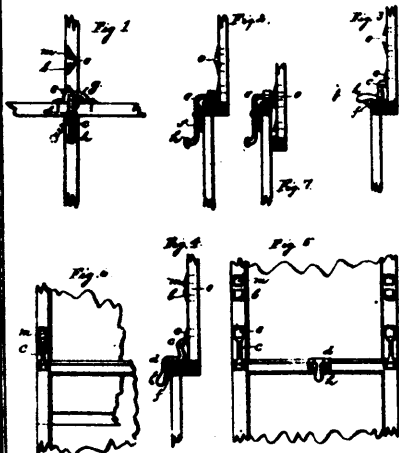
18481 Bickford's Fanning Mill.



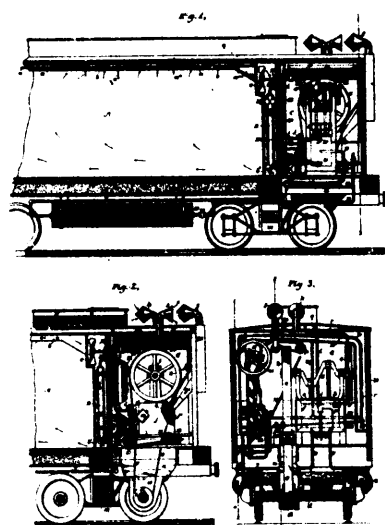
18482 Cantelo's Drawing Knife.



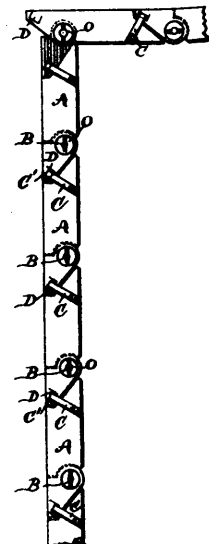
18483 Richardson's Fastening for Gloves.



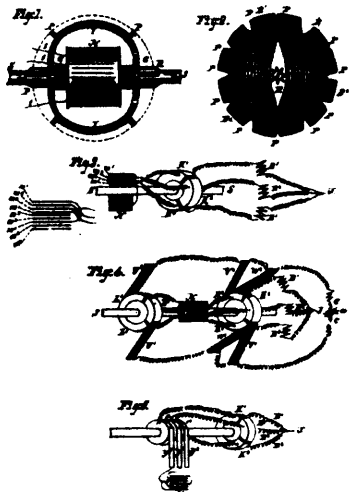
18484 Eberlein's Sash Fastener.



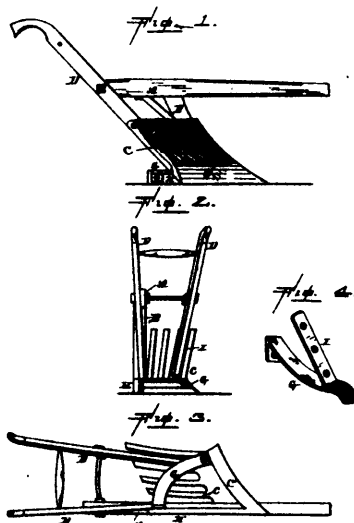
18486 Palmer's Refrigerator Car.



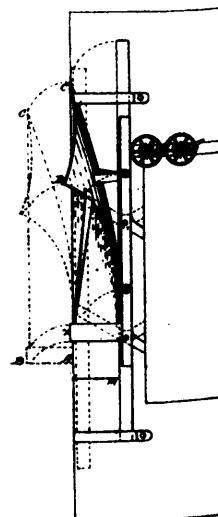
18487 Lande's Folding Ladder.



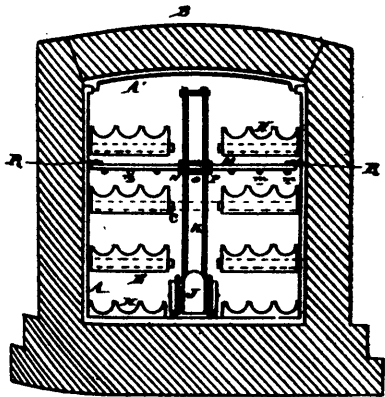
18488 Thomson's Dynamo-Electric Machine.



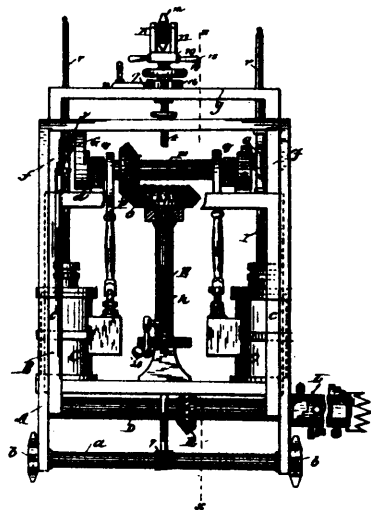
18489 Chevalier's Plough.



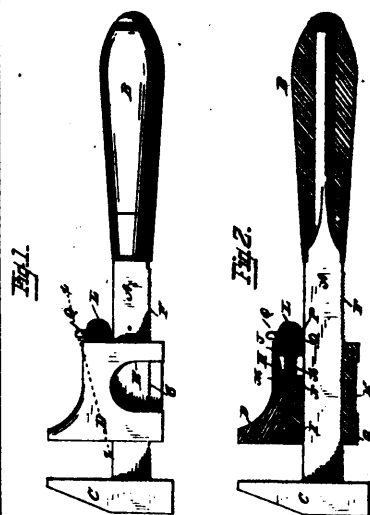
18490 Baker's Machine for Widening Channels through Snow Drifts on Railways.



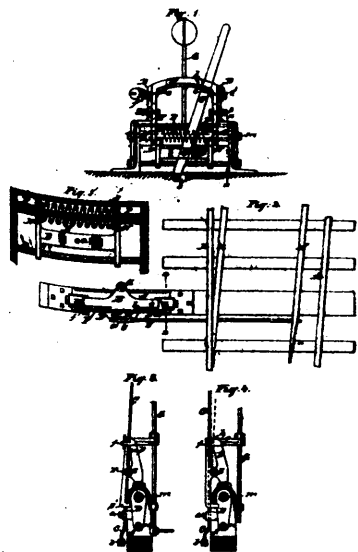
18491 DuBois' Underground Conduit.



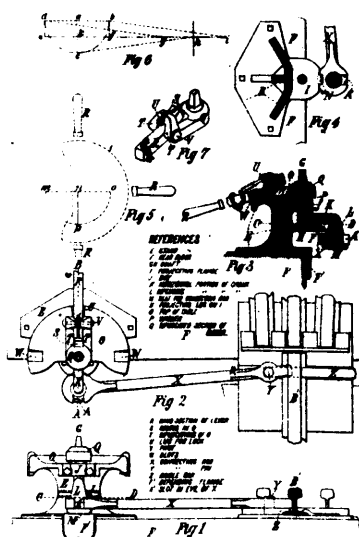
18492 Hilton's Mining Machine.



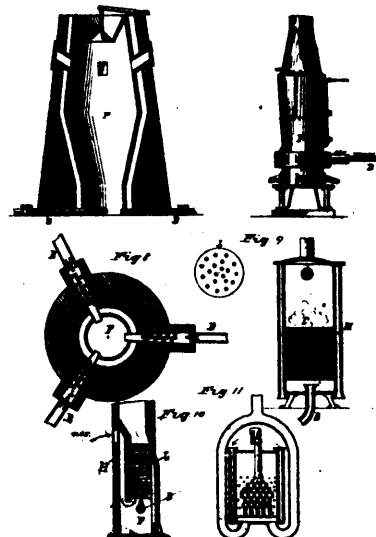
18493 Lee's Wrench.



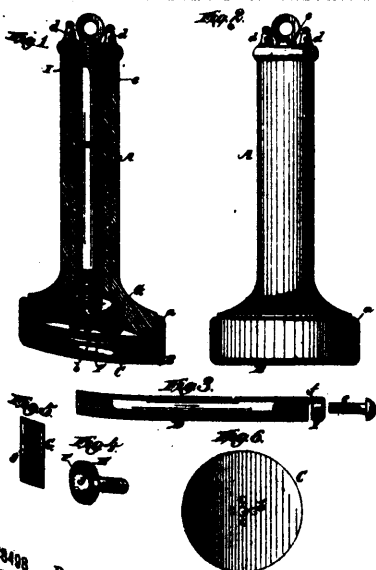
18494 Horne's Railroad Safety Switch Stand.



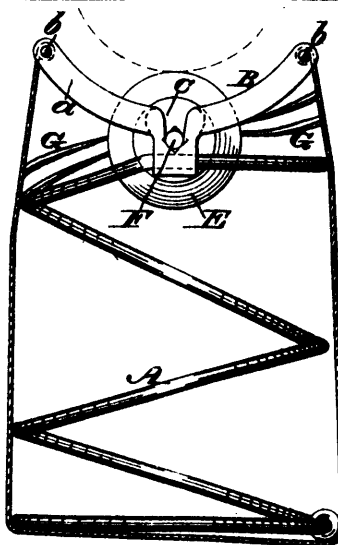
18495 Beard & Hinckley's Railroad Switch.



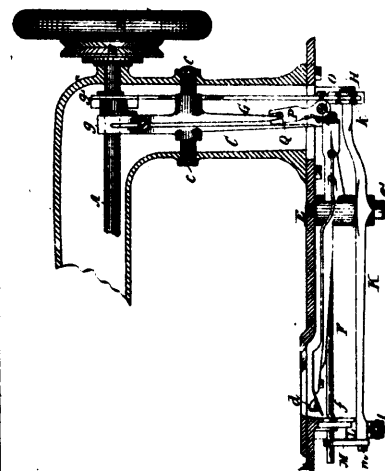
18498 Avery's Hydro-Carbon Generators and Process of Mixing Hydro-Carbon Vapor and Super-heated Steam.



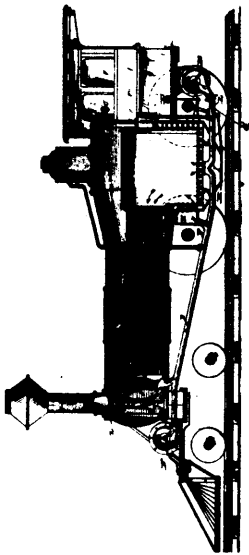
18498 Beedy's Teleponic Transmitter.



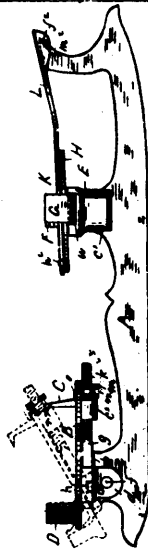
18499 Howard & Chance's Car Axle Lubricator.



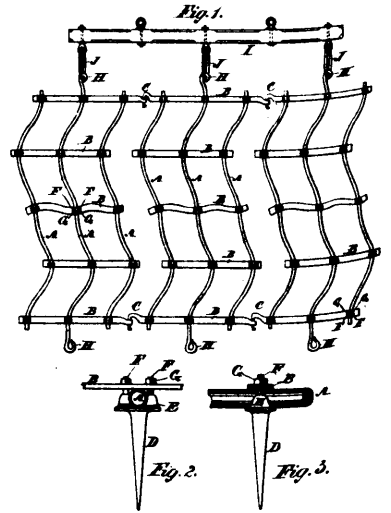
18500 Davis' Sewing Machine.



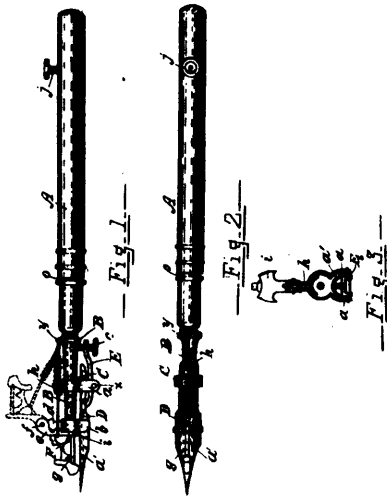
18501 Spear & Wight's Smoke Consumer for Locomotives and Stationary Boilers and Engines.



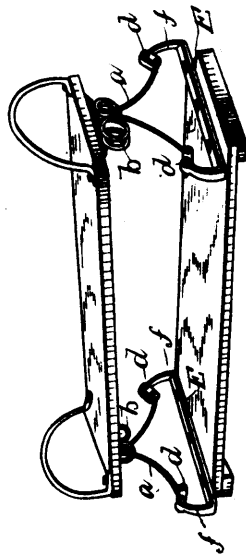
18502 Dodge's Skate.



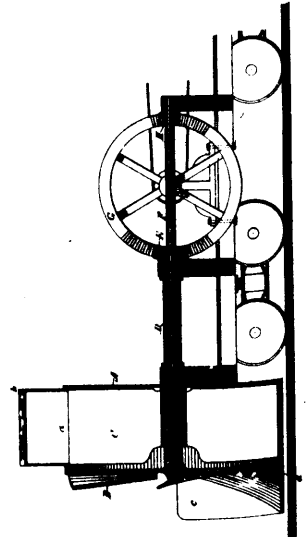
18503 Watt's Harrow.



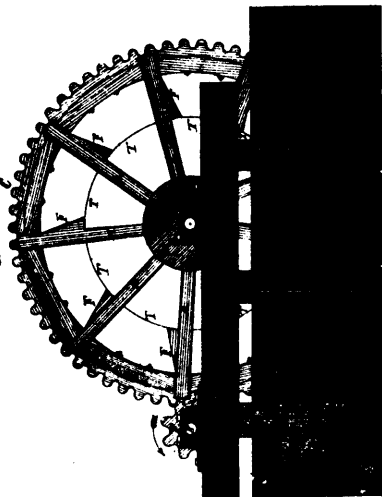
18504 Marcoux's Fountain Writing Pen Holder.



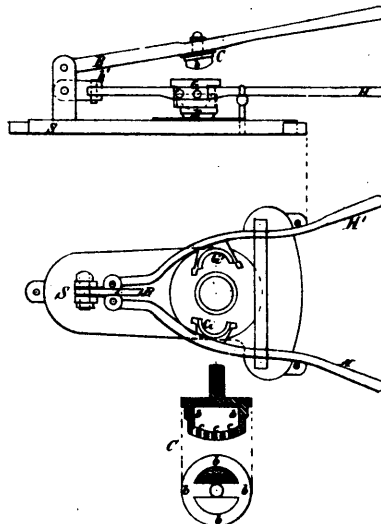
18505 Hunt's Vehicle Seat Spring.



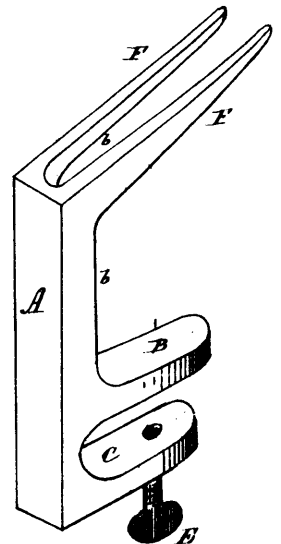
18506 Jull's Snow Flough.



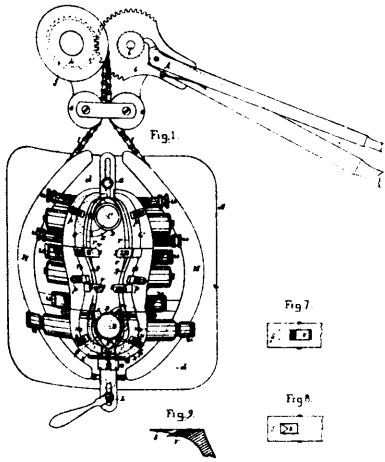
18507 Pike's Dash Wheel.



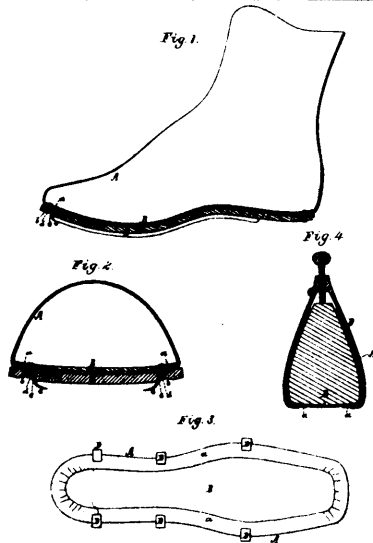
13508 Bayerque & Hue's Method and Apparatus for Moulding Designs in Glass.



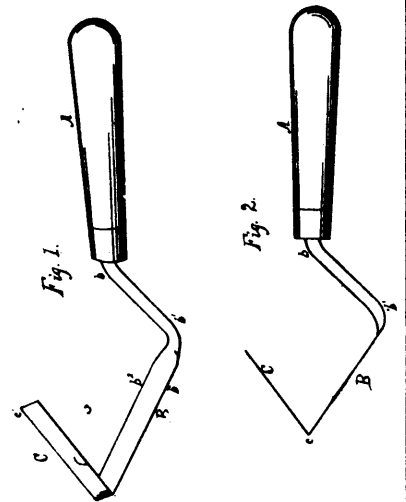
18508 Loemans' Holder for Flat Irons.



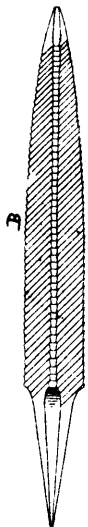
18510 Ethridge's Machinery for Lasting Boots and Shoes.



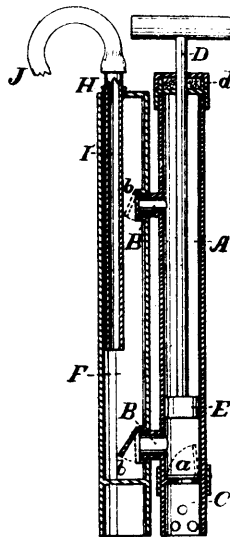
18511 Ethridge's Manufacture of Boots or Shoes.



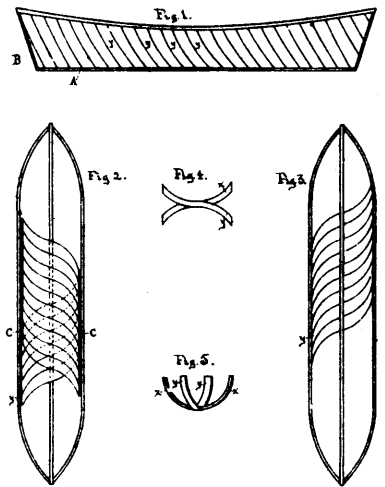
18512 Haseltine's Machine for Loosening Earth and Removing Weeds.



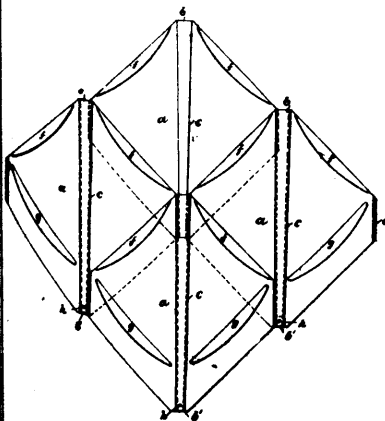
18513 Fairbanks's Three Square File.



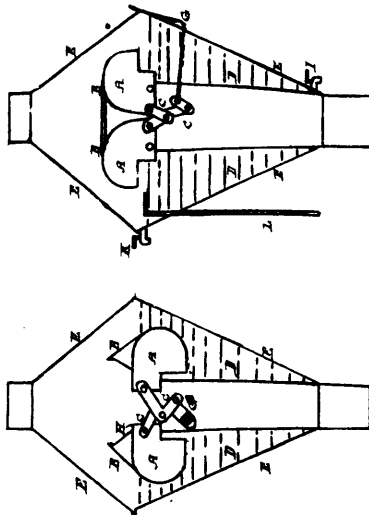
18514 Wock's Pump.



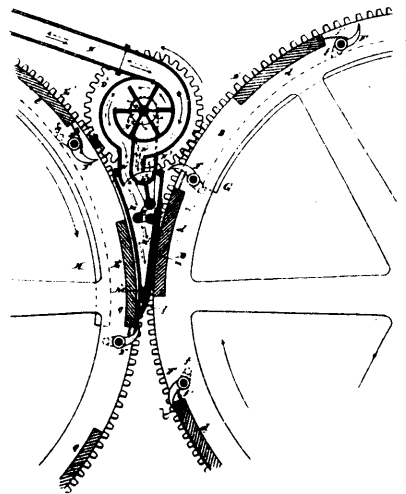
18516 Hodson's Boat Hull.



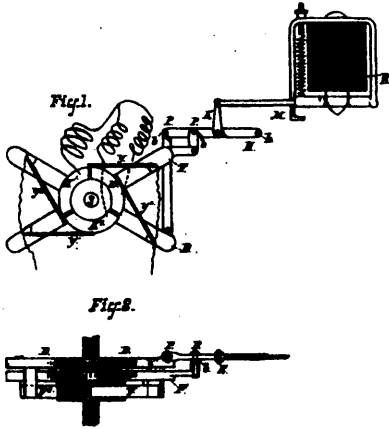
18517 Reynold's Shingle.



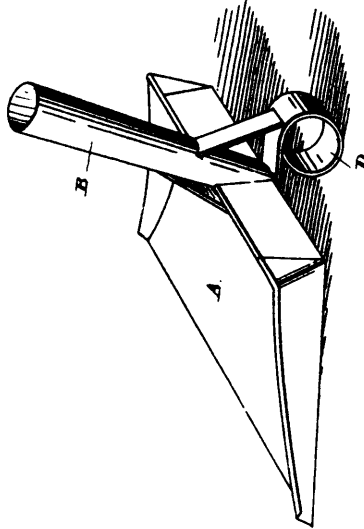
18518 McCaw's Machine for Extinguishing Sparks for Portable Engines.



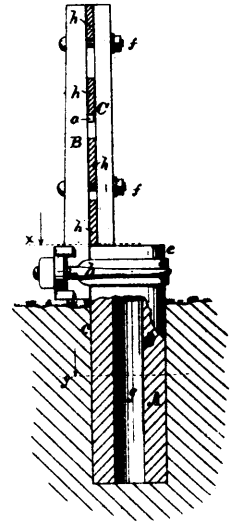
18519 Hunter's Printing Press.



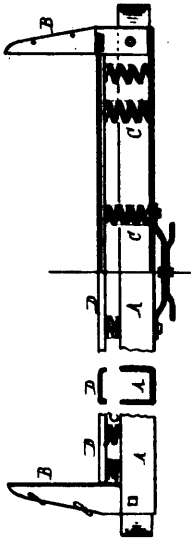
18520 Thomson's Regulator for Dynamo-Electric Machine.



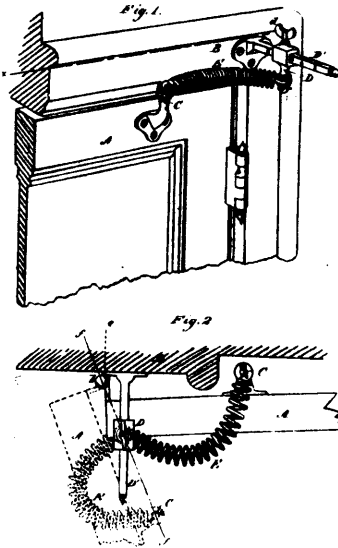
18521 White's Dust Pan.



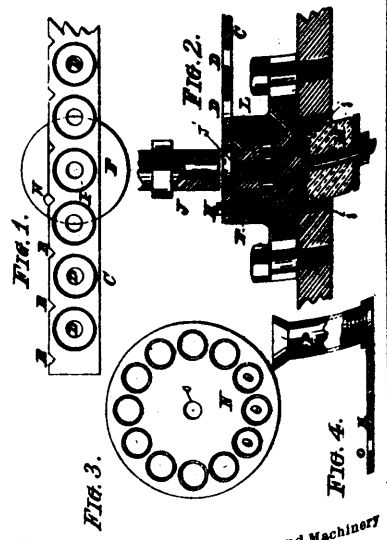
18522 Schweikhard's Fence Post.



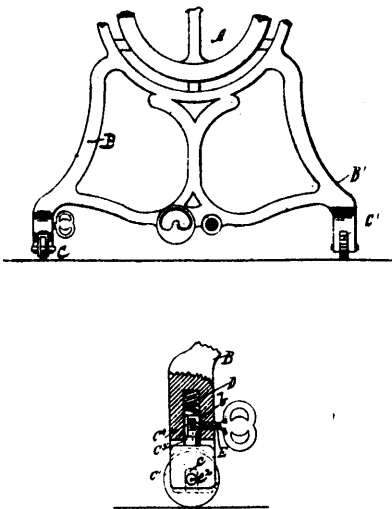
18523 Wilbur's Waggon Bolster.



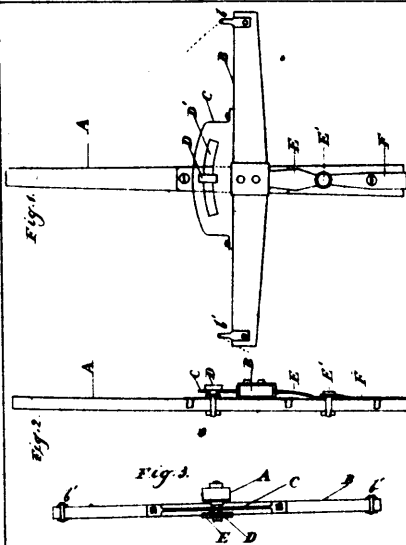
18524 Barlow's Door Spring.



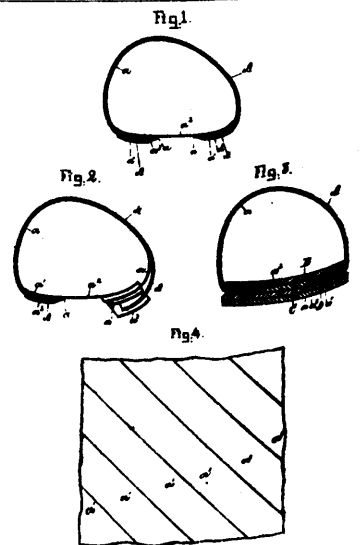
18525 Gingras's Leather Washer and Machinery for Manufacturing the same.



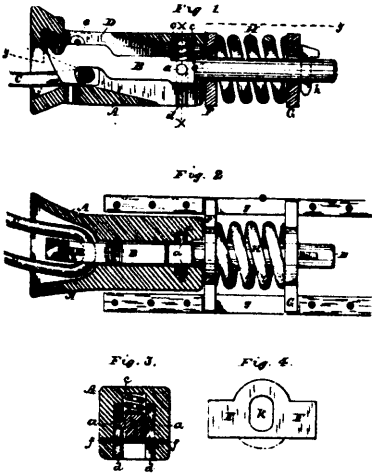
18526 McDonald's Caster Attachment.



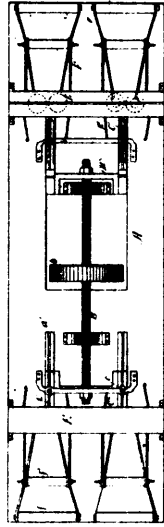
18527 Danby's Double Tree.



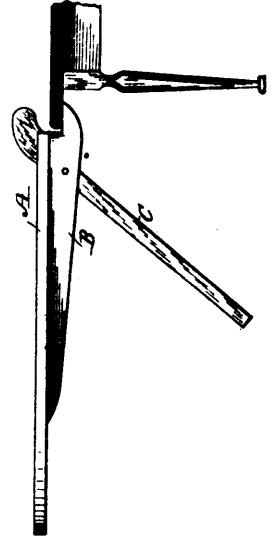
18528 Parker's Boots and Shoes.



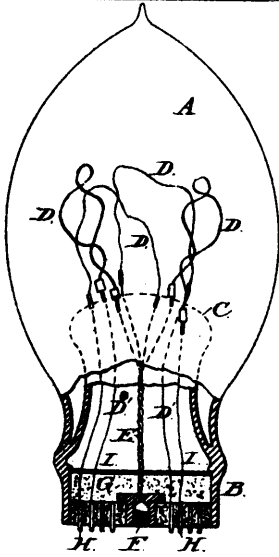
18530 Archer's Car Coupling.



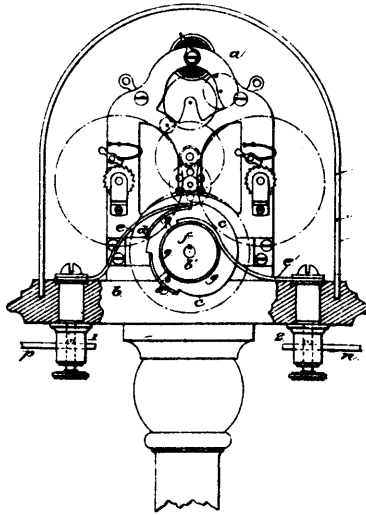
18531 Cote's Machine for Forming Heel Counters.



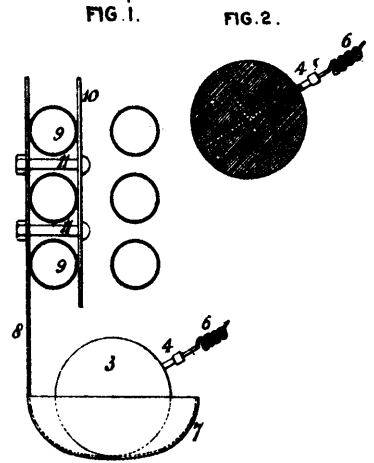
18532 Talbot's Ironing Board.



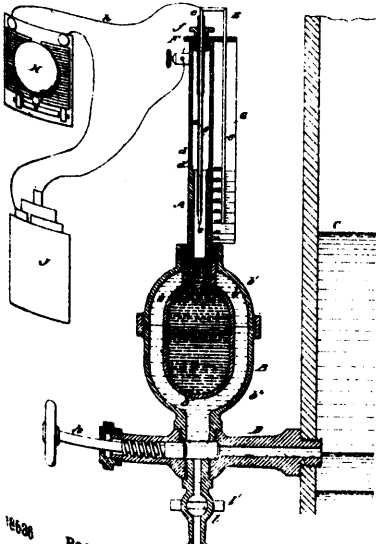
18533 Perkins' Electric Incandescent Lamp.



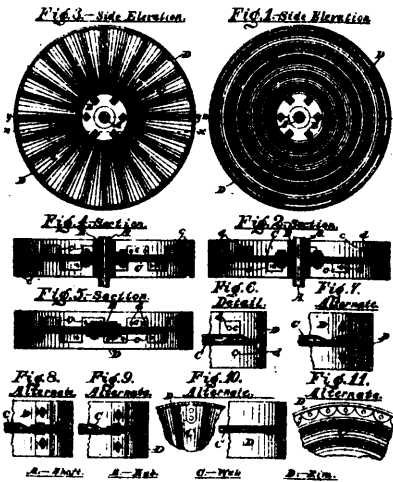
18534 Perkins' Automatic Electric Circuit Maker and Breaker.



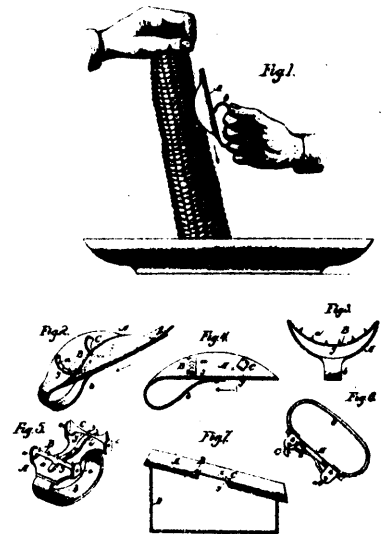
18535 Hannay's Improvements in Steam Boilers.



18536 Page & Carley's Electric Low Water Alarm for Steam Boilers, &c.



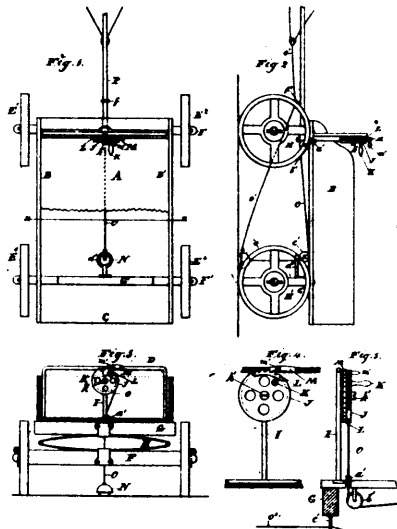
18537 Fulton & Olsen's Pulley.



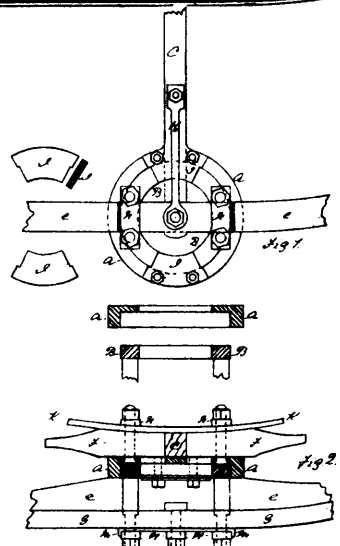
18538 Anderson's Malze Grater.



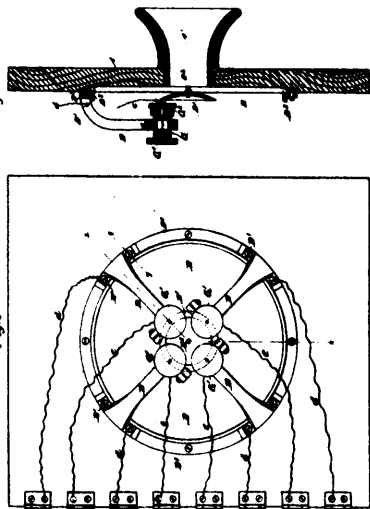
18589 Henley & Axtell's Ice Boat Oar.



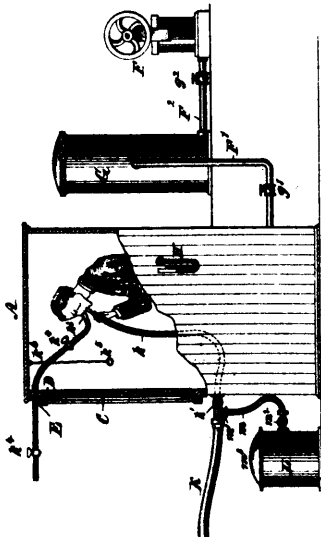
18540 Roy & Waldt's Attachment of Halter Weights.



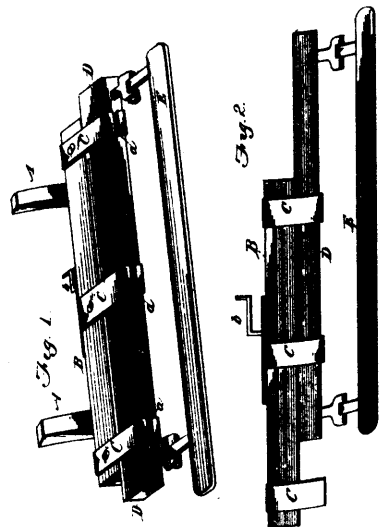
18541 Green's Fifth Wheel for Buggies and Waggon's.



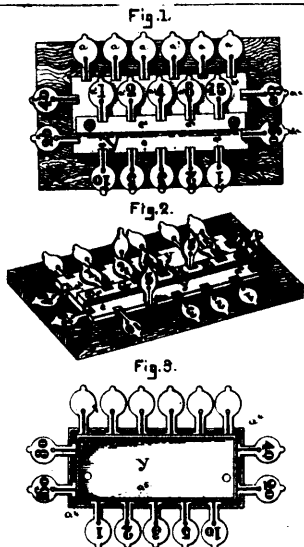
18542 Gillett's Telephone.



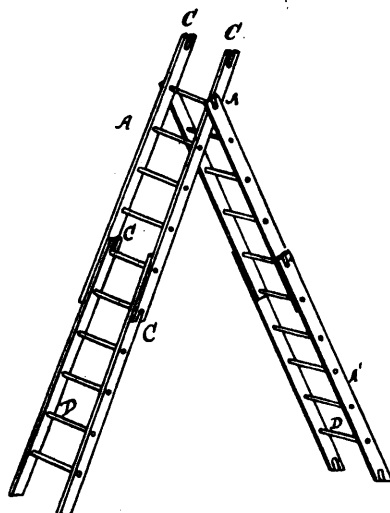
18543 Ketchum's Vacuum Treatment of Lung Diseases.



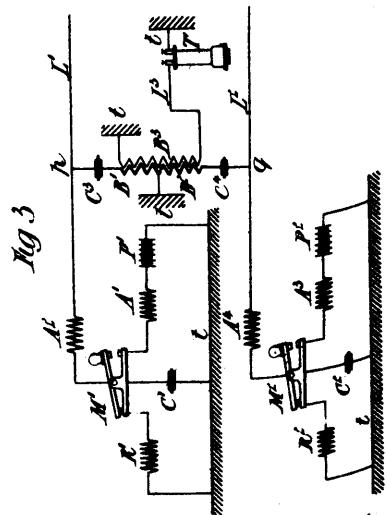
18544 Barker's Draft Bar for Sleighs.



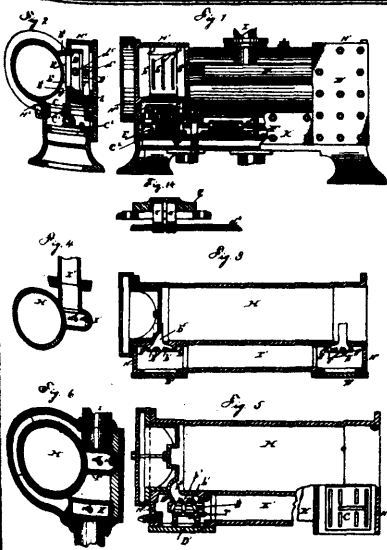
18545 Horton's Game Counter.



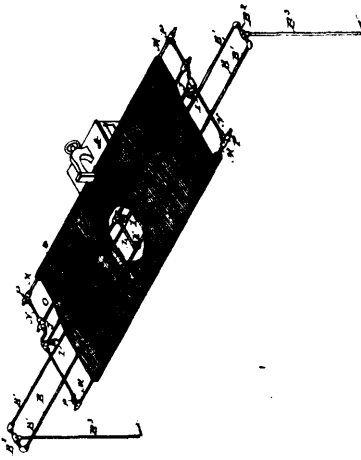
18548 Hitchcock's Step Ladder.



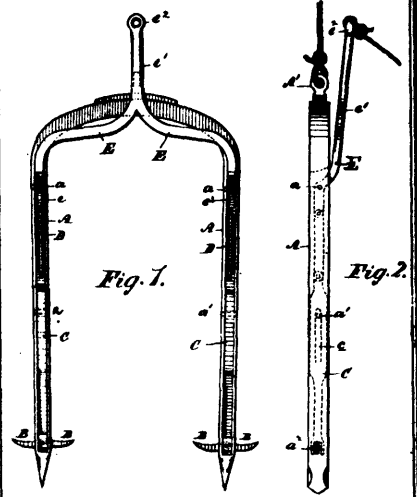
18547 Van Rysselberghe's Telegraphic and Telephone Apparatus.



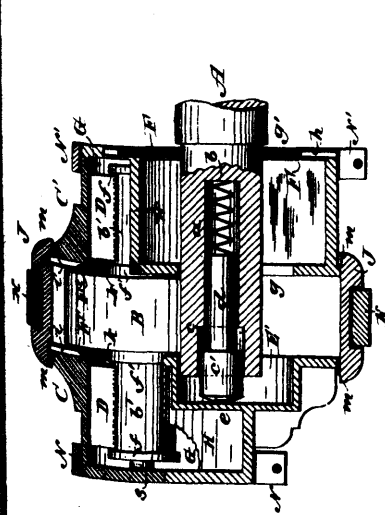
18548 Cummer's Steam Engine.



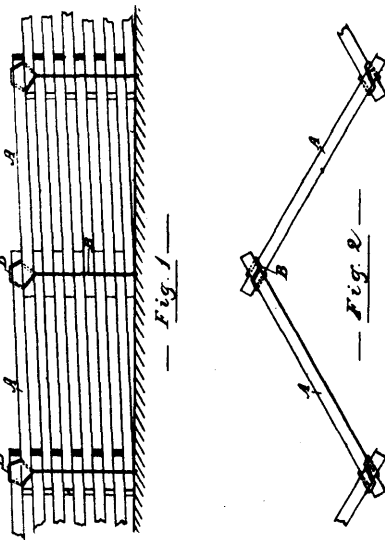
13549 Davis' Quilting Attachment for Sewing Machines.



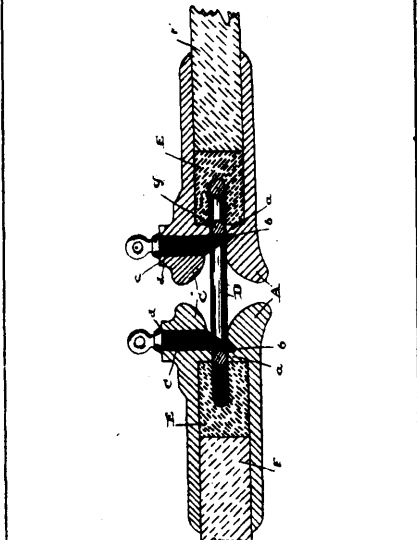
18550 Moore's Combined Hay Fork and Lifter.



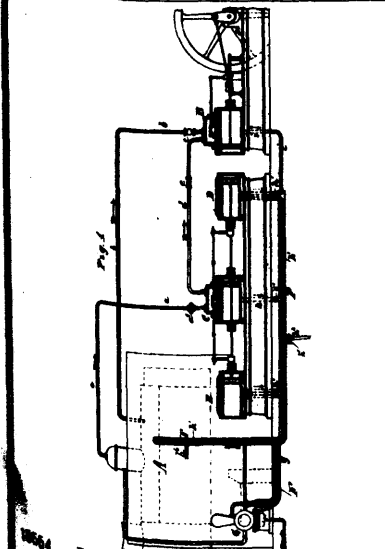
18551 Roberts' Journal Box.



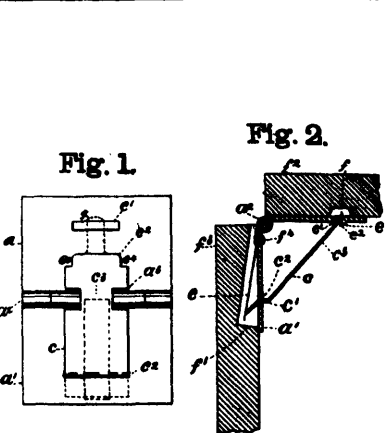
18552 Scarr's Wire Fence Lock.



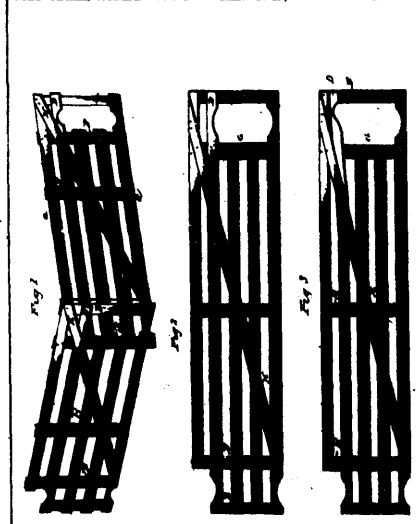
18553 Boyd's Car-Coupler.



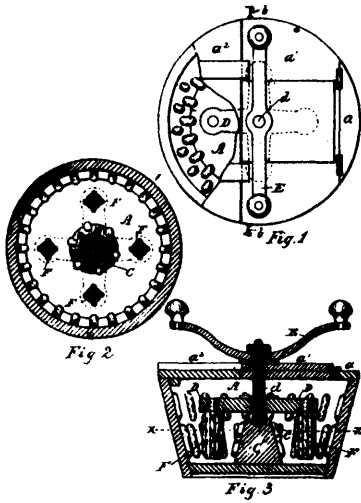
18554 Depp's Combined Steam and Compressed Air Engine.



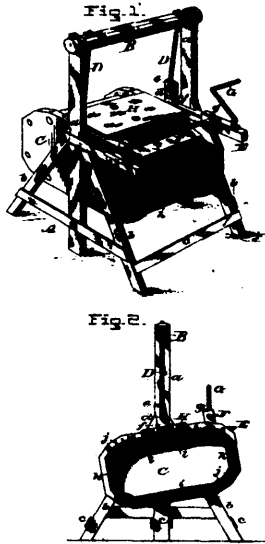
18555 Sangster's Brace Hinge.



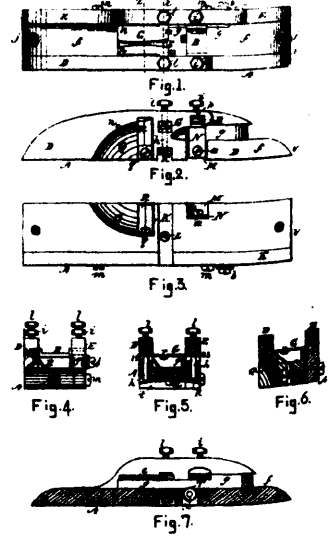
18556 Eastwood's Portable Fence.



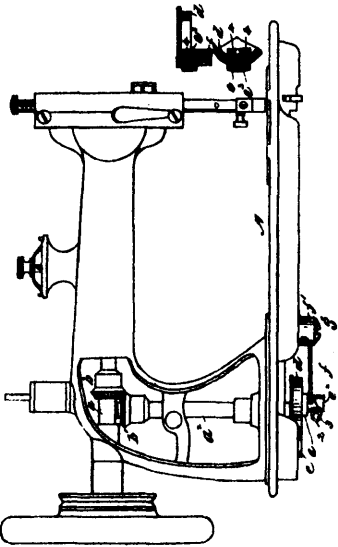
18557 Pariseault's Washing Machine.



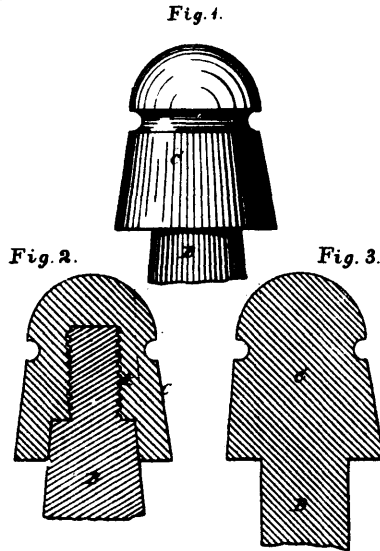
18558 Pomeroy's Churn.



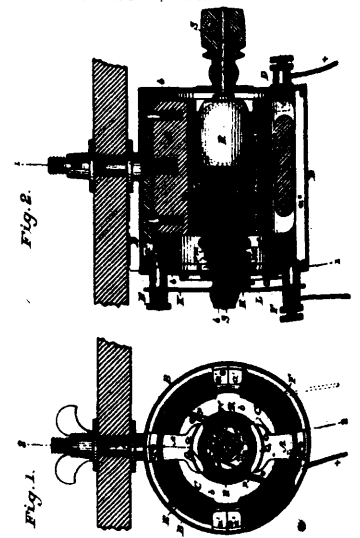
18559 Hinchelliff's Welt Cutter.



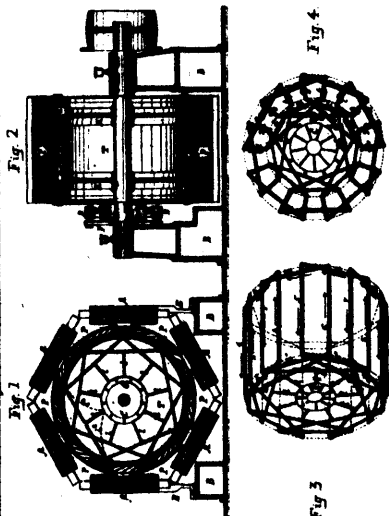
18560 Price's Sewing Machines.



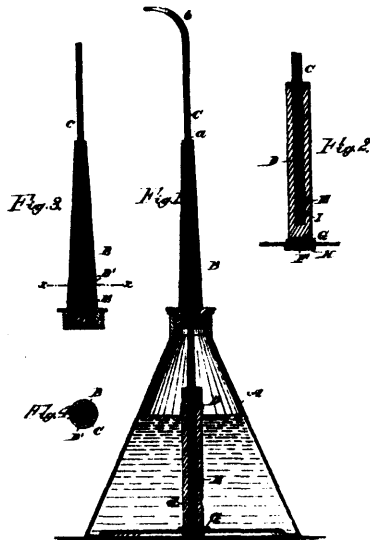
18561 Hildale's Telegraph Insulator.



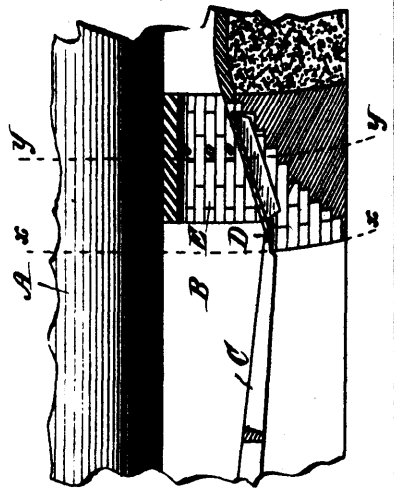
18562 Stockwell's Electric Motor.



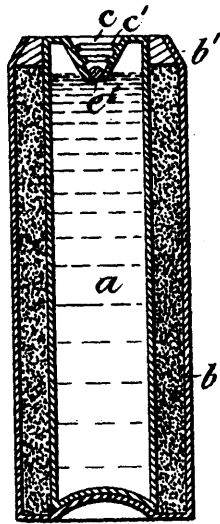
18563 Thury's Magneto and Dynamo Electric Machine.



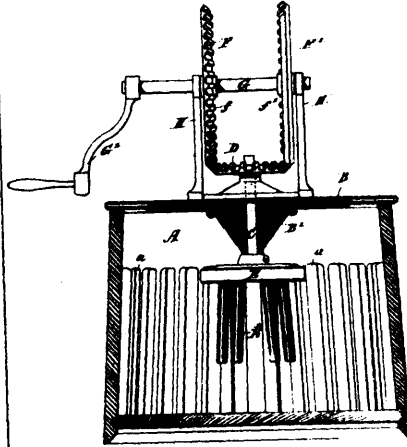
18564 Campbell's Oil Can for Oiling Machinery.



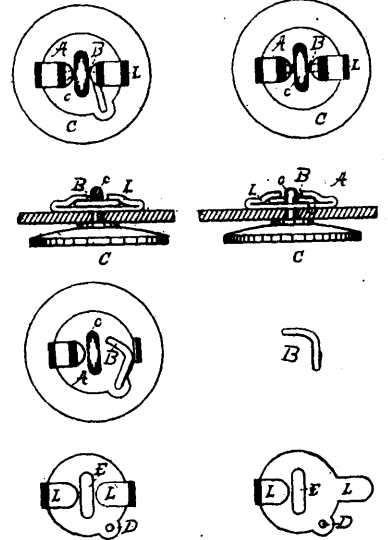
18565 Van Duzen's Boiler Furnace.



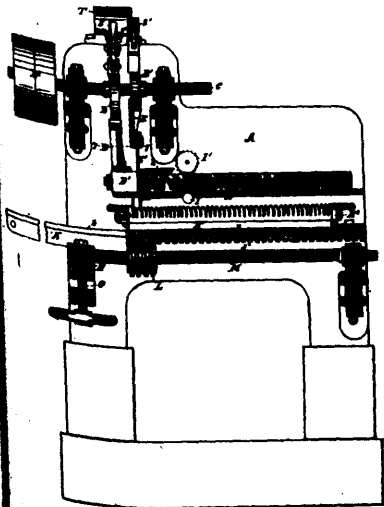
18660 Funshon & Viser's Method of and Apparatus for Utilizing an Explosive Compound.



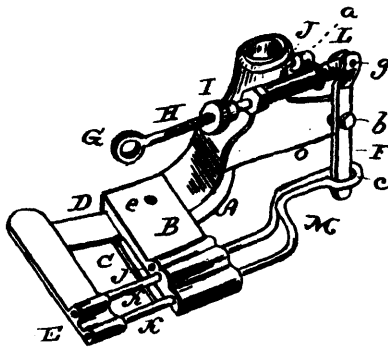
18667 Geneste's Washing Machine.



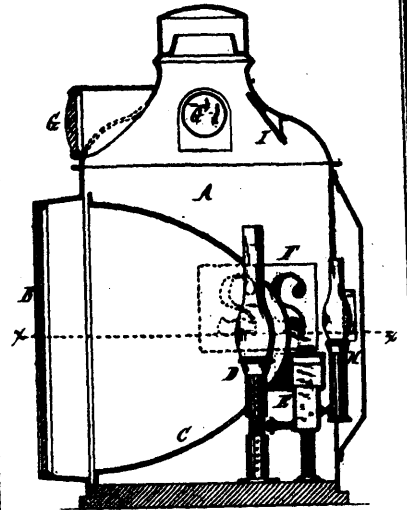
18668 Maedel's Fastening for Buttons.



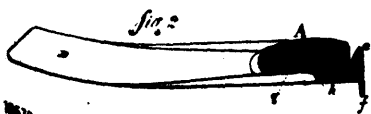
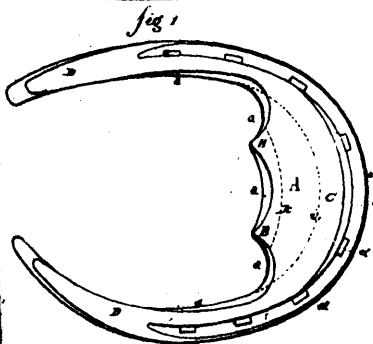
18669 Martin's Match Splint Machine.



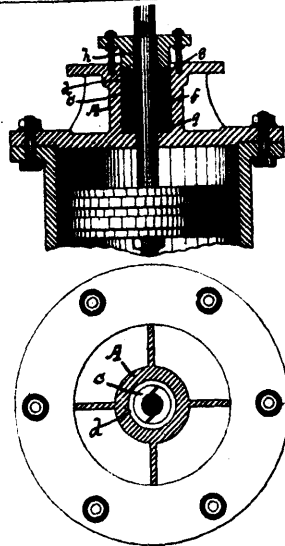
18670 Seckett's Buffie Attachment for Sewing Machines.



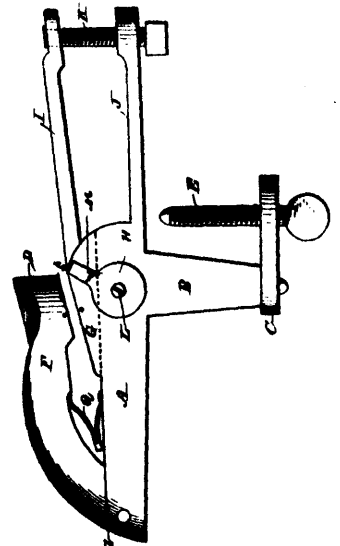
18671 Jenny's Headlight.



18672 Burr's Horse Shoe.

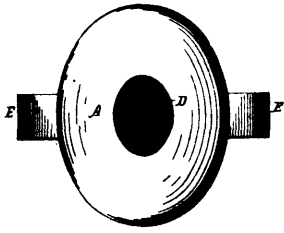


18673 Player's Metallic Packing for Piston Rods and Valve Stems in Stuffing Boxes.



18674 Flator's Saw Set.

Fig-1-



18576 Georges' Corn and Bunnian's Shield.

Fig-2-

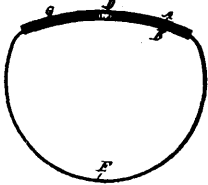


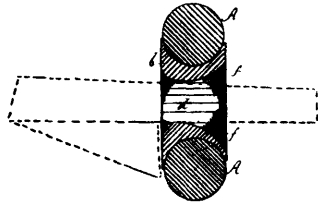
Fig. 1.



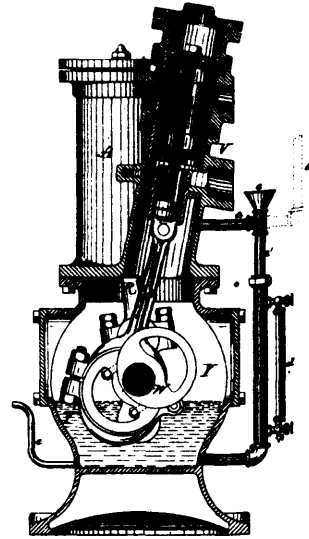
Fig. 2.



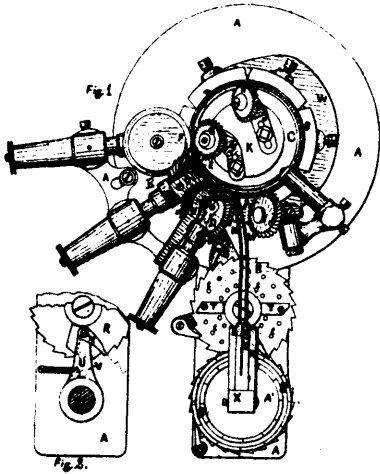
Fig. 3.



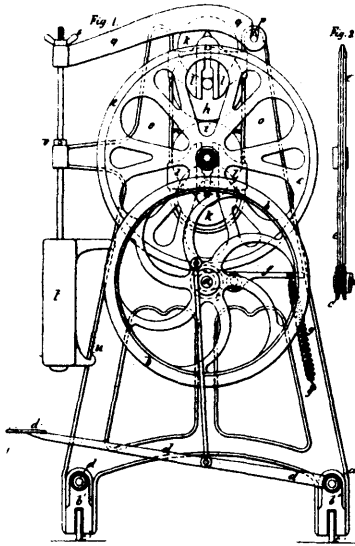
18576 Ramsey's Neck Yoke.



18577 Westinghouse's Steam Engine Lubricating Attachment.



18578 Bradley's Circular Knitting Machine.



18579 Rothwell's Machine for Washing, Wringing and Mauling.

Fig. 1.

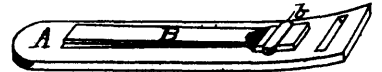


Fig. 2.

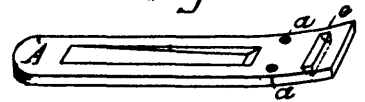


Fig. 3.

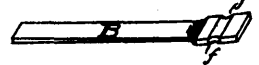
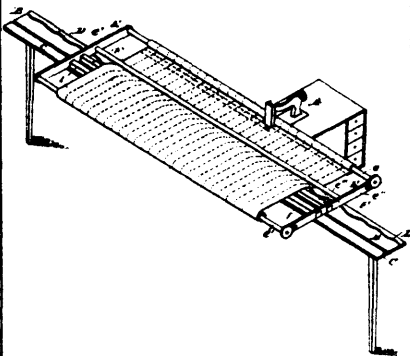


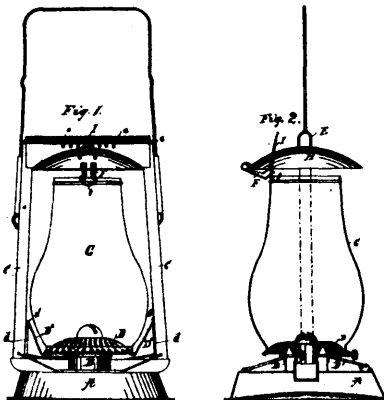
Fig. 4.



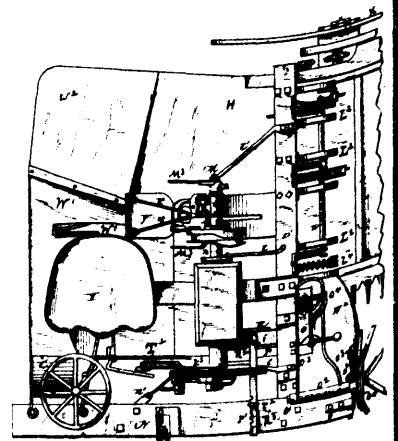
18580 Munroe's Organ Reed



18581 Davis' Quilting Attachment for Sewing Machines.



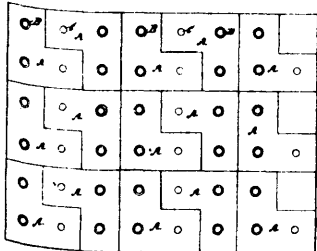
18582 Kennedy's Tubular Lantern.



18583 Miller's Grain Blading Harvester



Fig. 2.



18584 Morgan's Parchment and other Blanks used with Paper Fasteners.

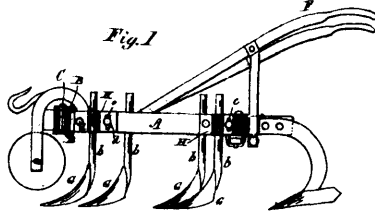


Fig. 1

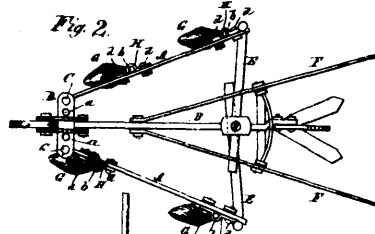


Fig. 2.

Fig. 3.

18585 Bell's Horse Hoe or Cultivator.

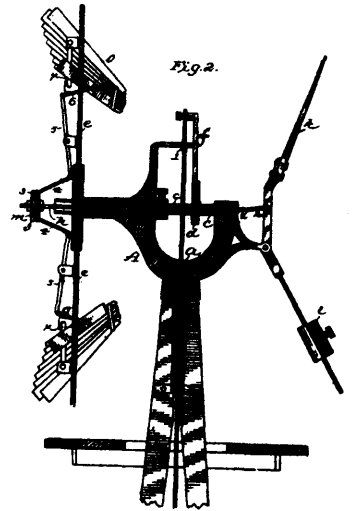
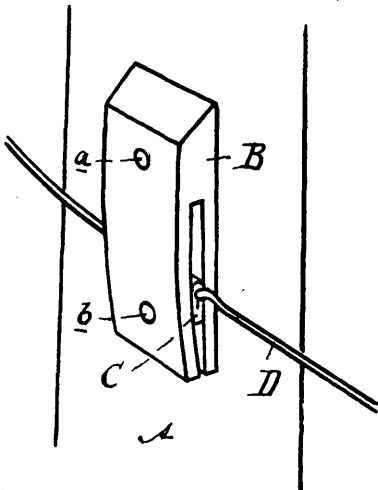
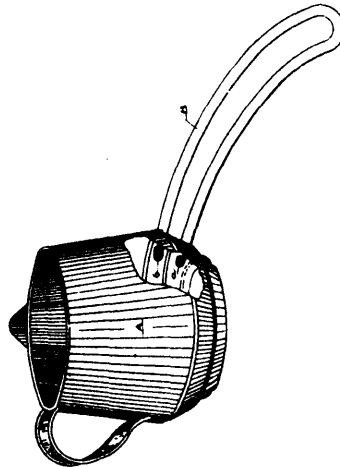


Fig. 2.

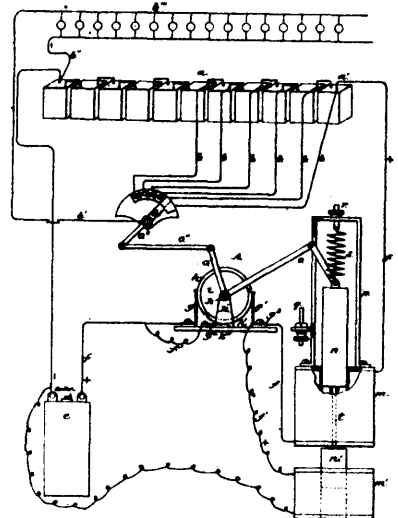
13586 Cornell's Wind Engine.



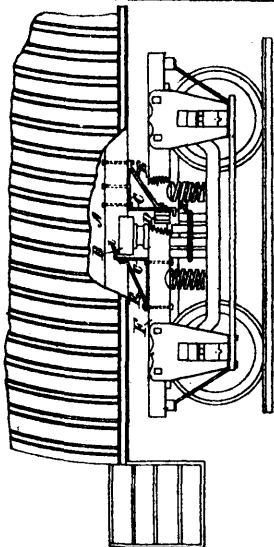
18587 Tringham's Means for Supporting Electrical Wires.



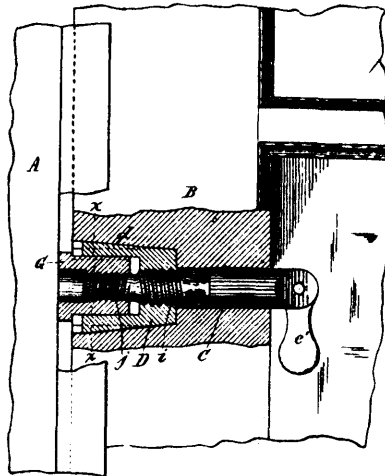
18589 Storie's Cooking Utensils.



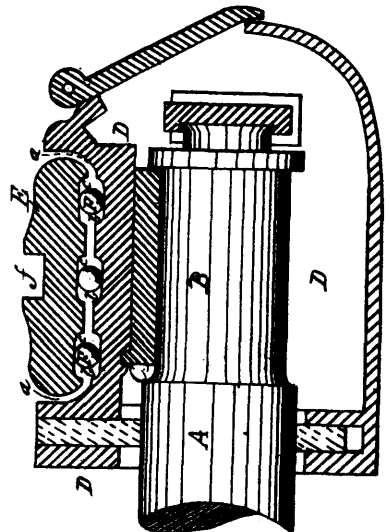
18591 Perkins' Automatic Electric Regulator for Storage Batteries.



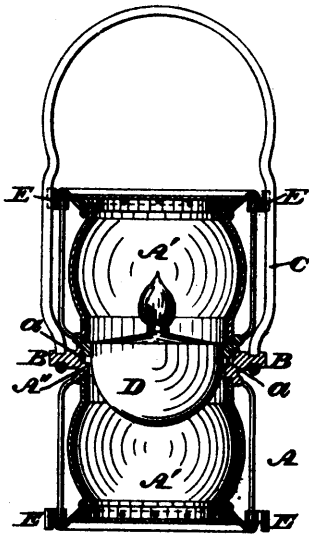
18592 Wilson's Railroad Car.



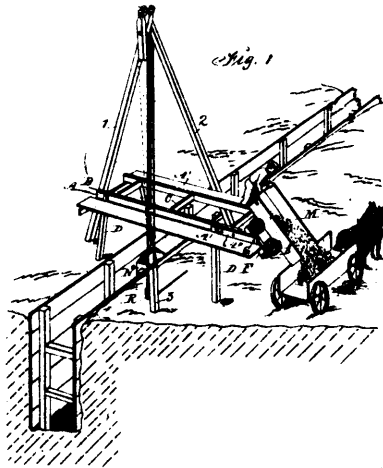
18593 Cutting's Sash-Holder.



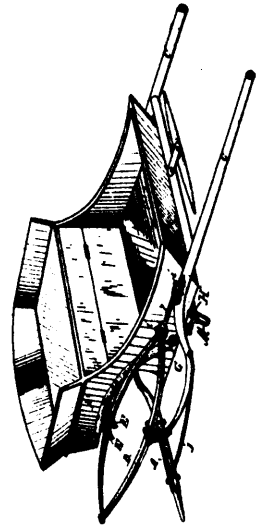
18594 Stearns' Self-Adjusting Bearing for Railroad Car-Axes.



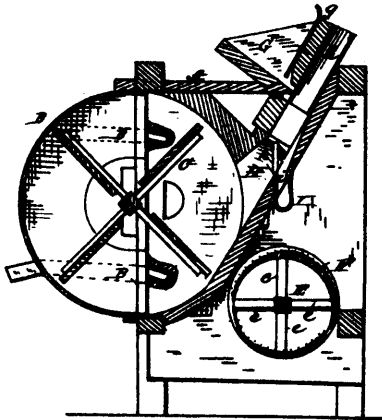
18595 Metzler & Burrell's Signal Lantern.



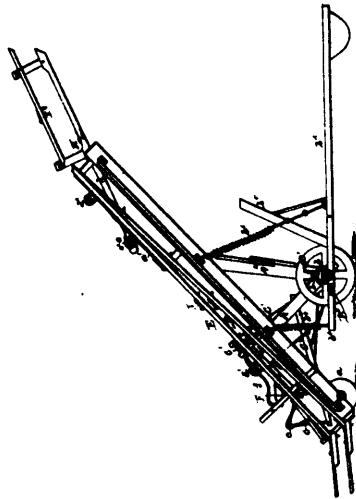
18496 McCauley's Machinery for Moving Ground in Sewer Ditches.



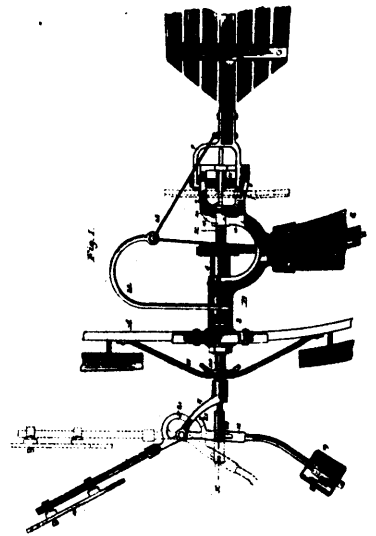
18597 Hortop's Vehicle.



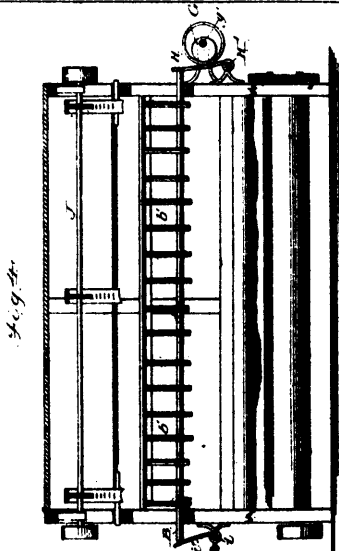
18598 Cummins' Grain Cleaner.



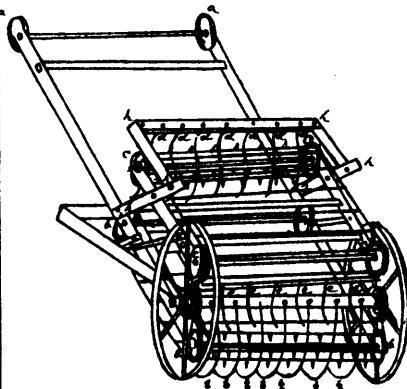
13699 Jewett's Hay Loader.



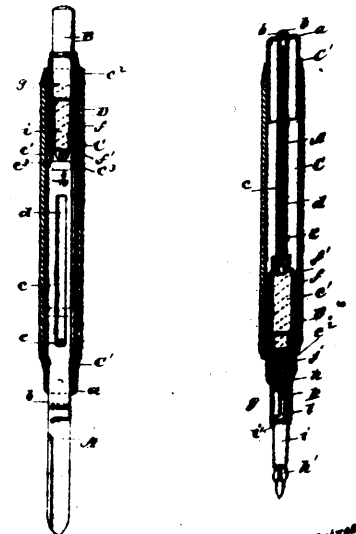
18600 Cornell's Wind Mill.



18601 Faulkner's Flour Bolt and Middlings Purifier



18602 McDonald's Hay Loader.



18603 Hoffman's Automatic Holder for Knives Pens, Pencils, etc.

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