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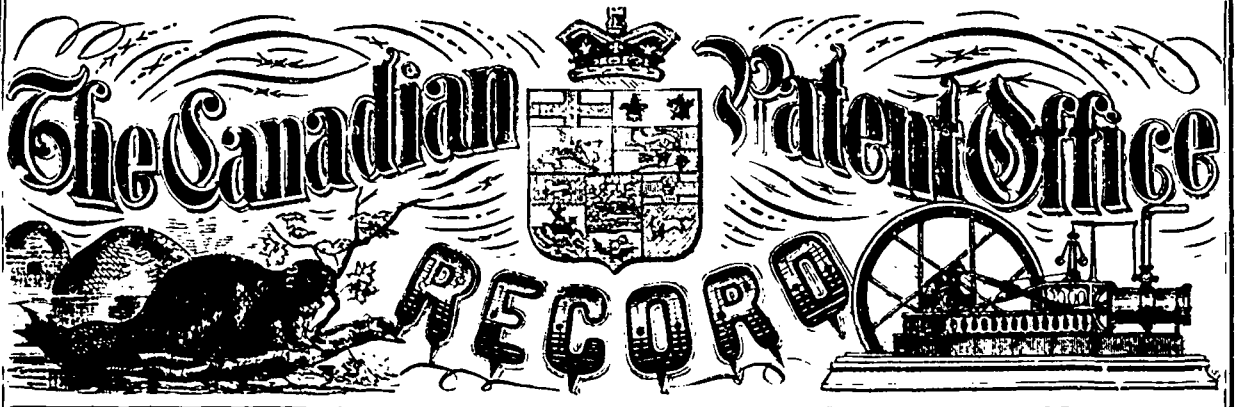
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INVENTIONS PATENTED.

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. 24,626. Shingle Jointer.
(*Colombe à Bardeau*)

Joseph Kearney, Woodstock, N.D., 2nd August, 1886; 5 years.
Claim.—The combination of a table B, balanced by a weight or spring, with a saw A, substantially as and for the purpose hereinbefore set forth.

No. 24,627. Heating Drum and Ventilator.
(*Poêle Sourd et Ventilateur.*)

John Springer, Clinton, Wis., U.S., 3rd August, 1886; 5 years.
Claim.—1st. In a combined heater-drum and ventilator, the combination with the drums A, D, and flue G, arranged within the drum D, of the flue L communicating with the drum A, and the flue K arranged within the flue L and communicating with the drum D, substantially in the manner and for the purposes specified. 2nd. In a combined heater-drum and ventilator, the combination of the drums A, D, smoke flues B, C and G, air-flues J, K and L, damper H and spiral flue strip M, when constructed, arranged and operating substantially in the manner and for the purposes specified.

No. 24,628. Steam Boiler for Agricultural and other purposes. (*Chaudière à Vapeur pour l'Agriculture et autres fins.*)

Charles S. Shepard, Chorro, Creech, N. Y., U. S., 3rd August, 1886; 5 years.
Claim.—1st. In a steam generator, in combination with the walls case and flues, constructed substantially as described, the cast iron flat disks or heads A, A', having circular V-shaped grooves therein for the reception of the ends of the case and flues, the rims a, a projecting beyond the walls of the case, and all parts held together by screw rods, f, passing through said rims outside of the case, all arranged as and for the purpose specified. 2nd. In a steam generator, the combination of the heads A, A', screw rods f, outer shell b, flues G, G' and the division plate A'', the latter having the circular grooves a, a', the central opening A and steam and water openings k, k', all substantially as specified. 3rd. The heads of a boiler for agricultural or other purposes made of flat disks and having cast therein, or formed thereon, grooves or circular rims for the reception of the ends of the case and flues, together with the screw rods passing through the rims of said disks or heads, and held together and tightened by the nuts g, g', all substantially as specified.

No. 24,629. Drill Tooth Regulator.
(*Régulateur pour Dents de Semoir en Ligne.*)

John Outram, Easton, Md., U.S. 3rd August, 1886; 5 years.
Claim.—1st. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar, and the shoe pivoted midway of its length to the rear end of the bar, substantially as described. 2nd. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar,

the shoe pivoted midway of its length to the rear end of the bar, and means, substantially as described, for limiting the tilting and rocking of the shoe on its pivot. 3rd. The combination, with a drill-tooth, of a rearwardly extending shoe-supporting bar, a shoe or runner pivoted midway of its length to the rear end of the bar, and means, substantially as described, for attaching the bar to the drill-tooth. 4th. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar, the shoe pivoted midway of its length to the rear end of the bar and provided on its underside with the rearwardly converging ridges, and means, substantially as described, for connecting the bar and brace to the drill-tooth. 5th. The combination with the drill-tooth, of the pivoted rearwardly extending shoe-supporting bar, the brace pivoted at the top of the tooth, and adjustably connected at its lower end with the bar, the shoe pivoted midway of its length to the rear end of the bar, and provided with the converging ridges on its underside and the guard on its forward end, and means substantially as described, for detachably connecting the shoe bar and its brace to the drill-tooth. 6th. The combination, with the drill-tooth, of the rearwardly extending pivoted shoe-supporting bar, the pivoted brace adjustably connected to the bar, the shoe pivoted midway of its length to the rear end of the bar, and provided with means, substantially as described, to limit its rocking or tilting movement on its pivot, and having the ridges on its underside and the guard on its upper front end, and the means described, for detachably connecting the supporting bar and its brace to the drill-tooth.

No. 24,630. Stove and Furnace.
(*Poêle et Calorifère.*)

Charles Garlick, Syracuse, N.Y., U.S., 3rd August, 1886; 5 years.
Claim.—1st. In a base burning stove or hot air furnace, the combination, with the base heating flue chamber, the fire pot and flue a, of a supplemental heating chamber located against the base heating flue chamber, and the hot air pipe H connecting said chamber with the fire pot, and having its discharge end located at the top of the fire pot, to feed hot air into the supplemental heating chamber into the products of combustion, substantially as described. 2nd. In combination with the fire pot B, the base heating chamber 2, flue a, supplemental heating chamber 1, and hot air feed pipe H, all constructed and arranged substantially as and for the purpose specified. 3rd. In a base-burning stove or hot air furnace, in combination, the fire-pot and combustion chamber B, the hot air pipe H extending above the fire-pot, the extension H' connected with the downward flue a, the damper K located between pipes H, H', for turning the hot air either into the fire-pot or flue a, the downward flue a and the smoke exit flue b, all substantially as and for the purpose specified. 4th. The combination, in a base heating stove or furnace, of a hot flue combustion chamber 2, and a supplemental heating air chamber 3 attached to said hot flue chamber, and a supplemental heating air chamber 1 located below said hot flue chamber and attached thereto, the hot air pipe H, the fire pot B, the downward flue a and the exit flue b, substantially as described. 5th. The combination, in a base heating stove or furnace, of a supplemental heating air chamber located below the ash-pit and above the hot flue chamber, the bottom thereof forming the top of the hot flue chamber, the hot flue chamber the bottom thereof forming the top of a supplemental heating air chamber located below said hot flue chamber, and the supplemental heating air chamber, the hot air feed pipe H passing through the hot flue chamber 2 and supplemental heating air chamber 3, the fire pot B, the flue a, the hot air conduits c, c', and smoke exit b, substantially as and for the purpose specified. 6th. The combination of the supplemental heating air chamber 1, provided with the divisions G, G', the inlet F, pipe H, the fire-pot and combustion chamber B, the downward flue a, the hot flue chamber 2 and the exit flue b, all substantially as and for the purpose specified.

No. 24,631. Shirt Ironing Board.
(*Planche à Repasser les Chemises.*)

Margaret A. Leslie, Georgetown, Ont., 3rd August, 1886; 5 years.
Claim.—The combination of the extension frame A having bends or notches B, B, B, with the staples C, C, C, C, as applied to short ironing boards, substantially as set forth and for the purposes specified.

No. 24,632. Lamp Burner. (Bec de Lampe.)

William McMullon, Toronto, Ont., 3rd August, 1886; 5 years.

Claim.—1st. In a lamp burner, a central tube having a closed bottom, in combination with walls to support the central tube within the outer wick-tube, and forming two passageways opposite to each other, leading from the interior of the central tube to the exterior of the outer wick-tube. 2nd. In a lamp burner, a central tube A having a closed bottom a, and suspended within the wick-tube C by the walls d of the passageways D, in combination with a circular wick E having legs f, to extend past the walls d, substantially as and for the purpose specified. 3rd. In a lamp burner, a central tube A having a closed bottom a, and suspended within the wick tube C by the walls d of the passageways D, in combination with a circular wick E having legs f, to extend past the walls d, the rack U, formed as specified, and operated by the ratchet-wheel H, substantially as and for the purpose specified. 4th. In a lamp burner, a central tube A having a closed bottom a, in combination with a detachable spindle I provided with a perforated disc K, substantially as and for the purpose specified. 5th. In a lamp burner, the combination of a wick L hung on the bar g attached to the bottom a, substantially as and for the purpose specified.

No. 24,633. Buckle. (Boucle.)

Clark W. Wheeler and John Kressin, Kenosha, Wis., U. S., 3rd August, 1886; 5 years.

Claim.—1st. The combination, in a buckle, of the section A having its sides upwardly inclined at one end and provided with cross-bars e and e, and a section B having its sides upwardly inclined at the opposite end, and provided with cross-bars b and d, the curved sides of each of said sections being arranged to engage with the other section, and when draft is applied to the trace to draw said cross-bars b and c toward said cross-bars d and e, and clamp said trace at different points between them, substantially as and for the purposes set forth. 2nd. The combination, in a buckle, of the section A upwardly or outwardly curved at its front end, and provided with cross-bars c and e and depending tongue f, and the section B, upwardly or outwardly curved at its rear end and provided with the cross-bars b and d, and the lateral projections a, a, substantially as and for the purposes set forth.

No. 24,634. End Gate for Waggon Boxes. (Hayon de Wagon.)

Thomas Thomson and Owen Bean, Berlin, Ont., 3rd August, 1886; 5 years.

Claim.—An end gate having pieces a, a, end rods d, d, keys i, i, piece b, hinges h, h, spring e and catch f, arranged and combined substantially as and for the purposes hereinbefore set forth.

No. 24,635. Automatic Guard for Railroad Cars. (Garde Automatique pour Chars de Chemins de Fer.)

John W. Anderson, (assignee of Robert J. Gillham,) Orlando, Fla., U. S., 3rd August, 1886; 5 years.

Claim.—1st. The herein-described guard pivotally supported, and having its heavier portion in rear of its pivot extended and adapted to overbalance the forward portion, said rear portion being shaped substantially as described, forming an incline between which and the top of the car, the air will operate with a wedging action, whereby to lift said end in order that the air may escape rearwardly, substantially as set forth. 2nd. The combination of two adjacent cars, and guards secured on and near the meeting ends of said cars, one of said guards opening toward the meeting ends of the car, whereby to receive the cinders and like, and the other being inclined upward from its inner to its outer edge, substantially as and for the purpose specified.

No. 24,636. Harvester and Binder. (Moissonneuse-Lieuse.)

The Massey Manufacturing Company, Toronto, Ont., (assignee of William N. Whitely, Springfield, Ohio, U. S.,) 3rd August, 1886; 5 years.

Claim.—1st. A single wheel side and rear cut reaping machine provided with a drag-bar C, ratchet lever U and conveyor platform b, combined with a shoe C₁, the post C₂ attached to an extension of said shoe, a revolving reel R supported on said post, and the binding mechanism also supported by said post, substantially as and for the purpose set forth. 2nd. The drag-bar C, shoe C₁, post C₂ attached to an extension of said shoe, the binding mechanism supported by said post, and the conveyor-platform b supported at its inner end by said shoe, combined with the miter gear m, tumbling-shaft u having the universal joint p and the clutch E, substantially as and for the purpose specified. 3rd. A binder-table b₁ provided with a lever d, combined with a connecting rod d₁, spring f, clutch E, and stop-lugs p₁ projecting from the binder-arm e, as and for the purpose specified. 4th. A bundle-compressor composed of the curved binder-arm e secured to the shaft e₁, and provided with the slotted arm e₂, and the compressor-arm f provided with the arm f₁ engaging with, and operated by the slot in the arm e₂, in combination with the shaft h₅ provided with the crank h, the crank-arm e₃ on the shaft e₁, and the connecting-link i, substantially as and for the purpose set forth.

No. 24,637. Artificial Fly. (Mouche Artificielle.)

Charles F. Imbrie, Jersey City, (assignee of Wakeman Holberton, Hackensack, N. J., U. S.,) 3rd August, 1886; 15 years.

Claim.—1st. In an artificial fly or fly-hook, the combination, with the hook proper, of an attached imitation fly having its parts which correspond to the wings of the insect arranged to project, inclining

backward in an outward direction, and to occupy an oblique position relatively to the forward end of the hook, substantially as and for the purposes specified. 2nd. In an artificial fly or fly-hook, the combination, with the hook proper, of an attached imitation fly, having its exterior flexible members arranged to extend out from the hook, and to incline backward in an outward direction relatively to the forward end of the hook on different sides of the said hook, substantially as shown and described.

No. 24,638. Waggon Gearing. (Train de Voiture.)

Peter J. Richter and Lola M. Ross, Bay City, Mich., U. S., 3rd August, 1886; 5 years.

Claim.—1st. In a waggon gearing, the combination, with the body d of the levers b and b₁ secured respectively to the rear axle and the bolster, and provided with the upturned portions h and h₁, and a horizontal spring placed between and connected with the said portions h and h₁, of the supporting parts f, extending upward from the central portion of the said levers, and provided with a rounded portion g, the piece i secured to the under side of the body, and provided with a saddle j fitting over, and resting upon the portion g, and having the ear pieces k extending downward on each side of, and pivoted to the part f, substantially as and for the purpose set forth. 2nd. In a waggon gearing, the combination, with the levers b and b₁, supporting the body and having the upturned ends h and h₁, and a horizontal spring m within the body, and with its outer ends pivoted to the said ends h and h₁, of the supporting braces r having their upper ends secured to the central portion of the said spring, and their opposite ends secured to the body sill, substantially as and for the purpose herein set forth. 3rd. In a waggon gearing, the combination, with the levers b secured to the rear axle, and having the upturned ends h, provided with the openings e, the levers b₁ secured to the bolster and provided with the upturned ends h₁, and having the openings e, the body d pivotally connected with, and supported by the said levers, of the curved spring pieces g, and s secured together at their central portions, and the pieces t secured to the projecting ends of the spring pieces, and having the projecting lugs et passed through the said openings e, substantially as and for the purpose set forth. 4th. In a waggon gearing, the combination, with the front axle having the thills rigidly attached thereto, of a journal k₁ in the central portion of the axle, and provided with screw-threads on its opposite ends, and with the nuts m passed upon the threads, the two part-box n resting upon the journal and provided with a circular portion a₁ and the bolster plate p, substantially as and for the purpose herein set forth.

No. 24,639. Button Shoe. (Soulier Boutonné.)

Otis D. Randall, Austin, and Charles N. Bishop, Chicago, Ill., U. S., 3rd August, 1886; 5 years.

Claim.—A shoe constructed with a foxing, consisting of the parts B, b, the part B forming the portion of the foxing on the outer side of the shoe, and the part b, the main portion of the foxing on the opposite side, and with the overlapping button flap D attached to the part B on a front central line, substantially as shown, provided with button-holes and adapted to button upon the inner side of the shoe to the portion B, substantially as described.

No. 24,640. Railway Signal. (Signal de Chemin de Fer.)

John A. Leonard, Glenvale, Thomas M. Clark, George A. McGowan and John T. McMahon, Kingston, Ont., 3rd August, 1886; 5 years.

Claim.—1st. The combination, with the rail G, of frame A, levers H, I, pulley F and chain L for operating a bell, as set forth. 2nd. The combination of the levers H, I, chain L, pulley F and a supporting frame A, to operate as set forth, for the purpose described.

No. 24,641. Goose Neck or Tongue Coupling Arrangement for use upon Street Cars, etc. (Col de Cygne ou Arnon pour Chars Urbains, etc.)

James H. Whitely, Arlington, and Thomas McKenzie, Jr., Baltimore, Md., U. S., 3rd August, 1886; 5 years.

Claim.—The improvement to the goose neck or coupling arrangement by the addition or extension of a hanger in a curved shape, like the letter J, from under the first curvature, by the continuation of which hanger after curvature a tongue or pole rest is formed, and for the combination thus made by which a goose neck or coupling arrangement and a tongue or pole rest are formed out of a single piece of metal.

No. 24,642. Spring Tooth Harrow. (Herse à Dents Elastiques.)

Daniel McKenzie and George Reid, Reese, Mich., U. S., 3rd August, 1886; 5 years.

Claim.—1st. The combination of a bar, a bracket bolted directly thereto and extending upwardly therefrom, a tooth pivotally connected to the upper free end of the bracket, a curved spring rigidly clamped at one end between the cross-bar and bracket, and a loop loosely connected to the free end of the spring and embracing the tooth, substantially as described. 2nd. The combination of a cross-bar, a bracket bolted thereto, and having perforated ears or lugs at its free end, a tooth pivoted to the lugs of the bracket, a curved spring rigidly held in place between the bracket and cross-bar, and having the flanges e at its free end, and a link F pivoted in the free end of the spring and embracing the tooth, substantially as described. 3rd. The combination of a cross-bar, a bracket bolted thereto, an elastic packing seated in a recess of the cross-bar, a tooth pivoted to the bracket, and a spring having one end interposed between, and

held in place by the bracket and elastic packing, substantially as described. 4th. In a harrow tooth, the combination of a cross-bar having a recessed seat, a bracket having perforated lugs *c, d*, bolts *e*, a tooth pivoted to said bracket, a curved spring clamped at one end between the bracket and recessed cross-bar, an elastic packing fitted in the seat in the cross-bar beneath the curved spring, and a loop loosely mounted in the lower arm of the spring and embracing the pivoted harrow-tooth, all arranged and adapted to serve, as set forth.

No. 24,643. Boot. (Bottle.)

Michael C. Mullarky (assignee of Simeon Steben), Montreal, Que., 3rd August, 1886; 5 years.

Claim.—A boot upper, composed of a single piece of leather, of the configuration herein shown and described, with cut B folded on lines D and *a*, and stitched along line *b*.

No. 24,644. Stump Extractor.

(*Arrache-Souche.*)

William Smith (assignee of Frank R. Smith), Tomah, Wis., U.S., 3rd August, 1886; 5 years.

Claim.—1st. In a stump extractor, a drum or windlass having the middle rounded and contracted, making a hour glass shaped, as and for the purpose shown and set forth. 2nd. In a stump extractor, the combination of a vertical standard or axle having a flange at its lower end, and having an eccentric circular flange or disk at its upper end, projecting towards the anchoring stump or stake, with a drum having a bore of the same diameter as the eccentric flange, and revolving upon the standard or axle, as and for the purpose shown and set forth. 3rd. In a stump extractor, the combination of a vertical standard or axle having a flange at its lower end, and having an eccentric flange or disk at its upper end, projecting towards the anchoring stump or stake, with a drum having a bore of the same diameter as the eccentric flange, and revolving upon the standard and formed hour glass-shaped, being contracted at its middle, as and for the purpose shown and set forth. 4th. In a stump extractor, the combination of standard or axle having a flat portion extending from the lower end, and provided with horizontal laterally-extending flanges at its lower edge, with two beams bolted at the sides of the flat portion clamping and holding the same, as and for the purpose shown and set forth. 5th. In a stump extractor, the combination of a standard or axle, having at its lower end a flat portion extending towards the anchoring stump or stake, and formed with a perforation in the extension, and provided with laterally projecting horizontal flanges at its lower edge, with two beams having bolts passing through them and a bolt passing through them and through the perforation in the flat portion of the standard, and clamping at both sides of the said flat portion, as and for the purpose shown and set forth. 6th. In a stump extractor, the combination of a standard for the winding drum having a flat portion at its lower end, extending towards the anchor and provided with a transverse perforation in the said extended portion, and with laterally projecting horizontal flanges at the lower edge, two beams clamping the flat portion between their ends and having bolts passing through them, and one bolt passing through the perforation in the flat portion of the standard and formed with recesses in the inner sides of the ends, and an anchor chain passed through the perforation formed by the recesses, as and for the purpose shown and set forth. 7th. In a stump extractor, the combination of a standard having a flange at its lower end, and an eccentric circular flange at its upper end, and having a flat portion at its lower end extending towards the anchor and formed with horizontal laterally projecting flanges at its lower edge, and with a transverse perforation in the extension, a winding drum having a sweep and turning upon the standard having a diameter equal to the diameter of the eccentric flange, two beams clamping the flat portion with their ends and having connecting bolts passing through them, and through the perforated flat portion, and formed with facing recesses in the inner sides, or the other ends of the beams, clamping the flat portion of the standard, and an anchor chain passed through the aperture formed by the recess, as and for the purpose shown and set forth. 8th. In a stump extractor, the combination of a pulley clevis, a sheave journaled in the said clevis and two plates secured to the arms of the clevis, and having meeting curved flanges at their outer edges, and having the inner edges cut out concave and sharpened, fitting inside of the edges of the sheave, as and for the purpose shown and set forth.

No. 24,645. Automatic Boiler Cleaner.

(*Nettoyeur de Chaudière Automatique*)

Henry Sims, Erie, Penn., U.S., 4th August, 1886; 5 years.

Claim.—1st. The combination, in an automatic boiler cleaner, of one or more covered pans opening at one end, and located in the boiler about the water level, substantially as shown, with an upright settling tank provided with a blow-off cock near the bottom thereof, and a pipe connecting the ends of said pans in the boiler with the said tank, at or near the centre vertically of the tank, and also a pipe extending from the upper end of said settling tank across the fire chamber, and into the rear end of the boiler near the bottom thereof, substantially as and for the purpose set forth. 2nd. The combination, in an automatic boiler cleaner, of one or more triangular covered pans open at the large ends thereof, and located in the boiler about the water level, substantially as shown, with an upright settling tank provided with a blow-off cock near the bottom thereof, and a pipe connecting the small ends of said triangular covered pans in the boiler with the said tank, at or near the centre vertically of the tank, and also a pipe in the upper end of said tank provided with a screen, and extending therefrom into the fire chamber and across the rear end of the boiler, and entering the same at or near the bottom thereof, substantially as and for the purpose set forth. 3rd. In an automatic boiler cleaner, the triangular flat-bottomed and perpendicular sided covered pans A, the toe D connected to the small ends of the pans A, and the discharge pipe E, in combination with the boiler B, substantially as and for the purpose set forth. 4th. In an automatic

boiler cleaner, the upright settling tank F having the blow-off cock H near the bottom thereof, and an ingress pipe entering the same at G, and egress pipe near the top of said tank F, all substantially as and for the purpose set forth. 5th. In an automatic boiler cleaner, the combination, with the upright settling tank F, of an egress pipe near the top thereof provided with the screen L, substantially as and for the purpose set forth.

No. 24,646. Mechanical Movement.

(*Mouvement Mécanique.*)

Charles Hammelmann, Buffalo, N. Y., U. S., 4th August, 1886; 5 years.

Claim.—1st. The combination, with a driving wheel C provided with a clutch disk F, of a loose clutch disk G, which is turned alternately backwardly and forwardly, and which is thrown in engagement with the disk F on its forward movement, and out of engagement on its backward movement, substantially as set forth. 2nd. The combination, with a driving wheel C, provided with a clutch disk F, of a loose clutch disk G, and a collar H which is turned alternately backwardly and forwardly, and which throws the disk G alternately in engagement and out of engagement with the disk F, substantially as set forth. 3rd. The combination, with the driving wheel C, provided with a clutch disk F, of a loose clutch disk G, provided with lugs *h* and a collar H, provided with inclined guides *j*, in which the lugs *h* engage, substantially as set forth. 4th. The combination, with the driving wheel C provided with a clutch disk F, of the loose clutch disk G, a collar H connected with the disk G and provided with a pinion J, and a reciprocating rack bar K engaging with the pinion J, substantially as set forth. 5th. The combination, with the driving wheel C provided with a clutch disk F, of a loose clutch disk G, a collar H connected with the disk G and provided with a pinion J, and a rack bar K engaging with the pinion J, a hand lever N and a rod O connecting the rack bar with the hand lever, substantially as set forth. 6th. The combination, with a rotary blower L, of a driving wheel C, provided with a clutch disk F, a loose clutch disk G, and a collar H connected with the disk G and turned alternately backward and forward, substantially as set forth. 7th. The combination, with the driving wheel C, provided with a clutch disk F, of a loose clutch disk G, a collar H provided with a pinion J, a rack bar K, and a casing L enclosing the rack bar and provided with guides *l*, substantially as set forth. 8th. The combination, with the wheel C, cast with a neck E and clutch disk F, of the loose clutch disk G, made in halves and mounted on the neck E, by securing the halves together, substantially as set forth. 9th. The combination, with a fan, of a driving wheel, a clutch connected with said wheel, a rack bar and pinion whereby the clutch is moved back and forth, and a hand lever whereby the rack bar is set in motion, substantially as set forth.

No. 24,647. Steam Generator.

(*Générateur de Vapeur.*)

Joseph A. Eno, Newark, N.J., U.S., 4th August, 1886; 5 years.

Claim.—1st. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, and a cylinder or branch adapted to receive the water from the boiler and distribute it to each of said flues, substantially as set forth. 2nd. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from the boiler and distribute it to each of said flues, and a supply pipe adapted to take the water from said boiler and convey it to said cylinder or branch, substantially as set forth. 3rd. In a steam generator, the combination, with a boiler, of a generator flue, constructed substantially as described, and arranged approximately horizontally, and a discharge pipe adapted to convey the water and steam from said flue into the forward part of the boiler, substantially as set forth. 4th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, and arranged approximately horizontally, a supply pipe adapted to take water from the boiler and convey it to said flue, and one or more discharge pipes adapted to convey the water and steam from said flues into the forward part of the boiler, substantially as set forth. 5th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from the boiler and distribute it to said flues, a supply pipe arranged to take water from said boiler and convey it to said cylinder or branch, and one or more discharge pipes adapted to convey the water and steam from said flues into said boiler, substantially as set forth. 6th. In a steam generator, an assemblage of two or more generator flues, constructed substantially as described, and united to one or more discharge pipes by one or more Y-branches, substantially as and for the purposes set forth. 7th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from said boiler and distribute it to said flues, and one or more discharge pipes connected with said flues by Y-branches, substantially as and for the purposes set forth. 8th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, and a sediment drum or receptacle arranged to separate and remove the sedimentary matters from said water, said drum or receptacle being placed entirely below the point of ingress of the water which supplies said generator flues, substantially as and for the purposes set forth. 9th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, a sediment drum or receptacle, a sediment pipe adapted to convey water and sediment to said drum, and a pipe adapted to convey the water from said sediment pipe toward said flues, said sediment pipe being of larger internal diameter than the other said pipe, substantially as and for the purpose set forth. 10th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, a supply pipe arranged to take water from said boiler and convey it to said flues, a discharge pipe adapted to convey the water and steam from said flues to said boiler, and a sediment drum or receptacle arranged to separate and remove

the sedimentary matter from said water, substantially as and for the purposes set forth.

No. 24,648. Traction Rope Railway. (Chemin de Fer à Câble.)

John H. Robertson and Julius Jonson, New York, N. Y., U. S., 4th August, 1886; 5 years.

Claim.—1st. The combination, with a car, of a grip frame extending lengthwise thereof and suspended from the car by pairs of links, whereby provision is afforded for its lateral movement without swinging from its vertical position, substantially as herein described. 2nd. The combination, with a car and a grip-frame, of hangers wherein the frame is supported at opposite ends, and plates depending from the car between which the hangers and grip-frame may move laterally, and by which the hangers and grip frame are supported in a direction lengthwise of the car, substantially as herein described. 3rd. The combination, with a car and grip-frame, of hangers at opposite ends of the frame suspended by pairs of links D₂, and the plates D₁ for guiding the hangers in their lateral movement, and sustaining them against movement lengthwise of the car, substantially as herein described. 4th. The combination, with a car and a grip-frame, of hangers at opposite end of the frame plates D₁, guiding the hangers in their lateral movement and preventing their movement lengthwise of the car, and pairs of links D₂ suspending the hangers and swinging on pivots supported by the plates D₁, substantially as herein described. 5th. The combination, with a grip-frame, comprising the head-piece C, of hangers at opposite ends thereof having forks or pairs of flanges open at top and bottom, and between which the head-piece C is supported by pins or bolts, substantially as herein described. 6th. The combination, with a grip-frame comprising the head-piece C, of the hangers D having pairs of flanges *h*, receiving the pins *c* between them, and pins or bolts *h* inserted through the flanges above and below the piece C, substantially as herein described. 7th. The combination, with a car, and the plates D₁ depending therefrom, of the hangers D₂, constructed with the pairs of flanges *h* and guided by the plates D₁ in their lateral movements, the pairs of links D₂ by which the hangers are suspended, and the grip-frame comprising a head-piece C, secured at the ends by pins or bolts between the pairs of flanges *h*, substantially as herein described. 8th. The combination, with a car and a stationary grip-frame and fixed jaws, of a movable frame fitted thereto and carrying a movable jaw, belt-crank levers connected with operating devices at opposite ends of the car, and slotted links or rods forming a connection between the belt-crank levers and the movable grip-frame, substantially as herein described. 9th. The combination, with a car and a fixed grip-frame and fixed jaw, of a movable frame carrying a movable jaw, belt-crank levers connected with operating devices at opposite ends of the car, and links or rods *f*, pivoted to the movable frame and having a slotted connection *g* with the belt-crank levers, substantially as herein described. 10th. The combination, with a car, and a fixed grip-frame and fixed jaw, of a movable grip-frame carrying a movable jaw, belt-crank levers *g* connected with operating devices at opposite ends of the car, and having square blocks *f* pivoted to their arms, and the links or rods *f*, pivoted in the movable grip-frame and slotted or yoked at *f* to receive the blocks *f*, substantially as herein described. 11th. The combination, with a car, a fixed grip-frame and fixed jaw, of a movable grip-frame carrying a movable jaw, belt-crank levers *g* connected with operating devices at opposite ends of the car, and the links or rods *f* forming a connection between the movable grip-frame and said lever, constructed with slots or yokes *g* and provided with adjusting screws *g*, substantially as herein described. 12th. The combination, with hollow jaw-holders provided with removable cap-plates on their sides, and with internal hubs or bosses, of removable jaws having their ends notched or recessed to fit said hub or bosses, and held laterally in place of said cap plates, substantially as herein described. 13th. The combination, with a fixed grip-frame comprising a base portion provided with rollers for moving cable-supporting sheaves arranged in their path, and a fixed upper jaw secured to said frame, of a movable lower jaw fitted to slide in the fixed frame and carrying at the ends cable-supporting pulleys, substantially as herein described. 14th. The combination, with the fixed frame composed of the head-piece C, the parallel uprights C₂ and the base portion C₃, of the fixed upper jaw-holder secured to the uprights C₂, the lower jaw-holder F mortised to slide on the uprights C₂, and the cross-head F₂ and connecting bars F₁, for operating the jaw-holder F, substantially as herein described. 15th. The combination, with the fixed frame composed of the head-piece C, the uprights C₂ and the base portion C₃, of the movable frame composed of the lower jaw-holder F, the bars F₁ and cross-head F₂, the jaw-holder F being secured to the lower ends of the plates F₁ and mortised to slide on the uprights C₂, and the upper fixed jaw-holder E secured to the uprights C₂ and mortised to receive the plates F₁, substantially as herein described. 16th. The combination, with a grip-frame, of belt-crank levers pivoted to swing horizontally near opposite ends thereof, and provided with rollers or projections for engaging one or other of two cables, of a vertically-movable bar having an inclined slot, a cross-bar or pin fitting said slots, and rods connecting opposite ends of the said bar or pin with said belt-crank levers, substantially as herein described. 17th. The combination, with the fixed grip-frame and the fixed upper jaw-holder secured thereon, of the belt-crank levers *h* fulcrumed to swing horizontally in opposite ends of said holder, and provided with projections or rollers *h* for engaging a cable, the vertically-movable bar *g* guided in said holder and having an inclined slot *g*, and the cross-bar or pin *h* fitting said slot and connected at opposite ends by rods *h* with the levers *h*, substantially as herein described. 18th. The combination, with the inner spindle H and outer tubular spindle H₁, of the grip-operating windlass or wheel J geared to the tubular spindle H₁, the brake-operating windlass or wheel K on the spindle H, and locking devices for both spindles, substantially as herein described. 19th. The combination, with a fixed grip-frame provided with a fixed jaw, of a movable grip-frame carrying a movable jaw, and comprising at the upper end a cross-head fitted to, and sliding upon the fixed frame, and anti-friction rollers interposed between the cross head and the fixed frame, substantially as herein described.

No. 24,649. Bottle Stopper.

(Bouchon de Boutelle.)

Charles L. Morehouse, Brooklyn, N. Y., U. S., 4th August, 1886; 5 years.

Claim.—1st. The combination, with a bottle having a groove and shoulders in the inner surface of its head, of a soft rubber stopper having its sides tapered inward and downward from the top to near the bottom, and then bulged out and rounded at the bottom, and of a plug in the upper part of said stopper, substantially as shown and described. 2nd. A bottle having a V-shaped groove in the inner surface of its head near the bottom of said head, and outwardly and upwardly inclined parts C above said groove B, and the bevelled shoulder D above the inclined part C, substantially as shown and described.

No. 24,650. Bottle Stopper.

(Bouchon de Boutelle.)

Charles L. Morehouse, Brooklyn, N. Y., U. S., 5th August, 1886; 5 years.

Claim.—1st. The combination, with a bottle provided at the inner surface of its neck with the annular groove B having the triangular rabbet C, that part of the groove above the rabbet being inclined parallel with the inner bevel of the top of the neck, and that part of the groove below the rabbet being vertical, that is parallel with the longitudinal axis of the bottle, of the packing ring D having its outer surface formed to fit in said groove and against the rabbet, and having its inner side bevelled from the top downward and inward, the lower bevel being on a concave line, whereby a sharp edged annular ridge is formed on the inner side of said packing ring, substantially as herein shown and described. 2nd. The combination, with a bottle having the triangular rabbet C, that part of the groove above the rabbet being inclined parallel with the inner bevel of the top of the neck, and that part of the groove below the rabbet being vertical, that is parallel with the longitudinal axis of the bottle, of the packing ring D having its outer surface formed to fit in said groove and against said rabbet, and having its inner side bevelled from the top downward and inward and from the bottom upward and inward, the lower bevel being in a concave line, substantially as set forth.

No. 24,651. Boot or Shoe Heel.

(Talon de Chaussure.)

Edward J. LeGay, Boston, Mass., U. S., 5th August, 1886; 5 years.

Claim.—1st. A boot or shoe heel shell or wall, formed of thick leather or analogous mouldable material, moulded, shaped and set to form to comprise the sides, rear and breast of the heel with the ends of the blank united at the breast thereof, substantially as specified. 2nd. A boot or shoe heel shell or wall, formed of thick leather or analogous mouldable material, moulded, shaped and set to form to comprise the sides, rear, breast and bottom of the heel, with the meeting edges of the bottom and breast of the blank arranged at the longitudinal vertical centre of the heel, substantially as specified. 3rd. A boot or shoe heel formed with an outer shell or wall, substantially as described, and having a duly formed block of wood loosely fitted therein, and secured in place by an adhesive hard-drying material interposed between the wall and block, and filling the spaces between the same, substantially as specified.

No. 24,652. Shoe Nail. (Clou de Chaussure.)

Edward J. LeGay, Boston, Mass., U. S., 5th August, 1886; 5 years.

Claim.—1st. A nail formed with two arms and a flattened and broadened head, and with a supporting-rib formed beneath the head and uniting with the arms of the nail, substantially as specified. 2nd. A nail formed with two parallel arms, united by an inclined or oblique head flattened transversely, substantially as specified.

No. 24,653. Combination Wrench.

(Clé à Ecrou à Combinaison.)

Augustus W. Wright, Kyle, Texas, U. S., 5th August, 1886; 5 years.

Claim.—The bar A, having the nut wrench B and the hammer-head C formed at one end, the pipe wrench E formed at the opposite end, and the slot U made in one side, the spring H located in the bottom of the slot or opening U, and the blade K pivoted in one end of the said slot or opening, and bearing on the free end of the spring H, the said blade K forming a screw-driver, substantially as described.

No. 24,654. Rock Drill. (Foret de Mine.)

Sylvannus Hussey, Buffalo, N. Y., U. S., 5th August, 1886; 5 years.

Claim.—1st. The combination, with the drill-bar and clutch-head, of a rotating driving head provided with primary lifters *i*, and a secondary lifter J, and a reciprocating sleeve or carrier E surrounding the drill-bar and bearing against the clutch-head, and provided with bearings against which the lifters *i* and *j* engage successively in lifting the sleeve or carrier and the drill bar, substantially as set forth. 2nd. The combination, with the drill frame drill bar and clutch head, of a rotating driving head provided with primary lifting arms *i* and a secondary lifting roller *j*, and a sleeve E having a reciprocating motion in the drill frame while being prevented from turning, and provided with bearings *i* and *j*, against which the arms *i* and the roller *j* engage successively in lifting the sleeve and the drill bar, substantially as set forth. 3rd. The combination, with the drill bar and drill frame, of a clutch-head G capable of turning with and on the drill bar and a lifting sleeve E having a vertical reciprocating movement in the drill frame, and held in the drill frame against turning with the drill-bar, substantially as set forth. 4th. The combination with the drill-bar, clutch-head G and detached lifting sleeve E, of a drill frame provided with a head F, having two concentric cushion rings *k*, *kl*, on which the clutch-head G and lifting sleeve

are cushioned separately, substantially as set forth. 5th. The combination, with the drill frame and the drill-bar having a longitudinal groove *m*, of the flanged clutch-head body *N* provided at its lower end with a removable collar *n*, the ratchet ring *L* provided with a feather *m* entering the groove *m*, the pawl ring *L* provided with the pawl *l* and pin *h*, and the curved feed guide *f* secured to the drill frame, substantially as set forth. 6th. The combination, with the drill-bar provided with a longitudinal groove *m* and the drill frame, of the clutch-head body *N*, the pawl ring *L*, the ratchet ring *L* provided with a feather *m*, the tabular cap *g* secured to the body *N* and provided with pawl *o*, the screw *O* on which the cap *O* loosely rests and which is provided with a ratchet rim *o*, the frame *P* secured to the screw *O*, the supporting cap *R* held in the frame *P* against turning, and the divided nut *Q* having its parts pivoted to the cap *R* in the frame *P*, substantially as set forth.

No. 24,655. House Construction.

(Construction de Maison.)

Edsell Totman, Hinsdale, Ill., U.S., 6th August, 1886, 5 years.

Claim.—1st. The combination, with the parallel frame-pieces of a house, of a series of transverse planks forming siding or ceiling, movably held at their ends in grooves in the frame-pieces, and means for forcing together the planks, whereby the joints between them may be tightened, substantially as described. 2nd. The combination, with the parallel frame-pieces of a house, provided with dovetailed grooves and transverse planks having upon their ends tongues engaged with the said grooves, of means for forcing together the planks, whereby the joints between them may be tightened, substantially as described. 3rd. The combination, with the parallel frame-pieces of a house, and a series of transverse planks forming siding or ceiling, of means for tightening the joints between the planks consisting of bolts connected at one of their ends with the said frame-pieces, and at their opposite ends with a plank at one end of the series, substantially as and for the purpose set forth. 4th. The combination, with the parallel frame-pieces of a house, provided with dovetailed grooves, and a series of planks having upon their ends dovetailed tongues engaged with said grooves, of means for tightening the joints between said planks, consisting of bolts connected with the said frame-pieces and with the plank at one end of the series, substantially as set forth. 5th. The combination, with the studding of a house, and a double series of planks forming inner and outer walls, of means for holding the said planks from movement at one end of the studding, a movable bar or follower at the opposite end of the studding, located in contact with the end planks of both the inner and outer walls, and tightening bolts secured in the said studding and engaged with the said follower, substantially as set forth. 6th. The combination, with the upright frame-pieces or studding of a house and a double series of planks forming inner and outer walls, of the upper planks of the series being held from upward movement, of a follower *K* forming a water-table resting against a lower plank of each series, bolts engaged with the studding and with the follower, and a removable plank *C* below the said follower, substantially as and for the purpose set forth. 7th. The combination, with the sill and floor of a house, the vertical frame-pieces or studding and a double series of planks forming inner and outer walls, at which the upper planks are held from upward movement, of a follower located above the floor and below the lower planks of both series, bolts engaged with the studs and the follower, a removable plank *C* fitted against the sill beneath the follower, and a stationary base-board covering said follower, substantially as and for the purpose set forth. 8th. A house-wall composed of separately portable sections, each section consisting of two marginal frame-pieces united by transverse planks having their ends movably held in longitudinal grooves of the frame-pieces, and the adjacent sections being joined to each other by placing and fastening together their marginal frame-pieces, which thus form double studding at frame-pieces of the building, substantially as described. 9th. As a separately portable element in house construction, a wall-section composed of two longitudinally-grooved marginal frame-pieces *B*, and transverse planks having their ends held movably in the grooves of the frame-pieces, the whole forming an integral section or member adapted to be joined directly with other and similar sections, to form a house-wall, substantially as described. 10th. As an integral member in house construction, a panel or section composed of two marginal frame-pieces having dovetailed grooves in their proximate faces, and planks provided with dovetailed tongues on their ends inserted in said grooves, and thereby uniting said side pieces with each other and with the planks, to form such integral section or member, substantially as and for the purpose set forth. 11th. A section or panel for the construction of houses, comprising two stud- or frame-pieces and planks united with said frame-pieces by dovetailed joints, said frame-pieces being provided upon their outer faces with tongues and grooves, whereby tight joints may be formed between the contiguous sections or panels, substantially as described. 12th. A section or panel for the construction of houses, comprising two longitudinal marginal frame-pieces having grooves therein, a series of transverse planks held in said grooves, and means for forcing together the said planks so as to close the joints between the latter, substantially as described. 13th. A section or panel comprising two longitudinal marginal frame-pieces having grooves therein, a series of transverse planks inserted at their ends in said grooves, and means for holding the frame-pieces in proper relative position, and bolts for tightening the joints between the planks connected with the said frame-pieces, and with the end plank of the series, said section or panel being adapted to be joined with other similar sections or panels to form a house-wall, substantially as described. 14th. In combination with converging walls having marginal frame-pieces *B*, a corner piece *P* occupying the angular space between the frame-pieces *B*, substantially as described. 15th. The combination, with studs or frame-pieces having longitudinal grooves therein, of transverse plank, sheathing or lath held at its ends in said grooves, said plank, sheathing or lath having means to receive and hold plastering, substantially as described. 16th. The combination, with the studs or frame-pieces of a house having longitudinal grooves therein of transverse laths, planks or sheathing held at its ends in the said grooves, and provided in one or both faces with dovetailed grooves affording a hold for plaster, substantially as de-

scribed. 17th. A combined sheathing and lath for buildings, consisting of laths or planks, each provided with a dovetailed groove in the middle of one of its faces, and a half groove upon its opposite face, at each of its edges, substantially as and for the purpose set forth. 18th. The improved construction in house sills consisting of the flat bottom pieces *A*, pieces *A* set on edge therein, and the pieces *A* laid on the bottom pieces, and all arranged to break joints and secured together, substantially as and for the purpose set forth. 19th. The combination, with the house-sills, consisting of three planks *A*, *A* and *A*, secured together as described, of floor-joists *G* gamed to fit over the pieces *A*, and to come flush with the top of the piece *A*, substantially as described. 20th. The combination, with grooved studs *B*, *B* and a window-sash provided with grooves *t*, of strips *u* inserted in the grooves of the studs and sash, and the means for detachably connecting said strips with the sash, substantially as described. 21st. The combination, with grooved studs *B*, *B* and window-sash provided with grooves *t*, of spring-strips *u* inserted through the sash and bearing upon the strips, substantially as and for the purpose set forth. 22nd. The combination, with grooved studs *B*, *B*, of door frames provided with side-pieces having tongues engaged with the grooves of the studs, substantially as and for the purpose set forth.

No. 24,656. Shoe Brushing Machine.

(Machine à Cirer les Chaussures.)

Levin T. Jones, Baltimore, Md., U.S., 5th August, 1886, 5 years.

Claim.—1st. A shoe brushing machine having its brushes hinged to a reciprocating frame, and each brush provided with a spring to press the brush against the foot, substantially as set forth. 2nd. A shoe-brushing machine having, in combination, a reciprocating frame, brushes hinged or pivoted to the frame, a spring to press each brush to the shoe, and a chain or equivalent stop device to limit the movement of each brush, as set forth. 3rd. A shoe-brushing machine having, in combination, a reciprocating frame, a front brush *C* provided with horizontal arms *e*, which are pivoted to the forward part of the frame, and a lift device, substantially as described, connected with the brush, as set forth. 4th. A shoe-brushing machine having, in combination, a reciprocating frame, a front brush *C* provided with horizontal arms *e*, which are pivoted to the forward part of the frame, a spring to press the brush on the shoe, and a lift device, substantially as described, connected with the brush, as set forth. 5th. A shoe-brushing machine having, in combination, a reciprocating frame, a front brush *C* provided with horizontal arms *e*, which are pivoted to the forward part of the brush with the standard fixed to the stand, and a chain connecting the brush with the standard, as set forth. 6th. A shoe-brushing machine having, in combination, a reciprocating frame, a front brush *C* provided with horizontal arms *e*, which are pivoted to the forward part of the frame, a spring to press the brush on the shoe, a standard fixed to the stand, and a chain connecting the brush with the standard, as set forth. 7th. A shoe-brushing machine having, in combination, a two-side reciprocating frame, a heel-brush hinged to one side of the frame, and projecting across a longitudinal line centred between the frame sides, and a heel-brush hinged to the opposite side of the frame projecting across the said centred line, and having position at the rear of the other heel-brush, as set forth. 8th. A shoe-brushing machine having, in combination, a two-side reciprocating frame, two heel brushes, one hinged to each side of the frame and one at the rear of the other, and both overlapping a longitudinal line centred between the frame-sides, and a spring and stop device to control each brush, as set forth. 9th. A shoe-brushing machine having, in combination, a reciprocating frame, a heel-brush hinged to each side to swing in a horizontal plane, and each brush provided with an outer row *g* of bristles, and an inner row *h* shorter and stiffer, as set forth. 10th. A shoe-brushing machine having, in combination, a reciprocating frame and a toe-brush *C*, the block of which has a straight central part, and at each end a downward projecting part at an angle with respect to the central part, as set forth. 11th. A shoe-brushing machine having, in combination, a reciprocating frame and a toe-brush *C* provided with bristles, which on the side are of graduated length, whereby the ends of the bristles instead of the sides touch the shoe, as set forth.

No. 24,657. Machine for Cross-Cutting Wood. (Machine à Scier de Travers.)

Frederick Mankey, Williamsport, Penn., U.S., 5th August, 1886, 5 years.

Claim.—1st. The combination of a rotary cutter, adapted to cross-cut the surface of wood at an angle to the grain thereof, a support and means for rigidly holding the object to be cross-cut thereon, and feeding mechanism for moving said support beneath, and thereby subjecting said object to the action of said cutter, substantially as described. 2nd. The combination of a rotary cutter, adapted to cross-cut the surface of the wood at an angle to the grain thereof, a means for rigidly raising and lowering said cutter, a support and means for rigidly holding the object to be cross-cut upon said support, and feeding mechanism for moving said support beneath, and thereby subjecting said object to the action of said cutter, substantially as described. 3rd. The combination of a rotary cutter, adapted to cross-cut the surface of wood at an angle to the grain thereof, a support and means (such as clamps) for rigidly holding the object to be cross-cut thereon, feeding mechanism for moving said support beneath, and thereby subjecting said object to the action of said cutter, and yielding presser rollers adapted to bear upon said object in front of, and in rear of said cutter, substantially as described. 4th. The combination of a rotary cutter, adapted to cross-cut the surface of wood at an angle to the grain thereof, a support and means for rigidly holding the object to be cross-cut thereon, feeding mechanism for moving said support beneath, and thereby subjecting said object to the action of said cutter, yielding presser rollers adapted to bear upon said object in front and in rear of said cutter, and yielding presser shoes adapted to bear upon said object at each side of said cutter, substantially as described. 5th. The combination of a rotary cutter, adapted to cross-cut the surface of wood at an angle to the grain thereof, a means for rigidly holding the object to be cross-cut

thereon, mechanism for reciprocating said support beneath, and thereby subjecting the object to the action of said cutter, and mechanism for moving said support in a direction at an angle to the direction of reciprocation, substantially as described. 6th. The combination, in a machine for cross-cutting wood, of the base A, bed C, support (as standards B) for said bed, jointed standard D and arms E, the said base bed, support for said bed, and standard below the joint being formed in one piece, and the arms and standard above the joint also in one piece, substantially as described. 7th. The combination of the bed C, frame b, a means for securing the object to be cross-cut upon said frame, a rotary cutter support above said frame, and means for reciprocating said frame beneath said cutter, substantially as described. 8th. The combination of the bed C, frame b, a means (such as a work-table and clamps) for securing the object to be cross-cut upon said frame, a rotary cutter support above said frame, rock bar c, pinion d, shaft e and means for rotating said shaft in alternate opposite directions, substantially as described. 9th. In combination with a rotary cutter, having a horizontal axis or shaft and a horizontal support reciprocating beneath said cutter, at right angles to said axis, a work-table resting upon said support and adjustable thereon, at various angles with reference to said cutter axis, substantially as described. 10th. In combination with a rotary cutter, having a horizontal axis or shaft and a horizontal support reciprocating beneath said cutter, at right angles to said axis, a detachable work-table pivoted upon said support and adjustable thereon, at various angles with reference to said cutter axis, substantially as described. 11th. In combination with a rotary cutter, having a horizontal axis or shaft and a horizontal support reciprocating beneath said cutter, at right angles to said axis, a work-table resting upon said support, and means (such as described) for moving said table on said support, in a direction parallel to said cutter axis, substantially as described. 12th. In combination with the reciprocating frame b, the work-table A and means (such as described) for moving said table upon said frame, in a direction transversely said frame, gauge bar N and latch O, substantially as described. 13th. The combination of a reciprocating support frame I, pivoted thereon, work table 3, means for moving said table 3 upon said frame I, and a clamping device for securing said frame to said support, and thereby preventing the turning of said frame on its pivot. 14th. The combination of vertically-sliding plates H and supports for the same, means (such as screws J) for vertically adjusting said plates, supports Q carried by said plates and carrying the vertical sleeve K, rollers U, V, having their bearings supported on rods S, collars I on said rods, and weighted levers X, bearing in said rods and pivoted to said supports Q, substantially as described. 15th. The combination of two vertically adjustable supports, a rotary shaft carried by said supports, a cutter on said shaft between said supports, and two yielding pressor rollers also carried by, and between said supports, and disposed parallel and respectively on each side of said cutter shaft, substantially as described. 16th. The combination of the arms E, plates H moving on slides C on said arms, means for vertically adjusting said plates, supports K carried by said plates, bearings L, shaft M, cutter-head N, having grooves O and carrying cutting tools, and a means for rotating said shaft M, substantially as described. 17th. The combination of the vertically sliding plates H and supports for the same, means for vertically adjusting said plates, supports K, bearings L, cutter shaft M carrying a cutting mechanism, supports Q, sleeves R, rods S, weighted levers X, rollers U, V and shoes W, substantially as described.

No. 24,658. Jet Condenser.

(*Injecteur-Condensateur.*)

Louis Schutte, Philadelphia, Penn., U. S., 5th August, 1886; 5 years.

Claim.—1st. In a jet condenser of the type herein described, the usual water nozzle, condensing tube and discharge tube, in combination with a movable ram or spindle, constructed substantially as described, to change the area of the water nozzle, and the discharge nozzle to maintain a constant ratio between them. 2nd. In a jet condenser of the type herein described, the combination with the water inlet nozzle, the condensing tube and the discharge tube, of the tapered movable spindle extending through the nozzle and discharge tube, substantially as described. 3rd. In a condenser of the type herein described, the live steam nozzle, in combination with the movable ram or spindle having its end guided by the steam nozzle, substantially as described. 4th. In combination, with the ram and its adjusting screw, the indicator spindle extended through the screw to the exterior of the apparatus, substantially as described. 5th. In a condenser to be operated by exhaust or low pressure steam, the combination of a combining tube with inlet openings, as described, its enclosing chamber, the water admission nozzle, the passage leading from an intermediate point in the water nozzle to the atmosphere, and a valve for closing said passage. 6th. In a condenser of the type herein described, a pipe sealed at one end by immersion in water, and communicating at the opposite end with the water nozzle B, through an opening or passage at an intermediate point in the length of the latter. 7th. In combination with a jet condenser of the type herein described, the outwardly opening exhaust valve to permit the free escape of incoming steam when the condensing action ceases. 8th. In a jet condensing apparatus, as a means of automatically supplying live steam to maintain its action during the cessation of exhaust steam, the combination of a steam jet condenser and a live steam supply valve connected by operating appliances with the vacuum chamber of the condenser, and controlled by variations in the vacuum or pressure therein. 9th. In combination with a condenser of the type herein described, to be operated by exhaust or low pressure steam, a valve to admit live steam to continue the action of the apparatus during the temporary failure of exhaust steam, and devices to open and close said live steam valve, connected with and controlled by the vacuum in the condenser, whereby the live steam is automatically shut off during the maintenance of the vacuum by the exhaust steam. 10th. In combination with the combining tube, its enclosing chamber and the water nozzle, the live steam nozzle, the automatic valve S controlled by fluid pressure through an auxiliary piston and valve, and a pipe connecting the same with the interior of the condenser. 11th. In combination with the valve body and a check valve a₂ located therein, a fluid pressure chamber located at

the receiving side of the valve and communicating by a port or passage with the inlet side of the body, whereby the inflowing fluid is applied to open the valve. 12th. The body and the recessed check valve a₂, in combination with the fixed piston within the valve, and the port or passage of restricted area forming a communication between the valve chamber and the inlet port. 13th. A recessed check valve, protected on its receiving side by a piston or diaphragm from the direct action of the inflowing current, but communicating with said current by a passage of relatively small area, whereby the force of the inflowing fluid is applied to effect the gradual opening of the valve. 14th. In combination with the body, the valve a₂, the diaphragm B, the inlet port d and adjustable spindle e₂. 15th. The main valve a₃, its piston and the cylinder for the latter, in combination with the auxiliary valve controlling the action of a fluid on the piston to move the main valve, and a diaphragm or its equivalent controlled by fluid pressure to operate the auxiliary valve. 16th. The valve body having the main inlet and outlet openings, the main valve a₃, its piston b₃, the cylinder containing said piston, the fluid passage from the inlet side of the body to the cylinder, the auxiliary valve g₃ to control said passage, the chamber having the yielding wall h₃ connected with the auxiliary valve, and the spring tending to open the auxiliary valve, said elements combined substantially as described.

No. 24,659 Central Draft Lamp Burner.

(*Bec de Lampe à Courant d'Air Intérieur*)

Alvin M. Craig and Charles P. Hobart, Southington, Conn., U. S., 5th August, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a central draft lamp burner provided with air inlet openings above the lamp body, said inlet openings communicating with the interior of the wick tube. 2nd. As a new article of manufacture, a central draft lamp burner, provided with air inlet openings situated opposite each other, and communicating with the wick tube. 3rd. As a new article of manufacture, a central draft lamp burner, provided with air inlet openings situated opposite each other and of the same size, and communicating with the interior of the wick tube. 4th. In a wick raiser the combination, with the tube A provided with openings near its bottom, of the wick tube situated within the tube A and provided with openings in the sides thereof, and suitable tubes for connecting the openings in the tube A and wick, substantially as described. 5th. The combination, with the lamp burner having the wick space, of the wick raiser, consisting of the cylinder provided with the projecting teeth, substantially as described. 6th. The combination, in the burner, comprising the tube A, and wick tube having openings connected by tubes passing through the wick space of the wick made in parts, and the wick raiser consisting of the cylinder having the projecting teeth. 7th. The combination, with the tube A, of the tapering wick tube secured therein, substantially as and for the purpose set forth. 8th. The combination with the tube A, provided with openings for the admission of air, of the bell-shaped ring covering said opening, substantially as described. 9th. The combination, in a lamp burner, of the tube A provided with openings, the wick tube also provided with openings, and the tubes for connecting the same, the wick made in sections, the wick raiser and the bell-shaped ring for protecting the air openings.

No. 24,660. Drawer Check and Support.

(*Arrêt et Coulisseau de Tiroir.*)

James A. Fraser (assignee of Simon J. Fraser), Lowell, Mass., U. S., 5th August, 1886; 5 years.

Claim.—1st. The combination, with a drawer and its case, of a T-shaped strip C, a slide D provided with blocks E, E, that are formed to engage with the flanges of the strip C, and a T-shaped lug F secured to the bottom of the drawer and arranged to ride in a longitudinal groove formed in the slide D, substantially as described. 2nd. The combination, with a drawer and its case, of a T-shaped strip C secured to the case by plates c, c, a slide D provided with blocks E, E, and lugs F, H, secured to the bottom of the drawer and arranged to ride in a longitudinal groove formed in the top of the slide D, substantially as described. 3rd. The combination, with a drawer and its case, of a T-shaped strip C, a slide D held to, and arranged to slide upon the strip C, a lug F fixed to the under side of the drawer and arranged to ride in a longitudinal groove formed in the slide D, and a stop J, all substantially as described. 4th. The combination, with a drawer and its case, of the following elements: strip C, slide D formed with groove d, blocks E, lugs F and H, and plate I carrying stop J, all arranged and combined substantially as described. 5th. The combination, with a drawer and its case, of the following elements: strip C, slide D formed with groove d, blocks E, E, lugs F and H rounded off at its plate I, spring (and lug J, substantially as described. 6th. The combination, with a drawer and its casing, of the slide connected to the drawer and having blocks and springs, one arranged at the forward end of the drawer-casing and the other arranged at the rear end of the said casing, substantially as and for the purpose set forth.

No. 24,661. Governor Tip for Oil Cans.

(*Bec-Régulateur pour Bidons à Huile.*)

James Pearson, Preston, Eng., 5th August, 1886; 5 years.

Claim.—1st. In an oil can, the employment of a ball or sphere contained within the spout of the can, and operating in such a manner as to regulate the supply of oil coming from the can, as hereinbefore described. 2nd. In a spout for oil cans, the combination of a conically shaped tube having stops in its interior, with a ball operating within the said tube and between the said stops, substantially as and for the purpose hereinbefore described and represented in the accompanying drawing.

No. 24,662. Pressure Indicator and Recorder.

(*Indicateur-Compteur de la Pression*)

Alfred Shedlock, Jersey City, N. J., U. S., 5th August, 1886; 5 years.

Claim—1st. In a pressure recorder, an indication receiver, constructed substantially as described, operated by the force of gravity acting on its mass, as and for the purpose set forth. 2nd. In a pressure recorder, in combination, an indication receiver operated by the force of gravity, a locking device for holding the indication receiver stationary, an indicating device for marking indications thereon, and means actuated by variable pressure, by which the locking device is caused to release the indication receiver and the indicating device is operated, substantially as set forth. 3rd. In a pressure recorder, a cylindrical indication receiver, in combination with means, substantially as described, by which it is caused by the action of gravity thereon to move helically, as set forth. 4th. In a pressure recorder, in combination, a helically moving indication receiver, means for holding it and causing it to rotate as it is acted upon by gravity, a locking device for holding the indication receiver stationary, an indicating device for marking indications thereon, and a pressure actuated device connected to the locking and indicating device, substantially as set forth. 5th. In a pressure recorder, in combination, a cylindrical indication receiver provided with a ratchet wheel at its lower end, and a releasable nut at its upper end, a vertical shaft upon which the cylinder is fitted to slide, having a helical groove in which the nut works, and a vertical escapement pawl arranged to engage the teeth of the ratchet wheel, substantially as set forth. 6th. In a pressure recorder, in combination, an indication receiver, an indicating device composed of a disc having a flat formed thereon and marking needles in its periphery, vertical guides having inclined recesses and located in front of the receiver, an inclined plate upon which the flat of the disc works when its bearings move into the inclined recesses, and means for imparting vertical motion to the disc, whereby it is first caused to move forward towards the receiver and then to rotate thereon by its needles puncturing the same, substantially as set forth. 7th. In a pressure recorder, the cylinder *c* provided with the paper covering *f*, and having the nut *i* clamped on its upper end, in combination with the vertical shaft *h* provided with the helical groove *k*, substantially as set forth. 8th. In a pressure recorder, the combination, with the cylinder *c*, nut *i*, helically grooved shaft *h* and ratchet wheel *l* secured to the lower end of the cylinder, of the vertically arranged escapement pawl *j*, having long retaining edges adapted to engage with the teeth of the ratchet wheel *l*, in all positions of the cylinder *c* on the shaft *h*, substantially as set forth. 9th. In a pressure recorder, in combination, the piston *b* provided with a groove in an arm projecting therefrom, the escapement pawl having a flange *g* inclined at its lower end and embraced by said groove, the ratchet *l*, the cylinder *c* and the vertical shaft *h*, substantially as set forth. 10th. In a pressure recorder, in combination, the cylindrical indication receiver *c*, *g*, *l*, the guide shaft *h*, puncturing disc *l*, guides *n*, *n*, links *m*, and piston *b*, substantially as set forth.

No. 24,663. Envelope Machine.

(Machine à Enveloppes.)

Louis P. Bouvier, John F. Ellis, Philip T. Perrott and Thomas J. Clark, Toronto, Ont., 5th August, 1886, 5 years.

Claim—1st. In an envelope-machine, the vertically reciprocating picker arranged to gum and raise one side of the top blank, in combination with the reciprocating auxiliary gummer constructed to fall directly upon the edge of the seal flap, and mechanism, substantially as described, for drawing said auxiliary gummer off the flap while the picker is resting on the blank, as set forth. 2nd. The gum-dish *Q* located immediately over the pile of blanks, and the vertically reciprocating picker supplied with gum from said gum-dish, and arranged to carry the gum to one flap of the blanks, in combination with the second gum-dish located in front of the pile of blanks, and provided with a gum-supplying surface, as *W*, on a level with the upper blank, and an auxiliary gummer arranged to be carried from said gum-dish to a point directly over the seal flap of the blank and dropped thereon, and then drawn therefrom in a horizontal plane while the said picker is resting upon and holding the blank, substantially as described. 3rd. In an envelope-machine having a gumming-dish located over the pile of blanks, a vertically reciprocating picker arranged to gum and pick up one side of the top blank sufficiently high to permit the carriers to pass below it, in combination with a spring finger or fingers placed on the bottom of the gum-dish, so that the blank carried up against it by the picker is pushed off the picker onto the carriers with a positive, yet gentle elastic force. 4th. In an envelope-machine, the vertically reciprocating gummer arranged to gum one side of the top blank, in combination with the auxiliary reciprocating gummer for gumming the seal-flap, and mechanism, substantially as described, constructed to carry said gummer from the gum-dish to the edge of said flap, and then lower it directly upon the same and draw it off while the gummer is resting on the blanks, substantially as set forth. 5th. In an envelope-machine having a gum dish located over the pile of blanks, the vertically reciprocating picker, constructed and arranged to gum and raise one side of the top blank, and the roller arranged to convey the gum from the gum dish to the underside of the picker, in combination with the reciprocating auxiliary gummer, the second gum-dish located near another edge of the blank and carrying a roller whose upper surface is substantially on a level with the top blank, and mechanism, substantially as described, for carrying said auxiliary gummer over the edge of the blank and free from contact with the same, and then dropping said gummer upon the blank and drawing it therefrom in a horizontal position while the picker is resting on the other edge, as set forth. 6th. In an envelope-machine, the elevator-frame *B* carried in suitable guides formed in the bracket *C*, and supporting the elevator plate or table *A*, in combination with mechanism, substantially as described, arranged to impart a continuous upward movement to the table during the operation of the machine, and an adjustable friction-roller, as *P*, operating on the cones *M* and *N*, as described, and varying the speed of the feeding mechanism, as and for the purposes specified. 7th. In an envelope-machine, the plate or table *A* carrying the envelope-blanks, and attached to, or forming part of the frame *B*, held in suitable guides within the bracket *C*, a screw *D* fastened to said frame, and split-nut *E* arranged to grasp the screw *D* and pivoted to the worm-gear *G* through which the screw *D* passes, in combination with a horizontal spindle *L* having a worm on it to mesh with the worm-gear *G*,

and deriving motion from adjustable mechanism, substantially as described, by which the speed of the spindle *L* may be increased or decreased without stopping the machine, substantially as and for the purpose specified. 8th. In an envelope-machine, the plate or table *A* attached to, or forming part of the frame *B*, held in suitable guides within the bracket *C*, a screw *D* fastened to said frame, and a pivoted split-nut *E* made to grasp the screw *D*, in combination with the cone-shaped collar *H* arranged to open the split-nut *E*, substantially as and for the purpose specified. 9th. In an envelope-machine, the plate or table *A* attached to, or forming part of the frame *B*, held in suitable guides within the bracket *C*, a screw *D* fastened to said frame, and a pivoted split-nut *E* made to grasp the screw *D*, in combination with a cone-shaped collar *H*, the apex of which extends between the ends of the split-nut *E*, and the pivoted lever *I* supported by the spring *J*, substantially as and for the purpose specified. 10th. In an envelope-machine, the plate or table *A* attached to, or forming part of the frame *B*, held in suitable guides within the bracket *C*, a screw *D* fastened to said frame and a pivoted split-nut *E* made to grasp the screw *D*, in combination with a cone-shaped collar *H* arranged to open the split-nut *E*, which is held against the screw *D* by a rubber band or spring *K*, substantially as and for the purpose specified. 11th. In an envelope-machine, the elevator-frame *B* carried in suitable guides formed in the bracket *C*, and supporting the elevator plate or table *A*, and a screw *D* arranged to support the frame *B*, when grasped by a nut secured to the worm-gear *G* supported by bracket *K*, in combination with the spindle *L* provided with a worm to mesh with the worm-gear *G*, and a cone *M* connected by the adjustable friction-roller *P* to the cone *N*, which is attached to the spindle *L*, deriving motion from some convenient moving part of the envelope-machine, substantially as and for the purpose specified. 12th. In an envelope-machine, the elevator-frame *B* carried in suitable guides, formed in the bracket *C*, and supporting the elevator plate or table *A*, a screw *D* fastened to the frame *B* having a bastard thread cut upon it, with a nut *E* arranged to grasp the said thread, in combination with mechanism, arranged substantially as described, to impart a revolving motion to the nut in order to convey a continuous upward movement to the elevator frame *B*, and means, as the rack *T*, pawl *U* and lever *V*, for raising said frame independently of the regular feed, as set forth. 13th. In an envelope-machine, the vertically adjustable elevator-table supporting the envelope-blanks, the spindle *L* connected to the elevating mechanism, and having attached to it a cone *M* and a spindle *H* running parallel with the spindle *L*, and having attached to it a cone *N*, the apex of the cone *N* being opposite to the base of the cone *M*, the two cones being similarly tapered, in combination with a friction-roller *P* arranged to form a connection between the two cones, and carried in a bracket capable of being adjusted toward either end of the cone, substantially as and for the purpose specified. 14th. In an envelope-machine, a table carrying the envelope-blanks and attached to a frame carried in guides so as to be vertically adjustable in them, and a ratchet rack *T* formed upon, or attached to the elevator-frame, in combination with the pawl *U* pivoted on the end of the lever *V*, and having a rounded tail *c* arranged to extend beyond the adjustable bracket *W*, substantially as and for the purpose specified.

No. 24,664. Brake Shoe for Car Wheels.

(Sabot de Frein pour Roues de Chérrs.)

William Gill, Toronto, Ont., 7th August, 1886; 5 years.

Claim—A brake-shoe constructed with a single longitudinal chilled portion in the face thereof, and extending the full length of the face, and portions of said chilled portion reaching to the edges of the shoe, and having soft portions of metal on each side of, and in the middle of said chilled portion, substantially as shown and described as a new manufacture.

No. 24,665. Funnel Thimble.

(Dé de Cheminée.)

Sherman C. Hutchins, Chelsea, and Edward F. Macomber, Roxbury, Mass., U.S., 7th August, 1886, 5 years.

Claim—1st. As an improved article of manufacture, the metallic funnel thimble guard *B* provided with a hole for receiving the funnel, and with slots or openings for receiving the plaster, substantially as described. 2nd. As an improved article of manufacture, the metallic funnel-thimble guard *B*, provided with a hole for receiving the funnel, slots or openings for receiving the plaster, and hooks or means for locking it to a thimble, substantially as set forth. 3rd. As an improved article of manufacture, a funnel-thimble, provided with a peripherally disposed flange near its outer end for locking a guard to the thimble, substantially as described. 4th. As an improved article of manufacture, a funnel thimble provided with a peripherally disposed flange near its outer end, for locking a guard to the thimble, and a flange at its outer end for holding the plaster, substantially as set forth. 5th. The thimble *A* having the flange *x*, and provided with the bars *d* for centering and supporting the guard *B*, substantially as described. 6th. The thimble *A* having the flange *x*, provided with the notches *t*, in combination with the guard *B*, having the hole *E*, hooks *l* and slots *m*, substantially as set forth. 7th. The thimble *A* having the flanges *x*, and bars *d*, in combination with the guard *B* having the hooks *l*, slots *m* and hole *E*, the flange *x* being provided with notches *t*, substantially as described.

No. 24,666. Stencil. (Patron.)

Michael W. Stines, Dayton, Ohio, U.S., 7th August, 1886, 5 years.

Claim—1st. A wire or wires, the ends of which are bent and embedded in the faces of paper or wood disks, said disks being provided with suitable adhesive substances and constructed to secure together, in parallel or curved lines, two or more edges of paper or other material, substantially as described. 2nd. A stencil plate, wherein the necessary blanks in the letters or figures are held in place by wires and disks, substantially as specified. 3rd. The combination, in a stencil plate and with said plate, of the centro blank, the removable wires, the disks and the metallic tags or clips, substantially as set forth.

No. 24,667. Engineer's Brake Valve.*(Valve à Frein à Air.)*

Frederick A. McArthur, Detroit Mich., U.S., 7th August, 1886: 5 years.

Claim.—1st. In a three way cock valve, for the purposes described, the cock H provided with minor ports which form an air passage through the cock controlled by a differential pressure valve placed within the body of the cock in combination with two of the main ports of the valve shell, substantially as and for the purposes described. 2nd. In a three-way valve, for the purposes described, the cock H having the chamber O, with the valve seat e formed in its body, and two ports d, e, one entering above and one below the valve seat, in combination with the spring puppet valve P, substantially as and for the purposes described. 3rd. In a three-way valve, for the purposes described, the cock H having minor ports which form a differential pressure passage through the valve, substantially as described, in combination with the brake handle J, friction spring M and index flange N, the latter provided with the off-set or shoulder J, which forms a stop for the brake handle, thereby indicating the position in which communication through the valve is established by the minor ports in the cock, substantially as described. 4th. In an engineer's brake valve for automatic air-brakes, a three-way cock valve having the ports C, B, D and I, K, by means of which the flow of air from the main reservoir into the brake-pipe, and from the brake-pipe to the atmosphere is regulated, in combination with minor ports f, h, forming a differential air-pressure passage through the cock from the reservoir to the brake-pipe, substantially as described. 5th. In an engineer's brake-valve for automatic air-brakes, the combination of a three-way cock valve, having the usual ports for connecting the main reservoir with the brake-pipe, and the brake-pipe with the atmosphere, and a minor passage through its cock by means of which a differential air pressure passage between the reservoir and the brake-pipe is established, and the index flange N having stops i, t and z, by means of which the positions of the lever are defined, substantially as described.

No. 24,668. Process of, and Apparatus for, Manufacturing Heating and Illuminating Gas. (Procédé et Appareil de Production du Gaz de Chauffage et d'Eclairage.)

James Roberts, New York, N. Y., U.S., 7th August, 1886: 5 years.

Claim.—1st. The herein described process of manufacturing heating, or illuminating gas from water and hydro-carbon oils, which consists in passing said water and oil separately through heated pipes of increasing diameters, and thus subjecting the vapor therein formed to continuous and increasing expansion until said fluids are separately converted into gases, then combining said gases in a common heated mixing chamber, thereby forming a fixed gas. 2nd. In an apparatus for manufacturing heating or illuminating gas from water and hydro-carbon oils, the combination of a heating chamber, water and supply pipes, two or more series of longitudinal pipes of differing diameters for converting the water and hydro-carbon oil into gases, and a mixing chamber or receptacle, substantially as described. 3rd. In an apparatus for manufacturing heating or illuminating gas from water and hydro-carbon oils, the combination of a heating chamber, two series of longitudinal pipes of differing diameters for converting the water and hydro-carbon oil into gases, a mixing chamber and a burner for supplying the necessary heat, substantially as described. 4th. In an apparatus for manufacturing heating or illuminating gases from water and hydro-carbon oils, the combination of a heating chamber, water and oil supply pipes, and having two or more series of longitudinal pipes of differing diameters, and having rearward and forward downward incline for converting the water and hydro-carbon oil into gases, a mixing chamber or receptacle, and a burner, having an air ingress in its front portion, substantially as described. 5th. In an apparatus for manufacturing heating and illuminating gases from water and hydro-carbon oils, the combination of a heating chamber, water and oil supply pipes having suitable cocks and gauges to regulate and indicate the flow of the liquids therethrough, two or more series of longitudinal pipes of differing diameters for converting the water and oils into gases, uniting in a mixing chamber, said series of pipes being arranged above a burner at suitable angles, substantially as described. 6th. In an apparatus for manufacturing heating and illuminating gases from water and hydro-carbon oils, the combination of a heating chamber, water and oil supply pipes 11, 11, having valves 12 and gauges 16 for regulating and indicating the flow therethrough, two or more series of pipes 9 and 6 of differing diameters, and downward incline, for converting the water and oil into gases, a common mixing chamber and a burner 1 having apertures 2, 2, substantially as described. 7th. In an apparatus for manufacturing gas from water and hydro-carbon oils, the combination of a heating chamber, two series of longitudinal pipes 9 and 6 of differing diameters, for converting the water and hydro-carbon oil into gases, two sets of oil and water-feeding pipes 11 and 16, the oil pipes 11 having extensions 17, which pass partially through each of said series of longitudinal pipes, and are of corresponding increasing diameters therewith, and a mixing chamber C, substantially as described. 8th. In an apparatus for manufacturing gas from water and hydro-carbon oils, the combination of a heating chamber, two series of longitudinal pipes 9 and 6 of differing diameters, for converting the water and hydro-carbon oil into gases, two sets of oil and water feeding pipes 11 and 16, the oil pipes 11 having extensions 17 which pass partially through each of said series of longitudinal pipes and are of corresponding increasing diameter therewith, a mixing chamber C, a burner 1, and air feeding pipes provided with suitable apertures adjacent to the said burner 1, substantially as described.

No. 24,669. Machine for Cleaning Wheat.*(Machine à Nettoyer le Blé.)*

Hiram J. Livergood, Brantford, Ont., 7th August, 1886: 5 years.

Claim.—1st. In a wheat separating and scouring machine, the combination of frame A, its caps and a bearing for one end of fan shaft, with the fan shaft 2 and the long metal box X forming the journal bearing for the other end of said fan shaft, substantially as described. 2nd. In a wheat separating and scouring machine, the combination, with suction separator H provided with a hopper in which are placed a rotary brush cylinder M and the roughened plate R, substantially as and for the purpose specified. 3rd. The combination, in a wheat separating and scouring machine, of frame A, eccentric shaft P, reciprocating shoe C, pitman rods G, G, having tension nuts, the spiral springs D, D, and the attachments Z, Z, substantially as and for the purpose specified. 4th. In a wheat separating and scouring machine, the combination of frame A, the reciprocating shoe C, shaft P, adjustable eccentrics K, K, pitman rods G, G, and spiral springs D, D, substantially as and for the purpose specified. 5th. The combination, in a wheat separating and scouring machine, of the frame A, reciprocating shoe C, flanged castings L, L, L, and the upright springs E, E, E, E, substantially as and for the purpose specified. 6th. The combination, in a wheat separating and scouring machine, with the perpendicular suction separator I, of the independent air tube 1, 2, substantially as and for the purpose specified. 7th. In a wheat separating and scouring machine, the combination, in a rotating scouring cylinder, of the oscillating scouring plates B, B, journalled in cylinder heads W, W, in combination with the adjusting wheel N, substantially as and for the purpose specified. 8th. In a wheat separating and scouring machine, of the oscillating scouring plates B, B and the adjusting wheel N and springs T, T, and tension yoke O secured to cylinder shaft, substantially as and for the purpose hereinbefore set forth. 9th. In a wheat separating and scouring machine, of the oscillating scouring plates B, B, having a pimped scouring surface, also having blong shaped conveying flights on them, substantially as and for the purpose specified. 10th. In a wheat separating and scouring machine, of the cylinder heads W, W, having round holes in them for the reception of the journals or the ends of the oscillating scouring plates B, B, substantially as and for the purpose specified. 11th. In a wheat separating and scouring machine, of the cast-metal scouring case S having openings lengthwise of the case, and corrugations lengthwise of the case, and corrugations crosswise of the case parallel with each other in a zig-zag manner, all substantially as and for the purpose hereinbefore set forth.

No. 24,670. Hot Air Furnace.*(Calorifère à Air.)*

Charles R. Alsop, Syracuse, N. Y., U.S., 7th August, 1886: 5 years.

Claim.—1st. A hot air furnace comprising a fire-pot, subjacent ash-pit and superposed combustion chamber, all arranged central of the furnace, a radiator surrounding the fire-pot and combustion chamber, and communicating with the latter at the upper end thereof, a smoke jacket surrounding the aforesaid radiator and communicating with the bottom portion thereof, and an exit flue connected to said jacket, two air passages extending around the space between the radiator and combustion chamber and fire-pot, the air passage adjacent to the latter being provided with air inlets at the base, and connected with the other air passage at the top, a third air passage between the radiator and smoke jacket and extending around the same, and communicating with the second air passage at the base thereof, an air passage extending across the top of the furnace, and communicating with the third air passage and hot air pipes extending from the top air passage, all combined to operate substantially as set forth. 2nd. In combination with the fire pot A and combustion chamber B, the annular radiator C extended horizontally or laterally outward from the upper end of the combustion chamber, the radiator D extending downward from the peripheral portion of the radiator C, and surrounding the combustion chamber and fire-pot, the smoke jacket E surrounding the radiator D and communicating with the same at the base thereof, the exit flue F connected to the smoke jacket E, the annular vertical air passage 1 adjacent to the fire-pot and combustion chamber, and provided with cold air inlets a, the annular vertical air passage 2 between the passage 1 and radiator D, and communicating with passage 1 at the upper end, the annular vertical air passage 3 between the radiator D and jacket E, the annular horizontal air passage 4 under the radiator D, and connecting the passages 2 and 3, and the annular horizontal air passages 5 extended across the top of the radiator C, and connected with the passage 3, and hot air pipes 11 extended from the passage 5, substantially as described and shown. 3rd. The combination, with the combustion chamber, of a magazine projecting above said combustion chamber, and provided therewith with ports communicating with the open air, stoppers removably applied to said ports, and removable covers respectively on top and bottom of the magazine, substantially as and for the purpose set forth.

No. 24,671. Cream Separator. (Garde-Lait.)

Morrill C. Barden, West Pawlet, Vt., U.S., 7th August, 1886: 5 years.

Claim.—1st. The combination, with the milk receiver A, provided with the conical bottom B, and stop cock C having the inner stoppe seat d, of the floating stopper F, substantially as herein shown and described. 2nd. The combination, with the milk receiver A, having the conical bottom B and stop cock C, of the floating stopper F, having a specific gravity greater than that of new milk and less than that of milk from which the cream has been removed, substantially as shown and described.

No. 24,672. Steam Engine. (Machine à Vapeur.)

David L. Cross, Austin, Texas, U.S., 7th August, 1886: 5 years.

Claim.—1st. A cam wheel, applicable to a steam engine and adapted to move in a plane at right angles to the axis of the driving shaft, provided with two cam grooves, each of which is parallel with a right central plane of said wheel, one half of said wheel's circumference, the other half of said grooves having direction inward, toward said central plane, with the greatest inward variance of the one at an angle of 180° to the greatest inward variance of the other, sub-

stantially as specified. 2nd. In a steam engine, the cam wheel having two annular cam grooves formed in a manner, substantially as described, fixed to the main or driving shaft by which motion is imparted from said shaft in opposite directions, in a line parallel with the axis of said shaft, to operate certain mechanism connected with the steam cylinders, as and for the purpose set forth. 3rd. A cam wheel, formed substantially as described, and fixed upon the driving shaft of a steam engine, one of the grooves of which gives motion to a steam abutment, and one or more slide valves on one side of said cam wheel simultaneously, and the other of said grooves alternately with the first giving corresponding motion to an abutment, and slide valves on the opposite side of said wheel, as and for the purpose set forth. 4th. A steam engine having two steam cylinders, one fixed to a base upon one side and parallel with a central plane, and one upon the opposite side of said plane, said cylinders being set with their common axis coincident with the axis of the driving shaft, in combination with concentric pistons provided with suitable piston heads, substantially as described, fixed upon and moving said driving shaft, when influenced by steam received into, and discharged from said cylinders, substantially as specified. 5th. The combination, with a steam cylinder fixed about the axis of the driving shaft of an engine, and a rotary piston fixed to and moving with said driving shaft, provided with a suitable head, of an abutment having an alternate movement into and out of said cylinder with an interval of rest, a rotary cam wheel provided with annular grooves about its periphery, and suitable rod connections for said cam wheel and abutment, all arranged as set forth. 6th. The combination, with the cylinder, rotary piston and steam abutment, substantially as described, of the slide valve operated from the motion of the main driving shaft through the influence of the cam wheel, grooved in its periphery and fixed to the driving shaft, and suitable connecting mechanism, as and for the purpose substantially as set forth. 7th. The combination, with the steam cylinders fixed at opposite points about the axis of the driving shaft, and provided with induction and exhaust ports, the rotary pistons, movable abutments, steam chests and slide valves, of the rotary cam wheel located between the steam cylinders upon the driving shaft, provided with cam grooves on its periphery, and connecting mechanism for the abutments, slide valves and cam wheel, substantially as set forth. 8th. The reversing mechanism composed of cocks B, E₁, E₂, E₃, E₄, shaft S, arm r, levers t, u, v, w, x, and link bars q, r, and cranks connected to said cocks, whereby steam is changed and directed from one side of the abutments of the steam cylinders to the other, to give forward or backward movement to the pistons and driving shaft, substantially as specified. 9th. The combination, with a steam chest and slide valves moving horizontally therein, and the combined induction and eduction cocks, of the fixed concentric cylinder and rotary piston fixed to the driving shaft and moving in said cylinder, and the steam abutment moved horizontally from a concentric cam wheel, grooved as described and fixed to said driving shaft, as specified. 10th. A steam engine having duplicate cylinders and rotary pistons arranged about the axis of the driving shaft, duplicate slide valves and abutments arranged, and moved in connection with a cam wheel having annular cam grooves, substantially as described, whereby said pistons are rotated by force of steam, which enters and continues to enter through an induction port into one cylinder, to drive its piston half a revolution and cuts off simultaneously with the entrance and continued entrance of steam in the opposite cylinder during a half revolution, thus keeping up an unabated steam pressure and movement consequently to the driving shaft, substantially as set forth. 11th. The combination, with the steam cylinders provided with suitable ports located at opposite points about the axis of the driving shaft, the pistons fixed to the driving shaft and moving with it within the said cylinders, of the double grooved cam wheel, the slide valves, the induction and exhaust ports connected with the cylinders and slide valves, the steam abutments and induction and eduction cocks, all arranged as and for the purpose set forth.

No. 24,673. Mowing Machine. (*Faucheuse.*)

William A. Morgan, Jr., Cumbrina, Iowa, U.S., 7th August, 1886, 5 years.

Claim.—In a mowing machine, the combination, with the frame having the portion A and vertical guide or keeper L cast integral therewith, of a draft-pole M secured pivotally to said frame in rear of said keeper L, and devices, substantially such as indicated, for moving the body relative to said pole M, substantially as set forth.

No. 24,674 Method of Reducing old Railroad Rails into Steel Plates. (*Manière de Convertir les vieux Rails de Chemin de Fer en Plaques d'Acier.*)

Bernard Lauth, Howard, Penn., U.S., 7th August, 1886, 5 years.

Claim.—The method, substantially as hereinbefore described, of reducing railroad rails to plate metal, the same consisting in the presentation of a section of an old rail to grooved rolls, in order to reduce to a limited extent the head and the flange thereof, then presenting said section sidewise to plain surfaced rolls, of unequal diameters, and giving to it a succession of passes accompanied by reversals of the section, so as to present to the rolls, first one edge and then the other, and to the small roll, first one side and then the other, until finally, after so rolling until the proper width of plate has been attained, and then passing said plate edewise through the rolls to reduce it to the desired thickness, as set forth.

No. 24,675. Transom Lifter. (*Lever de Dormant.*)

Charles F. Leopold, Philadelphia, Penn., U.S., 7th August, 1886; 5 years.

Claim.—1st. A transom lifter having a vertically-moving bar, a guide and a rod pivoted to said bar and the transom, the bar continuing below the lower guide, and the rod being pivoted to the lower end of said bar, substantially as and for the purpose set forth. 2nd. A transom lifter, having a vertically-moving toothed bar, a guide for said bar, and a gravitating pawl supported on said guide and adapted

to engage with the teeth of said bar and lock the same, said pawl being of the form of a tooth, having a weighted handle and provided with pivots which are mounted on the sides of the guides, substantially as and for the purpose set forth. 3rd. A transom lifter, having a vertically-moving toothed bar, a guide for the same, a locking dog for said bar and a rod, the dog being journaled on the guide, the bar extending below the guide, and the rod being pivoted to the transom and the lower end of the toothed bar, substantially as described.

No. 24,676. Waggon and Sleigh Box.

(*Cause de Wagon et de Traineau.*)

James Cochran, Dorby, Ont., 7th August, 1886, 5 years.

Claim.—1st. The combination of the dove-tail fastening B, B, fastened on to the tail board A by the bolts c, c, and the perpendicular rod d with collar, the keepers F, E, and inverted nut D, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the strap (1), with eye fastened to side board, self keying hook F passing through bottom and cleat, and secured with nut rivetted on, substantially as and for the purposes hereinbefore set forth.

No. 24,677. Force an Litt Pump.

(*Pompe Aspirante et Foulante.*)

William M. Watson, Brantford, Ont., 9th August, 1886, 5 years.

Claim.—The combination of the piston B, with the handle C and piston rod D, substantially as and for the purpose hereinbefore set forth.

No. 24,678. Mode of and Apparatus for the Generation of Steam. (*Mode et Appareil de Production de la Vapeur.*)

Pierre E. Jay, New York, N.Y., U.S., 9th August, 1886, 5 years.

Claim.—1st. The method of converting water into steam, by dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into a fragmental, subdivided or granulated mass of heated metal, alloy, or other metallic substance. 2nd. The method of converting water into steam by dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into a fragmental, subdivided or granulated mass of heated metal, alloy, or other metallic substance, contained in a closed recipient to the exterior of which heat is applied. 3rd. The method of converting water into steam by dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into a fragmental, subdivided or granulated mass of metal, alloy, or other metallic substance, heated to a temperature at which water passes to steam without boiling, or assuming a spheroidal or globular state, substantially as set forth. 4th. The method of converting water into steam by dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into a fragmental, subdivided or granulated mass of metal, alloy, or other metallic substance, contained in a suitable recipient to the exterior of which the heat is applied, and heated to a temperature at which water passes to steam without boiling, or assuming a spheroidal or globular state, substantially as set forth. 5th. The combination, to form an apparatus for the conversion of water into steam, of a closed generator, recipient or containing vessel, a fragmental, granulated or subdivided mass or charge of metal, alloy, or other metallic substance contained therein, a furnace or other suitable means for heating the foregoing charge or mass, means for dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into said mass or charge, and means of exit for the steam generated. 6th. The combination, to form an apparatus for the instantaneous conversion of water into steam, of a closed generator, recipient or containing vessel, a fragmental, granulated or sub-divided mass or charge of metal, alloy, or other metallic substance contained therein, a furnace or other suitable means for heating the foregoing charge or mass to a temperature at which water is instantly converted into steam, means for dispersing, flashing, injecting, pouring, dropping, or otherwise introducing water into said mass or charge, and means of exit for the steam generated, substantially as set forth. 7th. The combination, to form an apparatus for the instantaneous conversion of water into steam, of a closed generator, recipient or containing vessel, a fragmental, granulated or subdivided mass or charge of metal, alloy, or other metallic substance contained therein, a furnace or other suitable means for heating the foregoing charge or mass to a temperature at which water is instantly converted into steam, an injector for the injection of water into the contained mass or charge, and means of exit for the steam generated, substantially as set forth. 8th. The combination, in an apparatus of the class herein set forth, of the generator A, the contained metallic mass G, the water-inlet or feed-water pipe D, the injection tube C and the outlet or steam pipe E, substantially as described. 9th. The combination, in an apparatus of the class herein set forth, of the generator A, the contained metallic mass G, the water inlet or feed-water pipe D, the injection tube C, the outlet or steam pipe E, and the depending containing-sleeve for said injection tube, substantially as described. 10th. The combination, to form an apparatus of the class herein recited, of a furnace, a closed generator, recipient in connection with said furnace in such manner as to be heated thereby, a fragmental, subdivided or granulated charge of metal, alloy, or other metallic substance contained therein, and means for injecting or otherwise introducing water to the heart of the charge, substantially as set forth.

No. 24,679. Manufacture of Journal Bearings. (*Fabrication des Coussinets de Tourillons.*)

John J. Lappin, Toronto, Ont., 9th August, 1886, 5 years.

Claim.—A process for the manufacture of journal bearings, of revolving shafts having the acting face chilled in one or more parts, or over the full face, and cast face down, so that the pure and heavier metal will fall to the bottom and form the face of the bearing, substantially as shown and described and for the purposes set forth.

No. 24,680. Gas Regulator. (Regulateur à Gaz.)

Henry F. Bromhead, London, Eng. 9th August, 1886, 5 years.

Claim.—1st. In a gas regulator, a vessel such as A whose area increases with the distances from the inlet, substantially as specified. 2nd. In a gas regulator, a valve chamber, such as D, of greater area than the inlet, substantially as specified. 3rd. In a gas regulator, a diaphragm, such as M, dividing the interior into two chambers, whereof the area of that chamber which is farther from the inlet is the greater, the intercommunicating passage M being governed by a valve O, substantially as specified. 4th. In a gas regulator, the combination, with the valve specified, of a tube P passing through the cover A and surrounding the threaded portion of said spindle, substantially as specified. 5th. In a gas regulator, the combination, with a conical vessel, such as described of two partitions, such as F, M, dividing the vessel into separate chambers and having central openings P, M, and two valves E, O, carried upon the same spindle and adapted to operate simultaneously, substantially as specified. 6th. The complete gas regulator, substantially as specified and shown in the accompanying drawings. 7th. In a gas regulator, the combination, with a spindle G, of two valves, such as P, O, so placed upon said spindle that, when one valve is closed upon its seat, the other remains partially open, substantially as specified.

No. 24,681 Potato Digger. (Arrache-Patates.)

William D. Robinson, Kanona, N. Y., U. S., 9th August, 1886; 5 years.

Claim.—1st. The combination, substantially as set forth, of the main frame, the wheels, the bent axle provided with bearings located to one side of the general plane of the bent axle, spring-adjusting devices connected directly with the axle, and an adjustable connection between said spring devices and the main frame. 2nd. The combination, substantially as set forth, of the main frame, the digging devices, the bent axle, its bearings in the frame, the spring or springs connected with the axle and forced with the upwardly projecting arms ϕ , the adjusting chain, and means for securing the chain in any adjusted position. 3rd. The combination of the main frame, the digging devices carried thereby, the bent axle, the wheels, the journal of the bent axle located above or to one side of the plane of the axle, the bearings in the frame located in advance of the wheels and digging devices, as shown, and the adjustable spring connection between the axle and the main frame. 4th. The combination, substantially as set forth, of the main frame, the shovel, the wheels, the bent axle journaled in the main frame to one side of a vertical line drawn through the axis of the wheels, and an elastic connection between the axle and the main frame. 5th. The combination, substantially as set forth, of the main frame, the wheels, the bent axle journaled in the main frame, the springs secured to the axle and an adjustable connection between the springs and the main frame. 6th. The combination, substantially as set forth, of the main frame, the wheels, the bent axle journaled in the main frame, the springs secured to the axle, the spring lever arms, and an adjustable connection between the lever arms and the main frame. 7th. The herein described casting, having downwardly projecting lugs to form bearings for the axle, and the inclined handle-supporting arms. 8th. The combination, substantially as set forth, of the main frame, the axle, the handles, and the casting having downwardly projecting lugs in which the axle is journaled, and the upwardly inclined arms to which the handles are secured. 9th. The combination, substantially as set forth, of the digging blade or shovel and the drag-chains hinged thereto, each chain consisting of a link hinged to the shore and a second link hinged between lugs in the preceding link, and succeeding links hinged in like manner to their preceding links, for the purpose specified.

No. 24,682 Potato Digger. (Arrache-Patates.)

William D. Robinson, Kanona, N. Y., U. S., 9th August, 1886; 5 years.

Claim.—1st. In combination with the digger, an arch or yoke over the digger wheels pivoted to the inner side of the feet of the arch or yoke and riddles on said wheels. 2nd. In combination with the digger and an arch over the digger, combined carrying and riddling wheels pivoted on the inner side of the feet of the arch and having spokes inclined from the hub towards the digger. 3rd. In a potato digger the combination, with the frame, of an axle turning in bearings of the frame and having cranked ends, a spring connected with the axle, serving as a cushion and as a gauge to adjust the height of the opening point, and wheels attached to the cranked ends of the axle and on the inner sides thereof, as shown and described and for the purpose specified. 4th. In a potato digger the combination, with the frame, of a cranked axle resting in bearings of the frame and made in parts, provided with a slip joint, whereby it may be lengthened and shortened, and supporting wheels made open and spoked to form sifters attached to the cranked ends and resting inside the cranks, as shown and described and for the purpose specified.

No. 24,683. Compass. (Compas.)

Carl W. Stuart, New York, N. Y., U. S., 9th August, 1886; 5 years.

Claim.—1st. A compass-attachment for pencils or similar marking implements, consisting of a holder adapted to be attached to such marking implement, and an arm hinged to the said holder, and provided with a needle or center-point, for the purpose substantially as set forth. 2nd. The combination, in a compass-attachment for pencils or similar marking implements, of the tube or sleeve adapted to be fitted upon the pencil, the hinge at its upper end and means for tightening the same, the hinged arm having a sleeve or recess adapted to receive the needle, the adjustable sliding needle inserted into the said recess, and the binding screw for holding the needle in the adjusted position, substantially as and for the purpose shown and set forth. 3rd. The combination of the slitted tube or sleeve A open at both ends, hinge F, G having tightening nut ϕ , arm H having sleeve I, extensible needle J and means for properly securing the same in the a: m, substantially as and for the purpose set forth. 4th.

The combination of the slitted tube or sleeve A open at both ends, hinge F, G having tightening nut ϕ , arm H, hinged knife-blade L, extensible needle J and means for properly securing the same in arm H, substantially as and for the purpose set forth. 5th. The hereinbefore described compass-attachment for pencils or similar marking implements, consisting of a slitted spring tube or sleeve having a suitable scale or scales marked thereon, and provided on one side with a projecting bracket having a hinged arm and a knife-blade, and a thumb-nut for fixing said arm and knife-blade in their adjusted position relative to the sleeve, said hinged arm being provided with an extensible needle, and with means for fixing said needle in position when properly adjusted, substantially as and for the purpose set forth.

No. 24,684. Disintegrating Machine. (Machine à Désagréger.)

Walter F. Birge, Buffalo, N. Y., U. S., 9th August, 1886, 5 years.

Claim.—1st. In a disintegrating-machine, the case provided with inwardly-projecting stationary arms, and having the outlet opening of larger area than the inlet-opening, as and for the purposes specified, in combination with two vertical shafts 11 and 12 set in bearings in the case, and connected together by gears 15, 16 and 17, and provided with beaters, substantially as and for the purposes described. 2nd. In a disintegrating-machine, the case or shell provided with cylindrical portions, and a tapering bottom, inwardly-projecting stationary arms, feed and discharge pipes having valves and the shaft-bearings, in combination with two vertical shafts set in said bearings, and gears for simultaneously operating said shafts, each shaft being provided with a series of beaters adapted to the cylindrical portions of the case, and a series of beaters of varying lengths adapted to sweep the material from its tapering or concave bottom towards the outlet, substantially as specified.

No. 24,685 Hoof Pad for Horses. (Bourrelet de Sabot de Cheval.)

Thomas P. Leonard, Detroit, Mich., U. S., 9th August, 1886; 5 years.

Claim.—1st. In combination with a horseshoe, a plate A provided with a stationary locking bar near its toe, and adjustable locking plates near the heel, substantially as and for the purposes set forth. 2nd. In combination with a horseshoe, the plate A provided with the rigid locking bar B, and the adjustable locking plates C, when constructed, arranged and operating substantially in the manner and for the purposes set forth.

No. 24,686. Apparatus for Ventilating Ships' Holds. (Appareil pour Aérer les Sales des Navires.)

George S. Dodman, Liverpool, Eng., 9th August, 1886; 5 years.

Claim.—In a ship ventilator, the horizontal tube B with perforations, in combination with the vertical perforated tubes C, provided with the cowl L and damper K, substantially as and for the purpose set forth.

No. 24,687. Pedal Cover for Organs. (Couvercle de Pédale d'Orgue.)

James S. Foley, Chicago, Ill., U. S., 9th August, 1886; 5 years.

Claim.—1st. The combination, with an organ case A having a pedal opening α , of a cover hinged at the top of the opening, and adapted to close it, and to fold upward against the front of the case, rod-and-lever mechanism connecting the pedal-cover with the fall board, and screws interposed or connected in the said mechanism, substantially as shown and described, whereby the aforesaid rod-and-lever mechanism may be adjusted to cause the fall-board and pedal cover to open simultaneously and to close tightly in unison, as herein set forth. 2nd. The combination, with the organ-case A having a pedal opening α , of a cover hinged at the top of the opening, and adapted to close it, and to fold upward against the front of the organ case, substantially as specified, of an arm D fixed to the pedal cover, a cranked rod G H J journaled to the case front, a rod I connecting crank H and arm D, levers L pivoted at I to the ends of the case A, rods K connecting levers L with cranks J of rod G rods M connected at m to the levers L, and screws N connected to the rods M and threaded into the fall-board frame F, substantially as and for the purposes herein set forth. 3rd. The combination, with the organ-case A having a pedal-opening α , of a cover C consisting of two parts α' , α'' hinged together and at the top of opening α , and adapted to close said opening and to fold upward against each other and the front of the organ-case, substantially as specified, of an arm D fixed to cover C, a cranked rod G H J journaled to the organ-case front, a rod I connecting crank H and arm D, levers L pivoted at I to the ends of case A, rods K connecting levers L with cranks J of rods G, rods M connected at m to the levers L, and screws N connected to rods M and threaded into the fall-board frame F, substantially as and for the purpose herein set forth.

No. 24,688. Car Mover. (Lever de Char.)

Clarence L. Barnhart, Flint, Mich., U. S., 10th August, 1886; 5 years.

Claim.—1st. A car-mover comprising a bar, two legs secured thereto by straps fastened to the bar and surrounding the legs and bar, a motor-lever pivoted in a slot in the bar and having a toothed segment engage a toothed rack in a guide-groove in one leg, and also having a cam-slot engaging a roller in a slot in the other leg, substantially as described. 2nd. The legs of a car-mover, each provided with the rail-gripping device consisting of a socketed casting to engage the legs, and a forked end reinforced with steel plates to engage the rails, substantially as described.

No. 24,689. Wheel. (Roue.)

Edward M. Ball, Casticook, Que., 10th August, 1886; 5 years.

Claim.—1st. A wheel having two hub sections connected by spokes

to the wheel rim, and screwing on an axle or axle box provided with right and left hand screw threads, whereby the hub sections, by turning the axle, will be brought closer together to tighten the spokes and take up looseness in the wheels, as set forth. 2nd. A wheel having two hub sections E, E₁ connected by spokes to the wheel rim or felly C, and sleeved on an axle box A having right and left hand screw threads, and nuts F, F₁ screwing on opposite ends of the hub sections inwardly, whereby the radius of the spokes will be shortened and looseness in the wheel taken up, as set forth. 3rd. A wheel having two hub sections E, E₁ connected by spokes to a rim or felly C, and means for drawing or forcing the hub sections inwardly to tighten the wheel, as set forth. 4th. A wheel in which the spokes are tightened by closing the hub sections inwardly, as set forth.

No. 24,690. Hay Rack. (*Râtelier à Foin.*)

Benjamin Tanner, Sturgis, Mich., U.S. 10th August, 1886, 5 years.

Claim.—The combination of the bed-timbers, the rack-sections, one of which is secured to one end of the bed-timbers, and the other adapted to slide back and forth thereon, for the purpose of lengthening or shortening the rack, and the blocks H, R, secured to the sections and extending under and supporting the bed-timbers, said blocks being adapted to rest upon the bolsters of a running gear, substantially as described.

No. 24,691. Manufacture of Glucose.

(*Fabrication de la Glucose.*)

Alfred Seyberlich and Alexander Trampedach, Riga, Russia, 10th August, 1886; 5 years.

Claim.—1st. In the manufacture of grape sugar, the saccharification of the starch by diluted nitric acid, and the regeneration of the remaining sirup containing nitric acid by adding sulphuric acid thereto. 2nd. In the manufacture of grape sugar, obtaining solutions of starch-sugar by means of nitric and sulphuric acids, or combinations of such, and treating said starch-sugar with caustic or carbonaceous alkalis or alkaline earths in quantity, in order to obtain an alkaline sugary solution in which the sugar-crystals are easily and completely separated by centrifugal action.

No. 24,692. Manufacture of Explosives.

(*Fabrication des Mélanges Explosibles.*)

David Johnson, South Hampstead, Eng., 10th August, 1886; 5 years.

Claim.—1st. The hardening and rendering dense of nitro cellulose, and preferably dinitro cellulose, by the admixture of a camphor solution or its specified equivalent, for the purpose of regulating the energy of action or combustibility of the explosive, substantially as set forth. 2nd. The herein-described improvement in the art of making from nitro cellulose, and preferably dinitro cellulose, an explosive having any required degree of hardness, density and combustibility, which consists in mixing the nitro cellulose with an oxidizing agent forming the composition into the required size grains or blocks, saturating the same with a camphor solution or its equivalent, as specified, and lastly removing the solvent and the camphor therefrom, substantially as set forth. 3rd. The herein described improvement or process for making from nitro cellulose and preferably dinitro cellulose, an explosive having any required degree of hardness, density and combustibility, which consists in mixing the nitro cellulose with an oxidizing agent and with a suitable carbonaceous material forming the composition into the required size, grains or blocks, saturating the same with a camphor solution, or its equivalent, as specified, and lastly removing the solvent and the camphor therefrom, substantially as set forth. 4th. Compressed blocks of nitro cellulose, which has been rendered hard by treatment with camphor or its specified equivalent, substantially as and for the purpose set forth. 5th. Compressed grains of nitro cellulose, which has been rendered hard by treatment with camphor or its equivalent, as specified substantially as set forth. 6th. Gunpowder for sporting and military fire-arms made from nitro cellulose, which has been rendered hard by treatment with camphor or its specified equivalent, substantially as set forth.

No. 24,693. Combination Wash Bench.

(*Banc de Buanderie à Combinaison.*)

Deunoord Beaudry, Montreal, Que., 10th August, 1886; 5 years.

Claim.—1st. The combination of the top A, standards B having the hinges a and trusses c, and the bar E, substantially as shown and described and for the purpose set forth. 2nd. The combination of the back board hinged to the extension board C, and the extension board C hinged to the bench top A, with the folding standards B and the bar E, as shown and for the purpose set forth. 3rd. The combination of the standards f, formed on the trussed folding standards B, and provided with the screws e, with the arms d pivoted to the extension board C, and provided with the socket holes, and with hooks on their ends to take over the screws e, substantially as and for the purpose set forth. 4th. The combination, of the drying rods p and the rack k attached to the back board D, with the arms d provided with the socket holes, pivoted to the extension board C and hooked to the standards f, substantially in the manner shown and for the purpose set forth. 5th. The combination of the shirk board F, having the rib h and the clamp i, with the back board D, extension board C, wash-bench top A, and trussed folding standards B, all substantially as shown and described and for the purpose set forth.

No. 24,694. Art of Measuring and Weighing Grain, etc., and Apparatus therefor. (*Mode de Mesurage et Pesage des Grains, etc., et Appareil pour cet objet.*)

Henry Pooley and Son, (assignees of Eugene O'Drion) Liverpool, Eng., 10th August, 1886; 5 years.

Claim.—1st. The method, substantially herein described, of weigh-

ing granular and pulverous substances, which method consists in opening and closing the doors or dampers by which the substance is alternately admitted, and closed to the weighing receptacles of machines of the type described, the make-weight being effected by an automatic device such as that herein described, as and for the purposes set forth. 2nd. In weighing machines of the type herein described, effecting the main filling of the weighing receptacles by doors or dampers (such as herein described), operating substantially as and for the purposes set forth. 3rd. The combination, in weighing machines, of the type herein described, of doors such as d, d, operated as herein described, and a make weight device such as the spouts e, e, operated as herein described, substantially, as and for the purposes set forth. 4th. In weighing machines of the type herein described, effecting the cutting off of the supply of the make-weight delivery by an automatically operated device, such as herein described, substantially as and for the purposes set forth. 5th. In weighing machines of the type herein described, an automatically operated mechanism for locking and releasing the tilting doors thereof, consisting substantially of a lever such as h, links and lever, such as i, i, and k, k, and an actuating device, such as the pin h₂, and tappet p or its equivalent, as and for the purposes set forth. 6th. In a weighing machine of the type herein described, the combination of a filling device consisting of doors or dampers operated as described, an automatically operated make-weight device, such as described, a device for locking and releasing the tilting doors, such as described, and a device for locking and releasing the weigh-beam, such as described, substantially as and for the purposes set forth. 7th. The means, substantially herein described, by which the capacity of weighing receptacles may be varied, consisting of an adjustable device, such as a, or its equivalent, substantially as set forth. 8th. In combination with weighing receptacles of machines of the type herein described, the displacing devices, such as a, as and for the purposes set forth. 9th. In weighing machines of the type herein described, effecting the locking of the weigh-beam through mechanism operated by the working of the filling doors or dampers, substantially as and for the purposes set forth. 10th. In a weigh-beam locking mechanism, the combination of doors, such as d, d, pins S₁, S₂, rods S₃, lever S₄, bar S₅ and weigh-beam A, substantially as set forth for the purposes specified. 11th. The automatic make-weight mechanism, constructed and arranged substantially as set forth, with reference to the drawings consisting of a cut-off f, operating as described. 12th. The shoot D, slide doors or dampers d, d, weighing receptacles 1 and 2, and make-weight mechanism, arranged and constructed substantially as set forth with reference to the drawings. 13th. The shutter N, in combination with the cut-off device e, e and f, as and for the purposes set forth. 14th. The slides a and operating mechanism a₁ and a₂, arranged and constructed substantially as set forth with reference to the drawings.

No. 24,695. Feed Mill. (*Moulin à Blé*)

Thomas C. Cadogan, Benjamin F. K. Jennings, John F. Hoy and John J. Goodfellow, Springfield, Ohio, U. S., 10th August, 1886, 5 years.

Claim.—1st. In a feed mill, the combination of a crusher, a fixed and an adjustable grinding ring, and a grinding-wheel rotating in a vertical plane between said grinding-rings, said grinding-wheel being free to move horizontally on its shaft, and to adjust itself to the grinding surfaces of the ring on either side of the same, as set forth. 2nd. In a grinding mill, the combination of the two grinding rings, one being fixed and the other provided with means for adjustment, and the wheel rotating in a vertical plane between said grinding-rings, with a grinding surface on either side of the same, and having a central opening therein to allow the material to be carried to said grinding surfaces, said grinding-wheel being free to move in either direction in the liner of its shaft, and thereby adjust itself to the grinding surface of both said grinding-rings, substantially as set forth. 3rd. In a grinding mill, the combination of the cylindrical case, with an extended screw central thereon, a horizontal shaft, provided with spines having a bearing in said sleeve, a fixed grinding-ring in one side of the case, a grinding-ring with means for adjustment attached thereto in the opposite side, and an open spoked grinding-wheel rotating between the fixed and the adjustable grinding rings, said grinding-wheel being free to move toward either grinding-ring on said shaft, and provided with scrapers projecting from either side of its rim into the spaces within the case outside said grinding-rings, substantially as and for the purpose hereinbefore set forth. 4th. In a grinding-mill, the combination of a cylindrical case, with a screw cast central thereon, a horizontal shaft having a bearing in the latter, an open self-adjustable grinding-wheel rotating with said shaft, a fixed grinding ring on the inner side of the same, a grinding-ring on the outer side, and means for effecting the adjustment of the latter in either direction in the line of said shaft, consisting of a sliding frame and a screw engaging the end of said sleeve, as set forth.

No. 24,696. Fire-Escape. (*Sauveteur d'Incendie.*)

The Dittreck Fire Escape Company, (assignee of John Dittreck,) Perth, Ont., 10th August, 1886; 5 years.

Claim.—1st. The combination, with the frame A, shaft C, spur-wheel E and pinion F, of the shaft D, pinion G, spur-wheel H, drums I, J, fan wheel K, fan case L and cables M, N, reversely wound on said drums, substantially as and for the purpose set forth. 2nd. The rotary spool S, subdivided by notched partition T, in combination with shaft C carrying pinion G, spur wheel H, drums I, J, fan wheel K and fan case L, substantially as and for the purpose set forth. 3rd. Pulleys O and P, with deep flanges, metal handle or chain W, substantially as and for the purpose set forth.

No. 24,697. Rein Guard for Whiffletrees.

(*Garde-Guide pour Palonniers.*)

Samuel R. B. Pingree, (assignee of Horace Libby,) Lewiston, Me., U. S., 10th August, 1886; 5 years.

Claim.—A whiffletree-guard attached to the top side of the cross-

bar and shaft, as herein set forth, so as to embrace the end of the whiffletree, and afford a guard over the outer end of the same, as and for the purpose set forth.

No. 24,698. Apparatus for Promoting the Combustion of Fuel. (*Appareil pour Aider la Combustion.*)

William Oliphant, Jersey City, N.J., and Henry Walsh, New York, N.Y., U.S., 10th August, 1886; 5 years.

Claim.—1st. In an apparatus for conducting atmospheric air to the furnace of a steam generator or other fuel chamber, the combination, with one or more pipes open to the atmosphere at one end, and forming a communication with one or more flue spaces located adjacent to the furnace, and separated therefrom by a perforated partition, of a branch pipe or pipes leading from the chimney, provided with dampers to regulate the admission of heated gases, and a steam jet located at the mouth of the air conducting pipes, substantially as described. 2nd. In an apparatus, substantially as described, the arrangement of air-conducting pipes C, b, substantially as shown in Figs. 4 and 5 of the drawing annexed.

No. 24,699. Semaphore. (*Sémaphore.*)

Frederick Stitzel, Charles Wainodel, John H. Eckelhoff, Otto Mueller, Adolph Reutlinger and Moses Schwarz, Louisville, Ky., U.S., 10th August, 1886; 5 years.

Claim.—1st. A visual signal, combined with a motor or power actuated by a vaporizable liquid inclosed therein, and driven by heat from one chamber to another, substantially as described. 2nd. A visual signal, combined with a motor or power actuated by a vaporizable liquid inclosed therein, and driven by heat from one chamber to another, combined with an electrical apparatus for controlling the movement of said motor or power, substantially as described. 3rd. A visual signal, and a motor or power actuated by a vaporizable liquid inclosed therein, and driven by heat from one chamber to another, combined with a slotted plate or disc on the shaft of said motor, a rod extending from said disc to the signal, and an electrical apparatus for controlling the operation of the parts, substantially as described.

No. 24,700. Manufacture of Sectional Horse Shoes. (*Fabrication des Fers à Cheval Brisés.*)

John E. Bingham, Walla Walla, T. W., U.S., 10th August, 1886; 5 years.

Claim.—Interchangeable conformable blank sections of which to constitute sectional horse shoes said sections severally being of varying dimensions and curvatures adaptable to hoofs of different sizes and shapes, and furnished to the public and to the trade in the varieties named as a new manufacture.

No. 24,701. Paint. (*Peinture.*)

Benjamin Harris and Philo W. Dunning, Kingston, Ont., 10th August, 1886; 5 years.

Claim.—A compound composed of coal tar, boiled linseed oil, red lead, amber, rosin, plaster of paris and iron dust, substantially in the proportions and for the purposes set forth.

No. 24,702. Automatic Fan. (*Eventail Automatique.*)

William G. Workman, Ottawa, Ont., 10th August, 1886; 5 years.

Claim.—1st. The combination of a stand A, escapement arbor B, cross arm C, cord D, rocking shaft E, holder G, notch G, and staple G. 2nd. The combination of a stand A, escapement B, arbor B, pendulum B¹, cross arm C and crickets C¹. 3rd. The combination of the arbor D, arm C, cord D, rocking shaft E, holder G, staple G, and fan F. 4th. The combination of a rocking shaft E, pulley C, holder G, and shaft H. 5th. The combination with the rocking shaft, of a holder G, set screw G¹, notch G, staple G¹, and fan F. 6th. A portable fan consisting of a suitable stand carrying an escapement having a rocking arbor, with a cross arm attached, a rocking shaft at the top of the stand, connected by cord or equivalent to said cross arm, and an adjustable holder for the attachment of a fan.

No. 24,703. Roofing. (*Toiture.*)

Benjamin B. Adams, Lincoln, T. N. M., U.S., 10th August, 1886; 5 years.

Claim.—A roof-covering consisting of rectangular plates, applied diagonally upon the roof by fitting the angle or corner of each between the diagonal sides of the two adjacent plates of the next course above, nailing said corner and then folding the body of the plate symmetrically over said corner, whereby the lower margins of said plates overlap the upper margins of said adjacent plates, each plate having a single perforation and a single nail, and the same entirely covered and protected as set forth.

No. 24,704. Machine for Labelling Tin and other Cylindrical Packages. (*Machine à Etiqueter les Boîtes Métalliques et autres Paquets Cylindriques.*)

Malcolm B. Chambers, Glenferrie Road, Victoria, 10th August, 1886; 5 years.

Claim.—1st. The comb C G, gum or paste box C¹ to C², spreading brush D, drop box D¹ and pad D², or paste box and roller H H¹, as and for the purposes herein described and explained, and as illustrated in my drawings. 2nd. The partially inclined race or shoot marked from A to A⁶ and E, its label flat F, the side springs F¹ and

the parts marked F² and F³, as and for the purposes herein described and explained, and as illustrated in my drawings. 3rd. The combination of the parts marked C to C², D to D², and G to H, or H to H¹, forming the appliances for placing the adhesive substance on the cans and their labels, with the parts marked from A to A⁶ and E forming the supports for said appliances, the labels and the race through which the cans roll, substantially as herein described and explained and as illustrated in my drawings.

No. 24,705. Device for Clamping Loose Bolts. (*Appareil pour Saisir les Boulons Relâchés.*)

Wilbert F. Brown, Richmond, Mich., U.S., 10th August, 1886; 5 years.

Claim.—In a device for holding loose bolts, the combination of the bent frame having its two ends turned inwardly in opposite directions, and the screw D which is passed through the centre of the frame, and made to bear against the head of the bolt while the frame is applied to the rim of the wheel, substantially as shown.

No. 24,706. Nut Lock. (*Arrête-Ecrou.*)

Andrew S. Goodrich, Clifton, and Oscar F. Shaw, Brooklyn, N. Y., U.S., 10th August, 1886; 5 years.

Claim.—1st. In combination with a nut and bolt, a pin or screw inserted into the nut obliquely through the face of said nut, adjoining and nearly parallel with the side of the bolt, substantially as and for the purpose described. 2nd. The combination of a bolt, a nut having its outer face provided with a perforation C made obliquely therein adjoining its bolt receiving central opening, and a soft metal plug inserted within the oblique perforation C with a pin or screw, substantially as and for the purpose described.

No. 24,707. Machine for Extracting Stumps. (*Machine à Arracher les Souches.*)

Alexander Logan, North Sidney, N.S., 11th August, 1886; 5 years.

Claim.—1st. In a stump extractor, the combination, with the frame A supporting the chain wheel H and its operating-gearing, substantially as described, of the hinged arms M, M, and the chain O connected to the outer ends of said arms, substantially as herein set forth. 2nd. In a stump-extractor comprising a frame A having rear supports B, a chain wheel journalled in the frame gearing for operating said chain-wheel, and devices for anchoring the frame to a tree or stump, substantially as specified, the combination, with said frame, of a wheel B journalled at or to its forward end, substantially as shown and described, whereby, should the anchorages give way, the machine will rebound on the wheel B, as set forth. 3rd. In a stump-extractor, the combination, with the frame A, the chain-wheel H provided with elongated peripheral recesses h, and the chain I passed over the wheel into the recesses of the arm R, v, substantially as and for the purposes herein set forth. 4th. In stump-extractors, the combination, with the frame A, the chain wheel H and its operating gearing, substantially as specified, of the barrel T for guiding the stump-pulling chain to the chain-wheel, substantially as herein set forth.

No. 24,708. Apparatus for Absorbing the Motive Force of the Tides, etc., for Propelling Vessels. (*Appareil pour Absorber la Force Motrice des Marées, etc., pour Propulser les Vaisseaux.*)

Benjamin S. Weston, London, Eng., 11th August, 1886; 5 years.

Claim.—1st. In an apparatus for absorbing the motive force of tides, the platform A having a channel on its underside into which is placed the undershot water wheel B on axle F and provided on both sides with air tight chambers L, and air-tight cases or compartments E into which water can be pumped, when necessary to keep the platform level, the chain wheel C driven by suitable gearing from axle F, the endless chain H, the chain-wheel pinion I on shaft F, and the rollers J and J¹ acting as guides to the cable-carrier, substantially as and for the purpose set forth. 2nd. In an apparatus for absorbing the motive force of tides, the anchor rail N fixed securely across the bed of the river, and upon it works a saddle M having on its underside pinions gearing into racks on the edge of said anchor rail, and said pinions having chain wheels L, L, placed on the underside of the saddle M, and the endless chain K passing around these wheels L, L, and over the chain wheel J upon the shafts H, substantially as and for the purpose set forth.

No. 24,709. Thread Cutter. (*Coupe Fil.*)

Benjamin F. Walker, Allentown, N. Y., U.S., 11th August, 1886; 5 years.

Claim.—1st. A thimble having the cutting-blade B, arranged parallel to a plane transverse thereto, and provided with a curved guard on its outer side, substantially as shown and described. 2nd. The combination, with the thimble A having the set a cut transverse ly thereto near its closed end of the cutting-blade B, inserted in the slot parallel therewith and projecting obliquely therefrom, and having blunt outer end c and the inner bevelled and sharpened edge d, substantially as shown and described.

No. 24,710. Railroad Tie Truss.

(*Armure de Traversée de Chemin de Fer.*)

Stephen G. Scott, Plainwell, Mich., U.S., 11th August, 1886; 5 years.

Claim.—1st. In a railroad the combination of the joint supporting up and the contiguous ties with the metal truss bar passed beneath said joint supporting-tie, from thence extending both ways obliquely upward, and the ends being anchored directly to the other ties, sub-

stantially as set forth. 2nd. In a railroad, the combination, with the rails and the ties at the joints of said rails, of separating blocks between the rails, and a truss-bar supporting the joint supporting-tie, and thence extending obliquely upward and anchored on the contiguous ties at such end, substantially as set forth. 3rd. In a railroad, the truss-bar comprising the portion for supporting the joint supporting-tie, the portions for resting on the contiguous ties, and the angled ends for locking over the side of the latter named ties, and the oblique portions between the ties, substantially as set forth. 4th. In a railroad, the combination of the ties at the joints of the rails, the separating blocks and connected strip resting on the ties, and the truss-bar supporting the joint supporting-tie, and resting upon and locking over the side of the contiguous ties, substantially as set forth.

No. 24,711. Compensating Pendulum.

(*Pendule Compensateur.*)

John Gerhardt, Montreal, Que., 11th August, 1886; 5 years.

Claim.—1st. The combination, with the pendulum B, of the compensating rod A supported upon the projection C, and connected to the pendulum by the connected levers D, E, the pendulum spring being held between the points b, substantially as described. 2nd. The pendulum B and points b, c, in combination with the supported compensating rod A, and suitable pivoted connecting device connecting the compensating rod with the pendulum, substantially as described. 3rd. The compensating rod A made longitudinally adjustable, in combination with the pendulum and the pivoted connection, and connecting levers D, E, substantially as and for the purposes described. 4th. The combination, with the compensating lever A, and adjusting lever d, of the index f, and pointer p, substantially as described.

No. 24,712. Cover for Cracker Boxes.

(*Couvercle pour Boîtes à Biscuits.*)

Carl G. Sandberg, Helena, Ark., U.S., 10th August, 1886; 5 years.

Claim.—1st. A cracker box cover, formed of a frame A containing a glass panel A', the door C hinged to the central cross-bar of the frame A, the angled plate c and the adjustable angled plates f, substantially as herein described. 2nd. The combination, with the frame A and door C, of the flat spring d bent around the edge of the door, and the staple c inserted in the frame A, substantially as herein shown and described. 3rd. As an improved article of manufacture, a cracker box cover provided with a glass panel A', and having a glazed door C hinged in the frame, the combined buffer and fastener consisting of the spring d and staple c, convex angled plate e, adjustable angled plates f and the hooks s, substantially as specified.

No. 24,713. Seal Lock. (*Serrure Scellée.*)

John M. Smith, Kansas City, Mo., U.S., 11th August, 1886; 5 years.

Claim.—1st. In a seal lock, consisting of a face plate, provided with a horizontal passage, and with a vertical chamber or passage intersecting the horizontal passage, a movable staple or bolt operating in the horizontal passage, and having a transverse channel in its body, a ball located in the vertical chamber and engaging said bolt, and means at the inner end of such bolt to prevent its withdrawal from the passage should said ball become inoperative, substantially as set forth. 2nd. In a seal lock, the combination of a casting provided with a horizontal passage, a chamber located above and intersecting therewith, a movable bolt adapted to operate in said horizontal passage, said bolt having a depression in its body, and a loose ball located in the upper chamber and adapted to roll into said depression, which is of a depth less than the diameter of the ball, whereby the ball comes in contact with the shoulder at the lower part of the wall of said upper chamber to prevent the withdrawal of the bolt, substantially as described. 3rd. In a seal lock, the combination of a hasp having an opening for the reception of the staple bolt, a staple bolt, a bolt engaging therewith, a yielding substance located in the casing of the lock for holding said ball in engagement with the bolt, and a seal having a perforation that is engaged by the short leg of the staple bolt, substantially as described. 4th. As an article of manufacture, a sheet-metal seal having a central perforation for the reception of the main bolt, and having a perforated sealing strip P formed integral with the upper portion of its main body, substantially as described. 5th. In a seal lock, the combination of a staple bolt, a ball engaging therewith, a metal face plate having a lug formed upon it, a seal having a sealing strip formed integral with its body and passing through said lug and perforated for the reception of a soft metal rivet, and a hasp, arranged substantially as described. 6th. In the above described seal lock, the horizontal passage C, in which is formed a slot having the straight side c and the curved side f, substantially as shown and for the purpose set forth.

No. 24,714. Horse Shoe. (*Fer à cheval.*)

John E. Bingham, Walla Walla, W. T., U.S., 11th August, 1886; 5 years.

Claim.—1st. In a horse shoe, the combination of the toe-piece formed at each end with an enlarged or elongated nail hole or slot, slightly oblique or inclined to the contour of the shoe, and two side pieces having each a nail hole near its forward end, which registers with the holes of the toe-piece, whereby a self-adjustment or conformity to longitudinal and lateral growth or expansion of the hoof is obtained, substantially as described. 2nd. In a horse shoe, the combination, with the toe-piece having nail holes, and formed at each end with a mortise f, slot g and tongue d, of the side pieces cut out as at e, and having tongue d, the said side-pieces, each having holes, one of which registers with the slot in the toe-piece, substantially as described. 3rd. As an article of manufacture, a horse shoe constructed of three pieces, each having on its upper or hoof surface a series of raised projections, having one side perpendicular to and facing the peripheral border of the shoe, substantially as described. 4th. A horse shoe constructed of a toe-piece and two side pieces movably connected together, as shown and described, each of said pieces

being provided on their hoof surface with a number of raised projections, having one vertical side which faces the outer border of the shoe, substantially as described.

No. 24,715. Method of Preparing Starch from Grain. (*Méthode de Préparation de l'Amidon de Grain.*)

William T. Jobb, Buffalo, (assignee of John C. Schuman, Akron), N. Y., U.S., 11th August, 1886; 5 years.

Claim.—1st. The herein described method of extracting a starchy material from grain, which consists in steeping the grain, then reducing the grain, and then separating the hulls from the reduced inner portions of the kernels by sifting, substantially as set forth. 2nd. The herein described method of extracting a starchy material from grain, which consists in steeping the grain, then partially drying the grain, then reducing the grain, and then separating the hulls from the reduced inner portions of the kernels by sifting, substantially as set forth. 3rd. The herein described method of extracting a starchy material from grain, which consists in steeping the grain, then reducing the grain by whipping or beating, and then separating the hulls from the reduced inner portions of the kernels by sifting, substantially as set forth. 4th. The herein described method of extracting a starchy material from grain, which consists in steeping the grain, then partially drying the grain, then reducing the grain by whipping or beating, and then separating the hulls from the reduced inner portions of the kernels by sifting, substantially as set forth.

No. 24,716. Rubber Watch Protector.

(*Bourrelet de Queue de Montre.*)

George B. Gardner and Willey Barker, Lynn, Mass., U.S., 11th August, 1886; 5 years.

Claim.—As an improved article of manufacture, a safety attachment for watches, consisting of a round, soft rubber ring A, formed with projecting points B around its outer surface, substantially as set forth.

No. 24,717. Door Lock. (*Serrure de Porte.*)

Charles E. Whittlesey and James T. Whittlesey, New Haven, Ct., U.S., 11th August, 1886; 5 years.

Claim.—1st. In a door lock, the combination, with a cylinder A journaled in bearings in the case, and having two opposite radial arms l, h, of parallel l its engaging therewith, said cylinder adapted to move lengthwise in its bearings, thereby disengaging one of the arms from the bolt it operates, in the manner substantially as described. 2nd. In combination, with the case of a door lock a, journaled cylinder b, having two opposite radial arms l, h, two parallel bolts c, e having notches for engaging the arms of the cylinder, a spring r adapted to maintain the arm l in engagement with its corresponding bolt, and the spindle m, all arranged and operated in the manner and for the purpose described.

No. 24,718. Steam Governor.

(*Gouverneur de Vapeur.*)

John Gerhardt, Montreal, Que., 12th August, 1886; 5 years.

Claim.—1st. In a steam governor, the combination, with the valve rod, of rotating and pivoted vanes controlled by a spring, and connected to the valve rod by means whereby the opening and closing of the vanes will move the valve rod longitudinally, substantially as described. 2nd. The valve rod E, resting upon the cross-piece I, in combination with the shafts K, vanes L and cams M for lifting the cross-piece I and valve rod, substantially as described. 3rd. The shafts K, to which the vanes are secured, in combination with the main spring P, the eccentrics A and the connecting chains R, substantially as and for the purposes described. 4th. The barrel Q, containing the main spring P, in combination with the vanes and van shafts and connections R, the barrel being provided with means for turning the same for increasing or diminishing the tension of the spring, substantially as described. 5th. The standard A, containing the revolving sleeve C and the revolving valve rod E, and provided with the plates D, D', in combination with the vanes L and their shafts K, the cams M, cross-bar I that rests upon the cams and supports the valve rods E, the main-spring P, barrel Q and the chains R connecting the barrel with the shafts K, substantially as described.

No. 24,719. Sweat Leather, or Bands for Hats and Caps. (*Cuir de Chapeau.*)

Jacques Schorestone, New York, N. Y., U.S., 12th August, 1886; 5 years.

Claim.—A sweat leather for hats or caps, provided with a pocket for holding tickets, checks, etc., formed by a longitudinal slit in the leather, at or near the upper margin of same, and a suitable backing, substantially as hereinbefore set forth.

No. 24,720. Harrow. (*Herse.*)

Effinger E. Whipple, Eaton Rapids, Mich., U.S., 12th August, 1886; 5 years.

Claim.—1st. The combination, with a tooth beam or frame, of two or more double edged, curved and twisted teeth secured to the beam, one behind the other, with their points rearwardly directed, and having their end portions arranged obliquely beneath the beam at opposite angles thereto, and having their working faces rearwardly, laterally and downwardly inclined, substantially as and for the purpose set forth. 2nd. The combination, with a tooth beam of a reversible, curved and twisted tooth, and means, substantially as described, for securing said tooth to the beam, with its working point directed either forward for deep digging, or to the rear for surface cultivation, substantially as set forth. 3rd. The combination, with a tooth-beam, and a reversible, curved and twisted tooth adapted for attach-

ment to the beam, with its point directed either forward or to the rear, said tooth having a shank constructed for attachment to the beam, so as to sustain the tooth with its point forwardly directed for digging of an annular casting for connecting the said shank with the beam when the tooth is reversed for surface cultivation, substantially as set forth. 4th. The combination, with a tooth beam and a reversible, curved and twisted tooth, adapted for attachment to the beam, with its point directed either forward or to the rear, said tooth having its shank adapted for attachment to the beam, so as to sustain the tooth with its point directed forwardly for deep digging, of means, substantially as described, for adjustably connecting the said shank with the beam when the tooth is reversed for surface cultivation, whereby the angle of the working edge of the tooth with reference to the ground may be varied, substantially as set forth. 5th. The combination, with a tooth beam and a reversible, curved or twisted tooth, and an adjustable wedge-shaped casting having cruciform recesses, and a bolt securing the tooth and casting to the beam, whereby the desired pitch may be given to the tooth lengthwise or laterally of the beam by partly rotating the casting, as set forth.

No. 24,721. Fifth Wheel for Vehicles.

(Rond d'Avant-tram de Voiture.)

William W. Grier, Verona Borough, Penn., U. S., 12th August, 1886, 5 years.

Claim.—1st. The combination, with the front axle and head block of a spring hanger situate back of the axle and above the level of the bottom thereof, substantially as and for the purposes described. 2nd. The combination of a fifth wheel, a king-bolt situate back of the axle, and a spring hanger mounted on the king-bolt, substantially as and for the purposes described. 3rd. The combination of a head block, a spring hanger situate above and back of the axle, and springs extended from substantially a common point in the hanger and diverging to the rear axle, as and for the purposes described. 4th. The combination of a head block, a king bolt situate back of the axle, and a spring hanger having a socket which is mounted on the king-bolt, substantially as and for the purposes described. 5th. The combination of the circle plates of a fifth wheel, a king bolt situate back of the axle, a spring hanger on the king bolt, and a brace extending from the king bolt to one of the circle plates, substantially as described.

No. 24,722. End Gate Fastening for Waggon Boxes.

(Fermeture de Hayon de Waggon.)

Duncan W. McKinnon, North Sidney, N. S., 12th August, 1886; 5 years.

Claim.—The combination, with the gate, of the rod or shaft on the same, and having lateral hooks engaging with the braces on the sides of the waggon body, said shaft having a lug acted upon by a spring of the gate, and the handle connected to said shaft, and having its lower end turned with a hook bearing against said gate, substantially as and for the purpose set forth.

No. 24,723. Air Pressure Pump and Air Vessel.

(Pompe et Reservoir à Air.)

James Yule, Hamilton, Ont., 12th August, 1886; 5 years.

Claim.—1st. The combination of the air pump *a*, with *B*, bearing *B*, crank wheel *C*, piston rod *D* with piston, and the valves *e* and *e* and tap *e*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the pump *a*, the valves *e* and *e*, the tap *e*, the tube *F* and air vessel *G*, provided with the preparation *H* having holes for tubes *I*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the pump *a*, tube *F*, air vessel *G*, with pipe *o* and indicator *P*, the tube *I*, plug *J*, pipe *L*, lever *n* and barrel *k* or its equivalent, substantially as and for the purpose hereinbefore set forth.

No. 24,724. Felt Boot Felter and Expander.

(Machine à Feutrer et Etirer les Bottes de Feutre.)

Casper S. Grosch and Robert W. Rolston, Chesley, Ont., 12th August, 1886, 5 years.

Claim.—1st. A hollow foot *A* formed with perforations *B*, *B*, in combination with a tubular arm *C*, substantially as shown and described and for the purpose specified. 2nd. The hollow foot *A*, formed with the perforations *B*, *B*, and tubular arm *C*, in combination with the felted leaf *E*, operated by any suitable operating device, substantially as shown and described and for the purpose set forth. 3rd. The placing of the hollow foot *A*, in which perforations *B*, *B*, are formed in the felt boot tube and conducting steam thereto by a tubular arm *C* or its equivalent, substantially as shown and described and for the purpose specified. 4th. An expanding arm *L* operated by any suitable operating device, and held and guided by guides *o*, *o*, or their equivalent, substantially as shown and described and for the purpose specified. 5th. The springs *N*, *N*, substantially as shown and described and for the purpose specified. 6th. The expanding arm *L*, operated by any suitable operating device and held and guided by guides *o*, *o*, or their equivalent, in combination with the springs *N*, *N*, substantially as shown and described and for the purpose specified.

No. 24,725. Hold-Back Attachment for Harness.

(Ragot de Limonière.)

William Chegwin and William A. Eldredge, Fond du Lac, Wis., U. S., 12th August, 1886; 5 years.

Claim.—1st. A hold-back consisting of a plate adapted for attachment to the under side of a shaft, and provided at one edge with a downwardly-extending standard *b*, a finger extending below the plate from said standard, and a guard projecting down past the side of the finger at the opposite edge, constructed to leave an unobstructed passage beneath the finger, substantially as described. 2nd.

The combination, with a shaft, of a hold-back consisting of a plate, a downwardly-projecting standard, and lateral finger below the plate, and a guard extending downward past the finger to leave a passage below the finger, as set forth. 3rd. A hold-back attachment consisting of a plate having a standard at one edge, and two guards at the other, and a finger projecting from the standard parallel to the under side of the plate and extending between the guards, with a passage below the finger, substantially as set forth. 4th. The plate, the pin supported adjacent thereto, and the fingers extending opposite and below the pin, whereby the loop must be compressed to carry it inward into the pin, for the purpose set forth. 5th. The combination of the looped end of the strap with the pin or hook, to connect the hold-back strap with the thill, substantially as described.

No. 24,726. Gland or Packing Follower for Packing Boxes of Steam and other Engines.

(Chapeau de Boîte à Etoupe pour Machines à Vapeur et autres.)

Robert M. Fryer and Timothy O'Meara, Brooklyn, N. Y., U. S., 12th August, 1886; 5 years.

Claim.—1st. In a stuffing box for holding packing, a gland provided inside of the barrel which enters the stuffing box with a packing chamber, and at the end between this and the packing of the main stuffing box, an annular recess or chamber provided with a passage leading to a condenser or to the open air, as and for the purposes described. 2nd. In a stuffing box for holding packing, a gland provided between the piston rod and the walls of said stuffing box, with an annular chamber provided with a passage in said gland, between the packing chamber in the same and the walls of the main stuffing box, the said passage connecting at the flange of gland with an angular passage leading to a condenser or to the open air, for the purpose above set forth. 3rd. In a stuffing box for steam engines, a gland provided inside next to the piston rod, with a packing chamber adapted to receive a gland within the radius of main gland, and also a passage to the flange of said main gland, as shown, all being combined with an annular recess within the said main gland between its face and the main packing of the stuffing box, substantially as and for the purpose set forth.

No. 24,727. Shifting Seat for Sleighs.

(Siège Mobile de Traineau.)

John G. Doyle and William H. Doyle (assignees of William H. Steinbrecker), Detroit, Mich., U. S., 13th August, 1886; 5 years.

Claim.—1st. The sleigh seat *C*, having the folding L-shaped end portions hinged to said seat by means of the L-shaped iron *a*. 2nd. In a sleigh seat, the seat *C* having hinged L-shaped end portions, said seat being secured to the frame *F* by hinges *d*, said hinges having L-shaped extensions *d*, with lugs *d* and pintals *e*, connecting bars *P*, reciprocating braces *D*, said braces pivoted to the frame *F*, the whole when arranged and combined as specified. 3rd. The combination of the seat *B*, having jump irons *h* pivoted thereto, the hollow braces *r* pivoted to the lugs *n*, said braces containing pins *o*, coil springs *r*, internal bolts and square openings *l*, said openings and internal bolts engaging with the sockets containing holes *e* of the braces *b*, as and for the purposes set forth. 4th. The combination of the seat *B* having the rail *B* attached thereto, the braces *E* pivoted to the lugs *n*, with jointed braces *e* pivoted at *y* and to the lugs *r*, the lower portion of the braces *e*, adapted to fold within the longitudinal openings of the braces *E*, as and for the purposes specified. 5th. In a sleigh, the seat *B* having the jump irons *h* attached thereto, the seat adapted to move backward over the sleigh box, and supported by folding brace irons attached thereto and to the runner braces, for the purposes set forth.

No. 24,728. Stove Pipe Coupling.

(Joint de Tuyau de Poêle.)

Angus Campbell, Powassan, and Gilbert McEachern, Nipissing, Ont., 13th August, 1886; 5 years.

Claim.—A stove pipe coupling consisting of the band *C*, having swages *D* and provided with an eye or opening *E*, and a catch *G* near opposite ends, whereby the band can be drawn around the stove pipe by a lever, as set forth, and the ends locked together, as described.

No. 24,729. Gate Hinge.

(Penture de Barrière.)

Adam M. Garman, Sinking Creek, and Abraham Crumpacker, Blacksburg, Va., U. S., 13th August, 1886; 5 years.

Claim.—The gate post having the sockets *d*, in combination with the gate provided with the upper and lower slotted straps *B*, the bar *C* longer than the gate provided at its ends with pivots *c*, *c*, working in the sockets *d*, and having notches *F* on its forward edge below the centre, and notches *F* on its rear edge above the centre, and holes *E* along its length, and pins *e* passed through the holes, the straps *B* encompassing the bar *C* above the pins *e* so as to rest on and be supported thereby, the rear walls of the slot in the upper strap engaging the upper rear notches *F*, and the front wall of the slot in the lower strap engaging the lower forward notches *F*, as set forth.

No. 24,730. Lubricator for Car Axles, etc.

(Boîte à Graisse pour Essieux de Chars, etc.)

Frederick G. Brownell and Theodoro S. Peck, Burlington, Vt., U. S., 13th August, 1886; 5 years.

Claim.—1st. The combination of the right and left screw-threaded or grooved lubricating roller, the chain or conveyor and the axle or journal, as and for the purposes set forth. 2nd. The combination of the axle, the housing box, the lubricator frame applied to the side of the same, the lubricating roller and its pivoted supporting arms or bracket, the chain or conveyor and the springs, arranged and operating as set forth. 3rd. The pivoted or folding lubricator frame *D*, *D*, in combination with the lubricating roller, its pivoted supporting

bracket or arms and the springs, substantially as and for the purposes hereinbefore set forth. 4th. The lubricating roller formed and adapted to receive the supply of lubricant at a point intermediate between its two ends, and right and left screw-threaded or grooved respectively from that point towards its ends, as and for the purposes set forth.

No. 24,731. Combination in a Two-Wheeled Cart. (*Combinaison dans un Voiture à Deux Roues.*)

Nicholas W. Sherman and James R. Dickey, Coldwater Branch, Mich., U.S., 13th August, 1886; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination, with a shaft bar having an opening, as described, of a spring mounted in said opening, substantially as and for the purpose set forth. 2nd. In a two-wheeled vehicle, the combination, with slotted cross-bar, spring mounted on loose links or shackles therein, and spring bar, of the seat and seat bars, the latter being secured to the shafts by loose links, and to the spring bar by knuckle joints, as set forth. 3rd. The combination, with the spring, spring bar and seat bar mounted thereon, of the foot-rest and straps curved under and secured to the front side of the spring bar, as shown and for the purpose set forth. 4th. In a sulky, the combination, with the slotted shaft bar and spring mounted loosely therein, of the spring bar surmounting said spring, the seat bars, knuckle-jointed to the spring bar and loosely connected to the shafts, and the foot-rest strap connected at one end to the seat, and at the other to the front of the spring bar.

No. 24,732. Sheathing and Lath Machine. (*Machine à Bouserie et à Lath.*)

Henry Coburn, John H. Murry and Addison A. Adair, Indianapolis, (assignees of Edwin M. Byrkit, Michigan City,) Ind., U.S., 13th August, 1886; 5 years.

Claim.—1st. The mandrel *m* enclosed in the box *b*, and sleeve *s* clamped upon such boxing and secured by suitable means, the driving-pulley *p* mounted on one end of such mandrel, the tool *w* mounted upon the other end of such mandrel, and the nuts *n* working upon the threaded end of such mandrel, all combined substantially as described. 2nd. A mandrel enclosed in a suitable boxing and adapted to revolve therein, the boxing clamped by a suitable sleeve formed in halves, the two parts secured together by suitable screws or bolts, the loosening of which will allow the mandrel and its boxing to be adjusted along the line of such sleeve, substantially as described. 3rd. A mandrel having a driving-pulley mounted upon one end, and a revolving tool upon the other, enclosed in a suitable boxing in which the mandrel revolves, the boxing confined in a sleeve provided with means of clamping the sleeve upon the mandrel, without interfering with the revolution of the mandrel in its boxing, all combined substantially as described. 4th. The frame *f* carrying the horizontal shaft *s*, *h*, the cross-piece *f*, threaded to receive the screw-rod *s*, *c*, on either end, the geared wheels *g*, *g*, mounted so as to engage with each other, and operate the screw-rod *s*, *c*, when the shaft *s*, *h*, is revolved, whereby the cross-piece *f*, and the mechanism connected therewith, may be raised or lowered in a vertical plane, the mandrels *m* inclined toward each other, and adjustably connected to such central cross-piece by means of a screw *5* operating in a slot *6*, all combined substantially as described. 5th. The mandrels *m* having the boxing *b*, the sleeve *l* enclosing such boxing, the driving-pulley *p* mounted upon the upper end thereof, the saws *s* mounted on the lower end thereof, and adjustably connected with the cross-piece *f*, in combination with a similar mandrel mounted upon the opposite end of the same cross-piece, and also adjustable, the frame *f*, and mechanism for lowering and raising the cross-piece *f* in a vertical plane, all combined substantially as described. 6th. The framework *f*, provided with bearings, for the shaft *s*, *h*, upon which is mounted the gear wheels *g* meshing with the gear wheels *g*, secured to the upper end of the vertical screw-rod *s*, *c*, the cross-piece *f* carrying the mandrels *m* inclined toward each other, the mandrel and cross-piece having a movement in a vertical plane and operated by the screw-rod *s*, *c*, the mandrel connected with such cross-piece so as to be adjustable thereon, in the line of its length, the screw-rod *r* working in the neck of such mandrels to regulate such adjustment, all combined substantially as described. 7th. In a lath and sheathing machine, a pair of mandrels adjustably secured to a portion of the frame, which is capable of a vertical adjustment, these mandrels oppositely inclined to each other, and carrying saws of different diameters, for cutting the opposite sides of dovetailed grooves in sheathing lath, a table upon which the material rests while being operated upon, a shaft supported below such table carrying a series of under cutting saws, for cutting the kerfs in the under side of the sheathing lath, this under cutting mechanism adjustable horizontally as to length, and vertically as to depth of cut, all combined substantially as described. 8th. In a sheathing and lath machine, a framework having a table upon which the material rests, a series of saws of different diameters removably mounted on mandrels oppositely inclined to each other, and adjustably connected to a portion of the frame, so as to be raised or lowered by means of suitable screw and gear mechanism, a shaft beneath the table having a bearing at one end, in a support movable vertically in the side of the frame, with means for securing the same at any desired point, and supported near the centre by means of a hanger, also allowing a vertical adjustment of such shaft, a series of saws mounted upon such shaft at right angles to its length, and passing up through openings in the table to cut the kerf in the under side of the sheathing material, with suitable screw mechanism for lowering such under cutting saws, all combined substantially as described. 9th. In a sheathing and lath machine, a framework having a table for supporting the material near its centre, a series of saws for cutting dovetailed grooves in one side of the sheathing arranged upon mandrels oppositely inclined to each other, and a series of saws mounted upon a horizontal shaft beneath the table for cutting the kerfs upon the other side of the material, both sets of saws adjustable vertically and horizontally, and operating upon both sides of the material at the same time, in combination with suitable driving mechanism, substantially as described.

No. 24,733. Dental Cotton Holder.

(*Porte Coton de Dentiste.*)

Arthur C. Runyan, Bangor, Me., U.S., 14th August, 1886; 5 years.

Claim.—In a cotton-holder for dentists' use, the combination of a tube having perforated fastening plates, and having screw-threaded ends, caps fitting upon the screw-threaded ends, and having milled sides and central perforations, and a coiled spring within the tube having followers at both ends, the cotton being confined between the followers of the spring, and the perforated screw caps, as and for the purpose shown and set forth.

No. 24,734. Hub Runner.

(*Patin de Voiture à Moyeu.*)

Harold Holland, Lynn, Mass., U.S., 14th August, 1886; 5 years.

Claim.—1st. In a device for mounting a carriage or wheeled vehicle on runners, the combination of the axle *A*, clip *M* and clamp *N*, said clamp having the flange *Q*, provided with the slot *t*, for receiving a stud or projection on the runner, substantially as described. 2nd. The runner *B*, provided with the hub *K*, shoe *C* and stud *P*, combined and arranged to operate substantially as set forth. 3rd. The axle *A*, provided with the clip *M* and clamp *N*, said clamp having the slotted flange *Q*, in combination with the runner *B*, provided with the hub *K*, stud *P* and key *A*, substantially as described. 4th. In a device for mounting a carriage or wheeled vehicle on runners, the hub *K* mounted in the runner *B*, outside of a vertical line drawn through the shoe *C*, in combination with the axle *A*, and means for securing the runner to the axle, substantially as set forth.

No. 24,735. Hub Runner.

(*Patin de Voiture à Moyeu.*)

Harold Holland, Lynn, Mass., 14th August, 1886; 5 years.

Claim.—1st. In a device for mounting a wheeled vehicle or carriage on runners, the axle *A*, provided with the clip *M* and bolt *L*, said bolt being adapted to be projected and secured in position to engage with said axle, and also to be withdrawn and secured in such position, as to prevent it from engaging said hub, substantially as described. 2nd. In a device for mounting a carriage or wheeled vehicle on runners, the clamp *N*, provided with the stud *d*, flange *Q* and bolt *L*, in combination with the axle *A*, clip *M* and nuts *v*, *v*, substantially as set forth. 3rd. In a device for mounting a carriage or wheeled vehicle on runners, the hub *K* provided with the socket *S*, for receiving a bolt mounted on the axle of the carriage, to prevent said hub from entirely revolving on said axle, when the carriage is mounted on runners, substantially as described. 4th. In a device for mounting a carriage or wheeled vehicle on runners, the hub *K*, provided with the socket *S*, in combination with the axle *A*, provided with the clip *M*, clamp *N* and bolt *L*, combined and arranged to operate substantially as set forth. 5th. In a device for mounting a carriage or wheeled vehicle on runners, the axle *A*, provided with the nut *l*, clip *M* and nuts *v*, *v*, the clamp *N*, provided with the flange *Q*, stud *d* and key *k*, the bolt *L* provided with the holes *10*, *12*, and the hub *K* provided with the socket *S*, constructed, combined and arranged to operate, substantially as described.

No. 24,736. Incubator. (*Incubateur.*)

Jacob R. Meschter, Philadelphia, Pa., U.S., 14th August, 1886; 5 years.

Claim.—1st. In an incubator, a regulator to control the temperature, consisting of hot water receptacle *E3*, supported in, and surrounded by the water in the hot water circulator, a U-shaped vessel having legs *G*, *g*, mercury *G3*, a rarified atmosphere in leg *G*, above the mercury and exposed to the atmosphere, a burner to keep the water warm, a valve to control the flame of said burner, and devices controlled by the height of the column of mercury, to automatically actuate said burner valve, substantially as and for the purpose specified. 2nd. In an incubator, the combination of a hot water circulating boiler, a burner to heat said boiler, a valve to control the size of the flame from said burner, and a regulator, automatically operated by the varying changes in joint temperatures of the atmosphere exterior to the incubator, and water in said boiler, to control said valve, said regulator consisting of a balanced lever, column of mercury, a rarified atmosphere supporting said mercury, and a receptacle to contain said mercury and rarified atmosphere, supported in water of the temperature of that in the circulating boiler, substantially as and for the purpose specified. 3rd. In an incubator, the boiler *A* having chambers *B*, *B*, and *H*, and consisting of hollow floors and walls *b*, passages *b1*, *b2*, pipes *c*, apertures *c*, and means to create a circulation of the hot water, substantially as and for the purpose specified. 4th. In an incubator, the boiler *A* having chambers *B* and *H*, and consisting of hollow floors and walls *b*, passages *b1*, *b2*, pipes *c*, apertures *c*, pipes *E*, *E*, having nozzle *e*, and means to create a circulation of the hot water, substantially as and for the purpose specified. 5th. In an incubator, the combination of chambers *B*, *B*, and doors *I* to close the latter of said chambers, and make it comparatively air-tight, substantially as and for the purpose specified. 6th. In an incubator, the combination of the circulation boiler *A*, having chambers *B*, *B*, doors *I* to close the latter of said chambers, and make it comparatively air-tight, and case *H*, having doors *H1*, substantially as and for the purpose specified. 7th. An incubator provided with a brooding yard and chamber, substantially as and for the purpose specified. 8th. A frame to support the eggs in an incubator, consisting of a frame *M*, having cross-bars *m*, a soft flexible bottom *m*, substantially as and for the purpose specified. 9th. In an incubator, a removable absorbent pad of asbestos adapted to hold the required amount of water, to keep the hatching chambers in a moist atmosphere, substantially as and for the purpose specified. 10th. The combination of tray *U*, porous pad *U1*, frame *P*, and egg frames *M* having soft bottoms *m*, substantially as and for the purpose specified.

No. 24,737. Cutting Die for the Manufacture of Envelopes for Telegraphic and other Messages. (*Élampe pour la Fabrication des Envelopes pour D^{es} pêches Télégraphiques et autres.*)

Alfred E. Ames, Toronto, Ont., 14th August, 1886; 5 years.

Claim.—A rectangular message envelope cutting die constructed with two arms, one on each end of the rectangle, and its cutting edge a little inward from the inner face of the blade, substantially as shown and described and for the purposes set forth.

No. 24,738. Folding Canvas Boat.

(*Canot de Toile Pliant.*)

Jehu R. Mosher, Moir's Mills, N.S., 14th August, 1886; 5 years.

Claim.—1st. A folding canvas boat, having a sectional keel hinged to fold short, sectional cross frames pivoted to the keel and hinged to fold inwardly, sectional stern and stem post, secured to the keel and hinged to fold inwardly, sectional longitudinal strips connected to the ribs by buttons and hinged to fold short, sectional gunwales coupled and secured in position by straps and buckles, thwarts to keep the frames extended, and a water-proofed canvas covering drawn over the gunwales and secured by straps and buckles. 2nd. The combination of a sectional keel A, A', A'', hinged to fold so that the folded ends lie side by side, the joints provided with sweated stretchers a, sectional hinged cross frames B, B', B'', pivoted to said keel and sectional hinged stem and stern posts secured to the ends thereof. 3rd. The combination of sectional gunwales G, suitably coupled and secured to the cross frames by straps and buckles. 4th. The combination of the frame sections B, B', B'', scarf jointed and hinged to fold, the central section B pivotedly bolted to the keel.

No. 24,739. Nail Driving Machine.

(*Machine à Chasser les Clous.*)

Thaddeus Fowler, Shelton, Conn., U. S., 14th August, 1886; 5 years.

Claim.—1st. The combination, in a device of the character described, of the case within which the coil of nails is confined, a wedge-pointed driver secured therein, the spring-actuated vertically-sliding nose-piece arranged around the driver, and the feed spring secured to the nose-piece, and whereby the nails are successively brought within the field of the driver, substantially as set forth. 2nd. In a nail driving machine, the combination, with the driver of the spring controlled and vertically sliding nose-piece arranged around the same, and the feed spring secured to the said nose-piece, and adapted to reciprocate therewith, substantially as specified. 3rd. In a nail driving machine, as described, the combination, with the case for containing the nails, of the slotted guide tube secured therein, the hollow slotted and internally tapered nose-piece within the guide tube, the spring, whereby the nose-piece is actuated in its downward movement, the stationary toe-pointed driver arranged within the nose-piece, and the feed spring secured to, and adapted to reciprocate with the nose-piece, substantially as described. 4th. In a nail driving machine, the combination, with the handle and a suitable case for containing the nails, of the hollow and internally-tapered nose-piece, the head within which the latter slides, the wedge-pointed driver arranged within said nose-piece, means as described for ejecting the latter from the head, and further means for bringing the nails within the field of the driver, substantially as set forth. 5th. A nail driving machine, consisting essentially of a recessed head, having a driver and sliding nose-piece arranged therein, means for the actuation of the nose-piece outward from the head, a handle secured to the head, and whereby the machine is operated, and a case or magazine secured upon the handle, all arranged as described and for the purpose set forth.

No. 24,740. Apparatus for the Raising and Supply of Water. (*Appareil pour Elever et Distribuer l'Eau.*)

Alexander Guitard, Montreal, Que., 14th August, 1886; 5 years.

Claim.—1st. The combination of the storage tank A, float B, operating piston D, reservoir E, with inlet valve e, and pipe F, all as herein set forth and for the purposes described. 2nd. The combination, with the upper and lower reservoirs A and E, stand pipe F connecting same, and float in A operating piston in E of syphon G, communicating with upper reservoir and source of supply, and cistern H fed from syphon, all substantially as and for the purposes set forth.

No. 24,741. Waistband for Pants.

(*Ceinture de Pantalons.*)

Bernard Birnbaum, Boston, Mass., U. S., 14th August, 1886; 5 years.

Claim.—1st. A waistband for pants, composed of a strip of cloth having elastic strips secured to its rear side, and a folded ply d secured to its lower edge, the opposite edge of the folded ply and the lower ends of the elastic strips being secured to the body of the pants, substantially as described. 2nd. A waistband for pants, composed of the folded strip of cloth B, having elastic strips b attached to the rear side thereof, and button-hole slits cut through both the folded strip and the elastic strips, the lower ends of the said folded strip and of the elastic strips being connected with the body of the pants, substantially as described. 3rd. A waistband for pants, composed of the folded strip B, having elastic strips b inserted in slits in the rear side thereof, and button-hole slits cut therethrough, and the folded ply d secured to the lower end of the folded strip, and to the body of the pants and concealing the elastic strip b, substantially as described. 4th. A yielding waistband for pants, having elastic fabric by which its elasticity is secured, and having also slack or folded non-elastic fabric attached to the waistband adjacent to the elastic fabric, and thus adapted to relieve the strain on the latter, and to limit the yielding movement of the waistband, substantially as set forth.

No. 24,742. Telephonic Receiver.

(*Récepteur Téléphonique.*)

John E. Dann and John Lapp, Honooyo Falls, N. Y., U. S., 14th August, 1886; 15 years.

Claim.—1st. In a telephonic receiver, the combination, with the diaphragm B, of the two horse-shoe electro-magnets L and L', arranged on the rear side of, and in laterally opposite directions from, the diaphragm, the two armatures M, M', having arms l projecting toward each other, and the two rigid rods N, N', connecting these arms with the centres of the diaphragm, as shown and described for the purpose specified. 2nd. In a telephonic receiving instrument, the combination of the socket screws n, with the armature arms having points that constitute bearings or fulcra for said armatures, as shown and described.

No. 24,743. Manufacture of Starch.

(*Fabrication de l'Amidon.*)

Walter F. Birge, Buffalo, N. Y., U. S., 14th August, 1886; 5 years.

Claim.—1st. The herein described method of extracting starch from grain, which consists in reducing and steeping the grain, then disintegrating the crushed and steeped grain while held in suspension, whereby the starch becomes partially detached from the bran or offal, then agitating the liquid containing the reduced grain in a closed vessel under pressure, whereby further detachment of the starch from the bran or offal is effected, and then separating the starch from the bran or offal, substantially as set forth. 2nd. The herein described method of extracting starch from grain, which consists in reducing and steeping the grain, then reducing the mixture to the proper gravity, then disintegrating the crushed and steeped grain while held in suspension, then regulating the specific gravity, then separating the starch from the bran, then reducing the bran to the proper gravity, then agitating the liquid containing the bran in a closed vessel under pressure, whereby the remaining starch is detached from the bran, and then separating the starch from the bran or offal, substantially as set forth. 3rd. The herein described method of extracting starch from grain, which consists in reducing and steeping the grain, then reducing the mixture to the proper gravity and adding the alkali, then disintegrating the crushed and steeped grain while held in suspension, then regulating the gravity, then separating the starch from the bran, then reducing the bran to the proper gravity, then agitating the liquid containing the bran in a closed vessel under pressure, and then separating the remaining starch from the offal, substantially as set forth. 4th. The herein described method of extracting starch from grain, which consists in reducing and steeping the grain, then reducing the mixture to the proper gravity and adding the alkali, then disintegrating the crushed and steeped grain while held in suspension, then regulating the gravity, then agitating the liquid in a closed vessel under pressure, and then separating the starch from the offal, substantially as described. 5th. The herein described method of extracting starch from grain, which consists in reducing and steeping the grain, then reducing the mixture to the proper gravity and adding the alkali, then disintegrating the crushed and steeped grain while held in suspension, then regulating the gravity, then agitating the liquid in a closed vessel under pressure, and then separating the starch from the offal, substantially as set forth.

No. 24,744. Lubrication of Bearings.

(*Lubrification des Coussinets.*)

Anthony Stevenson, Chester, Eng., 14th August, 1886; 5 years.

Claim.—1st. The method of automatically lubricating bearings, which consists in cutting away the top bearing at centre, causing an endless band hanging over the journal at this point to dip into a reservoir below, to revolve with the shaft and bring up oil to the top of the bearing and so shaping the lower bearing as to catch this oil, substantially as described. 2nd. A bearing having an upper brass cut away in the centre, and an endless chain or band passing over the shaft, through holes in a continuous bottom brass, and dipping down into an oil reservoir below. 3rd. The combination of the top brass B cut away in the centre for a band or chain, and the bottom brass D having oil channels or grooves E, all along the sides to near the ends, in combination with a band or chain G dipping down into the oil chamber, whereby the oil brought up by the chain is carried by the grooves all along the bearing. 4th. The bottom bearing having grooves E, E and holes F, F, each substantially as and for the purposes described.

No. 24,745. Stays for Garments.

(*Renfort de Vêtement.*)

Barth Seligman, New York, N. Y., U. S., 14th August, 1886; 5 years.

Claim.—1st. The combination of whalebone a, having perforations e that extend at each end d, through the body of the whalebone, with tubular fabric b, having reinforcing flaps c and covering central part of the whalebone a, while leaving the perforated ends d exposed, substantially as specified. 2nd. The combination of stay a, having perforations e at each end, with tubular fabric b, with reinforcing flaps c and of greater length than the length of the stays, substantially as and for the purpose described.

No. 24,746. Window Sash Fastener.

(*Arrêée-Croisée.*)

Ezra A. Bates, Armprior, Ont., 14th August, 1886; 5 years.

Claim.—1st. In combination with a window sash, a double inclined stop secured to the side rail of the sash, and a double oppositely inclined wedge between said stop and the casing, substantially as shown and described. 2nd. In combination with the sash l, and the casing 2, the piece 3 having the double inclined rabbet and flange 8, 10, and the piece 3 having the double inclined rabbet and flange 7, 9, and the button 5 thereon, substantially as shown and described.

No. 24,747. Ventilating Attachment for Stoves. (*Appareil de Ventilation pour Poêles.*)

Warren M. Brinkerhoff, Auburn, N. Y., U. S., 14th August, 1886; 5 years.

Claim.—1st. The combination, with a stove, of a ventilating passage separate from the flues of the stove communicating with the outer air at its lower end, and discharging into the smoke outlet of the stove at its upper end, the said passage diverging out of a direct course and traversing a greater distance than the length of the parts of the stove, or its connections adjacent thereto, the whole of the diverging portion of said passage lying in close proximity to the wall of the stove or its outlet, substantially as described. 2nd. The combination, with a stove, of a ventilating passage separate from the flues of the stove communicating at its lower end with the outer air, and discharging into the smoke outlet within a short distance of the stove, said ventilating passage being provided intermediate its end with an annular portion, substantially as described. 3rd. The combination, with a stove, of an annular passage lying adjacent to the walls of the smoke outlet, and a ventilating passage communicating with the outer air at its lower end, and with the said annular passage at its upper end, the said annular passage also communicating with the smoke outlet within a short distance of the stove, substantially as described. 4th. The combination, with a stove, of an annular passage lying adjacent to the walls of the smoke outlet, and a ventilating passage communicating with the outer air at its lower end, and with the said annular passage at its upper end, the said annular passage communicating with the smoke outlet on the side opposite the entrance of the ventilating passage, substantially as described. 5th. The combination, with a stove, of a ventilating passage separate from the flues of the stove, communicating with the air at its lower end, and rising therefrom and discharging into the smoke outlet of the stove, the said passage being provided intermediate its ends with a return portion, the direct and return portion lying adjacent to the wall of the stove or smoke outlet, substantially as described. 6th. The combination, with a stove, of a ventilating passage communicating with the open air at its lower end, the said passage at its upper end being provided with an annular or coiled portion lying adjacent to the walls of the smoke outlet of the stove, and discharging into the same, substantially as described.

No. 24,748. Clutch for Electric Arc Lamp. (*Griffe de Lampe Electrique à Arc.*)

Clarence B. Noble, Cleveland, Ohio, U. S., 14th August, 1886; 5 years.

Claim.—1st. In a clutch for electric-arc lamps, the combination, with a vertically moving hollow carbon-holder containing, within itself, a loosely fitting tilting friction disk held stationary on one side by a wire or rod, also contained within the holder and attached above to the lamp frame, with the opposite side of the disk supported by a wire or rod contained within the holder and connected above to the core or armature of a helix, said helix being connected in circuit with the lamp carbons, for tilting the disk and causing it to impinge against the inside of holder to grip and elevate it, the parts being arranged substantially as shown. 2nd. In clutches for electric-arc lamps, the hollow carbon-holder consisting of a tube or cylinder and containing, within itself, a loosely fitting tilting friction disk and wires for tilting and tripping the disk, to respectively tighten and loosen the grip of the disk against the interior of carbon-holder, for separating and feeding the carbons, the said wires passing up through the holder and being connected one with the lamp frame, the other with the armature core of the helix, said helix being in electric circuit with the lamp carbons, the parts being arranged substantially as described. 3rd. The combination, in a clutch for electric-arc lamps, of a hollow carbon-holder, a loosely fitting clutch disk operating therein and supported on opposite sides by wires passing up through said holder, one wire or rod supporting one side of the disk and attached above to lamp frame, with the other wire or rod supporting the opposite side of the disk and attached above to the armature or core of the helix, said helix being electrically connected in circuit with the lamp carbons for tilting the disk and causing it to impinge against the inside of carbon-holder to grip and elevate it, and adjustable stops to limit the upward movement of the helix core for regulating the length of the arc, all the parts being arranged as and for the purposes shown. 4th. The combination, in clutches for electric-arc lamps, of a hollow carbon-holder D and wires I and G, for respectively tilting and tripping the disk C, to tighten and loosen its grip on the inside of the carbon-holder for separating and feeding the carbons, the said wires passing up through the holder and being connected above G with the lamp frame, and I with the helix or armature core C of the helix C, said helix being electrically connected in circuit with the lamp carbons P and N, and the adjustable stop E, or its equivalent, located over the helix core, to limit the upward movement of the core and regulate the length of the arc, the parts being arranged substantially as specified.

No. 24,749. Elliptic Spring. (*Ressort Elliptique*)

William G. Simpson, Guelph, Ont., 16th August, 1886; 5 years.

Claim.—1st. An elliptic spring in which the upper and lower plates are formed out of one piece of metal, substantially as shown and described. 2nd. An elliptic spring in which the eye A is formed in the centre of the plates a and b, and the eye B out of a correspondingly shaped plate a and b, the two plates being connected together, substantially in the manner specified. 3rd. An elliptic spring in which the eye A is formed in the centre of the plate a and b, and the eye B out of a correspondingly shaped plate a and b, the two plates being connected together, in combination with a series of outer plates d, substantially as and for the purpose specified.

No. 24,750. Steam Engine. (*Machine à Vapeur.*)

Charles E. Robertson, Montreal, Que., 16th August, 1886; 5 years.

Claim.—1st. The combination of a triple cylinder having passages and pistons, substantially as described, with steam chest N having

extension, O and P, and valves Q, U and S, the whole substantially as described. 2nd. In combination with the ports F, E, I and M, the valves Q, U and S, constructed, arranged and operated substantially as described.

No. 24,751. Steam Boiler. (*Chaudière à Vapeur.*)

Robert W. King, Georgetown, Ont., 16th August, 1886; 5 years.

Claim.—1st. A steam boiler in which the furnace is placed within the inner shell, and the outer shell is surrounded by a closed space communicating with the chimney or main flue, the combination of a series of tubes placed between the inner and outer shell of the boiler, and connecting the furnace with the outer space, substantially as and for the purpose specified. 2nd. The inner shell B surrounding the furnace A, and connected at its lower end to the outer shell C, by the plate D, resting on the wall K, in combination with a series of tubes F, arranged to connect the furnace A with the space J, substantially as and for the purpose specified. 3rd. The inner shell B surrounding the furnace A, and connected at its lower end to the outer shell C, by the plate D, resting on the wall K, in combination with the dead plate J and tubes F, substantially as and for the purpose specified. 4th. The inner shell B surrounding the furnace A, and provided with a covering plate I, having an annular flange a formed on it, to receive the set-screw or screws b, in combination with the coal magazine H, arranged substantially as and for the purpose specified. 5th. The tubes F connecting the furnace A with the space J, in combination with the openings L formed in the wall K, and protected by detachable doors O, substantially as and for the purpose specified.

No. 24,752. Wind Mill. (*Moulin à Vent.*)

Frederick B. Boutoiller, Belle Rivier, Ont., 18th August, 1886; 5 years.

Claim.—1st. In a windmill, the combination, with the vertical shaft and the adjustable sails, of the disk M on said shaft, the governor, the connections N between said disk and sails, and the adjustable weights L on said connections, substantially as described. 2nd. In a horizontal windmill, the combination, with the vertical shaft, the disk M sleeved thereon, and provided with a plurality of holes m, and the governor, of the adjustable sails, the eyes O secured thereto, the connections N having hooked ends engaging said holes and eyes, and the weights L adjustably sleeved on said connections, substantially as described.

No. 24,753. Traction Wheel. (*Roue de Traction.*)

Morgan Loring and Eli H. Anspaugh, Columbia City, Ind., U. S., 18th August, 1886; 5 years.

Claim.—The traction wheel herein described, the rim thereof having a flat periphery, and provided on opposite sides with a series of spaced rectangular lugs arranged singly thereon, the outer edges of which are flush with the edges of the rim, their inner edges forming with the unobstructed flat portion of the rim a space E, as shown and described and for the purpose set forth.

No. 24,754. Straw-Cutting Machine. (*Coupe-Paille.*)

Manus C. Beaupré, Charlotteville, Ont., 18th August, 1886; 5 years.

Claim.—1st. The combination of the endless band or belt M, carrying knives suitably attached thereto, with the roller B, of raw hide or other suitable material, substantially as described and for the purposes specified. 2nd. The combination, which may be attached to a thrashing machine, of the roller B with the knives A, A, carried on endless band or belt M, substantially as described and for the purposes specified.

No. 24,755. Button-Fastening for Corsets, etc. (*Queue de Bouton pour Corsets, etc.*)

Sherwood B. Ferris, Lakewood, N. J., U. S., 18th August, 1886; 5 years.

Claim.—In corsets and other garments, or articles of wear, provided with flexible button fastenings, the article or garment provided with buttons b, carried by tapes or flexible strips c, passed forward and backward successively through the centre portions of the buttons, and secured to the garment at their terminal portions under cover and inclosure by a seamed portion of the garment, essentially as shown and described.

No. 24,756. Harvester Knife Grinder. (*Rémouleur de Couteaux de Moissonneuses.*)

John F. Webster, Elkhart, Ind., U. S., 18th August, 1886; 5 years.

Claim.—1st. The combination of the support or standard, the main frame pivoted thereto, a geared drive-wheel keyed to the outer end of the pivotal connection, the supplemental frame pivoted to the outer end of the main frame, a pinion C₁ journaled in line with the pivotal connection between the two frames, and meshing with the gear of the drive-wheel, the grinding-wheel supported on the outer end of the supplemental frame and having its shaft provided with a gear-pinion G₁, a gear-pinion H₁, meshed with the pinion G₁, and journaled in line with the pivot between the main and supplemental frames, and keyed to, and rotating with the pinion B₂, whereby the grinding-wheel may be revolved in any position of the main or supplemental frame, substantially as described. 2nd. The combination of the curved support or standard B, the main frame, the supplemental frame pivoted to the main frame, the grinding-wheel journaled in the supplemental frame and having its shaft provided with a pinion G₁, the gear H₁ keyed to the pivotal connection between the two frames and meshed with pinion G₁, pinion C₂ keyed to gear H₁, and the drive-wheel geared with pinion C₂, and journaled on the pivotal connection between the standard and the main frame, all substantially as set forth. 3rd. The combination, with the main

frame, of the supplemental grinding-wheel frame pivoted to the main frame, and a handle projected from the supplemental grinding-wheel frame in advance of, and between its pivotal supports, substantially as set forth. 4th. The combination, with the base provided with suitable ways, of the knife-supports mounted and movable on said ways, and provided with a slot elongated in the direction of the line of adjustment of said supports, and a clamping-screw turned through the said slot into the base, whereby the said supports may be held at any desired point of adjustment, substantially as set forth. 5th. The combination of the base, the knife-supports, the knife-clamp pivoted midway its length and adapted at its forward end to bear on, and secure the knife, and means, substantially as described, whereby to forcibly elevate the rear end of the clamp, whereby its forward end will be caused to bear firmly on the knife, substantially as set forth. 6th. The combination of the base provided with a slot N, enlarged laterally as at N', near its rear end, the knife-supports and the knife-clamp provided midway its ends with a depending lug M, adapted to operate through slot N, and provided on its lower end with lateral pins M' and bearings M'', arranged at or near the upper end of the lug M, and means, substantially as described, whereby to forcibly elevate the rear end of the knife-clamp, substantially as set forth. 7th. The combination, with the knife-clamp pivoted midway its ends, of the lever O, provided with a wedge Q, and pivoted to work in a plane substantially at right angles to the movement of the clamp, the wedge being suitably arranged to engage under and elevate the rear end of the knife-clamp, substantially as set forth. 8th. The combination of the main frame pivotally supported at one end, the supplemental frame provided in one end with the grinding-wheel, and pivoted at its other end to the outer end of the main frame, a handle projected from the supplemental frame in rear of its pivot and inclined outwardly, and suitable gearing, whereby to operate the grinding wheel, substantially as set forth.

No. 24,757. Pavement. (*Pavage.*)

Thomas H. Carroll, Toronto, Ont., 18th August, 1886; 5 years.

Claim.—A road bed composed of concrete, asphalt and broken hard stone, laid in the manner described, and having curb-stones B anchored to the concrete base B', below which the land curb drains C are placed, substantially as and for the purpose specified.

No. 24,758. Toboggan. (*Tobogganne.*)

John R. McLaren, Jr., Montreal, Que., 18th August, 1886; 5 years.

Claim.—A toboggan, having the cross-bars, to which the longitudinals are attached, curved or bent, as and for the purposes described.

No. 24,759. Car Axle Lubricator.

(*Boîte à Graisse.*)

Isaie Fréchette, St. Hyacinthe, Que., 18th August, 1886; 5 years.

Claim.—1st. In a device for lubricating car-axes and similar journals, the combination of an endless screw to be rotated by contact with the periphery of the axle or journal to be lubricated, a spring actuated or yielding support for the screw, and a worm-wheel engaging said screw, substantially in the manner and for the purpose set forth. 2nd. In a device for lubricating car axes and similar journals, the combination of a movable supporting plate, an endless screw journaled in bearings carried by said plate, and adapted to be rotated by contact with the periphery of the axle or journal to be lubricated, a worm-wheel pivoted upon the plate to engage said screw, and a spring adapted to carry and press the screw against the car axle or journal, substantially in the manner and for the purpose herein set forth. 3rd. In a device for lubricating car axes and similar journals, the combination of a supporting frame or base plate, a swinging frame or plate pivoted to said frame, an endless screw mounted to rotate in bearings carried by said frame, a worm-wheel pivoted upon said plate to engage the screw, and a spring upholding the plate and adapted to carry and press the screw against the periphery of the axle or journal to be lubricated, substantially in the manner and for the purpose herein set forth. 4th. In a device for lubricating car axes and similar journals, the combination of a base plate or frame, a guard attached to the same to prevent it from turning, a swinging plate or frame pivoted to said base, a spring to uphold the swinging plate or frame, an endless screw journaled in bearings carried by said swinging plate or frame, to be rotated by contact with the periphery of the axle, and a worm-wheel pivoted upon the swinging plate or frame to engage the screw, the base plate being adapted to be inserted in the axle box or reservoir for containing the oil or lubricant, and the worm-wheel so disposed as to be immersed, or partially immersed in the oil or lubricant when in position for use, substantially in the manner and for the purpose herein set forth. 5th. The combination, with an axle or journal, of an endless screw adapted to be rotated by contact with the periphery of the axle or journal, pivoted arms between which the screw is journaled, a worm-wheel engaging said screw and carried by the arms, a base plate or support to which said arms are pivoted, a spring adapted to uplift the arms and screw, and carry the latter against the axle or journal, and a box or reservoir adapted to contain an oil or lubricant and from which the worm-wheel is supplied with oil, substantially in the manner and for the purpose herein set forth. 6th. The combination of the base frame R, swinging frame G, springs O, worm-wheel L and endless screw N, substantially in the manner and for the purpose herein set forth. 7th. The combination of the base frame A, swinging frame G, springs O, worm-wheel L and screw-threaded lubricating roller N, provided with a worm which is lost at each end P on the periphery of the roller, substantially in the manner and for the purpose herein set forth.

No. 24,760. Elevator Floor Stop and Lock.

(*Enrayure d'Ascenseur.*)

Robert B. Hamilton and Henry M. Peitatt, Toronto, Ont. (assignees of Charles L. Bartels, the assignee of James S. Ashton, Rochester, N. Y., U. S.), 19th August, 1886; 5 years.

Claim.—1st. In an elevator, the combination, with the car, of a shifting or operating line having balls or stops attached thereto, and a device affixed to the car, adapted to engage with said balls or stops in such manner as to arrest the motion of the car at the desired points by automatically pulling upon said line, substantially in the manner and for the purpose specified. 2nd. The combination, with an elevator car, of the shifting rope D provided with balls E, E', the movable stops C, C', connected together so as to move simultaneously toward or away from the shifting rope, substantially as described. 3rd. The combination, with an elevator car, of the shifting rope D provided with balls E, E', the movable stops C, C', connected together so as to move simultaneously toward, or away from the shifting rope and spring G, substantially as described. 4th. The combination, with the shifting rope, of the two balls E, E', provided on their inner ends with the elastic cushions F, F', substantially as described. 5th. The combination, with the shifting rope of an elevator, of the divided ball E and the elastic cushion or collar F, attached to the ball by means of the flange I, inserted in a recess in the end of the ball, substantially as described. 6th. The combination, with an elevator car, of the shifting rope D provided with balls E, E', the movable stop or stops C, C', spring G, push J and spring-catch A, substantially as described. 7th. The combination, with the shifting rope of an elevator car, provided with ball E, of the sliding stops C, C', lever J, rod H and spring G, substantially as described. 8th. The combination, with a suitable supporting case, of the sliding stops C, C', lever J, rod H, spring G, push J and spring-catch A, substantially as described. 9th. The combination, with the shifting rope of an elevator car, provided with ball E, of the body A having funnel K and supporting a movable stop or stops, substantially as described. 10th. The combination, with the shifting rope D, provided with ball E, of the body A, sliding stops C, C', funnel K and supporting tube O inclosing the shifting rope, substantially as described. 11th. The combination, with the shifting rope D of an elevator car, of the body A supporting a movable stop and provided with detachable segment Q, substantially as described. 12th. The combination, with an elevator car, of the shifting rope D, provided with ball E and one or more movable stops C, spring G, spring-catch A, lever S, adjustable contact piece U, and a series of lugs or projections attached to the side of the elevator well, substantially as described. 13th. The combination, with an elevator car, of the shifting rope D, provided with ball E and one or more movable stops C, spring G, spring-catch A, lever S, indicator scale I, adjustable contact piece U, and a series of lugs or projections attached to the side of the elevator well, substantially as described. 14th. The combination, with an elevator, of a series of lugs m, m', arranged out of line with each other on different stories, and an adjustable contact piece applied to the car and arranged to operate the shifting rope by suitable mechanism, whereby the motion of the car is arrested at any desired point, substantially as described.

No. 24,761. Price Ticket

(*Etiquette de Marchandises.*)

Charles Gulath, St. Louis, Mo., U. S., 19th August, 1886; 5 years.

Claim.—1st. A price ticket, having numerals or letters printed or marked upon its face in bold type, and descriptive matter printed or marked upon its face behind the price and in less distinct type. 2nd. In a price ticket, the combination of the back ground B and face part A, the latter being made of metal, with the price stencilled upon it, and descriptive matter printed or pressed upon it, substantially as shown and described for the purpose set forth.

No. 24,762. Apparatus for Crushing and Measuring Fuel, and for Distributing the same in Furnaces.

(*Appareil pour Broyer et Mesurer le Bois et pour le Jeter dans les Fourneaux.*)

James Hodgkinson, Salford, Eng., 19th August, 1886; 5 years.

Claim.—1st. The crushing plate E supported by a spring plate F, substantially as and for the purpose set forth. 2nd. The crusher C, provided with hinged blades D, substantially as and for the purposes set forth. 3rd. The distributor H, provided with blades H', substantially as and for the purpose set forth. 4th. The combination of the crusher C with distributor H, arranged and operating substantially as and for the purposes set forth. 5th. The combination of hollow shaft L, distributor shaft O, upright shaft R and crusher shaft T, arranged and operating substantially as and for the purposes set forth.

No. 24,763. Machine for Making, Repairing and Clearing Roads.

(*Machine pour Faire, Réparer et Nettoyer des Chemins.*)

The American Road Machine Company, Kennet Square, Penn., (assignee of George W. Aust, Poinsett, U. S.), 19th August, 1886; 15 years.

Claim.—1st. In a machine for working roads by diagonal ploughing operation, the combination of a diagonally-disposed scraper-blade, supported for upward and downward adjustment, in connection with a wheeled carriage, mechanism connected with said blade for independently lifting and depressing the respective ends thereof, and a counterbalance device exerting a force counteractive to the gravity of said blade in its effect on said lifting and depressing mechanism, for the purpose set forth. 2nd. The combination of an upwardly and downwardly adjustable diagonal scraper-blade, a push-frame supporting said blade from the rear, and a counterbalancing device acting in opposition to the weight of the adjustable blade, substantially as set forth. 3rd. The combination of a diagonally-reversible scraper, a vertically-swinging push-frame and a torsional counterbalancing device in connection with said frame, whereby a portion of the gravity of said scraper and frame is counteracted, as and for the purpose set forth. 4th. The combination, substantially as described, of a diagonally-reversible vertically-adjustable scraper-blade, a supporting carriage mounted on front and rear axles and wheels, blade-adjusting

mechanism mounted on said carriage, from which said blade is suspended, and a counterbalance device relieving said adjusting mechanism from the weight (or a portion of the weight) of said scraper-blade, as set forth. 5th. The combination, with a vertically adjustable scraper blade supported in connection with a carriage, mounted on front and rear wheels, of a thrust-frame connected with the carriage by means of a spring attachment at the rear or hinged portion of said thrust frame, said spring being arranged to exert a lifting force on said thrust frame, for the purpose set forth. 6th. The combination, with the push frame C, of a torsionally strained bar connecting the rear of said frame with the carriage, for the purposes set forth. 7th. The combination, with the main carriage frame A, rear axle B and push frame C, of the cheek pieces *a*, *a* rigidly fixed to the main frame and axle, the bearing pieces *c*, *c* fixed to the thrust-frame, the rotation sleeves *b*, *b*, and the torsionally strained bar *b* confined by said cheek pieces and bearings, in the manner substantially as set forth. 8th. The combination, with the push-frame and scraper blade, of a compound connecting hinge having two pivots perpendicular to each other, seating sockets sustaining the thrust-strain and facilities for rocking action, substantially as described, to accommodate the oblique reversible inclined and pitch-adjustments of said blade, as hereinbefore set forth. 9th. The apex hinge F, composed of a attaching plate having jaws *f*, *f*, the horizontally-swinging laterally bevelled disk E, carrying the cylinder F, the connecting plate D, and the vertical and horizontal pivot-pins F, *f*, in combination with an adjustable scraper and its supporting bars or frame, substantially as and for the purpose set forth. 10th. In combination with the diagonally adjustable scraper blade and push-frame, an adjustable segment of semicircle formed of a wrought or rolled flanged bar, provided with the downwardly-extending ends secured or hinged to the rear of said blade, substantially as and for the purpose set forth. 11th. In combination with the diagonally adjustable blade and push frame, the semicircle formed of a wrought T bar having outwardly-extending ends, provided with downwardly-inclined hinge pieces, as E, the lower extremities of which are connected with the blade by hinges, and their upper portions provided with eyes or loops, and the suspending rods attached thereto, substantially as set forth. 12th. In combination, substantially as described, the push-frame, the scraper-blade connected thereto by the compound apex hinge for universal adjustment, the semicircle arranged above said push frame and provided with downwardly-extending hinged ends, connected by hinge plates to the back of the blade near its lower edge, in line with said apex hinge, and the guiding and locking devices disposed above, and supported on said push-frame at the rear of said semicircle, for the purposes set forth. 13th. The combination, in a wheeled road machine, of an adjustable scraper-blade, an adjusting semicircle hinged to the rear of said blade, suspending-rods connected to the ends of said semicircle, mechanism for elevating and depressing said rods, and devices for locking said semicircle at different positions of angular adjustment, substantially as set forth. 14th. The suspension-ring M, having head-disk E and lugs *e*, in combination with the semicircle, having the end pieces E, provided with the opening *e*, and the hooked suspension-rod K, substantially as set forth. 15th. The combination of the diagonally adjustable blade, the semicircle connected to the rear thereof, the locking bolt G, having a lever H extending up through the carriage-platforms, and the foot-slide *h* arranged on said lever, substantially as and for the purpose set forth. 16th. The combination, with a diagonal scraper supported in connection with a wheeled carriage and adapted for upward and downward adjustment, of an operating wheel (or wheels) for effecting such adjustment, adapted to act as a momentum or fly wheel, whereby the peripheral weight of said wheel is utilized to assist in the adjustment of the blade, substantially as hereinbefore explained. 17th. In a road-machine, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating hand-wheel (or wheels) connected therewith for effecting such adjustment, and a brake (or brakes) acting against said wheel, to arrest movement thereof and retain the parts, substantially as set forth. 18th. In a wheeled road-scraper, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating-wheel (or wheels) connected therewith for effecting such adjustment, and adapted for developing peripheral momentum for throwing the blade up or down, and a brake or stop to arrest the movement of said wheel and retain the parts in position, substantially as set forth. 19th. The combination of an adjustable scraper, a vertically-movable rack connected for raising or depressing the end of said scraper, a sprocket-wheel and rack connected for working said rack, a second sprocket and hand-wheel, and a chain (or band) connecting said first and second sprockets, substantially as and for the purpose set forth. 20th. The combination, substantially as hereinbefore described, of the hand-wheel M carrying the sprocket (or sheave) N, the sprocket (or sheave) L carrying the gear L, the connecting chain (or band) *m*, the rack L, arm J, suspending rod K, and adjustable scraper mechanism, for the purpose set forth. 21st. In combination, substantially as hereinbefore described, the carriage mounted on front and rear axles and wheels, the adjustable scraper-blade, the push-frame sustaining said blade from the rear, a semicircle and lock device for retaining said blade in diagonal relation to said push-frame, the swinging cranes in connection with vertically-moving racks, rods connecting said cranes and the blade-supporting mechanism, a pair of hand-wheels and sprockets mounted on a transverse shaft, above the carriage platform, with connecting gearing for operating said racks and brake devices engaging therewith, for the purpose set forth. 22nd. The combination, substantially as hereinbefore described, of the adjustable scraper blade, the racks L, connected for lifting and depressing the ends thereof, the pinions L, the hand-wheels M, sprocket-wheels L, and M, and adjustable tension-chains *m*, for the purpose set forth. 23rd. The combination, in a road-machine, of an adjustable scraper-blade, a blade-adjusting mechanism controlled by a reversible hand-wheel, and a counterbalance device for relieving said hand-wheel from the excess of strain on the upward throw or movement of the blade, whereby the effective momentum of said hand wheel is rendered approximately uniform for either upward or downward adjustment of the blade. 24th. The combination, with the hand-wheels, of the brake or holding devices having a pedal bar P, arranged for operating either of the brakes

alone or both simultaneously, substantially as set forth. 25th. In a diagonal road machine, the combination of a scraper-blade or bar hinged for backward or forward tipping action, and a screw for varying the backward and forward pitch and sustaining said blade at positions of adjustment, substantially as set forth. 26th. In combination with an adjustable scraper-bar or blade hinged for backward or forward pitch adjustment, a screw device for controlling the pitch adjustment of said blade, a geared nut upon said screw supported in a swiveling head block, and means for revolving said geared nut for effecting adjustment of the mechanism, substantially as set forth. 27th. In a road grading machine having a scraper-bar or blade supported beneath a carriage mounted on front and rear axles and wheels, and hinged for backward and forward pitch adjustment, in combination with said blade and its supporting frame, a screw and nut mechanism for effecting the pitch adjustment, and means for operating said screw mechanism under control of the attendant from his position upon the carriage-platform, substantially as set forth. 28th. The combination of a diagonally-adjustable scraper-blade hinged for backward and forward tipping action to a diagonally-adjustable frame or semicircle, a pitch-adjusting screw and actuating mechanism mounted in connection with said frame and movable therewith, to maintain its perpendicular relation to the blade, as said blade is swung from one position of diagonal adjustment to another, substantially as set forth. 29th. The combination of the push-frame C, the semicircle E having a cross-bar E₂, the blade D hinged, near its lower edge, to the apex of said push-frame and depending ends of said semicircle, a screw S hinged to the upper part of the blade, the chair R fixed on said cross-bar, a rocking head mounted in said chair, a nut working on said screw and confined in said head, and means for revolving said nut, substantially as and for the purpose set forth. 30th. The combination, substantially as described, of the scraper-blade, the support-bar in rear of said blade, the chair fixed thereon, the screw S connected with the blade, the rocking head mounted in said chair, the geared screw-nut and operating-gear confined in said head, the shaft R₂ having a universal coupling connected with said gear and the operating-wheel R, for the purposes set forth. 31st. The combination with the scraper-blade in a diagonal road-machine, of an attachable re-enforce or cutting edge formed of a vertically-curved hardened steel-plate, the edges whereof are reduced by bevels which incline in the same direction as the curvature of the plate, substantially as shown and described. 32nd. The landside-plate formed of a plain sheet of metal, with its edge *o* curved as shown, in combination with the attaching-plate W₂, having a slot W₁ and cylindrical rib W₅, the blade D and brace X, substantially as set forth. 33rd. The adjustable land-side brace composed of telescoping male and female parts X, X₁, in combination with the swinging land-side plate and scraper-blade, and the locking pin or device X₂, substantially as set forth. 34th. In a diagonal road-machine, the combination, with the carriage-body and rear axle of a check-casting *a*, provided with a lug or recess *a*°, for sustaining the end of a detachable temporary thrust brace *a*, substantially as and for the purposes set forth. 35th. The combination, substantially as described, of the hollow pintle-block rigidly secured between the arch-irons A₁, the tongue-plate T secured to the tongue and axle, the pintle V having its head or lugs *v* confined within said block, as shown, with its end extending down in rear of the axle, and the guard T₂ limiting the movement of parts in relation to each other, for the purpose set forth. 36th. In a road-machine, in combination with the arched iron A₁ at the forward part of the carriage-body, the overhanging foot-board A₂ and supports A₃, substantially as and for the purpose set forth. 37th. The combination, with the arch-irons A₁ in a road-machine, of the yoke Y, the stay Y₁ connected to said yoke at a position above the pintle-bolt, and having its forward end connected to the pole T, substantially as and for the purpose set forth. 38th. The combination of the arch-frames A₁, the yoke Y pivoted to swing backward between the same, the stay-chain Y₁ having one end attached to said yoke, the tongue or pole T, the link-locking hook Y₂, secured to said pole and adapted for detachably retaining the links of said chain, substantially as and for the purpose set forth.

No. 24,764. Combined Eraser and Knife.
(*Grattoir et Canif Combints.*)

Edward C. Manter and Mary A. Gesber, assignees of Thomas Holdsworth, Elyria, Ohio, U.S., 19th August, 1886; 5 years.

Claim.—1st. A combined knife and eraser consisting of a hollow handle, formed of the parts *d* and *f* and having a slot *o*, in combination with a body *a* constructed to slide within the handle and having blades *b*, *c*, and finger-piece *j*, substantially as shown. 2nd. The hollow handle in combination with sliding blades, flat spring *g* arranged to bear against the side of the blade and finger-piece *j*, substantially as shown. 3rd. The combination of the sliding blades having a finger-piece and locking-pin, with a handle having open ends and a locking pin recess or opening, substantially as shown. 4th. A body *a* having two blades made integral therewith, in combination with an open-ended handle, and finger-piece, and locking means, and a flat spring fixed to handle and arranged to bear against the part *a*, substantially as shown.

No. 24,765. Apparatus for Receiving Payment for, and Delivering Prepaid Goods. (*Appareil pour Recevoir le Prix des Marchandises et les Livrer.*)

Perceval Everitt, London, Eng., 20th August, 1886; 5 years.

Claim.—1st. In apparatus for receiving payment, for and for delivering prepaid goods, the arrangement of mechanism for preventing the blocking of the apparatus, the said mechanism being arranged and operating substantially as hereinbefore described and illustrated in the accompanying drawings. 2nd. In apparatus for receiving payment for, and for delivering prepaid goods, the combination, with the rack of the locking apparatus, of a drop plate for preventing more than one article being procured for the payment of the one amount which unlocks the drawer, the said drop plate being constructed,

arranged and operating substantially as hereinbefore described and illustrated in the accompanying drawings. 3rd. In apparatus for receiving payment for, and for delivering prepaid goods, the arrangement of mechanism for preventing the setting free the catch of the delivery slide or drawer by means of a knife or similar instrument, and thereby admitting of the slide or drawer being improperly opened, substantially as hereinbefore described and illustrated in the accompanying drawings. 4th. The improved apparatus for receiving payment for, and for delivering prepaid goods, hereinbefore described and illustrated in the various figures of the accompanying drawings.

No. 24,766. Radiator used in Connection with Heating Stoves. (*Calorifere*)

Francis Mark, Everest, Ks., U.S., 20th August, 1886, 5 years.

Claim.—1st. In a radiator, the body provided with the receiving chamber at one end, with a series of longitudinal flues communicating at their ends, in the manner described, and the valve G 2nd. In a radiator, the cylindrical body closed at its end and provided with inlet and outlet necks, in combination with the longitudinal radially depressed partitions, the diaphragm F provided with openings from the base chamber into two of the flues, and the hinged valve G.

No. 24,767. Automatic Perforator for Printing Presses. (*Perforateur Automatique pour Presses d'Imprimerie.*)

George Kennedy and Robert Kennedy, New Westminster, B. C., 20th August, 1886; 5 years.

Claim.—1st. In a perforating attachment for printing presses, the combination, with a hollow rule of a perforating cutter, and means, substantially as shown and described, for projecting the cutter beyond the face of the type before the impression of the type is made upon the paper. 2nd. In a perforating attachment for printing presses, the combination of the hollow rule A, the serrated cutter B, the links C pivoted in the rule and pivotally connected with the cutter, the spring F arranged to withdraw the cutter within the rule, the angled lever C pivoted in the rule and adapted to engage the end of the cutter, and a contact carried by the platen for engagement with the angled lever, substantially as herein shown and described. 3rd. The combination of the hollow rule A, the serrated cutter B, links C pivoted to the cutter and to the back of the hollow rule, the spring F, the angled lever C pivoted in the hollow rule, and the yielding contact D formed of the spring I, carrying the block K, the base plate M and the fastening device for securing it to the platen, as described. 4th. In a perforating attachment to printing presses, the combination with the hollow rule A and cutter operating lever C, of the hood A attached to the hollow rule and enclosing the outer end of the lever, substantially as herein shown and described.

No. 24,768. Printer's Lead and Rule Cutter. (*Coupe-Blanc et Réglette d'Imprimerie.*)

Preston S. Kellogg, Battle Creek, Mich., U. S., 20th August, 1886; 5 years.

Claim.—1st. The combination, with a bar provided with a series of notches or depressions corresponding to an exact number of whole or half pieces, of a gauge adapted to slide over the depressions, and provided with a depending lug or lugs adapted to adjust the gauge and lock it simultaneously at the desired point, substantially as set forth. 2nd. The combination, with a bar provided with a series of depressions corresponding to an exact number of whole or half piece or a fractional part thereof, of a spring actuated dog adapted to enter said depressions and to adjust and lock the gauge at the desired point, substantially as set forth. 3rd. The combination, with a bar provided with a series of flaring depressions corresponding to an exact number of whole piece or fractional part thereof, of a gauge provided with one or more pendant tapered lugs adapted to enter said depressions and fix the gauge at the desired point, substantially as set forth. 4th. The combination, with a bar having a series of depressions, of a gauge provided with a dog adapted to adjust the gauge at a point corresponding to an exact number of whole or half piece, and with a set screw to adjust the gauge at irregular intervals, substantially as set forth.

No. 24,769. Tobacco Cutting Machine. (*Coupe-Tabac.*)

George LeClair, Mexico, N.Y., U.S., 20th August, 1886; 5 years.

Claim.—1st. In combination with the feed bed T, two sets of cutting blades a, at, secured stationary on the end of said bed, and arranged alternately with one set projecting beyond the other set, the rotary cutter-head B arranged with its axis parallel to the plane of the stationary cutting blades, and cutters projecting different distances from the head B, to pass between the projecting stationary blades and across the front of the same, substantially as set forth. 2nd. In combination with the feed bed T, two sets of cutting blades a, at, secured stationary on the end of said bed, and arranged alternately, and with one set projecting beyond the other set, the rotary cutter-head B arranged with its axis parallel to the plane of the stationary cutting blades, a series of cutters b, b, distributed over the length of, and secured to the rotary cutter-head and projecting into the spaces between the projecting stationary cutting blades, and the cutter c secured lengthwise on the rotary cutter head, and having a continuous cutting edge, substantially as specified and shown. 3rd. The combination of the stationary cutter A, composed of two sets of blades a, a, and at, at, secured adjustably endwise to their carrier, and arranged alternately, and one set projecting with its cutting edges beyond those of the other set, the cutter head B pivoted in front of the stationary cutter A, the blades b, b, secured adjustably

endwise to one side of the aforesaid cutter head, and arranged in range with the spaces between the projecting blades of the stationary cutter, and the blade c having a continuous cutting edge, and secured adjustably to the opposite side of the rotary cutter head B, all constructed and combined substantially in the manner specified and shown.

No. 24,770. Envelope Machine. (*Machine à Enveloppes.*)

Sidney A. Grant, Springfield, Mass., U.S., 20th August, 1886; 5 years.

Claim.—1st. In an envelope machine, the table on which the blanks are laid, having a ratchet bar attached to the under side thereof and extending through a cross-bar beneath said table, a pawl pivoted on said cross-bar and engaging with said ratchet bar, a friction stud provided with a compression bolt, and spring through which said ratchet bar passes, and means, substantially as described, for imparting a vertical reciprocating motion to said stud, combined and operating substantially as set forth. 2nd. The combination with the blank-holding table of an envelope machine, of a blank holder, substantially as described, hung at one side of said table and extending over the latter, and having a vibratory motion, whereby it is alternately carried against and lifted from the pile of blanks on said table, substantially as set forth. 3rd. As means for gumming, picking up, and conveying envelope blanks one by one from the blank table to the folding devices of an envelope machine, a rocking bar journalled in boxes in longitudinal slots in the frame of the machine, and extending across the latter above the blank table, and having a gumming pad on its under side, two curved picker and gumming fingers, each having gumming pad thereon, pivoted on upright studs on said bar, and having a vibratory motion in a horizontal plane, whereby their ends are brought together and separated, means substantially as described, for rocking said bar, to elevate its pad-bearing part and the ends of said fingers, the vibrating blank-holder engaging with said cross-bar and fingers to depress them, and means, substantially as described, for imparting a horizontal reciprocating motion to said cross-bar, and fingers combined and operating substantially as set forth. 4th. As means for imparting a vibratory motion to the pivoted curved picker, and gumming fingers, a telescopic bar in two parts, having its ends pivotally attached to studs on the rear ends of said fingers, a spring on the smaller part of said bar acting between the end of the larger part of said bar, and one of said studs to spread said rear ends of the fingers, two cam levers pivoted one on each side of the machine, and united by a connecting rod having a vibratory motion in a horizontal plane against the studs on said fingers, whereby the latter are caused to open, and means, substantially as described, for imparting said vibratory motion to said levers, combined and operating substantially as set forth. 5th. As means for folding the envelope blank, a folding bed 56 on which the gummed blank is laid, two vertically reciprocating creaser plates to bear upon the blank, two side flap and two end flap folding shafts, each having a wing thereon, and means, substantially as described, for reciprocally rotating said shafts, combined and operating substantially as set forth. 6th. The folding bed 56, folding shafts having wings thereon, and a pinion on one end thereof, a rack-bar engaging with opposite sides of said pinions, and a vibrating segment lever engaging with one of said pinions combined and operating substantially as set forth. 7th. As means for holding the blank while it is printed, and creasing the latter, the folding bed 56, the vertically reciprocating platen and creaser plates, said platen having a free limited movement between said plates, and bearing on said blank, combined and operating substantially as set forth. 8th. As means for printing the envelope blank while it lies on the folding bed, a platen to bear on the blank, a folding bed 50 having a perforation therethrough, a type-bearing plunger having a vertical reciprocating motion within said perforation in the folding bed, and means, substantially as described, for linking the type on said plunger, combined and operating substantially as set forth. 9th. In combination, the perforated folding bed 50, a vertically reciprocating plunger moving through said bed and divided longitudinally into two parts, each of the latter having printing characters on its upper end, means, substantially as described, for imparting alternate and simultaneous vertical movements to said plunger parts, and for applying several colors of ink to their type-bearing ends. 10th. The blank table, the ratchet-bar 18 attached to the latter, the pawl 19, the friction stud 23 through which said bar passes, having the compression bolt 24 in one end, the plate 25, the spring 26 interposed between said bolt and plate, the arm 22 attached to said stud, and means, substantially as described, for imparting a vibratory motion to said arm, combined and operating substantially as set forth. 11th. The bar 6, having the studs 47 thereon, extending between the sides of the frame 2, having a gumming pad thereon, and journalled in boxes located in longitudinal slots in the latter, the vibrating arms 39 connected by rods 40 with said bar 6, the picker and gumming fingers 5, provided with gumming pads and pivoted on said studs, and having their rear ends connected by the telescopic bar 49, provided with the spring 50 and the vibrating holder 15 extending over bar 6 and bearing on the latter and on said fingers, combined and operating substantially as set forth. 12th. In combination, the bar 6 having a reciprocating movement between the blank table and the folding bed, the picker and gumming fingers pivoted on studs on said bar, the telescopic bar 49 secured on studs on the ends of said fingers, and having thereon the spring 50, the pivoted levers 51 connected by a cross-bar, and means, substantially as described, for imparting a vibratory motion to said levers, whereby they are caused to swing against the said studs on the fingers 5, combined and operating substantially as set forth.

No. 24,771. Manure Drag.

(*Distributeur d'Engrais.*)

William Montgomery, Lanark, Ont., 20th August, 1886; 5 years.

Claim.—A manure drag, consisting of the head A, having a row of teeth B and handle C, and provided with drag chains D, D, and drag bar E, as set forth.

No. 24,772. Art of Forming holes in Hinge Knuckles, etc., by the Process of Casting. (*Manière de Faire les Cra-paudines des Peitures, etc., en Coulant.*)

James Jamieson (Co-inventor with William J. Keop), and John G. Cowes, Hamilton, Ont., 20th August, 1886; 5 years.

Claim.—1st. Forming the mould for casting hinge knuckles, by means of a pattern cut away at the pin-hole to form an open recess, a pin placed at the bottom of said recess and projecting at the ends, and a metallic hood placed over the cut-away portion of the pattern, all so arranged that in moulding the metallic hood keeps the sand out of the recess in the pattern, and when the mould is completed the pattern may be withdrawn, leaving the pin and hood in position in the mould, and the hood supporting the pins, all substantially as described. 2nd. The means for casting pin-holes in castings, consisting in the combination of the pin, of the metallic hood provided with a seat or seats for receiving the pin when used, substantially in the manner described. 3rd. As a new article of manufacture for foundry supply, a sheet metal pattern or part thereof, a solid pin secured therein engaging with the sand, substantially as and for the purposes described. 4th. As a new article of manufacture, the hood, constructed substantially as described, having two seats, one in each arm of the hood, carrying a removable pin, for the purpose specified.

No. 24,773. Log Roller. (*Tourne-Billot.*)

Joshua Evered, Duluth, Minn., U.S., 21st August, 1886; 5 years.

Claim.—1st. The combination, with a steam-cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder forming a valve chamber, a valve in said chamber operating with both cylinders, standards on which the valve in the cylinder is mounted, which valve turns a pivot on which the cylinder can rock, and a log-rolling bar connected with one piston rod, substantially as herein shown and described. 2nd. The combination, with a steam cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder forming a valve chamber, a valve in said chamber, which valve is mounted to rock and move lengthwise on its longitudinal axis and operating with both cylinders and a log-rolling bar connected with one piston rod, substantially as herein shown and described. 3rd. The combination, with a steam cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder forming a valve chamber, a valve mounted on standards to rock and reciprocate on its longitudinal axis, which valve is in the above mentioned chamber and forms a pivot for the cylinder, the said valve being provided with two sets of ports, one set for conducting the steam into the upper part of the cylinder, and the other for conducting the steam into the lower compartment, and a log-rolling beam connected with one of the pistons, substantially as herein shown and described. 4th. The combination, with a pivoted steam cylinder, divided into two compartments, of a piston in each compartment, and a log-rolling bar connected with one of the pistons, the other piston serving to adjust the angle of the cylinder and rolling bar, and suitable valves and ports for said compartments, substantially as herein shown and described. 5th. The combination, with a steam cylinder divided into two compartments by a partition, of a piston in each compartment, the piston rods of which pistons project from the opposite ends of the cylinder, and a log-rolling bar connected with one of the piston rods, and a grooved or slotted bearing-plate in which the outer end of the other piston is guided, and suitable valves and ports for said chambers, substantially as herein shown and described. 6th. The combination, with the pivoted cylinder A, divided into the compartments A¹ and A² by the transverse partition B, of the pistons C¹, C², the piston rods D¹, D², the toothed bar F connected with the piston rod D¹, and the guide M in which a roller works, pivoted on the lower end of piston rod D², whereby the position of the cylinder is governed, substantially as herein shown and described. 7th. The combination, with the base L and the standard K, of the cylinder A mounted to swing on the standard and divided into two compartments, the piston rods D¹, D², the pistons C¹, C² in said compartments, the log-rolling rod F operated by the piston C¹, the head P on the outer end of piston D², the roller O on said head and bearing on the base, and suitable valves and ports for the cylinder, substantially as set forth. 8th. In a log roller, the combination, with a cylinder pivoted to swing in the vertical plane, of a log-actuating bar connected with a piston rod projecting from the top of the cylinder, and a piston rod for swinging the cylinder projecting from the lower end of the same, substantially as herein shown and described.

No. 24,774. Progressive Angling.

(*Pêche à la Ligne Progressive.*)

Mario D. Bullock, Philadelphia, Penn., U.S., 21st August, 1886; 5 years.

Claim.—1st. Apparatus used for playing the game of "Progressive Angling," which consists of hooks, each manually controlled by a rod or handle, and also of toy animals having each a loop, eye, ring or hook, by which they can be separately caught and lifted, and being also each provided with a designating letter or character so applied as to be concealed when the animal is laid upon a surface, but exposed when the animal is caught and lifted by the engagement of the hand-controlled hook with the eye or ring of the animal, substantially as set forth. 2nd. As an article of manufacture, a toy animal provided with a loop, eye, ring or hook, by which it can be lifted, and also provided with a distinguishing letter or character, so applied as to be concealed when the animal is laid upon a surface, substantially as set forth.

No. 24,775. Treatment of Paper, etc.

(*Traitement du Papier, etc.*)

Henry W. Morrow, Wilmington, Del., U.S., 21st August, 1886; 5 years.

Claim.—1st. The process herein described, of treating paper and other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof, and uniting two or more layers so treated. 2nd. The process, herein described, of treating paper and other vegetable fibrous substances, said process consisting in passing them in sheet form through a bath of nitric acid or a salt thereof, and uniting them in layers as they pass from the bath, substantially as set forth. 3rd. The process, herein described, of treating sheets of paper or other vegetable fibrous substances, said process consisting in passing them through a bath of nitric acid or a salt thereof, and pressing the layers of treated sheets to cement them together, substantially as specified. 4th. The process, herein described, of treating paper or other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof, in connection with other solvent or solvents of cellulose and uniting layers of the sheets, substantially as set forth. 5th. The process, herein described, of treating paper or other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof, and then uniting the layers of the sheets by pressure, substantially as specified. 6th. The process, herein described, of treating paper or other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitrate of zinc, and then uniting layers of the sheets by pressure, substantially as specified. 7th. The process, herein described, of treating sheets of paper and other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of nitric acid or a salt thereof, and then uniting layers of the sheets by pressure and heat. 8th. The process, herein described, of treating sheets of paper or other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of a bath of nitric acid or a salt thereof, uniting layers of the sheets and combining with the paper or other substance before, during or after treatment, starch, gum, mucilage, dextrine, albumen, or equivalent, as set forth. 9th. The process, herein described, of treating sheets of paper or other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of nitric acid or a salt thereof, uniting the sheets and finally soaking out the chemical, as described. 10th. As an improvement in the treatment of paper by nitric acid or a salt thereof, the process, herein set forth, of soaking the paper after treatment, to remove the chemical and recovering the latter by evaporation or otherwise, substantially as specified. 11th. As a new manufacture, articles made of sheets of paper, or similar material, treated with nitric acid or one of its salts, and united in layers, substantially as described. 12th. As a new article of manufacture, a compound sheet composed of paper and woven material, treated with nitric acid or a salt thereof and united in layers, substantially as described. 13th. As a new manufacture, articles made of sheets of paper, or similar material, treated with nitric acid or one of its salts, in connection with another solvent or other solvents of cellulose, and united in layers, substantially as set forth.

No. 24,776. Suspender. (*Bretelles.*)

Charles C. Carpenter, New York, (assignee of Henry C. Whitmarsh, Brooklyn), N.Y., U.S., 21st August, 1886; 5 years.

Claim.—1st. A pair of suspenders comprising essentially two separable members or shoulder straps, each member having its web normally held in an angular position by being secured to faces, as c, c', the free ends extended in the same lateral direction and provided with suitable ends, the plates formed by the faces c, c' being removably and adjustably secured together to couple two similar members, as set forth. 2nd. A pair of suspenders, each half of which comprises a long web and a short web, secured in angular positions between faces or plates, as c, c', by stitches, and the two parts C, C', thus formed, being adjustably coupled together, as set forth. 3rd. The long webs A, A' and short webs B, B', secured between plates c, c', at angles as shown, the said plates c, c' forming a two-part back plate, and the parts C, C' adjustably connected, as set forth. 4th. The webs A, B, A', B' and the plates C, C' having eyes d connected and arranged as described, combined with the elastic lacing D, and the whole adapted to serve as and for the purpose set forth.

No. 24,777. Steam Generator.

(*Générateur de Vapeur.*)

Samuel Fiske, New York, N.Y., U.S., 21st August, 1886; 5 years.

Claim.—1st. The combination, with the outer shell a and shell H, as shown, of the inner shell g, arranged in relation to the outer shell to form water leg b, and having a central depending water-space projecting in the centre of the combustion-chamber, the flanged drum G forming a superheating chamber and arranged in relation to the shell H, to form a heating chamber, which receives the arising products of combustion and surrounds the drum G on all sides, and the top and the short tubes m connecting the chambers D, H, and projecting through the water-space, all arranged and operating as and for the purpose specified. 2nd. In a steam generator of the character substantially as herein shown and described, a shaking grate provided with a dumping section hinged therein and centrally supported by a standard, and spindle projecting upward from the generator base, substantially as herein shown and described.

No. 24,778. Vice. (*Etau.*)

Peter Minca, St. Paul, Minn., U.S., 21st August, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a vice check-plate D having a depressed portion a, slot b and socket d, and adapted to support an auxiliary jaw E, substantially as set forth. 2nd. In a vice check-plate or plates D, having depressed portions a, slot b and socket d, and adapted to be attached to the jaw or jaws of a vice, in combination with auxiliary jaw or jaws E, having legs c² and pivotal points e, substantially as set forth.

No. 24,779. Draft Apparatus for Railway Cars. (*Appareil de Traction pour Chemins de Fer*)

John W. Cloud, Altoona, Pa., U.S., 21st August, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a draft-casting, for railroad cars, having downwardly projecting surfaces or shoulders, for receiving thrusts and pulls through a draw-spring placed between such surfaces and shoulders, or surfaces for transmitting such thrusts and pulls to the car-framing, said casting being adapted to be secured to such framing by clamping, and without any bolts passing through the casting, substantially as shown and described. 2nd. The combination, with the end sill of a railway-car, of the draft-casting having shoulders or abutting surfaces *a, b, c, d*, to receive and transmit the thrusts of the draw-springs, and straps or ties to transmit the buffing thrusts on the casting to the end sill, all so arranged that all pushing or pulling strains are transmitted directly to the end sill, substantially as shown and described. 3rd. The combination, with the end sill and under-framing of a railway-car, of the draft-casting secured to the under-framing by straps, and without any bolts passing through the casting, and having shoulders or abutting surfaces *a, b, c, d*, to receive and transmit the thrusts of the draw-spring, and straps or ties to transmit the abutting thrusts to the end sill, all so arranged that all pushing or pulling strains are transmitted directly to the end sill, substantially as shown and described. 4th. The combination of the draft-casting *A* and the end sill *D*, with the cross-bar *E* and straps or ties *G*, all substantially as and for the purpose shown and described. 5th. The combination of the draft-casting *H*, having lugs *e, f, g, h*, and the end sill *D*, with the cross-bars *E* and *F*, and straps or ties *G*, all substantially as and for the purpose shown and described.

No. 24,780. Force Pump. (*Pompe Foulante.*)

James A. Thomas (assignee of Charles E. Woodworth), London, Ont., 21st August, 1886; 5 years.

Claim.—1st. A pair of disks *G, H* and *I, J* having valves *M, N* and *X, Y*, therein attached to a single piston *E, F*, and in combination therewith, the upper stationary disk *A, B* provided with valves *O, P*, and the valve *Q* at base of cylinder, all arranged and operating substantially as and for the purpose herein shown and described. 2nd. A force pump having the outlet *K, L* in the centre of the cylinder, and provided with apparatus for ejecting the water in nearly a continuous stream without the use of a check valve in point of exit, substantially as heretofore shown and described.

No. 24,781. Composition of Matters for the Cure of Abscess, etc. (*Composition de Matières pour la Guérison des Abscès, etc.*)

Mary A. Stevin, Eboulements, (Widow and Executrix of the Will of F. Xavier de Sales Laterrière, Malbaie), Que., 21st August, 1886; 5 years.

Réclame.—Une composition formée d'esprit d'ammoniac, d'other nitreux de vinaigre, et de jaune d'œuf, dans les proportions, et pour les fins décrites.

No. 24,782. Desk. (*Pupitre.*)

Christian Guggisborg, Preston, and Walter E. Guggisborg, Galt, Ont., 21st August, 1886; 5 years.

Claim.—1st. The combination, with a desk having a chamber *A* of hinged case *B*, fitted and arranged substantially as and for the purpose specified. 2nd. The hinged case *B, C*, fitted into the chamber *A*, in combination with the spring-bolt *F* actuated by the drawer *E*, substantially as and for the purpose specified.

No. 24,783. Pencil-Holder. (*Porte-Crayon.*)

Benjamin F. Eshelman and Ira B. Overholt, Harlan, Iowa, U.S., 21st August, 1886; 5 years.

Claim.—1st. As an improved article of manufacture, a pencil-holder, composed essentially of a continuous piece of wire, provided with a series of bends forming clasps, the lower open ends of which converge, and suitable spring-clasps formed by the ends of the wires, whereby the device is readily attached to a garment, substantially as herein described. 2nd. A pencil-holder composed of a continuous piece of wire, as described, in combination with a broad metal plate, or shield, substantially as and for the purpose described.

No. 24,784. Regulating Pendulum Clock from a Distance. (*Moyens de Régler une Pendule à Distance.*)

George W. Millard, Providence, R. I., and Joseph H. Clarke, Boston, Mass., U.S., 23rd August, 1886; 5 years.

Claim.—1st. The combination, with a pendulum of a clock, of suitable means, substantially as described, whereby its centre of oscillation may be raised and lowered, suitable mechanism, substantially as described, for working the said means, and suitable means, substantially as described, for operating the said mechanism from a distance, whereby the pendulum may be made to take a gaining or a losing rate, relatively to its prior performance, substantially as set forth. 2nd. The combination, with a clock to be regulated, of means, substantially as described, located upon the pendulum, whereby its centre of oscillation may be raised and lowered, of means, and a tooth *e* normally held out of position to engage the said means on the pendulum, and adapted to be moved by said magnet into a position to engage the said means, as described, and a master-clock, provided with suitable circuit-closing mechanism, as described, electrically connected with said magnet, whereby the tooth *e* may be brought into a position to operate the said means, on the pendulum for changing its centre of oscillation, substantially as set forth. 3rd. The combination, with a clock to be regulated, of a weight *D*, screw

C, and toothed wheel *c* located upon the pendulum thereof, an electro-magnet having a tooth *e* on its armature-bar, which tooth is normally held out of position to engage the wheel *c*, and a master-clock provided with suitable circuit-closing mechanism, as described, electrically connected with said magnet, and operated by said master-clock, whereby the tooth *e* can be brought into the path of movement of the wheel *c* at predetermined times, and be held in such position for a definite time, substantially as and for the purposes specified. 4th. The combination, with the pendulum-rod *A*, of a weight *D*, screw *C*, and toothed wheel *c*, a lever or bar having a tooth *e*, which tooth is arranged as described, so as to be brought into the path of movement of the wheel *c*, and suitable means, as described, for holding said tooth out of the path of movement of said wheel, substantially as set forth. 5th. The combination, with a clock pendulum, of a supplemental weight swinging therewith, and adapted to be raised and lowered thereon, and suitable means, substantially as described, for raising and lowering the said weight, whereby the centre of oscillation of the pendulum may be changed while the pendulum is in motion, substantially as set forth. 6th. The combination, with a pendulum, of suitable means, substantially as described, whereby its centre of oscillation may be raised and lowered, and suitable mechanism, substantially as described, normally held out of position to effect a change in the centre of oscillation of the pendulum, and adapted as described to be moved into a position to cause such change, substantially as set forth. 7th. In a system for regulating clocks, an electric circuit, a master-clock in said circuit, mechanism operated by the master-clock to close said circuit at predetermined intervals, one or more secondary clocks also in said circuit, provided with mechanism actuated by changes in said circuit, whereby the centre of oscillation of the pendulum of said secondary clock or clocks is raised or lowered, all substantially as described. 8th. The combination, with a clock pendulum, of a block adapted to be raised and lowered thereon to increase and decrease the vibrating length of the pendulum, as described, a screw and wheel for raising and lowering said block, a pair of awls for turning the wheel in opposite directions, as described, and suitable means, substantially as described, for operating the said pawls from a distance, substantially as set forth. 9th. In a system for regulating clocks from a distance, an electric circuit, a master-clock in said circuit, mechanism operated by the master-clock to change the condition of the said circuit at predetermined intervals, one or more secondary clocks also in said circuit, provided with mechanism actuated by changes in said circuit, whereby the regulating member of the said secondary clock or clocks may be made to take a gaining or losing rate, relatively to its prior performance, as described.

No. 24,785. Regulating Marine Clocks from a Distance. (*Moyens de Régler les Horloges Marines à Distance.*)

George W. Millard, Providence, R. I., and Joseph H. Clarke, Boston, Mass., U.S., 23rd August, 1886; 5 years.

Claim.—1st. The combination, with the regulator of a time-piece, having a balance wheel and spring of suitable means, substantially as described, for moving the regulator in opposite directions, suitable mechanism, substantially as described, for working the said means, and suitable means, substantially as described, for operating the said mechanism from a distance, whereby a change in the vibrating length of the balance-spring may be effected from a distant place, and the time-piece be made to take a gaining or a losing rate, relatively to its prior performance, substantially as set forth. 2nd. The combination, with the regulating member of a time-piece, of suitable means, substantially as described, co-operating with said regulating member, whereby the time-piece may be made to take a gaining or losing rate, relatively to its prior performance, suitable electrical mechanism, substantially as described, for operating the said means, and the segments or plates *J, K*, and spring or device *L*, for closing a circuit through said mechanism, substantially as and for the purposes specified. 3rd. The combination, with the regulating member of a time-piece, of suitable means, substantially as described, for moving said member in opposite directions, suitable electrical mechanism, substantially as described, for operating the said means, the segments or plates *J, K*, and spring or device *L*, for closing a circuit through said mechanism, a bar *K* and a spring or device *K* normally held out of engagement with each other, and adapted to be brought into contact, and suitable means, substantially as described, for bringing the bar *K* and device *K* in engagement from a distant place, substantially as and for the purposes specified. 4th. The combination, with the balance-spring of a time-piece, and a regulator for increasing and decreasing the vibrating length of said spring, of suitable means, substantially as described, for moving the regulator in opposite directions, a pair of pawls for operating said means, and suitable means, substantially as described, for working the said pawls from a distance, substantially as set forth. 5th. The combination, with the balance-spring of a time-piece, and a regulator for increasing and decreasing the vibrating length of said spring of suitable means, substantially as described, controlled from a distance for governing the movement of said regulator, all as set forth.

No. 24,786. Force Feed Seeding Machine. (*Semoir d'Alimentation Forcée.*)

Charles E. Patric, Springfield, Ohio, U.S., 23rd August, 1886; 5 years.

Claim.—1st. In a force feed seeding machine, a feed-wheel provided with a laterally projecting peripheral carrying flange, and surrounding case or feed-cup, and means for attaching the same to the seed-box or hopper of the machine, said feed-wheel and seed-cup being so organized that when said cup is fastened to the bottom of said seed-hopper, the upper periphery of said wheel will project up into said hopper to constitute both agitator and force feed, substantially as set forth. 2nd. Combined with the feed-wheel *C*, having a laterally projecting carrying flange, a cup or casing *B*, having a projection *a*, extension within the flange of said wheel to constitute a measuring channel of variable size, and the side walls gradually converging, and finally merged into the walls of said measuring channel without abrupt angles, for the purpose set forth. 3rd. In a force-feed seeding

machine, the following instrumentalities combined, a revolving wheel with a lateral carriage-flange, said wheel set to project upward into the hopper, a discharge-throat invariable in size within the flange of the wheel, and constituted by said wheel, and a portion of the stationary seed-cup, and mechanism to vary at will the speed of said feed-wheel. 4th. Combined with a series of double seed-cups B, and double-flanged feed-wheels C projecting upward into the hopper, a series of flaps or valves I hinged above the bridge D, to close one or the other side of the seed-cup, and adapted to deliver grain into the feed-wheel at the lowest possible point. 5th. Combined with a series of double seed-cups B, and double-flanged feed-wheels C projecting upward into the hopper, a bridge D and gate-bottom composed of flaps or valves I hinged to side-boards A, substantially as set forth. 6th. Combined with a series of double seed-cups B, and double-flanged feed-wheels C projecting upward into the hopper, a bridge D provided with a rib *r*, and a gate-bottom composed of hinged flaps or valves I forming a series of small hoppers, and adapted to close over one or the other side of said seed-cups, as set forth.

No. 24,787. Shingle Machine.

(Machine à Barreau.)

Willis J. Perkins, Grand Rapids, Mich., U. S., 23rd August, 1886, 5 years.

Claim.—1st. The combination, with the sides of a shingle-machine carriage, and a stationary dog connected therewith, of a movable dog consisting essentially of a tube or pipe, provided with holding teeth. 2nd. The combination, with the sides of a shingle-machine carriage, and a movable dog connected therewith, of a stationary dog consisting essentially of a tube or pipe, provided with holding teeth. 3rd. The combination, of the sides of a shingle-machine carriage, a stationary dog, and a movable dog, each of said dogs consisting essentially of a tube or pipe, provided with holding-teeth, substantially as set forth. 4th. In a shingle-machine carriage, the combination, with two sides, and a stationary dog secured thereto, of a movable dog forming an end girder for the sides. 5th. In a shingle-machine carriage, the combination with sides and a stationary dog, of a movable dog provided at its opposite ends with sleeves which latter embrace the sides of said carriage, substantially as set forth. 6th. In a shingle-machine carriage, the combination with sides and a stationary dog secured thereto, of a movable dog forming an end girder of said carriage, and provided at opposite ends, with sleeves which embrace the side rails, substantially as set forth. 7th. The combination, with a shingle-machine carriage, consisting essentially of two sides, and a stationary and a movable dog, of a rod connected to, and moving with the movable dog, arms attached to the rod, and links connecting the arms with the sides of the carriage, substantially as set forth. 8th. The combination, with a shingle-machine carriage, consisting essentially of two sides and a stationary, and a movable dog, of a rod journaled to the movable dog, and connected by one or more links to the carriage, whereby the rod is carried backward and forward with the movable dog, substantially as set forth. 9th. The combination, with a shingle-machine carriage, and a movable dog having boxes or bearings which rest and slide on the side of the carriage, of lugs secured to or formed integral with said dog or its bearings, and a bell-crank operating-rod journaled in said lugs, substantially as set forth. 10th. The combination, with the sides of a shingle-machine carriage, of two sets of sliding bearings secured thereto, one set of said bearings being plain flat bearings, while the other set is L-shaped or its equivalent in cross-section, for the purpose of taking all the side thrust of the carriage, substantially as set forth. 11th. The combination, with the sides of a shingle-machine carriage, of a stationary dog fittings secured within the ends of the dog, and provided with sleeves for embracing the sides of the carriage, said fittings being secured to the dog and to the sides of the carriage. 12th. In a shingle-sawing machine, the combination, with a machine-frame, a saw, and a longitudinal rib or ribs secured to the frame, and extending upwardly above the carriage, of a carriage mounted on the frame, the sides of said carriage being parallel with the rib or ribs, substantially as set forth. 13th. A shingle-machine carriage, consisting essentially of two sides and two ends, the latter forming end girders for the sides, substantially as set forth.

No. 24,788. Sheaf Table and Stand for Threshers. (Tablette Porte-Gerbe de Machine à Batte.)

Lafayette Wetmore, New Bremen, N.Y., U.S., 23rd August, 1886; 5 years.

Claim.—1st. The sheaf-table and stand for threshers, comprising the platform A, with its guide-cleats a, platforms D, E, with their arms or slides C, the leaf K, the leaf G, with its cleats g, the extensible supports F, R, the hooks X, and loops Y. 2nd. The combination, with the supports A, B, of the drop platform comprising the swing-board or trap H, the folding supports I, J, and the rods M, substantially as and for the purpose set forth.

No. 24,789. Regulating Clock from a Distance. (Moyens de Régler une Horloge à Distance.)

George W. Millard, Providence, R.I., and Joseph H. Clarke, Boston, Mass., U.S., 23rd August, 1886; 5 years.

Claim.—1st. The combination, with an electric circuit, a master clock, and means, substantially as described, controlled by the master clock, to close said circuit at predetermined intervals, of a lever pivoted within the secondary clock and controlling the regulating member thereof, mechanism, controlled by changes in the circuit, for raising and lowering the said lever, and segmental contact pieces and contact-pointer located in the circuits and governing the transmission of the changes in the circuit caused by the master clock, as set forth. 2nd. The combination, with an electric circuit, a master-clock, and means, substantially as described, operated by the master-clock for closing said circuit at predetermined intervals, of segmental

contact pieces located in said circuit, a contact-pointer co-operating with the segmental contact-pieces and determining the transmission of the changes in the said circuit caused by the master-clock to actuate mechanism controlling the regulating member of a secondary clock, and to actuate hand-setting mechanism in said secondary clock independently, as set forth. 3rd. An electric circuit, circuit-changing devices in said circuit, a contact-piece or pointer connected with one terminal of said circuit, and segmental contact-pieces over which the contact-pointer contiguously travels, said segmental contact-pieces determining the transmission of the current back to the main line, or to such various branch circuits connected with the members of the segmental contact-pieces, as the contact-pointer may be in contact with at the time the circuit-changing device is operated, as set forth. 4th. The lever C pivoted within a clock, and controlling the regulating member thereof, combined with the gear-wheel O, having a screw-threaded hub and the worm *w*, upon which said gear wheel rotates, thereby raising or lowering the said lever C, as set forth. 5th. The lever C, having the arm *c* supporting the pendulum rod, combined with the gear wheel O, overhanging piece *o*, worm *w*, compound pawl *n*, *n*¹, and means, substantially as described, for normally keeping said pawl out of engagement with the gear wheel O, magnets M, M¹, its armature E, E¹ controlling the engagement of the compound pawl *n*, *n*¹, as set forth. 6th. The lever C pivoted within the clock, the arm *c* supporting the pendulum rod, and the counterbalancing-weight G, combined with the gear-wheel O, having a screw-threaded hub, and the worm *w* upon which said gear-wheel rotates, thereby raising and lowering the said lever C, as set forth. 7th. The lever C having the arm *c*, controlling the regulating member of a time-piece, combined with the frame D suspended from said lever C, the magnets M, M¹, compound armature E, E¹, and the controlling springs *s*, *s*¹, the upright *f* and pawl *n*, *n*¹, bent lever *u*, *u*¹, the springs *n*, toothed gear O and worm *w*, substantially as described.

No. 24,790. Car-Coupler. (Attelage de Chars.)

William H. Kallenbeck, Roxbury, N. Y., U.S., 23rd August, 1886, 5 years.

Claim.—1st. The draw-head A, provided with the plates E, placed loosely upon rods and held in position by springs placed upon the rods, substantially as described. 2nd. The draw-head, provided with the plates E, in combination with a sliding and spring-actuated trip plate H, arranged to be forced forward by springs to support the coupling pin and to be forced backward by the entrance to the draw-head of the connecting link, substantially as described. 3rd. The sliding trip plate H, placed upon the draw-head and connected to the bar J, passed down through the draw-head and held in slots and backed by springs *f*, substantially as described. 4th. The draw-head, formed or provided with the guards K, K, in combination with the trip plate bar J placed between the guards, substantially as described.

No. 24,791. Car-Coupling. (Attelage de Chars.)

Jacob C. Mowry, Rising Sun, Ohio, U. S., 23rd August, 1886; 5 years.

Claim.—1st. As shown in the drawing in car-couplings, a draw-head, having the longitudinal slots in its upper and lower walls, and a solid cap C pivoted in the front thereof, in combination with a slotted coupling-hook pivoted in the draw-head, and capable of a limited longitudinal movement therein, a spring E, for normally depressing the hook-shaped end of the coupling-hook in the path of an approaching link, a swinging rocking arm D journaled in the slot *c* of the draw-head, and bearing against the coupling-hook in front of the pivot thereof, a horizontal rock-shaft F, having an arm *f* at its inner end for acting on the arm D, a vertical rod G, carrying a right-angled arm I at its lower end, and a projecting pin J that is adapted to abut against the draw-head and limit the rotation of the rod G in one direction, and a link intermediate of the arms *f* and D, all arranged and combined substantially as described.

No. 24,792. Portable House. (Maison Portative.)

Edwin Densmore, Grand Rapids, Mich., U. S., 23rd August, 1886; 5 years.

Claim.—1st. In a portable house, and in combination, the sills F, F¹ grooved on their upper surfaces, the plates A¹ grooved on their under surfaces, the posts and scantlings having tenons adapted to fit the grooves in the sills, and plates and grooved to receive the panels, the panels adapted to the grooves in the posts, studding plates, and sills, and pins for holding the parts together, all substantially as described. 2nd. In a portable house, and in combination, the sills F, F¹, the plates A¹ grooved on their upper and under surfaces, the panels A¹ grooved on their under surfaces, the posts studding, and nails fitted to each other and to the grooves in plates and sills, and the panels *c*, *c*¹, king post B, and the roof supported thereon, all substantially as described. 3rd. In combination with the grooved rafters E, and panels *a*, and ridge-pole D, the angle irons G attached to the roof, substantially as described.

No. 24,793. Book-Holder. (Pupitre.)

Joseph H. Paradis, Amherstburg, Ont., 23rd August, 1886; 5 years.

Claim.—1st. The combination, of wires A, A, with covers D, D, and tubes C, C, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, of wires B, B, with base E and tubes C, C, substantially as and for the purpose hereinbefore set forth.

No. 24,794. Printing Machine.

(Machine à Imprimer.)

Henry P. Feisher, Philadelphia, Pa., U. S., 23rd Aug., 1886, 5 years.

Claim.—1st. In a printing machine, two impression cylinders provided with one or more impression surfaces, in combination with a series of type forms arranged to be passed in succession in contact with cylinders, one of which cylinders prints from alternate type-forms, and the other of which prints from those omitted, nippers ar-

ranged upon said cylinders mechanism, substantially as described, to operate said nippers, to catch and deliver the sheets, transfer-frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression cylinder, and mechanism, substantially as described, to operate said transfer frames at the proper instant, substantially as and for the purpose specified. 2nd. In a printing machine, two impression cylinders provided each with one or more impression surfaces, in combination with a series of type forms arranged to be passed in succession in contact with said cylinder, one of which cylinders prints from alternate type forms, and the other of which prints from those omitted nippers arranged upon said cylinder mechanism, substantially as described, to operate said nippers to catch and deliver the sheets, transfer frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder where it is caught by the nippers before the sheet has left the first impression cylinder, mechanism, substantially as described, to operate said transfer frames at the proper instant, and adjusting devices, substantially as described, to regulate the time of operation of nipper cams, substantially as and for the purpose specified. 4th. In a printing machine, two impression cylinders, provided each with one or more impression surfaces, in combination with a series of type-forms arranged to be passed in succession in contact with said cylinders, one of which cylinders prints from alternate type forms, and the other of which prints from those omitted nippers arranged upon said cylinders, cams to operate said nippers to catch and deliver the sheets transfer frames, substantially as described, pivoted to one of said cylinders, and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression cylinder, mechanism, substantially as described, to operate said transfer frames at the proper instant, and adjusting devices, substantially as described, to regulate the time of operation of the said transfer frames, and nipper cams, substantially as and for the purpose specified. 5th. The combination of impression cylinder D, nippers H, pivoted cam L to operate said nippers, screw S, nut T, and frame A, substantially as and for the purpose specified. 6th. The combination of two impression cylinders, each provided with one or more impression surfaces, two or more type forms arranged to be passed in contact with said impression surfaces, with impression surfaces on one cylinder print from certain type forms, and those of the other cylinders print from the type forms omitted by the first, the impression surfaces on said cylinders being adapted to pass close to each other, and in opposite directions, and mechanism, substantially as described, consisting of a transfer frame carried by one cylinder and nippers upon each cylinder, the said parts being so arranged that the transfer frame moves one end of the sheet within reach of the nippers upon the second cylinder, and by which it is caught at or about the time it is freed by the nippers upon the other or first cylinder, to automatically transfer the sheet printed on one side directly from one cylinder to the other, and without being received and supported by intermediate stationary devices, substantially as and for the purpose specified. 7th. The combination of impression cylinders C and D, provided with nippers H, cranks K, pivoted cams Q, L, N, R and Ri, transfer frames P, crank O, adjusting screws S, nuts T, frame A, and type form carrying devices, substantially as described, substantially as and for the purpose specified. 8th. The combination of cylinder D, having a grooved periphery as at D2, a transfer frame P, consisting of arm Pi and adjustable cross bar P2, rod p, crank O and cam Q, substantially as and for the purpose specified. 9th. The combination of cylinder D, having a grooved periphery as at D2, a transfer frame P, consisting of arm Pi, and adjustable cross-bar P2, having notches p2, rod p, crank O and cam Q, substantially as and for the purpose specified. 10th. The combination of an impression cylinder and its nippers, cranks K, cams to operate said cranks pivoted to the axis of the cylinder, socket piece m, adjusting screw rod S, pivoted nut T and frame A, substantially as and for the purpose specified.

No. 24,795. Muff. (Machon.)

Martin Kosminski, London, Eng., 23rd August, 1886; 5 years.

Claim 1st The combination, with a muff of a bag, so arranged that the bag can be easily opened from the outside of the muff without removing the hand or hands therefrom, and which bag, when closed, is not visible, the combined article presenting the appearance of an ordinary muff, substantially as hereinbefore described and illustrated in the accompanying drawing. 2nd. The use with a lady's muff, of the frame of which is provided with a spring lock adapted to be released or opened from the interior of the bag, substantially as and for the purpose hereinbefore described and illustrated in the accompanying drawing. 3rd. The improved combined ladies muff and bag hereinbefore described and illustrated in the accompanying drawing.

No. 24,796. Mode of Tanning Hides and Skins. (Mode de Tannage des Peaux.)

Nils A. Alexanderson and Leonard Hoass, Stockholm, Sweden, 23rd August, 1886; 5 years.

Claim—In tanning hides and skins, the process of causing the oxyhydrate contained in a basic solution of sesquioxide salts to be deposited upon the fibres of the hides or skins, and of subsequently washing off the soluble matters.

No. 24,797. Paint Compound.

(Composition à Peinture.)

Elon A. Horton, Massoux, N. Y., U.S., and John Tawle, Cornwall, Ont., 23rd August, 1886; 5 years.

Claim.—A paint compound, consisting of coal tar, resin, sulphur, ochre, powdered iron ore and salt, prepared as herein described, and in about the relative proportions set forth.

No. 24,798. Screw. (Vis.)

Harry D. Cunningham, London, Eng., 23rd August, 1886; 5 years.

Claim.—A screw for wood or soft metal, having a slot or slots, or groove or grooves, on the under part of its head, one edge of such slot or slots, or groove or grooves, forming a cutting edge, as and for the purposes set forth.

No. 24,799. Machinery for Manufacturing Barrels. (Machine pour Fabriquer les Barils.)

William T. Vale, Toronto, Ont., 23rd August, 1886; 5 years.

Claim.—1st. A barrel-making machine in which the barrel-former or drum derives motion from a series of gearing driven by friction-clutches on the hub of the main driving pulley, substantially as and for the purpose specified. 2nd. A drum or barrel-former, driven substantially as specified, in combination with the rollers arranged to feed the staves into the former, substantially as and for the purpose specified. 3rd. A drum or barrel-former K, driven substantially as specified, and fed with staves by the feed-rollers a, in combination with hand levers l, substantially as and for the purpose specified. 4th. The feed-rollers a located on the shaft d, which is journaled in bearing boxes on the standard e pivoted on the shaft m, substantially as and for the purpose specified. 5th. Feed rollers a, located on the spindle d journaled in bearing boxes adjustably held on the standard e, in combination with the screw-spindles f arranged to adjust the feed-rollers a vortically, substantially as and for the purpose specified. 6th. A barrel-former or drum K, set upon the shaft Q and connected by a series of spur-wheels H, G, F and E, to the shaft D, on the end of which the friction-clutches B and C are situated, in combination with a lever O pivoted on the bed-plate, and arranged to bring the pin C, of the bell-crank P, against the hub of the main driving-pulley A, so as to bring the clutches B and C into gear, substantially as and for the purpose specified. 7th. A barrel-former K, carried on a shaft connected by a series of spur-wheels H, G, F and E to the shaft D, in combination with the feed-rollers a on the spindle d, which is caused to revolve by the sprocket-wheels b, L N and K connected together by a sprocket-chain, the sprocket-wheel K being on the same shaft as the gear-wheel J, which is driven by the gear-wheel I located on the shaft Q, substantially as and for the purpose specified. 8th. A barrel-former K, in combination with adjustable divided rings S and T, arranged to open and close by means of the screw-spindles k operated by the hand wheels, substantially as and for the purpose specified. 9th. The adjustable divided ring S and T, in combination with the detachable divided interior ring s and t, fitted on the inner surface of the ring S, substantially as and for the purpose specified. 10th. The rings S, T, supported on a cross-head adjustably connected to the frame M, in combination with means for rigidly fastening them in position, substantially as and for the purpose specified. 11th. A revolving barrel-former K, in combination with a cutter-head U, connected to the shaft g and driven by belts p, connected to pulleys u on the shaft m, substantially as and for the purpose specified. 12th. The cutter-head U adjusted by means of the slide v, the end u of which fits into the recess in the collar T on the cutter-head spindle or shaft g, in combination with the hand-wheel w operating the screw-spindle x, which projects through the set-screw y, extending into the block z situated on the bracket V, substantially as and for the purpose specified. 13th. A barrel-former K, divided into sections W and connected to collar Y, on the shaft Q, by the arms X, in combination with the collar Z, adjustably connected by the arms 3 to the inner rim X, the said collar Z being connected to the spindle d by the flange 2, and so arranged that when the handle 5 is drawn out, the sections W of the former K will collapse, substantially as and for the purpose specified. 14th. The collar Z, connected by the arms 3, being provided with slots to which the pin 4 on the arms X work or slide, to permit the collapse of the collar Z, in combination with the spindle d attached to the handle 5, substantially as and for the purpose specified. 15th. A barrel-former K, the sections W of which are connected by the arms 3 to the collar Z, said collar holding the former or drum K expanded during the time end of the bell-cranks 6, pivoted to the handle 5, fit into the recess 7, substantially as and for the purpose specified.

No. 24,800. Telephone and Telephonic System. (Telephone et Système Téléphonique.)

William C. Lockwood, New York, N. Y., U.S., 23rd August, 1886; 15 years.

Claim.—1st. A telephonic instrument composed of two spools or helices, adapted to be placed in a local telephonic circuit, and an intermediate spool or helix adapted to be placed in the main or line circuit, the spools having separate or independent cores, substantially as and for the purposes specified. 2nd. In a telephonic system, the combination, with the local circuit embracing a suitable transmitter and battery, of the spools or helices having separate and independent cores adapted to establish a current by magnetic induction in the main line leading to the receiver, substantially as specified. 3rd. The combination, with the local spools and their connections, of the intermediate spool and its connections, the cores of the respective spools being independent and separate from each other and located longitudinally in line with each other, substantially as specified. 4th.

In combination with the main line, spool or helix, the local spools or helices having independent cores and adjustably mounted at each end of the main spool, and the adjusting screws, whereby the local spools may be adjusted to and from the main spool, substantially as set forth.

No. 24,801. Burglar Alarm and Sash Fastener and Lock. (*Avertisseur à Sonnerie et Arrête-Croisée.*)

John Brady, Philadelphia, Pa., U.S., 24th August, 1886, 5 years

Claim.—1st. A sash fastener and lock, having a sliding bolt and a lock arranged substantially as described, the bolt of the lock being adapted to be projected across the path of the sliding bolt, in the manner and for the purpose set forth. 2nd. A sash fastener and alarm consisting of a latch, and a plate with which said latch is adapted to engage, and a finger which is in electrical communication with a bell, the latch being adapted to come in contact with said finger, substantially as described. 3rd. A lock bolt and latch connected with a window frame, the lock being adapted to control the bolt plates connected with the upper and lower sashes for the engagement of said bolt and latch, and a bell in electrical communication with said latch when the latter is withdrawn, the parts being combined and operating substantially as described. 4th. A bolt connected with a sash, and a keeper or plate therefor secured to the other sash, in combination with a guard hinged to said plate, adapted to be projected over the vertical path of said bolt, substantially as described.

No. 24,802. Counterbalance for Link Motion of Steam Engines. (*Contre-balancier de Mécanisme de Renvoiement de Machine à Vapeur.*)

James B. Stewart, Desoronto, Ont., 24th August, 1886, 5 years.

Claim.—1st. The combination, with the link motion and valve rod C, of a piston M, cylinder L and pipe N, in connection with a steam boiler, to relieve the eccentric operating the link motion, of superposed weight by steam admitted to the cylinder under continuous pressure from the boiler, as set forth. 2nd. The combination, with the valve rod C, and link motion operating said rod, of a piston M in alignment with said rod, and a cylinder L fixed to the frame of the engine, and having a pipe N leading to a steam boiler, whereby the piston follows the stroke of the valve rod under pressure of steam from the boiler, to counterbalance the gravity of the valve rod and link motion for relieving the eccentric of friction, as set forth.

No. 24,803. Mode of Propelling Ships. (*Mode de Propulsion des Navires.*)

Charles Desmarais, Sr., Longueuil, Que., 24th August, 1886, 5 years

Résumé.—Un mécanisme de propulsion pour navires quelconques, composé des séries d'aubes E, a, b, fixées aux pièces E et disposées sur les côtés du navire à faire mouvoir, en combinaison avec les arbres G et J, les brèles M et N, les brancards K et les couvertures C et D, le tout tel que ci dessus décrit et pour les fins sus mentionnées.

No. 24,804. Putting-out Machine for Leather. (*Machine à Débourrer les Peaux.*)

The Vaughn Morocco Machine Company, Portland, Me., assignee of Joseph W. Vaughn, Peabody, Mass., U.S., 25th August, 1886; 5 years.

Claim.—1st. In a putting-out machine, the combination of the shaft E provided with the pulley G, gear H and sprocket-wheel I, the counter-shaft J provided with the gear L and sprocket-wheel K, the chain belts U, Q, sprocket wheels P, T, yielding rolls O, R, and swinging arms M, M₂, substantially as described. 2nd. In a putting-out machine, the combination of the shaft Y provided with pulleys r, g and pinion a, the shaft T₂ provided with the gear B₂ and pinion 40, the holder D₂ provided with the racks J₂, the shaft A₂ provided with the pinions C₂, and the intermediate pinion K₂, substantially as set forth. 3rd. In a putting-out machine, the pivoted bars 14 adapted to be raised by the holder D₂, in combination with the chain 17, shipping lever G₂, bar O, and belt K₂, substantially as set forth. 4th. In a putting-out machine, the pivoted bars 14, adapted to be raised by the holder D₂, in combination with the chain 17, shipping lever G₂, bar O₂, belt K, bar 16, jointed arms m, h and rolls O, K, substantially as described. 5th. In a putting-out machine, the pivoted bars 14, provided with the yoke 22, in combination with the chain 17, lever G₂, bar O₂, belt K and holder D₂, adapted to engage said yoke as it rises, substantially as specified. 6th. In a putting-out machine, the holder D₂ provided with the lift 24, for engaging the yoke 22 on the pivoted bars 14, substantially as set forth. 7th. In a putting-out machine, the adjusting device Y₂, in combination with the shaft I₂, arm N₂, treadle P₂, rod V₂, sheave I₂, chain Q₂, pulleys j, j, rods V, W and arms M, M₂, for regulating the pressure which may be applied to the rolls O, R, by the treadle, substantially as described. 8th. In a putting-out machine, the standards B, B₂, C, having the shaft E mounted thereon and divided on the line G₂, said standards B, B₂ being connected by the clamps 75, to enable the upper portion of the machine to be removed, substantially as and for the purpose set forth. 9th. In a putting-out machine, the caps N₄, rendered adjustable on the standards B, B₂, C by the bolts and slots 55 and screws 54, and provided with boxes or bearings for the shafting disposed at the top of the machine, in combination with the shafts E, J, pulley G, gears L, H, sprocket-wheels K, I and belts U, Q, substantially as described. 10th. In a putting-out machine, the standards B₁ provided with the groove 30, in combination with the elongated bolt or stud 35, jointed arms b, d, arms M, M₂, and rolls O, R, for keeping said rolls in proper position with respect to the holder D₂, substantially as set forth. 11th. In a putting-out machine, the shaft A₂ provided with the pinions C₂, and the holder D₂ provided with the racks J₂ and link motion for relieving the eccentric of friction, as set forth.

said racks, and intermeshing therewith, and mechanism for rotating said shaft and raising said holder, substantially as described. 12th. In a putting-out machine, the shaft E provided with the pulley G, gear H and sprocket-wheel I, the shaft J provided with the gear L and sprocket-wheel K, the belts U, Q, the swinging arms M, M₂, the rolls O, R, respectively provided with the sprocket-wheels P, T, and the holder D₂ provided with the racks J₂, in combination with mechanism for operating said rolls and holder, substantially as set forth. 13th. In a putting-out machine, the shaft Y provided with the pulleys r, g and pinion a, the shaft T₂ provided with the gear B₂ and pinion 40, the shaft A₂ provided with the pinions C₂, the holder D₂ provided with the racks J₂, the intermediate pinion K₂ and a pair of yielding rolls provided with flanges for scraping or stretching the hide or skin, in combination with mechanism for operating said rolls, a treadle mechanism or other suitable device for increasing the pressure of the rolls on the hide or skin, and a shipping device for reversing the upward movement of the holder, substantially as described. 14th. In a putting-out machine, the shafts W, V, jointed arms b, d, m, h, swinging arms M, M₂, handle 25, rolls O, R, sprocket-wheel P, T, belts U, Q, shaft E provided with the pulley G, gear H and sprocket-wheel I, and shaft J provided with the gear L and sprocket-wheel K, in combination with the chain Q₂, pulleys f, f, a treadle or device for increasing the pressure on the rolls, and a holder adapted to present the hide or skin for the action of the rolls, substantially as set forth. 15th. In a putting-out machine, the shafts W, V, handle 25, jointed arms m, h, b, d, swinging arms M, M₂, rolls O, R, sprocket-wheels P, T, chain Q₂, pulleys f, f, shaft Y, pulleys r, g, pinion a, shaft T₂, gear B₂, pinions 40, K₂, shaft A₂, holder D₂ provided with the racks J₂, a treadle or device for increasing the pressure of the rolls on the hide or skin, and operative mechanism for the rolls and holder, substantially as described. 16th. The roller W₂ having a series of main flanges or sections 43, provided with the auxiliary flanges 46, arranged in rows which pass spirally around the same, from the circumferential line 49 to the other end of said roll, the ends of said main flanges being overlapped to form the channels 47, substantially as shown and described. 17th. In a putting-out machine, in combination with a suitable holder for the hide or skin, and with operative mechanism, a suit for scraping, stretching or putting out the hide or skin, said roll having a series of flanges arranged spirally around the body thereof, and starting at a circumferential line of point, which is located between a vertical line drawn through the center of said roll and one of its ends, substantially as shown and described.

No. 24,805. Grate for Stoves and Furnaces. (*Grille de Poêle et de Calorifère.*)

Alexander Sloan, John D. Green, Pittston, and Lewis Pugh, Scranton, Penn., U.S., 25th August, 1886, 5 years.

Claim.—1st. The combination of a fixed frame, a swinging grate-section D, and a section F pivoted to said section D, and having a connection with the fixed frame, whereby, as the section D swings, a rocking movement is imparted to said section F, all substantially as specified. 2nd. The combination of a fixed frame, a swinging grate-section D, and a section F pivoted to said section D, and having a slot and pin connection with the fixed frame, as described, whereby, on swinging the section D, a rocking movement will be imparted to the section F, all substantially as specified. 3rd. The combination of the fixed frame, the swinging grate-section D, the section F pivoted to said section D and having an end plate with slot h, and a retaining pin projecting from the fixed frame into said slot, whereby, as the section D swings, the section F, under the influence of the retaining-pin, will be caused to rock on its pivot, all substantially as specified. 4th. The combination of the fixed frame A, the grate-section D pivoted to said frame, and having a recessed end plate, the grate-section F pivoted to the section D, and a pin i serving as a stop for the section D, and as a retainer for the section F of the grate, all substantially as specified.

No. 24,806. Belt for Transmitting Power. (*Courroie de Transmission du Mouvement.*)

John Abell, (assignee of Francis M. Walker), Toronto, Ont., 25th August, 1886, 5 years.

Claim.—A series of leather segments composed of a number of thicknesses, rivetted or otherwise rigidly bound together, each segment being independently rivetted or otherwise rigidly fastened to a metal plate, having eyes or hooks formed at either end to connect with the plates of the adjoining segments, substantially as and for the purpose specified.

No. 24,807. Manufacture of Beet Sugar. (*Fabrication du Sucre de Betterave*)

Edward F. Dyer, Alvarado, Cal., U.S., 25th August, 1886, 5 years.

Claim.—The process of defecating and increasing the purity coefficient of beet-root molasses, so that it may be boiled to granulation in the strike vacuum-pan by mixing it with raw juice, and then defecating it, substantially as herein described.

No. 24,808. Apparatus for Removing and Replacing the Axles and Wheels of Railway Cars. (*Appareil pour Enlever et Remplacer les Essieux et les Roues des Chars de Chemins de Fer.*)

Hugh Sym, Montreal, Que., 25th August, 1886, 5 years.

Claim.—1st. The combination of the tracks A, B, having removable portions C, D, E, F, G, H, and pit O, having rails m, n, o, truck P having jack for carrying the axle and wheels, the whole constructed and arranged substantially as described. 2nd. The combination of the track P, having jack provided with arms V pivoted to the screw thereof, said arms having bearings B₁, and jack-screw having bearing C, the whole constructed and arranged substantially as described.

No. 24,809. Cabbage Maggot Preventive.*(Préservatif Contre les Vers à Choux.)*

William Fleming, Owen Sound, Ont., 25th August, 1886; 5 years.

Claim.—1st. The process of planting and preserving from maggots cabbage and cauliflower plants in sods, after having sown thereunder a composition of matter, as described. 2nd. The composition of matter composed of black soot, stacked lime, fine salt and wood ashes, substantially in the proportions and for the purposes set forth.

No. 24,810. Process for Dry Cleaning Textile Fabrics. *(Procédé de Nettoyage Sec des Tissus.)*

John Scott, Dover, Eng., 25th August, 1886; 5 years.

Claim.—1st. The method of dry cleaning textile fabrics by the frictional action of sawdust, in combination with a cleaning spirit, such as naphtha, benzoline, or equivalent. 2nd. The method of dry cleaning textile fabrics by the frictional action of sawdust, operated by the rotary motion of a receptacle or box containing the good to be cleaned, in the manner and for the purposes substantially as herein set forth.

No. 24,811. Apparatus for Facilitating the Multiplication of Numbers. *(Appareil pour Faciliter la Multiplication des Nombres.)*

Jules V. Charpentier, New Orleans, La., U. S., 26th August, 1886; 5 years.

Claim.—1st. The combination of the support or case, the movable sections inscribed substantially as shown, and an index F arranged relatively to the rolls and beginning at 1, with a predetermined one of said sections, and continuing in proper numerical order in relation with the succeeding sections, substantially as set forth. 2nd. The improved apparatus for facilitating the multiplication of numbers, consisting of the support or case, the series of carrying-rolls arranged in pairs, the series of guides arranged close together, and provided one for each pair of carrying-rolls, the tables or sections wound on the carrying-rolls and directed between their ends across the guides, the bolts connecting the carrying-rolls and guides, and the index arranged relatively to the rolls and beginning at 1, with a predetermined one of the tables or sections, and continuing in proper numerical order in relation with the succeeding sections, substantially as set forth.

No. 24,812. Calculator. *(Calculateur.)*

Jules V. Charpentier, New Orleans, La., U. S., 26th August, 1886; 5 years.

Claim.—1st. An apparatus for facilitating calculation comprising a case or support, and indicator-section and interest, maturity and period sections, such sections being divided into spaces, and held to the support with the spaces of one registering with those of the others and inscribed, substantially as set forth. 2nd. In an apparatus for facilitating calculation, the combination of a case or support, a fixed indicator section, a fixed period-table the interest and maturity tables, and supports therefor, substantially as described, whereby said interest and maturity tables may be moved or adjusted with reference to the fixed indicator-section and period-table, substantially as set forth. 3rd. In combination with a case or support A, an indicator-section, a period-table E arranged below and separated from the indicator-section, the maturity-table extended under the period-table and supports, and guides for the maturity-table, whereby a portion thereof is guided and exposed between the separated edges of the indicator-section and period-table, substantially as set forth. 4th. The herein-described apparatus for facilitating calculation, consisting of the case having rolls F, F, G, G, and guides f and g, the interest-section C passed over guides g and wound on rolls G, G, the indicator-section B secured close below the lower guide g, the period-table fixed below and separated from the indicator-section, and the maturity-section passed over guide f and exposed between the adjacent edges of the period-table, and indicator-section wound at its ends on the rolls F, F, substantially as set forth.

No. 24,813. Damper. *(Clé de Tuyau de Poêle.)*

Edward H. Jeeres, Waterford, Ont., 26th August, 1886; 5 years.

Claim.—1st. A damper provided with a flange, in combination with a handle also provided with a flange, substantially as described. 2nd. The combination, with a damper, of a handle and a connecting screw, substantially as described. 3rd. A damper provided with an apertured flange and a socket of irregular form, in combination with a flanged handle having a shank, which passes through the damper flange and fits within the damper socket, the damper and its handle being arranged to receive the connecting screw, substantially as described. 4th. The combination, with a damper provided with a central rib and formed with a flange 15 and a socket 14, of a handle with a flange 17, a shank having an irregular point 4 adapted to fit within the socket of the damper, and a connecting screw, which passes through the shank of the handle and engages with the threaded socket formed in the rib 11, substantially as described.

No. 24,814. Compound Water Gauge for Steam Boilers. *(Indicateur du Niveau d'Eau Composé pour Chaudières à Vapeur.)*

David Pyko, Philadelphia, Penn., U. S., 26th August, 1886; 5 years.

Claim.—1st. A compound water-gauge for steam boilers, constructed substantially as herein shown and described, and consisting of the three parallel glass tubes A, B, C, the elbow couplings D

attached to the ends of the side tubes A, C, having offsets in their inner arms and provided with valves E and cocks F, and the three-way globe valves G connected with the ends of the centre tube B and with the elbow couplings of the side tubes, as set forth. 2nd. In a compound water-gauge for steam boilers, the combination, with the three glass tubes, A, B, C, the elbow couplings H attached to the side tubes A, C, and the three-way globe valves G connected with the centre tube B and the elbow couplings of the side tubes, of the connecting bars I, substantially as herein shown and described, whereby greater firmness and strength are given to the gauge and the glass tubes are prevented from being accidentally broken, as set forth.

No. 24,815. Rail-Clearer for Snow Ploughs of Locomotive Engines. *(Grattoir pour Charrues à Neige des Machines Locomotives.)*

Augustus F. Priest, Fort William, Ont., 26th August, 1886; 5 years.

Claim.—1st. In rail clearers, the combination, with a snow plough of knives, as at G, adapted to clear the snow from the heads of the rails, substantially as specified, and said knives held to supports standing behind the plough mould-boards, substantially as herein set forth. 2nd. In rail clearers, the combination, with a snow plough A having openings at, at the lower edges of its mould-boards, of knives as at G, adapted to clear the snow from the heads of the rails, substantially as specified, and said knives held to a frame which is vertically adjustable in supports standing behind the plough mould-boards, substantially as herein set forth. 3rd. In rail clearers, the combination, with a snow plough having openings at in its mould board, of knives G adapted to clear the snow from the heads of the rails, substantially as specified, and said knives held to frames which are vertically adjustable in supports standing behind the plough mould-boards, and said knife frames being arranged to have horizontal play allowing the knives to yield either way to the curves of the rails, substantially as herein set forth. 4th. In rail clearers, the combination, with a snow plough having openings at in its mould-boards, and the clearer frame D supporting the knives G outside of said openings, of cover plates E fitted to slide on the plough and to rise and fall with the frames D and knives G, substantially as herein set forth. 5th. In rail clearers, the combination, with a snow plough and knives as at G, arranged to clear the heads of the rails, substantially as specified, of auxiliary mould-boards or guard plates M, fixed to the plough and adapted to relieve the knives of the pressure of the snow, substantially as herein set forth. 6th. In rail clearers, the combination, with a snow plough and knives as at G, arranged to clear the heads of the rails, substantially as specified, of guard plates M fixed to the nose of the plough and adapted to relieve the knives of the pressure of the snow, and said plates M being connected to the plough at the back end, so as to provide a clear space at m, behind the clearer knives, substantially as herein set forth. 7th. A rail clearer comprising a frame consisting of connected parts G, F, I, adapted to move vertically on a support as at H, and a frame D fitted to slide horizontally in the vertically-sliding frame, and a rail-clearing knife C fixed to the frame D, substantially as herein set forth. 8th. A rail clearer comprising a frame consisting of connected parts G, F, I, adapted to move vertically on a support as at H, a frame D fitted to slide horizontally in the vertically-sliding frame, a rail-clearing knife C fixed to frame D, a roller K journaled to the vertically-sliding frame, and a roller J journaled to the frame D, substantially as and for the purposes herein set forth. 9th. A rail clearer comprising a frame consisting of connected parts G, F, I, adapted to move vertically on a support as at H, said plate I having an upper end slotted at l₂, and an angular frame D fitted to slide horizontally at the lower part of the vertically-sliding frame, and having a brace arm d₁ guided in the slot l₂ of plate I, and a rail clearer knife C fixed to the frame D, substantially as herein set forth. 10th. In rail clearers, the combination, with a vertically-movable support as at I, and the clearer knife carrying frame D fitted to slide horizontally thereon, of a bar l₁ pivoted to the support and connected to the frame D, and having a curved end as at l₂, and a pin as at m, engaging the end l₂, substantially as specified, whereby, when the knife-carrying frame is raised, it will be drawn inward, as set forth. 11th. In rail clearers, the combination, with a vertically-movable support as at I, and the clearer-knife carrying frame D fitted to slide horizontally thereon, of a bar l₁ pivoted to the support and connected to the frame D, and having a curved end as at l₂, and a pin as at n, engaging the end l₂, substantially as specified, whereby, when the knife-carrying frame is lowered, it will be pushed outward, as set forth. 12th. The combination, with the frame D carrying the clearer knives C, of the inclined tail-pieces d₂ fixed to the frames, substantially as shown and described and for the purpose set forth. 13th. In rail clearers, the combination, with the frame D carrying the clearer knife C, of a roller J adapted to engage the inner edge of the head of the rail, and said roller being tapered upward, substantially as herein set forth. 14th. In rail clearers, the combination, with the vertically-movable frames to which the knife-carrying frames are held, of bars N, levers O, shaft P, levers R, R, bars S, S and a pair of toggle bars T, T, connecting each lever O with the engine or car, substantially as herein set forth.

No. 24,816. Wrench. *(Clé à Ecrou.)*

Carlton E. Bailley, Potsdam, (assignee of Boswell F. Cook, Iliou), N.Y., U.S., 27th August, 1886; 5 years.

Claim.—The combination of a wrench having a longitudinal slot in its handle near its head, and having a recess in its outer side forming a continuation of the slot, and having a groove or recess in the side of the aperture in the head, at a right angle to the groove and slot, a lever having a rectangularly-bent head portion pivoted at its bond in the rectangular recess, and having a handle projecting through the slot in the wrench-handle, extending parallel with the wrench-handle, and a flat spring secured at one end to the outer side of the wrench handle, and bearing with its free end against the inner end of the rectangularly-bent head portion of the clamping-lever, as and for the purpose shown and set forth.

No. 24,817. Force Pump. (*Pompe Foulante.*)

Idu R. Barton and Elenore L. Cloud (assignees of William H. Cloud), Detroit, Mich., U.S., 27th August, 1886; 5 years.

Claim.—1st. In a pump, the combination of the stationary cylinder having port-holes P and valves G located thereon, the discharge and suction pipes joining said cylinder, the piston made fast to said cylinder, the travelling cylinder, its lower head being air-tight, its dome D having a series of air-holes, and means for reciprocating the travelling cylinder, as and for the purposes set forth. 2nd. In a pump, the combination of the stationary cylinder having port-holes midway of its length, the valves located in said cylinder, the suction and discharge pipes joining said cylinder, the piston made fast to said cylinder, the guide rod anchored to the piston, the travelling cylinder, its head adapted to travel over the stationary cylinder, the upper head having a dome in which is a series of air-holes, the guide rod of the piston working through the upper head, the bolts for securing the heads to the travelling cylinder, and means for operating said travelling cylinder, substantially as specified. 3rd. In a pump, the combination of the stationary cylinder, its port-holes and valves, the piston anchored to said cylinder, the guide-rod anchored to the piston, the travelling cylinder moving over the stationary cylinder and having a dome with air holes therein, the guide-rod passing through said dome, and means for operating the travelling cylinder, substantially as specified.

No. 24,818. Lacing Bearing for Corsets, etc.

(*Châlet pour Lacer les Corsets, etc.*)

Joseph C. Wilson, Hobart F. Atkinson and Esther R. Spencer, Detroit, Mich., U.S., 27th August, 1886; 5 years

Claim.—A lacing bearing, consisting of a bearing in the form of a pulley, and a tubular eyelet capable of being passed through the same and clamped at the end, to clamp the cloth fast against the pulley, and make the pulley fast in place without the use of washers, as hereinbefore set forth.

No. 24,819. Reversing Device for Engines.

(*Mécanisme de Renversement pour Machines.*)

Frederick Uffelman, William J. Perkins and Albert L. Wilson, Red Bud, Ill., U.S., 27th August, 1886; 5 years.

Claim.—1st. The combination, with the eccentric shaft A, having the wedges I, said wedges being constructed with edges parallel with each other throughout their length, parallel with the axis of the shaft at their extremities, and inclined to the said shaft at an intermediate point, of the ring D of cylindrical form on its exterior, having the elongated slot E for the passage of the shaft A, and the slots *d* fitting snugly the edges of said wedges, and the yoke or ring F fitting the cylindrical exterior of the ring D, substantially as and for the purpose set forth. 2nd. The combination, with the shaft, of the wedges I terminating in straight portions, substantially as described, and the eccentric having a slot for the reception of said wedges, the surfaces of the eccentric, which engage with the opposite sides of said wedges, being bevelled off or rounded, substantially as and for the purpose set forth. 3rd. The combination, with the shaft A having the wedges I, whose surfaces are parallel to each other, but inclined to the axis of the shaft, and which terminate at both ends in surfaces parallel with the axis of the shaft, of the eccentric D, having the elongated aperture E and the diametrically-opposite slots *d*, the engaging surfaces at the extremities of said slots being bevelled or rounded, substantially as set forth.

No. 24,820. Heel Protector for Boots and Shoes. (*Protecteur des Talons de Chaussures.*)

Isaac R. Sanford, Boston, Mass., U.S., 27th August, 1886; 5 years.

Claim.—1st. As an improved article of manufacture, a heel protector for boots and shoes, having body *m* provided with a horizontal flange or flanges, substantially as described. 2nd. As an improved article of manufacture, a heel-protector for boots and shoes, having a body *m*, provided with a horizontal flange or flanges, and with a tapering hole for receiving a nail, substantially as set forth. 3rd. The heel-protector A, having the flange *e* and tapering hole *t*, in combination with a nail having a tapering head adapted to fit said hole, substantially as described. 4th. The nail B, having the tapering head *f* and projections *l*, in combination with the protector A, having the tapering hole *t* and flange *e*, substantially as set forth. 5th. The protector A and nail B, in combination with the heel C, constructed, combined and arranged substantially as described.

No. 24,821. Machine for rubber stamp Printing. (*Machine pour Imprimer avec une Etampe en Caoutchouc.*)

Harry Barnard, Hamilton, Ont., 27th August, 1886; 5 years.

Claim.—The combination of the handle A, the cap B, the body block D of any shape or pattern with rubber die *e*, secured to its under surface, and the metal bodied rubber type or metal body with rubber printing surface F, the packing piece G, for the purpose of adjusting the type to the level of the printing surface of rubber die *e*, and the screw *d* for holding type in place in aperture of block D, substantially as and for the purpose hereinbefore set forth.

No. 24,822. Waggon Bolster Spring.

(*Ressort de Wagon à Selle.*)

Edward Cliff, Oswego, N.Y., U.S., 27th August, 1886; 5 years.

Claim.—1st. The combination, with the waggon bolster and body supporting bar, of a clip striding said bolster, and conical coil springs mounted with their small ends on the said clip and arranged with

their large ends in proximity to each other, at a point central over the bolster, and a cap placed across the top of said springs, substantially as described and shown. 2nd. In combination with the bolster and body supporting bar, the clip C formed with the projections *C*, *C*, and with the bosses *h*, *h*, on said projections, the conical coil springs *S*, *S*, seated with their small ends on the projections *C*, *C*, and held in place by the bosses thereof, and arranged with their large ends in proximity to each other, at a point central over the bolster, the cap A on the large ends of the springs, and the coupling bolts *a*, *a*, passing movably through the bosses *h*, *h*, and projections *C*, *C*, to allow said bolts free vertical play beneath the clips, substantially as described and shown. 3rd. In combination with the clip C and springs *S*, *S*, the cap A provided with the recesses *r*, *r*, in its under side, and the coupling bolts *a*, *a*, passing loosely through the clip and cap at the centre of the aforesaid recesses and headed at their lower ends, and provided with the nuts *n*, *n*, on top of the cap, and with the jamb nuts *nt*, *nt*, in the recesses *r*, *r*, substantially as described and shown for the purpose set forth. 4th. The combination of the clip C, formed with the flanges *b*, *b*, ribs *e*, *e*, on the vertical edges of the flanges and undercut on their inner sides, and lips *d*, *d*, on the free edges of said flanges, and the check-pieces *c*, *c*, secured to the inner sides of the flanges by the aforesaid ribs and lips lapping on to the check-pieces *c*, *c*, secured to the inner sides of the flanges by the aforesaid ribs and lips lapping onto the check-pieces, substantially as described and shown. 5th. The combination of the clip C, formed with the flanges *b*, *b*, ribs *e*, *e*, lips *d*, *d* and spurs *s*, *s*, and the check-pieces secured to the inner sides of the flanges by the engagement of said ribs, lips and spurs, with the check-pieces, substantially in the manner specified and shown. 6th. In combination with the bolster B, stakes D, body F and springs interposed between the bolster and body, the boxes *f*, *f*, countersunk in the sides of the body, and the rollers *l*, *l*, pivoted in said boxes and provided with flanges *m*, *m*, substantially as described and shown for the purpose set forth.

No. 24,823. Machine for Jointing Shingles.

(*Machine à Dresser le Bardeau.*)

Francis J. Drake, Belleville, Ont., 27th August, 1886; 5 years.

Claim.—1st. In a rotary shingle jointer, a cap *a*, *a*, hinged at its middle, so that the upper half of the said cap may be lowered or raised, as and for the purpose set forth. 2nd. The braces *b*, secured to the frame of the machine at one of their ends, and curved to engage the cap *a*, by means of the lugs *c* and nuts *z*, *z*, whereby the said cap may be accurately adjusted, as and for the purpose set forth. 3rd. The combination, with the rotary disk, of the said cap hinged at its middle and having said supporting braces, whereby one half of the cap may be held in place or dropped at the will of the operator, as and for the purpose set forth.

No. 24,824. Combined Axle and Sand Shield for Vehicle Wheels. (*Essieu et Garde-Sable pour Roues de Voitures.*)

William I. Stillman, Watson, N.Y., U.S., 27th August, 1886; 5 years.

Claim.—1st. The combination, with the hub and axle-box thereon, of the axle and dust-excluding cap closely embracing and bearing upon said axle-box within the hub, substantially as described. 2nd. As an improved article of manufacture, an axle, having formed integral therewith a dust-excluding cap, substantially as described.

No. 24,825. Lubricator. (*Boite à Graisse.*)

William Y. Thomas, West Pittston, Penn., U.S., 22nd August, 1886; 5 years.

Claim.—1st. A lubricator, consisting of a casing attachable to a movable device, having a deflector within the same, whereby by centrifugal action the oil is directed by the deflector to the discharge-pipe or outlet of the casing, and thus to the journal or shaft to be lubricated, substantially as and for the purpose set forth. 2nd. A lubricator, having a casing which is formed with a bottom bent up wardly, and provided with a discharge tube communicating with said casing at the upper end of said bottom, substantially as and for the purpose set forth. 3rd. A lubricator having a casing provided with a discharge-pipe, and a deflector within the casing overhanging the pipe, substantially as and for the purpose set forth. 4th. A lubricator having a discharge pipe, a deflector within the same, and an adjusting screw for said deflector, substantially as and for the purpose set forth. 5th. In a lubricator, a casing having a discharge tube, a deflector over the entrance end of said tube, an adjusting screw for said deflector, and a jamb nut for said screw, substantially as and for the purpose set forth.

No. 24,826. Head Rest and Pillow for Railway Cars. (*Appui Tête et Oreiller pour Chars de Chemin de Fer.*)

James L. Wiseman, Montreal, Que., 28th August, 1886; 5 years.

Claim.—In a railway car, a head rest or pillow hinged at its lower end to the side of the car, folded up against it and secured in place, and let down and supported above the tops of the seats' backs, all as herein set forth.

No. 24,827. Lifting Jack. (*Cric.*)

Axel A. Strom, Austin, Ill., U.S., 23th August, 1886; 5 years.

Claim.—1st. A lifting-jack having its bar recessed transversely, rollers to enter the recesses to raise the bar and hold it when raised, a clutch-block upon the bar and recessed to contain the lifting-roller, and means, substantially as described, for actuating the clutch, substantially as set forth. 2nd. A lifting-jack having its bar recessed transversely, rollers to enter the recesses to raise the bar and hold it when raised, a clutch-block upon the bar and recessed to contain the lifting-roller, means, substantially as described, for actuating the clutch, and means, substantially as described, for releasing the

bar to permit its descent when raised, substantially as set forth. 3rd. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess *o*, on a side adjacent to the recess in the bar, and having a slanting bottom, a loose roller within the recess *o*, a loose roller adjacent to the recesses in the bar and within a recess *o*, in form like the recess *o*, and provided in the standard portion of the device, below the recess *o*, and means, substantially as described for actuating the clutch, substantially as set forth. 4th. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess *o*, on a side adjacent to the recesses in the bar, and provided with a slanting bottom, a loose roller within the recess *o*, a loose roller adjacent to the recesses in the bar and within a recess *o*, in form like the recess *o*, and provided in the standard portion of the device below the recess *o*, means, substantially as described, for actuating the clutch, and means, substantially as described, for releasing the bar to permit its descent when raised, substantially as set forth. 5th. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess *o*, on a side adjacent to the recesses in the bar, a loose roller within the recess *o*, a bifurcated lever *E*, having its arms journalled at opposite sides of the clutch-block, and fulcrumed upon a shifting block *F*, supported in the standard, a loose roller within a recess *o*, in form like the recess *o*, and provided in the standard portion of the device below the recess *o*, and means, substantially as described, for releasing the bar to permit its descent when raised, substantially as set forth. 6th. A lifting-jack having its bars recessed transversely, a clutch-block surrounding the bar and provided with a recess *o*, on a side adjacent to the recesses in the bar, a roller *D* within the recess *o*, a bifurcated rod *H*, having its arms journalled upon the said roller *D*, towards the ends of the same, and extending beyond the standard portion of the device, a roller *D* within a recess *o*, formed in the standard portion of the device below the recess *o*, a bifurcated rod *H* having its arms journalled upon the said roller *D*, towards the ends of the same, and extending beyond the standard portion, and means, substantially as set forth, for actuating the clutch, substantially as set forth. 7th. A lifting-jack having its bar recessed transversely, a clutch-block surrounding the bar and provided with a recess *o*, on a side adjacent to the recesses in the bar, a roller *D* within the recess *o*, a bifurcated rod *H*, having its arms journalled upon the said roller *D*, towards the ends of the same, and extending beyond the standard portion of the device, a bifurcated lever *E*, having its arms journalled at opposite sides of the clutch-block and fulcrumed upon a shifting block *F*, supported in the standard, a roller *D*, with a recess *o*, formed in the standard portion of the device below the recess *o*, and a bifurcated rod *H* having its arms journalled upon the said roller *D*, towards the ends of the same and extending beyond the standard portion of the device, the whole being constructed and arranged to operate substantially as described.

No. 24,828. Lifting Jack. (Cric.)

Axel A. Strom, Austin, Ill., U.S., 23th August, 1886; 5 years.

Claim.—1st. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when raised, comprising a recessed clutch-block upon the bar which passes through it, and having each recess bevelled internally in a downward direction and containing a roller, and the standard portion of the device having a recess below each recess in the clutch-block, and formed like the same and containing a roller, substantially as described. 2nd. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when raised, comprising a recessed clutch-block upon the bar having each recess covered and bevelled internally on its rear surface in a downward direction, and containing a roller, the standard portion of the device having a covered recess below each recess in the clutch-block, and formed like the same and containing a roller, means, substantially as described, for actuating the clutch-block, and means, substantially as described, for raising the rollers in their housings to permit the descent of the lifting-bar, substantially as set forth. 3rd. In a lifting-jack, the clutch devices for raising the lifting-bar and sustaining it when raised, comprising a recessed clutch-block upon the bar having each recess covered and bevelled internally on its rear surface in a downward direction, and containing a roller, the standard portion of the device having a covered recess below each recess in the clutch-block, and formed like the same, and containing a roller, a hinge on the cover of each, said recess having a leaf to extend into the recess above it into contact with the roller therein, a lever extending through the standard portion into each lower recess under the roller contained therein, and means, substantially as described, for actuating the clutch block, substantially as set forth. 4th. In a lifting-jack, the combination, with the lifting-bar, of clutch devices for raising the bar and sustaining it when raised, comprising a clutch block *C* having a central opening to admit the lifting-bar, and provided on two opposite sides with recesses *D* containing rollers *D*, the standard portion of the device having two recesses *H*, below the recesses *D*, and containing rollers *H*, substantially as described. 5th. In a lifting-jack, the combination, with the lifting-bar, of clutch devices for raising the bar and sustaining it when raised, comprising a clutch-block *C*, having a central opening to admit the lifting-bar, and provided on two opposite sides with covered recesses *D* containing rollers *D*, the standard portion of the device having two covered recesses *H*, below the recesses *D*, and containing rollers *H*, a hinge *S* on the cover of each recess *H*, having its leaf to extend into a recess *o* into contact with the roller contained therein, a bifurcated lever *K* fulcrumed on the standard and extending through the same, to cause each arm to enter a recess *H*, beneath the roller contained therein, and means, substantially as described, for actuating the clutch block, substantially as set forth. 6th. In a lifting-jack, the combination, with the lifting-bar, of the following elements: a clutch block *C*, having a central opening to admit the lifting-bar provided on two opposite sides with

covered recesses *D* containing loose rollers *D*, a bifurcated lever *E*, having its arms journalled at opposite sides of the clutch-block and fulcrumed upon a shifting block *F*, supported in a slot *m* in the standard, the standard portion of the device having two covered recesses *H* below the recesses *D* containing loose rollers *H*, a hinge *S* on the cover of each recess *H*, having its leaf to extend into a recess *o*, into contact with the roller contained therein, and a bifurcated lever *K* fulcrumed on the standard and extending through the same, to cause each arm to enter the recess *H*, beneath the roller contained therein, the whole being constructed and arranged to operate substantially as described.

No. 24,829. Friction Clutch.

(Embrayage à Friction.)

Axel A. Strom, Austin, Ill., U.S., 23th August, 1886; 5 years.

Claim.—1st. The combination, with a lifting-bar, of a movable recessed clutch-block *B* and a stationary recessed clutch block *B*, one above the other upon the lifting-bar to be clutched, which passes through them, and having each recess bevelled and containing a roller and a lever for actuating the lifting clutch-block, substantially as described. 2nd. The combination, with a lifting-bar, of a movable recessed clutch-block *B* and a stationary recessed clutch block *B*, one above the other upon the lifting-bar to be clutched, which passes through them, and having each recess bevelled and containing a roller, and means, substantially as described, for releasing the retaining-clutch *B* at will, whereby the lifting-bar may be raised intermittently by operating the lifting clutch-block *B*, through the medium of a suitable lever and caused to descend by releasing the gripping roller in the retaining-clutch, substantially as set forth. 3rd. The combination, with a lifting-bar, of a movable recessed clutch-block *B* and a stationary recessed clutch-block *B*, one above the other on the lifting-bar to be clutched, which passes through them, and having each recess bevelled and containing a roller, means, substantially as described, for releasing at will each roller in the lifting clutch-block, whereby the bar may be raised intermittently by operating the lifting clutch block through the medium of a suitable lever, and caused to drop directly to its lowest position by lowering the lifting clutch-block and releasing each gripping roller of the retaining clutch-block, substantially as set forth. 4th. The combination, with a lifting-bar, of a movable recessed clutch-block *B* and a stationary recessed clutch-block *B*, one above the other on the lifting-bar to be clutched, which passes through them and having each recess bevelled and containing a roller, and a lever *E* for releasing each roller in the retaining clutch-block *B* at will, whereby the lifting-bar may be raised intermittently by operating the lifting clutch block through the medium of a suitable lever and caused to descend by releasing each gripping roller in the retaining-clutch, substantially as described. 5th. The combination, with a lifting-bar, of a movable recessed clutch-block *B* and a stationary recessed clutch-block *B*, one above the other on the lifting-bar to be clutched, which passes through them and having each recess bevelled and containing a roller, and a lever *E* for releasing each roller in the retaining clutch-block *B* at will, whereby the lifting-bar may be raised intermittently by operating the lifting clutch block through the medium of a suitable lever and caused to drop directly to its lowest position by lowering the lifting clutch-block, and releasing each gripping-roller of the retaining clutch-block, substantially as described.

No. 24,830. Hot Water or Steam Radiator.

(Calorifère à Eau ou à Vapeur.)

John W. Hughes, Montreal, Que., 23th August, 1886; 5 years.

Claim.—1st. In the construction of radiators, the improved arrangement and combination of a section, at the lower end of which the heated medium is received and rises to the top thereof, with a number of sections into the top, of which the heated medium flows and having parted with its heat descends to the bottom of, and from thence escapes, substantially as shown and described. 2nd. The combination of the sections *A*, having inlet *a* and openings *a'*, with sub-sections having openings *a*, and outlet *a'*, the whole constructed and arranged substantially as described.

No. 24,831. Cultivator. (Cultivateur.)

William D. Lloyd, Johnson, Texas, U. S., 23th August, 1886; 5 years.

Claim.—1st. The combination, with a sulky, of a set of ploughs secured to the sulky in vertically-swinging adjustment, each having a rearwardly-projecting handle, a rest secured to the sulky for holding the ploughs in elevated position, and a clod-crusher or leveler pivoted to the sulky and adapted to be adjusted by the driver, substantially as set forth. 2nd. The combination, with the arched axle, the side rails rigidly secured thereto and projecting in front of, and behind said axle, the said side rails being curved or bent inwardly at their front ends, a tongue secured to said front ends of the said rails, a bar connecting the rear ends of the side rails, and a driver's seat secured on said bar, of standards depending from the tongue ploughs secured to the standards, and handles secured to the plough beams and projecting upwardly behind the axle within reach of the driver, substantially as set forth. 3rd. The combination, with the sulky, the two sets of ploughs hinged thereto, each having a rearwardly-projecting handle and a rest secured to the sulky, for engaging the handles and supporting the ploughs while in an elevated position, of the single plough hinged in advance of the two sets, and the clod-crusher and leveler hinged at the rear, substantially as set forth. 4th. The combination, with the arched axle, the skeleton frame supported thereon, and the tongue attached to the frame, of the backbone or brace leading from the tongue to the axle, and provided at its rear end with plough or cultivator handle, rest and reinholder, substantially as set forth. 5th. The combination, with the arched axle, the side rails rigidly secured thereto and curved or bent inwardly at their front ends, and a tongue secured thereto and curved or bent inwardly at their front ends, and a tongue secured to the front ends of said rails, of the brace *E* connecting the axle and

tongue, substantially as set forth. 6th. The combination, with a skeleton frame supported upon a pair of wheels, and a backbone or brace connecting the tongue with an arched axle, of a furrow opener, the covering-ploughs and a feed-hopper and dropper, arranged substantially as set forth.

No. 24,832. Hoppie. (*Chevre*)

William H. Crittenden, Ruggles, Ohio, U. S., 23th August, 1886; 5 years.

Claim.—1st. A hoppie of the class described, comprising two jaws pivoted to each other, and provided back of their pivot with operating levers, and forwardly extended to form embracing portions for the hook and tail of a cow, the ends of said jaws being provided with a spring-clasp, substantially as specified. 2nd. The two jaws A pivoted at B and provided with the loops C, the hook-embracing portion A¹, the tail-embracing portion E, and the clasp F, substantially as specified. 3rd. The jaws A, formed with the loops C, and pivoted at B, and extended to form the hook embracing portion A¹, and the tail-embracing portion E, said portion being provided with a series of studs or spurs E², substantially as specified.

No. 24,833. Washing Machine. (*Javeuse*)

Joseph Roulston and William C. Fanning, St. Catharines, Ont., 23th August, 1886; 5 years.

Claim.—1st. A rubber B pivoted on the cross-bar D, in combination with the blocks E, arranged to support the cross-bar D and hinged to the sides of the box A, substantially as and for the purpose specified. 2nd. A box A having a wringer fixed to one of its ends, in combination with the roller F, arranged substantially as and for the purpose specified. 3rd. A roller G, journaled in the box A and provided with a crank-handle I, in combination with the roller H journaled in the blocks G, located as specified, and acted upon by the spring-plate J, substantially as and for the purpose specified.

No. 24,834. Double Acting Force Pump.

(*Pompe Foulante à Double Action*)

Hiram Q. Hood, Wellington, N. Y., U. S., 23th August, 1886; 5 years.

Claim.—In a double-acting force pump, the combination, with submerged forcing chamber having receiving and discharging chambers arranged on opposite sides thereof, of a central piston rod having a circular plunger mounted on the lower end thereof, operating in the forcing chamber, suitable ventilating means connected to the top of the receiving chamber and extending above the ground, and suitable automatically operating valves, substantially as described.

No. 24,835. Semaphore. (*Sémaphore*)

David Tapley, Woodstock, N. B., 23th August, 1886; 5 years.

Claim.—The combination of the slide link and grab hook with a chain, for tightening the semaphore wire, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the double universal joint with the lamp rod and signal board, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the counterbalances A and B, with the semaphore gear, substantially as and for the purpose hereinbefore set forth.

No. 24,836. Machine for Cutting Lumber.

(*Machine à Tailler le Bois.*)

Homan S. Smith, Brooklyn, N. Y., U. S., 23th August, 1886; 5 years.

Claim.—1st. In a lumber cutting machine, the combination of a knife carrier sliding in inclined ways and provided with outwardly extending projections, a steam cylinder containing a piston, whose piston-rod is attached to the knife-carrier, and trip levers pivoted upon the upper one of the ways, in the path of the projections upon the moving carrier, said trip levers connecting together, and with the valve mechanism of the steam cylinder, so that the actuation at proper intervals of the trip levers, by the projection on the carrier, will regulate the steam supply for reciprocating the latter, substantially as shown and described. 2nd. In a lumber cutting machine, the combination of a knife-carrier sliding in inclined ways, and provided with projections extending over the upper way, a main steam cylinder containing a piston, whose piston-rod is connected with the said cross-head, valve-chests located on each extremity of the main cylinder, a supplemental steam cylinder attached to the main cylinder and carrying a valve-stem, a valve-stem passing through the supplemental cylinder, and having its ends attached to the valves contained within the chests of the main cylinder, and means for automatically regulating the steam supply so as to reciprocate the cross-head, which consists of trip levers pivoted upon the upper of the ways, and connecting with each other and with the valve in the chest of the supplemental cylinder by suitable levers, which trip levers lie in the path of the projections upon the cross-head and are actuated thereby, substantially in the manner shown and for the purposes set forth. 3rd. In a lumber cutting machine, the combination of a carrier for the knife sliding in inclined ways, a main steam cylinder containing a piston, whose piston-rod is connected with the said cross-head, valve chests located on each extremity of the main cylinder, a supplemental steam cylinder attached to the main cylinder, a valve stem passing through the supplemental cylinder and having its ends attached to the valves contained within the chests of the main cylinder, and means for shifting the valve stem by hand in order to control the movement of the cross-head at any point in the length of its stroke, which consists of a hand lever connected by suitable rods and levers with the said stem, substantially as herein specified and shown. 4th. In a lumber cutting machine, the combination of a cross-head sliding in inclined ways and provided with projections extending over the face of the upper way, a steam cylinder containing a piston, whose rod connects with the cross-head, automatic mechanism for reciprocating the cross-head, consisting of pivoted trip levers secured upon the upper way in the path of the projections on the cross-head, which levers connect with the valve mechanism of the cylinder, and

with which levers the projections come into contact, and means consisting of a hand lever and rods for connecting the same with the valve stem, whereby the valve mechanism is shifted by hand so as to stop the cross-head at any point in the stroke, substantially as shown and described. 5th. In a lumber cutting machine, the combination, with a knife-carrying cross-head reciprocated by the direct action of steam upon a steam piston enclosed within a steam cylinder, and a valve mechanism for regulating the steam supply to effect such reciprocations, of a hand lever and rods connecting the same, with the valve stem to shift it, and a hand lever and rods connecting the same with the valve in the steam supply pipe, for controlling the admission of steam to the cylinder, so that, by the conjoint manipulation of the two hand levers, the cross-head can be governed at all points throughout the length of its stroke, substantially as represented and herein specified. 6th. In a machine for cutting lumber, the combination, with a reciprocating cross-head and pivoted levers *e*, intermittently moved by it, of the rock-shaft *b* carrying at one extremity the upper lever *c*, and at the other a double lever *a*, the connecting rod *v*, and a system of levers for operating the feed, one of which levers is provided with a movable fulcrum, whereby the feeding mechanism is rendered adjustable for any thickness of board to be cut, said fulcrum consisting essentially of a socket inclosing the lever, which socket is pivoted to a sleeve adjustable upon a vertical column, substantially as shown and set forth. 7th. In a machine for cutting lumber, the combination of the standards *m*, plates *r*, and castings *o*, having rear flanges working in grooves of the plates *r*, and carrying journal-boxes for the feed-screws, all of which parts are combined together by means of bolts *w* passing through slots, as shown, and are rendered horizontally movable together with the feed-screws, by means of vertically oscillating wedges actuated by a leverage connection automatically acted on by the reciprocating carrier, substantially as shown and described. 8th. In a lumber cutting machine, the following elements in combination, viz the inclined ways, the cross-head sliding therein and carrying a cutter located transversely to the ways, the steam cylinder containing a steam piston, whose piston rod is secured to the cross-head perpendicularly to the cutter, valve chests situated on each end of the cylinder, a supplemental cylinder secured to the side of the main cylinder, and a valve stem within the supplemental cylinder, whose extremities are connected with the valves in the chests of the main cylinder, so that the admission of steam to the supplemental cylinder will shift the valve stem and reciprocate the cross-head, substantially as shown and described. 9th. In a lumber cutting machine, the automatic mechanism for shifting the valve stem and reciprocating the cutter at each end of the stroke, which consists of pivoted trip levers *r*, *r*¹, adapted to be brought alternately into contact with the cross-head, said levers being connected by a rod *r*², the rod *r*³ pivoted to a bell-crank *r*⁴, which actuate a rod *r*, and thereby moves a slide-valve in the chest *e*, and admits steam to the cylinders *c*, to shift the stem *g*, substantially as shown and described. 10th. In a machine for cutting lumber, the combination, with the stay-log, of horizontal feed screws *n*, journaled in suitable holders *b* and *t*, and provided with ratchet wheels *s*, mounted closely thereon and having interiorly-projecting lugs, which engage with longitudinal grooves in the feed-screws, which latter are further provided with levers *s*¹, *s*², connected together by a cross-rod *s*³, and each carrying a pawl for engaging the ratchet, said levers *s*¹, *s*², being moved so as to feed the log forward by means of a leverage connection automatically acted on by the knife-carrier, as shown and set forth. 11th. In a machine for cutting lumber, a retracting mechanism for withdrawing the log after each cut, which consists essentially of bi-sectional holders for the feed-screws, the lower section being smooth, while the upper section is screw-threaded to fit the screws, and is rendered immovable therefrom by being provided with a rear flange, which works in a groove in a horizontally movable casting, and of vertically oscillatory wedges, which enter inclined grooves in the said castings and are actuated to move the holders and their accompanying feed screws, stay log and log, by means of levers intermittently operated by the reciprocating cutter, substantially as shown and described. 12th. In a machine for cutting lumber, the combination, with the feed-screws of a feeding mechanism, of boxes fashioned interiorly so as to engage the contained feed-screws, which boxes serve to hold the feed-screws in any position in which their governing mechanism may place them, and which boxes are themselves horizontally movable in conjunction with the feed-screws to which they are connected, so as to change the position of the feed screws and thus retract the log, substantially as shown and set forth. 13th. In a machine for cutting lumber, the combination, with the feed screws, of bi-sectional journal boxes, whose lower sections are smoothly bored and mounted on a suitable standard, and whose upper sections have a screw-threaded interior for engagement with the screws, and are removable from the screws by being provided with a dovetailed flange, working in a dovetailed groove formed in the supporting casting, as shown and for the purposes set forth. 14th. In a machine for cutting lumber, the combination of the ways *f*, *f*¹, provided with levers *e*¹, connected by a rod *e*, and a cross-head reciprocating between said ways and having its lower side bar provided with dogs *a*¹ and *a*², which intermittently come into contact with the said levers *e*¹, for the purpose of automatically actuating the stay log, as shown and described. 15th. In a machine for cutting lumber, the combination, with a reciprocating cross-head and pivoted levers *e* intermittently moved by it, of a rock shaft *b*, carrying at one extremity the upper lever *c*, and at the other a double lever *a*, by means of which rock-shaft motion is imparted to the bell-crank *b*, connecting with each other and with the lever *a* by means of suitable rods and levers, and each actuating a wedge-carrying vertical rod *r*, which operates to retract the stay-log from the knife, substantially as shown and described.

No. 24,837. Gauge or Indicator for Steam Boilers. (*Manomètre*)

John B. Little, Winnipeg, Man., 23th August, 1886; 5 years.

Claim.—1st. The combination, with a glass tube and its mountings, said mountings having valve seats, of valves located in the mountings and means for supporting the valves from contact with the seats, as set forth. 2d. The combination, with a glass tube and its mountings, said mountings having valve seats, of valves to close said seats,

and means located within the glass tube for supporting the valves from their seats, as set forth. 3rd. The combination, with a glass tube and its mountings, having valve seats and valves to close the same, of a jointed rod located within the glass tube and connected with the valves, as set forth. 4th. The combination, with a glass tube and its mountings, said mountings having valves, seats and valves, of a jointed rod located in the tube and connected with the valves, and a cross rod pivoted to one of the sections of the jointed rod, as set forth.

No. 24,838. Manufacture of Sugar by Electrolysis and Apparatus Thereof.
(Fabrication du Sucre à l'Electrolyse et Appareil pour cet objet.)

Ernst Fabrig, Manchester, Eng., 28th August, 1886; 5 years.

Claim.—1st. The combination of networks or sieves *c.* of platinum or other inoxidizable or semi-inoxidizable metal and non-conducting plates *d.* with a high tension dynamo, substantially as described and shown herebefore and in the accompanying drawing, for the purpose set forth. 2nd. The combination of a low tension dynamo, with positive and negative conductors for the purpose set forth herebefore, substantially as described and shown herebefore and in the accompanying drawing.

No. 24,839 Portable Electrical Gas Lighting Apparatus. (Appareil d'Eclairage au Gaz Electrique Portatif.)

The Domestic Electrical Manufacturing Company, Boston, Mass., U. S. (assignee of Charles L. Clarke, Manchester, Eng.), 30th August, 1886; 5 years.

Claim.—1st. An electric gas lighting apparatus, consisting of an inductive generator of electricity, a motor, mechanism to revolve the moving parts thereof, an actuating push button for the said motor, and disconnecting gear adapted to release the said motor from the control of the push button after a single impulse, whereby a protracted operation of the generator may be developed from a single motive impulse, together with igniting points or electrodes connected by means of suitable conductors with the said generator, whereby sparks may be produced in a continuous stream and be directed to any desired point, substantially as described. 2nd. A portable electrical gas-lighting apparatus, consisting of an inductive generating machine, conducting wires and electrodes therefor, an actuating mechanism for the said machine, and a drying chamber fitted with a textile fabric impregnated with chloride of calcium or similar compound, the generating device actuating mechanism and drying compound being enclosed in the handle of the instrument in the manner specified, and the said actuating mechanism being provided with a starting knob or button, the shank of which passes through the casing, but which is itself fixed upon the outside thereof, whereby the same hand that grasps the handle may operate the generator. 3rd. A portable electrical gas-lighting apparatus or electric torch consisting of a rotary inductive generator of high tension, electricity conducting wires and electrodes for said generator inclosed in a tube of desired length, an actuating mechanism for the said generator adapted to be manually operated from the outside and provided with a push-button, whereby the mechanism may be actuated to rotate the generator cylinder, and an inclosing case formed of vulcanite or similar dielectric divided into separate compartments, one of which serves to inclose the motor mechanism, while the other serves to inclose the generator and also constitutes the outer cylinder of said generator, the entire case being also adapted to serve as a handle for the complete lighting apparatus, substantially as described. 4th. An electric torch for igniting gas or inflammable vapour consisting of the combination, in a single case or handle, of an inductive generating device, an actuating mechanism therefor adapted to be operated by the same hand that carries the torch, leading out wires inclosed in an extension tube and terminating in spark points, a condenser interposed between the said wires, and a chamber fitted with a suitable drying or absorbent substance, whereby the interior of the apparatus is maintained perfectly dry and the efficiency of the instrument insured. 5th. An electric gas-lighting apparatus consisting of four detachable sections, adapted to be screwed together to form one portable instrument, one section composed of a tube inclosing the terminal wires, sparking points and a condenser, the second section including an electro-static inductive generating device, the third an actuating mechanism for the said induction machine, capable of being set in action from the outside by means of a press-button projecting through the casing, and the fourth section comprising a drying chamber inclosing textile fabric or blotting paper impregnated with calcium chloride, substantially as described. 6th. The combination, with the lighting tube *E* of a portable electrical gas-lighting apparatus, of the detachable cap-piece *F* carrying the screen *k.* for the purpose described. 7th. In a portable electric gas-lighting apparatus, an electro-static inductive generating device of cylindrical form, comprising an outer cylinder of ebonite or similar material, supporting armatures or inductors of metal foil, an inner cylinder of like material adapted to rotate on bearings or pivots, and supporting carriers of metal foil, contact springs, whereby the charges induced upon the said carriers are re-distributed, and means, as indicated, whereby one of the said cylinders may be rotated with reference to the other, conducting wires and electrodes inclosed in a tube of suitable length, whereby the disruptive discharges of the generator, when operated, may be directed to the required point, and an inclosing case for the working parts constituting a handle for the lighter, a portion of which case incloses the motor mechanism while a second portion constitutes the outer cylinder of the generator.

No. 24,840. Saw-Swaging Machine.

(Machine à Etamper les Scies.)

Collingwood Campbell, West Bay, and James E. Thomas, Bay City, Mich., U. S., 30th August, 1886; 5 years.

Claim.—1st. In a saw-swage, the combination, with a cylindrical die-holder having a longitudinal opening on one side of its centre, and a transverse slot in the middle of its length, of a cylindrical die placed in the said longitudinal opening and extending across the said slot, substantially as and for the purpose set forth. 2nd. In a saw-swage, the cylindrical revolving die having a die face extending entirely around its central portion, and consisting of the reduced portions *v* on each end portion of the face, and the reduced portion *S* in the central portion of the face, substantially as and for the purpose set forth. 3rd. In a saw-swage, the combination, with a holder *a* provided with devices for clamping the holder to the saw, and an anvil die supported by the holder, of a cylindrical die-holder passed through the holder *a* and provided with a longitudinal opening in one side of its centre, and having a transverse slot in the middle of its length and reaching into the said longitudinal opening, and a cylindrical die placed into the said opening and extending across the slot, substantially as and for the purpose herein set forth. 4th. In a saw-swage, the combination with a cylindrical die-holder having a longitudinal opening in one side of its centre, and a transverse slot in the middle of its length and reaching to the said opening, a cylindrical die within the opening and extending across the slot, of a screw passed into the end of the said longitudinal opening and with its inner end against the die, substantially as and for the purpose set forth. 5th. In a saw-swage, the combination, with a cylindrical die-holder provided with a transverse slot in the middle of its length, and a longitudinal opening in one side of its centre, and a cylindrical die within the opening, of an anvil die having a portion reaching into the said slot and provided with a die face, substantially as and for the purpose herein set forth. 6th. In a saw-swage, the combination, with a holder *a* provided with devices for clamping and holding the saw tooth, a cylindrical die-holder provided with a cylindrical die on one side of its centre, and a transverse slot on one side of the cylinder and opening to the die face, of an anvil die having a portion *r* extending into the said slot and provided with a die face, a spindle *g* extending through the upper portion of the holder *a*, and a sleeve *h* surrounding the spindle and secured to the holder *a* by a screw-thread, substantially as and for the purpose set forth. 7th. The combination, in a saw-swage, of a swaging die and an anvil die, with a die face in the said anvil die having side links *u*, whereby the saw teeth are brought to a uniform width by the swaging operation, substantially as and for the purpose herein set forth. 8th. The combination, in a saw-swaging machine, of a holder *o*, provided with a slot *b* and the said portions *d*, a swaging die passed into the holder, and an anvil die above the swaging die, with a jaw *S* passed through the portion *d* and reaching into the slot *b*, and provided with the outwardly-extending spindle *r*, a sieve *v* surrounding the spindle and with its inner end against the jaw, and provided with a screw thread engaging with a screw-thread in the portion *d*, substantially as and for the purpose set forth. 9th. In a saw-swage, a cylindrical die-holder having a longitudinal opening in one side of its centre, and a transverse slot in the middle of its length and reaching to the opening, in combination with a cylindrical die reaching across the slot and loosely secured within the said opening, whereby the die revolves in one direction and the holder in the opposite direction when operating on the saw tooth, substantially as set forth. 10th. In a saw-swage, the combination, with a holder *a* and devices for clamping the holder to the saw, and a die-holder passing through the holder *a*, and provided with a cylindrical die, of a band *r* surrounding the holder and provided with an arm *l* and the extension *k*, and the bolt *t* passed through the arm and extension, substantially as herein set forth.

No. 24,841. Alarm Bell and Lock.

(Avertisseur à Sonnerie et Serrure.)

Charles Falter, (assignee of John Feal, Montreal, Que., 30th August, 1886; 5 years.

Claim.—1st. An alarm door bell and burglar-proof lock fastened to the inside of a door, at any desired height from the door knob, and operated by the spindle that passes through said door and lock to which the knobs are fastened, as above described and for the purposes set forth. 2nd. A ratchet *I*, provided with teeth *l* in any desired number at one end, and a round hole *m* at the other, sufficiently large enough to let the spindle *K* to pass through and turn without said ratchet, substantially as above described and for the purposes set forth. 3rd. A saddle *H*, provided with a square hole *J* through which the spindle *k* passes closely, projections *i*, *t*, to keep the ratchet *I* under, and projections *j*, *j*, to hold spiral springs *c*, *c*, in place, as above described and for the purposes set forth. 4th. A dog *E*, provided with a tooth *n* made to correspond to those of the ratchet *I*, projections *o* and *p*, said dog *E* being also pivoted at *f*, the whole holding hammer *F* substantially as described and for the purpose set forth. 5th. A lock lever *D* pivoted at *e* provided with a head *r*, to operate the dog *E*, also with a lug *a*, to lock the whole mechanism and door to which it is attached, as above described and for the purposes set forth. 6th. A plate *A* cut under a special die and provided with screw-holes *a*, *b*, *h*, slots *c*, *e*, and corresponding catches *d*, *d*, round hole *m* through which the spindle *k* passes, and projection *t*, substantially as above described and for the purpose set forth. 7th. A cap or cover *k*, for the whole mechanism of my present invention, having bent edges *q*, *q*, to go under and slide along plate *A*, to hold on it, and having also a closed end *L* and side slot for the lock lever handle *D*, to pass through the whole, as above described and for the purposes set forth. 8th. A spring *C*, fastened to a part *h* on plate *A* at one end, and engaged behind projection *p* of dog *E* at the other, as above described and for the purposes set forth.

No. 24,842. Stubble and Sod Plough.

(Charrue à Chaume et à Gazon.)

John Currie and James Milne, London, Ont., 30th August, 1886; 5 years.

Claim.—1st. The arched coulters *D*, *D*, shaped as shown, in combination with standards *B*, *B* and mould-boards *C*, *C* of a stubble and sod plough, as shown and specified. 2nd. The scrapers *H* attached

to levers I, J, K, immediately above the wheels L, M, N, and in combination therewith, substantially as and for the purpose specified. 3rd. The bracket G attached to frame A, as a support for spring F, of seat E, of a stubble and sod plough, and in combination therewith, substantially as shown and specified. 4th. In a stubble and sod plough, the frame A shaped substantially as shown in combination, with the arched coulters B, D, a pair of standards B, B and mould-boards C, C, also shaped as shown and specified.

No. 24,843. Brick Kiln. (*Four à Brique*)

Jacob Buhner, Constanz, Germany, and David Moore, Cleveland, Ohio, U.S., 30th August, 1886; 5 years.

Claim.—1st. A brick kiln provided with a series of communicating chambers, with gas burners located in their floors, series of smoke conduits leading from smoke slots in the chamber floors to a smoke collecting channel, a main smoke conduit leading to a chimney, and series of apertured partitions between the several chambers, substantially as shown and described. 2nd. The combination, in a brick kiln, of gas generators J, K, gasometers L, combination chambers I, II, III, IV, V, VI, VII, VIII, apertured partitions π separating the several chambers, gas burners in the several chambers, valves for controlling the supply of gas to the gas burners, conduits for conducting smoke from each chamber through the series of smoke conduits leading from smoke slots in the chamber floors to a smoke-collecting channel, air ducts for receiving the heated air from the several chambers, and a series of air conduits for conducting heated air from the main air conduits to the ignited burners, and valves for controlling the smoke and air ducts, substantially as shown and described. 3rd. The combination, in a brick kiln, of gas generators J, K, gasometers L, M, combination chambers I, II, III, IV, V, VI, VII, VIII, apertured partitions π separating the several chambers, valves for controlling the supply of gas to the gas burners, in the several chambers, valves for controlling the supply of gas to the burners, means, substantially as described, for conducting smoke from each chamber to the smoke chimney, air ducts for receiving the heated air from the several chambers, and a series of air conduits for conducting heated air from the main air conduits to the ignited burners, valves for controlling the smoke and air ducts, and the drying chambers ρ ρ ρ substantially as shown and described. 4th. The method of burning brick, which consists in drying the moulded brick in the heat abstracted from the cooling finished product, and in burning the brick so dried by applying heat to the dried brick contained in the different chambers in rotation, thereby rendering the operation of brick-burning continuous, substantially as shown and described.

No. 24,844. Fly Screen. (*Moustiquaire*.)

Joseph B. Sheridan, Toronto, Ont., 31st August, 1886; 5 years.

Claim.—A fly-screen having a series of projections A made on the outside of its surface, with a hole a made in the centre of each projection.

No. 24,845. House Raising Apparatus.

(*Machine à Soulever les Maisons*.)

Thomas F. Maher, San Francisco, Cal., U. S., 31st August, 1886; 5 years.

Claim.—1st. In house raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts, adapted to be fitted over the screw at any portion, and frames adapted to be fitted around the screw and to form bearings for the nuts, substantially as described. 2nd. In house raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts adapted to be fitted over the screw at any portion, frames adapted to be fitted around the screw, and removable cross-pieces supported by the frames and forming bearings for the nuts, substantially as described. 3rd. In house raising apparatus, the combination of a screw on which the weight rests, separable or divided nuts having flanges and adapted to be fitted over the screw at any portion, frames adapted to be fitted around the screw, and removable cross-pieces supported by the frames and forming bearings for the flanges of the nuts, substantially as described. 4th. In house raising apparatus, the screw-elevating nut D, having a flange d and consisting of two independent parts, and the pivoted balls or clamps d_1 for holding the parts together, substantially as described. 5th. In house raising apparatus, the screw elevating flanged nut D, consisting of two independent parts united by dowel-pins d_1 , and the pivoted balls or clamps d_1 for holding the parts together, substantially as described. 6th. In house raising apparatus, the frame B having an opening b in one side or end, by which it can be fitted around the lifting screw, while the latter is in place, substantially as described. 7th. In house raising apparatus, the frame B, having an opening b in one side or end, by which it can be fitted around the lifting screw, and ledges b_2 in combination with the removable cross-pieces C supported on the ledges, substantially as described. 8th. In house raising apparatus, the screw supporting the weight, and separable or divided nuts to be fitted on said screw, in combination with frames B, having an opening b on one side or end, by which they can be fitted around the screw, and ledges b_2 in their sides, and the removable cross-pieces C supported on the ledges and supporting the flanged nuts, substantially as described. 9th. In house raising apparatus, the screw supporting the weight and frames constructed to fit around the screw while in place, in combination with the flanged nuts D, consisting of two independent parts united by dowel-pins and held together by pivoted clamps d_1 , said nuts being fitted on the screw while in place, and bearing on the frames, substantially as described. 10th. In house raising apparatus, the combination of the screw A supporting the weight, the frames B having openings b and removable cross-pieces C having bearings c , and the two-part separable flanged nut D fitting on the screw and bearing on the cross-pieces, substantially as described.

No. 24,846. Electric Signalling Apparatus and Circuit. (*Appareil de Signal et Circuit Electriques*.)

Felix B. Herzog, New York, N.Y., U.S., 31st August, 1886; 5 years.

Claim.—1st. The combination, with a latent signal transmitter located at a sending station, and in direct circuit connection with the receiving station, and apparatus to release and respond to said transmitter at a receiving station, of a calling apparatus at the sending station, an instrument to respond thereto at the receiving station, and circuit connections, substantially as described, whereby the call denoting that the transmitter has been set and is ready to be released can be sent in without releasing or affecting said transmitter, substantially as hereinbefore set forth. 2nd. The combination, with a latent signal transmitter at a sending station, and apparatus to release and respond to said transmitter at a receiving station, of a calling apparatus at the sending station, and at the receiving station a call receiver, which continues to indicate that a call has been received after the calling apparatus at the sending station has ceased to operate, and circuit connections, substantially as described, whereby the call, denoting that the transmitter has been set and is ready to be released, can be sent in without releasing or affecting said transmitter, substantially as hereinbefore set forth. 3rd. The combination, with a latent signal transmitter at a sending station, and apparatus to release and respond to said transmitter at a receiving station, of a calling apparatus at the sending station, an instrument to respond thereto at the receiving station, and two circuits, in one of which are the latent signal transmitter and the releasing and responding apparatus, and in the other of which are the call operating and call receiving apparatus, substantially as and for the purpose described. 4th. The combination of a latent signal transmitter and a calling key or device at a sending station, apparatus to release and respond to said latent signal transmitter, and an instrument to respond to the said call at a receiving station, a wire leading from the receiving to the sending station, two return wires and circuit changers, whereby the circuit can be completed through one or the other of the return wires at will, according as it is desired to bring into action the latent signal transmitter at the one station, or the call responding instrument at the other station, substantially as hereinbefore set forth. 5th. Two or more latent signal transmitters, placed in separate rooms or sub-stations, and connected by separate circuits with the central station or office, a battery and circuit connections at the central office for releasing any of the transmitters, as desired, and two signal receiving instruments combined with a switch at the central office, and connected so that either receiving instrument may be introduced into any of the separate circuits, so as to receive the signal at pleasure, substantially as described. 6th. The combination, with a latent signal transmitter at a sending station, means to release it, and apparatus to respond to it and to calling apparatus at a distant station, and suitable circuit connections between these two stations, of an automatic circuit-controlling call transmitter at the sending station, actuated by the latent signal transmitter, whereby the receiving station is without fail informed that the latent signal transmitter is set ready to be released, substantially as described. 7th. The combination of two electric circuits connecting two stations, one circuit including a latent signal transmitter placed at a sending station, and apparatus for releasing it at a distant station, and the other circuit including call-receiving apparatus at the receiving station, and an automatic circuit-controlling call-transmitter at the first station actuated by the latent signal transmitter, whereby the operation of the latter necessarily informs the receiving station that the transmitter has been set, substantially as described. 8th. The combination of a circuit including a latent signal transmitter at a sending station, means for releasing it and apparatus for receiving its signal at a distant station, and an additional return circuit including a call signal at a distant station and at the sending station, an automatic circuit-controlling call transmitter controlled by the actuation of the latent signal transmitter, whereby the receiving station is necessarily informed that the latent signal transmitter is set, substantially as described. 9th. The combination of a signalling system, consisting of a central station electrically connected with two or more sub-stations, a latent signal transmitter at each sub station, apparatus to release them and respond to it at the central station, calling apparatus at the sub station, and a call-receiving annunciator or indicator at the central station, together with means at the sub-stations, whereby the actuations of the latent signal transmitter automatically operates the call transmitter thus actuating the annunciator and informing the receiving operator that the latent signal transmitter is set ready to be released, substantially as described. 10th. The combination of two or more separate circuits radiating from a central station, each circuit including a sub-station at which is a latent signal transmitter, the central station at which is apparatus for the releasing any desired one of the latent transmitters, and for receiving its signal, together with an annunciator or indicator to indicate when a call is received, and an additional return circuit or circuits connecting at the central office with the annunciator, and at the sending station with an automatic circuit-controlling call transmitter, actuated by the signal transmitter, to automatically connect the circuits and thereby operate the annunciator, whereby the receiving operator is informed that a latent transmitter is set and ready to be released, substantially as described. 11th. The combination, with a spring-actuated automatic signal transmitter at a sending station, a call receiver at the receiving station, and suitable circuit connections between the two stations, of an automatic circuit-controlling call transmitter at the sending station actuated by the signal transmitter, when it is being wound, but not again operated by it at its unwinding, substantially as described. 12th. The combination, with a latent transmitter, of the arm R fixed to its spindle, and of the spring T, fixed to the frame in the path of the said arm, so that the arm makes electrical connection with the spring T, in being set forward, substantially as described. 13th. A combination, with an automatic signal transmitter, of the arm R fixed to the spindle and tipped with an insulating block, as shown, and of the spring T fixed to the frame of the instrument in the path of the said arm, so that the arm makes electrical connection

with the spring, when turned in one direction, and does not when turned in the other, substantially as described.

No. 24,847. Steam Boiler. (Chaudière à Vapeur.)

Hiram Rushton, Toronto, Ont., 31st August, 1886; 5 years.

Claim.—1st. A chamber A fitted on to the inside shell of the boiler, and arranged so that its interior shall communicate with the feed-pipe D, in combination with the pipe B provided with a blow-off cock

C, arranged substantially as and for the purpose specified. 2nd. A chamber A fitted on to the inside shell of the boiler, and communicating with the interior, the pipe B, which is provided with a blow-off cock C, as specified, in combination with a feed-pipe D communicating at *c* with the interior of the chamber A, and having a deflecting plate *e*, located substantially as and for the purpose specified. 3rd. A chamber A fitted on to the inside shell of the boiler, and arranged so that its interior shall communicate with the feed-pipe D, in combination with a trough E having a series of deflecting plates F, and holes made in its end plate *f*.

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

667. G. H. STANSBURY, A. S. HUBBELL and H. S. HUBBELL, 3rd 5 years of No. 6,603, from the 28th day of September, 1886. Improvements on Grates for Stoves, 4th August, 1886.
668. J. A. MATHIEU, 2nd 5 years of No. 13,233, from the 8th day of August, 1886. Improvements on Apparatus for the Purification of Products Resulting from the Distillation of Woods, 7th August, 1886.
669. H. B. HOWARD and A. W. BURNSIDE, 2nd 5 years of No. 13,278, from the 17th day of August, 1886. Improvements on Couplings in Steam or Air Brakes, 7th August, 1886.
670. H. B. HOWARD and A. W. BURNSIDE, 2nd 5 years of No. 13,415, from the 17th day of September, 1886. Improvements on Car Couplings, 7th August, 1886.
671. J. BOND, Jr., 2nd 5 years of No. 13,350, from the 1st day of September, 1886. Improvements on Lock Stitch Sewing Machines, 10th August, 1886.
672. J. H. HARPER and J. B. POWELL, 2nd 5 years of No. 13,373, from the 4th day of September, 1886. Improvements on Spring Motors, 4th August, 1886.
673. S. McCLURE, 2nd 5 years of No. 13,250, from the 12th day of August, 1886. Improvements on Grain Sieves, 12th August, 1886.
674. C. LA DOW and J. H. MELICK, 3rd 5 years of No. 6,438, from the 12th day of August, 1886. Improvements on Horse Hay Rakes, 12th August, 1886.
675. J. B. SHERMAN and L. D. PHELPS, 2nd 5 years of No. 13,236, from 17th day of August, 1886. Improvements in Lathes for Turning Small Wooden Articles, 14th August, 1886.
676. R. MORRIS, 2nd 5 years of No. 13,585, from the 20th day of October, 1886. Improved Method of and Apparatus for Controlling the Accuracy of Sighting and Aim in Rifle Drill or Practice, 14th August, 1886.
677. C. E. BURNS, 2nd 5 years of No. 13,238, from the 17th day of August, 1886. Improvements in Machinery for Manufacturing Cylindrical Blocks for Being Converted into Spools or various other Articles, 17th August, 1886.
678. THE FEED WATER HEATER COMPANY (assignee), 2nd 5 years of No. 13,280, from the 17th day of August, 1886. Improvements on Feed Water Heating Apparatus for Locomotives, 17th August, 1886.
679. THE TORONTO DAIRY CO. (assignee), 2nd 5 years of No. 13,235, from the 17th day of August, 1886. Improvements in Bottles, 17th August, 1886.
680. R. WEIR and L. N. KEATING, 2nd 5 years of No. 13,343, from the 1st day of September, 1886. Improvement in Log Cauters, 18th August, 1886.
681. G. BOWER and A. S. BOWER, 2nd 5 years of No. 13,531, from the 12th day of October, 1886. Improvements on Effecting the Protection of Iron and Steel Surfaces and in Furnaces Employed Therein, 18th August, 1886.
682. D. F. VAN LIEW, 2nd 5 years of No. 13,356, from the 2nd day of September, 1886. Improvements on Car Door Hangers, 20th August, 1886.
683. THE CARDIGAN OVERSHOE CO. (Assignee), 3rd 5 years of No. 6,493, from the 4th day of September, 1886. Improvements on Overshoes, 23rd August, 1886.
684. J. W. CLOSE, 2nd 5 years of No. 13,313, from the 24th day of August, 1886. Improvements on Machines for Clearing Snow from Railway Tracks and other Roadways, 24th August, 1886.
685. H. W. WILSON, 2nd and 3rd 5 years of No. 24,373 from the 27th day of June, 1891. Improvements in Fence Posts, 26th August, 1886.

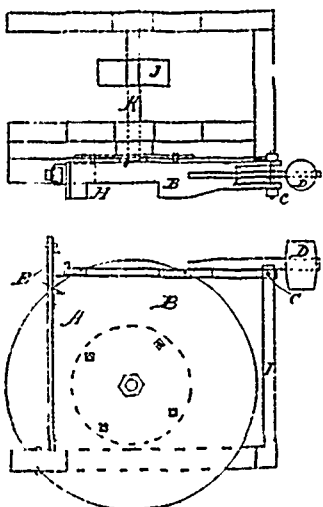
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ILLUSTRATIONS.

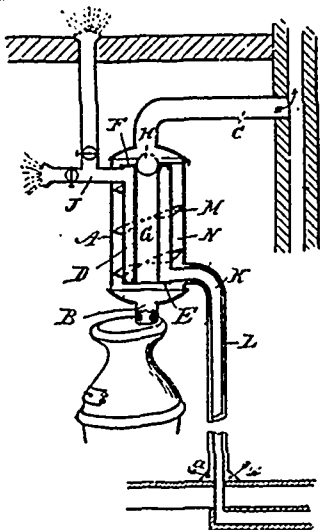
Vol. XIV.

SEPTEMBER, 1886.

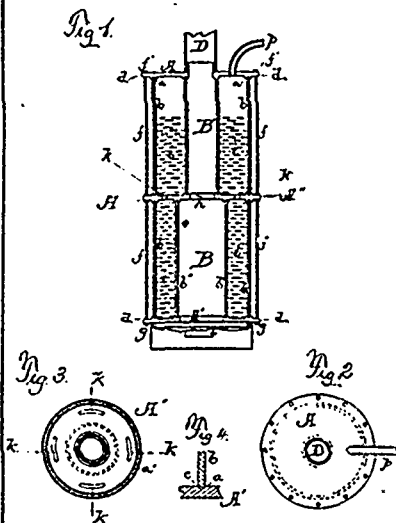
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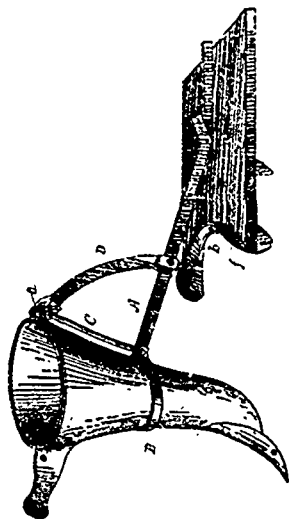
24626 Kearney's Shingle Joiner.



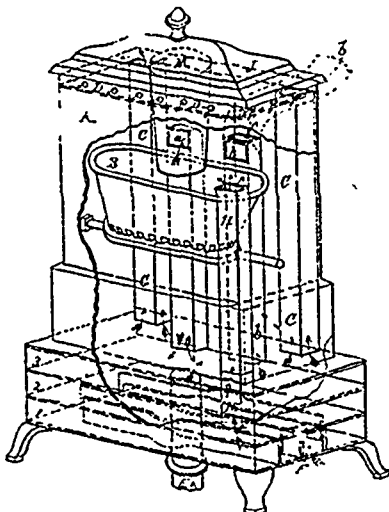
24627 Springer's Heating Drum, etc.



24628 Shepard's Steam Roller.



24629 Outram's Drill Tooth Regulator.



24630 Garlick's Stove and Furnace.

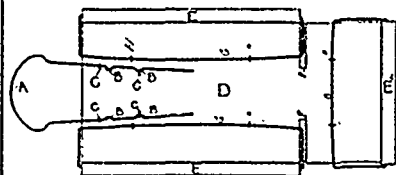


FIG. 1.

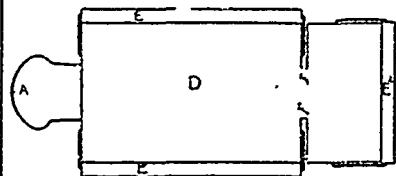
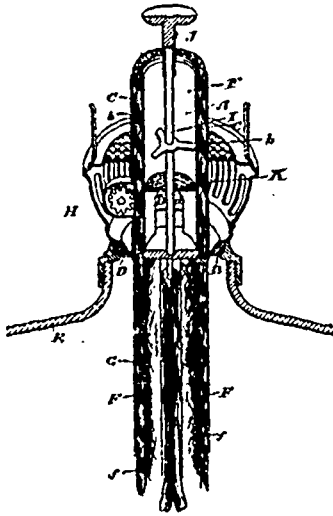
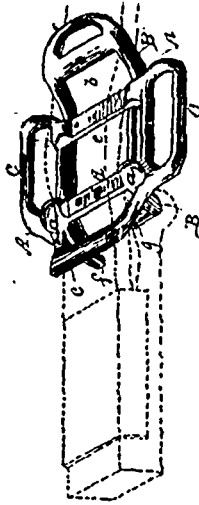


FIG. 2.

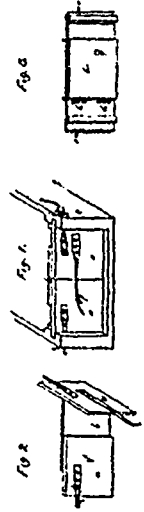
24631 Leslie's Shirt Ironing Board.



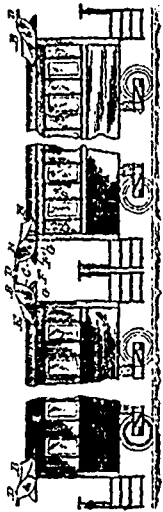
24632 McMullen's Lamp Burner.



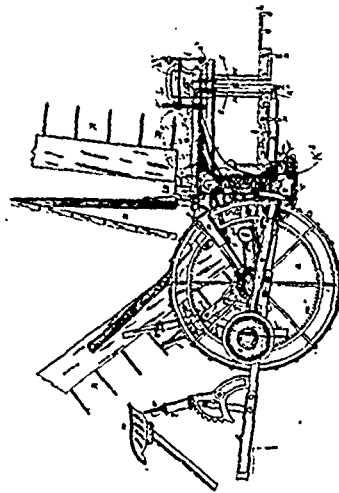
24633 Wheeler's Buckle.



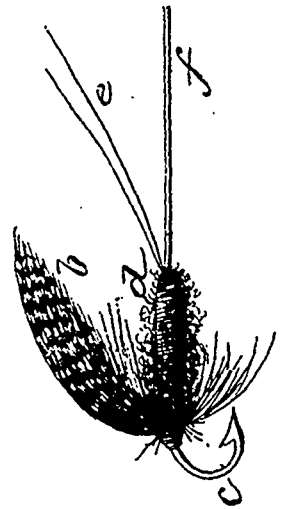
24634 Thomson's End Gate for Wagons.



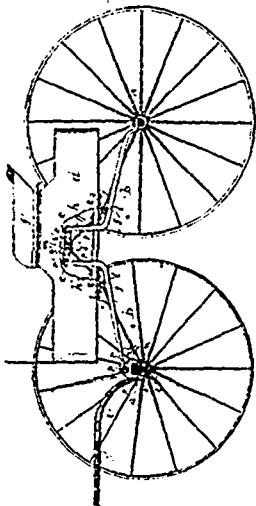
24635 Gihham's Guard for Railroad Cars.



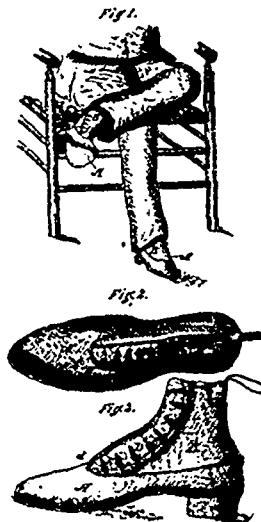
24636 Whiteley's Harvester and Binder.



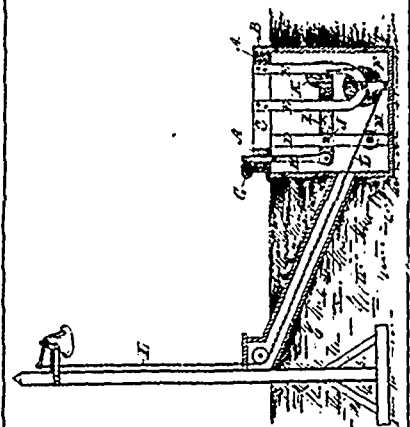
24637 Holberton's Artificial Fly.



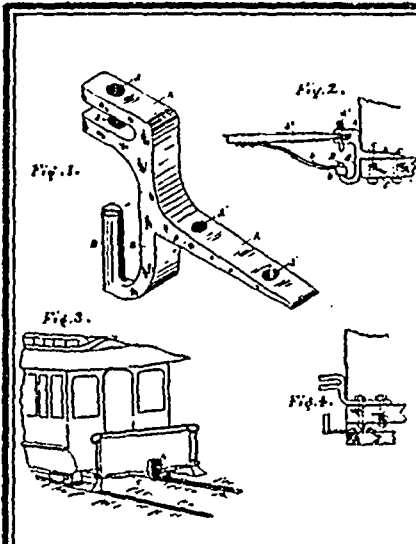
24638 Richter's Waggon Gearing.



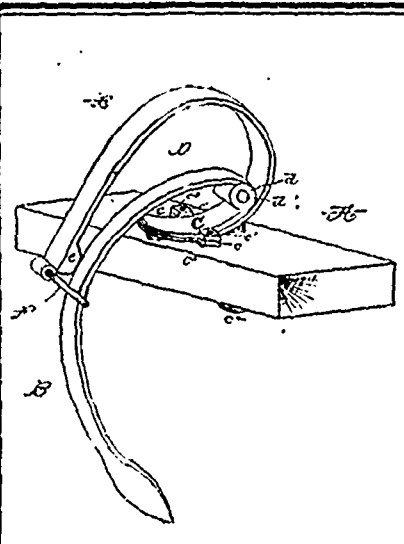
24639 Randall's Batton Shoe.



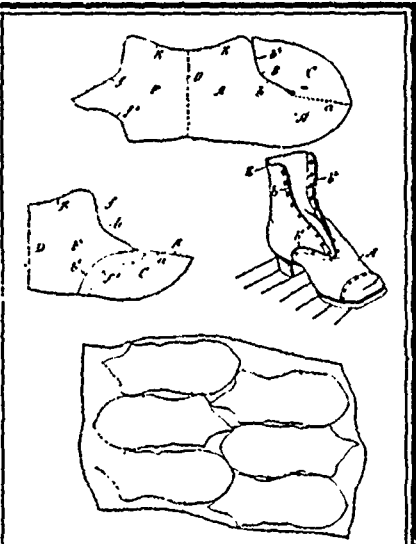
24640 Leonard's Railway Signal.



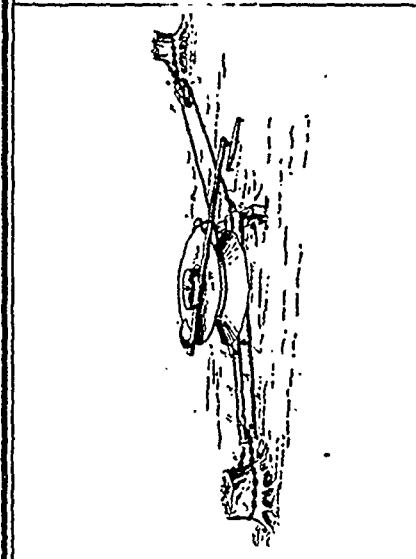
24641 Whittely's Tongue Coupling for Street Cars, etc.



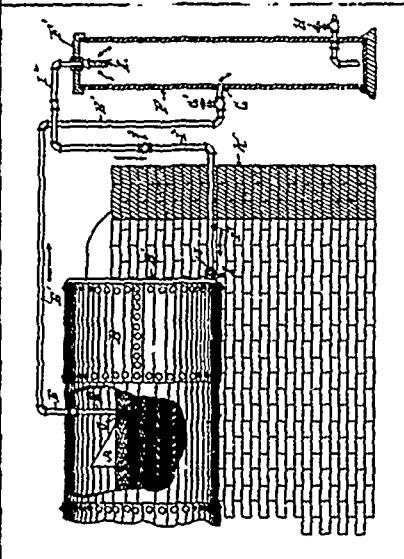
24642 McKenzie's Spring Tooth Harrow.



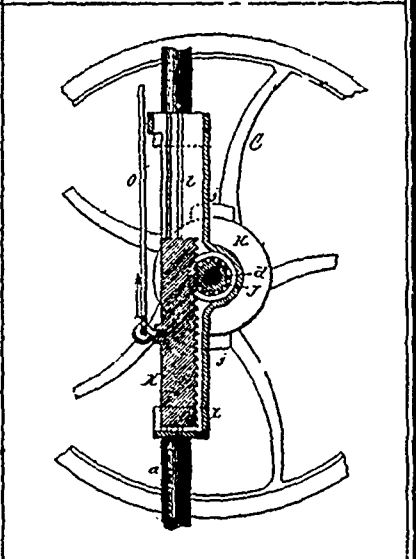
24643 Steben's Boot.



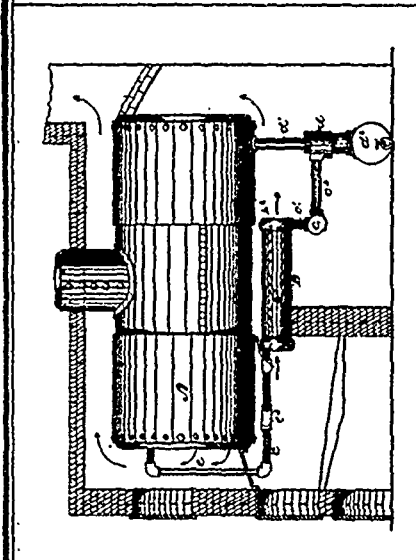
24644 Smith's Stump Extractor.



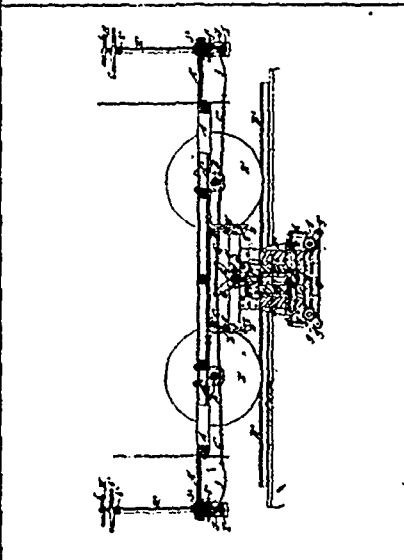
24645 Sims' Boiler Cleaner.



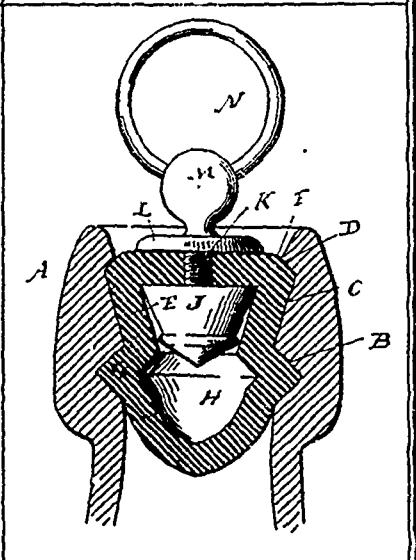
24646 Hammelmann's Mechanical Movement.



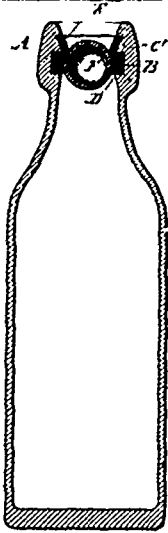
24647 Eno's Steam Generator.



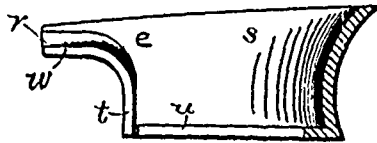
24648 Robertson and Jonson's Rope Railway.



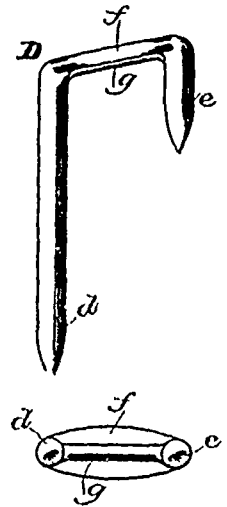
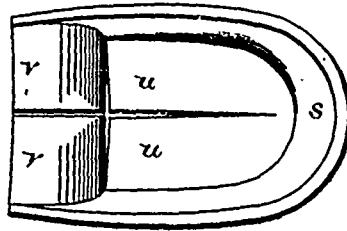
24649 Morehouse's Bottle Stopper.



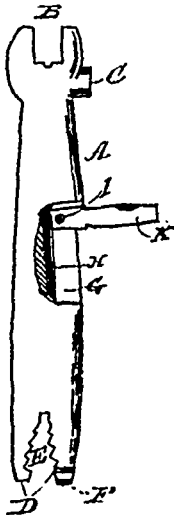
24650 Morehouse's Bottle Stopper.



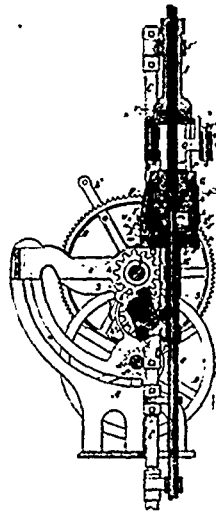
24651 LeGay's Boot or Shoe Heel.



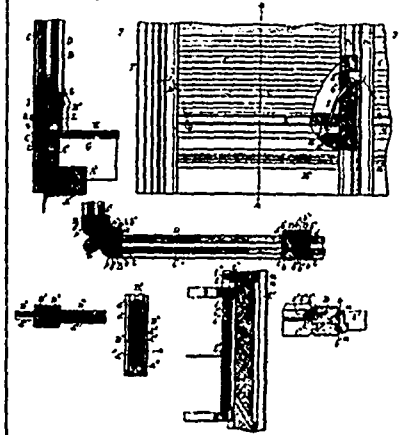
24652 LeGay's Shoe Nail.



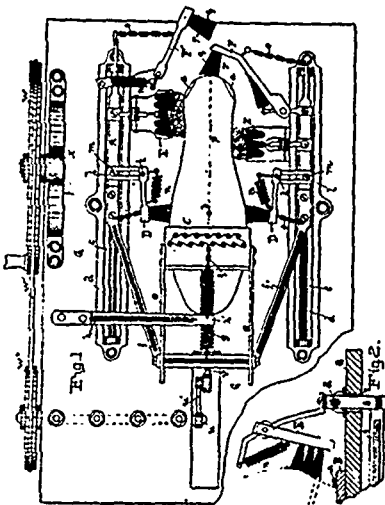
24653 Wright's Combination Wrench.



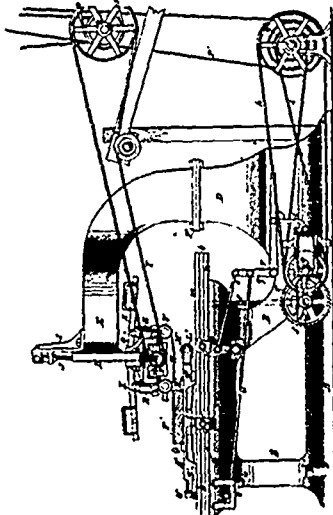
24654 Hussey's Rock Drill.



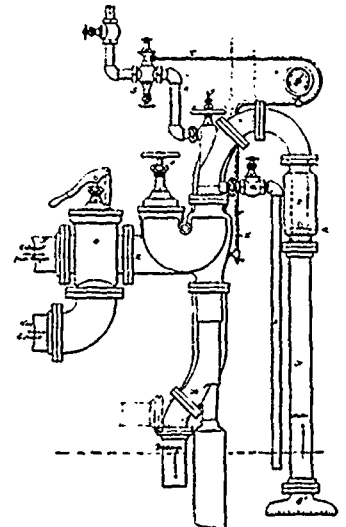
24655 Totman's House Construction.



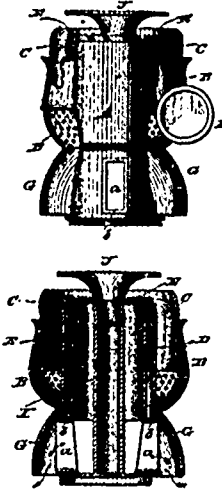
24656 Jones' Shoe Brushing Machine.



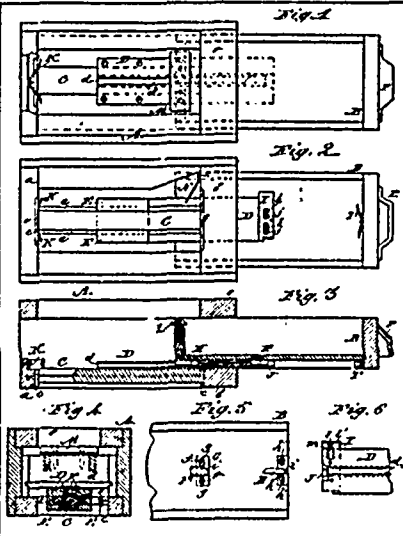
24657 Mankey's Machine for Cross-Cutting Wood.



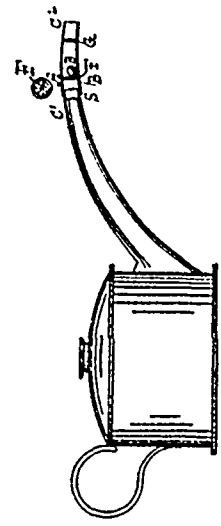
24658 Schutto's et Condenser.



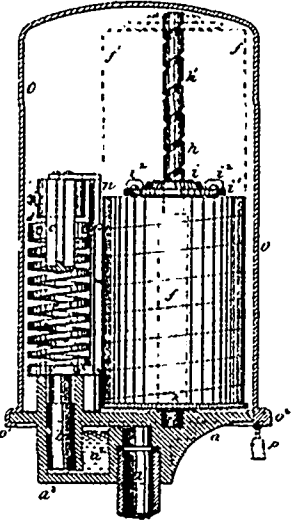
24659 Craig's Lamp Burner.



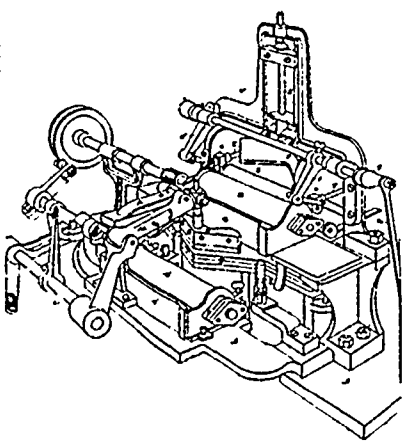
24660 Fraser's Drawer Check and Support.



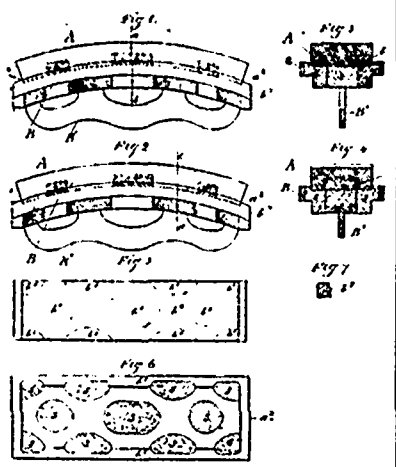
24661 Pearson's Governor Tip for Oil Cans.



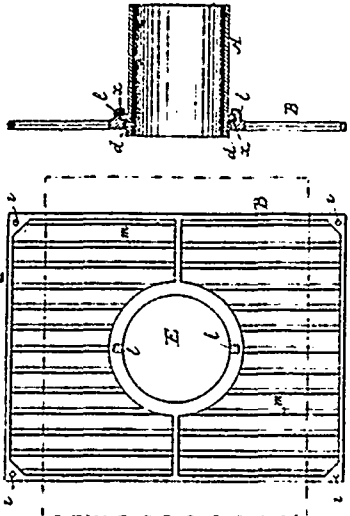
24662 Shedlock's Pressure Indicator and Recorder



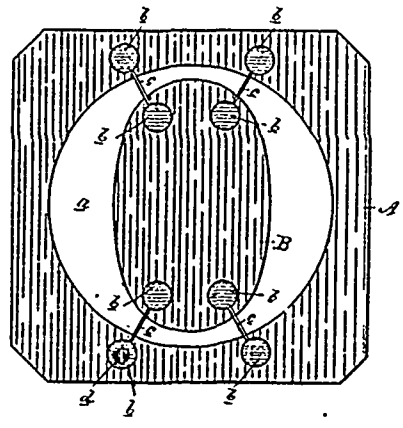
24663 Bouvier's Envelope Machine.



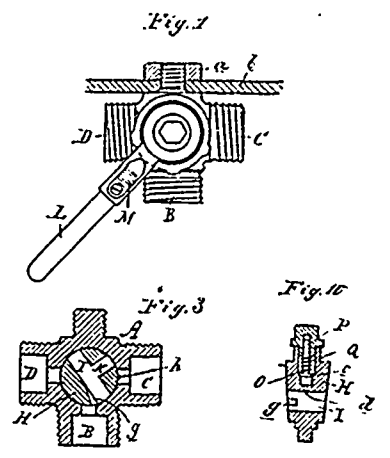
24664 Gill's Railway Brake Shoe.



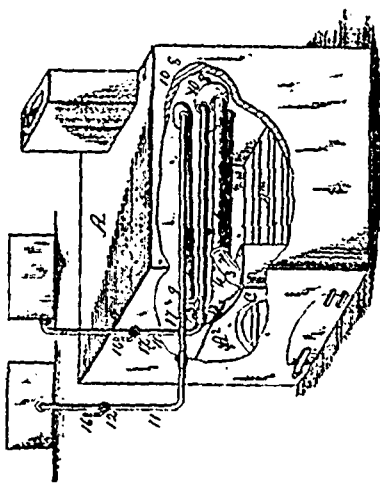
24665 Hutchins and Macomber's Funnel Thimble



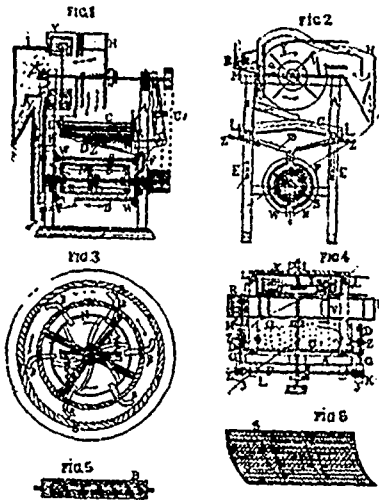
24666 Stines' Stencil.



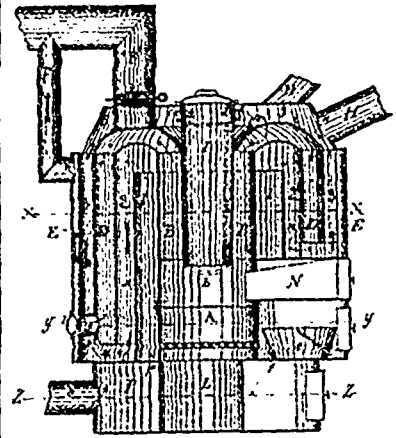
24667 McArthur's Brake Valve.



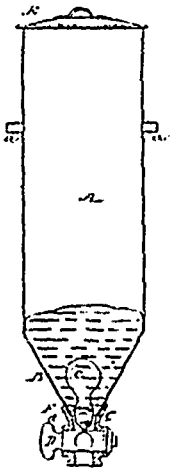
24668 Robert's Apparatus for Manufacturing Gas.



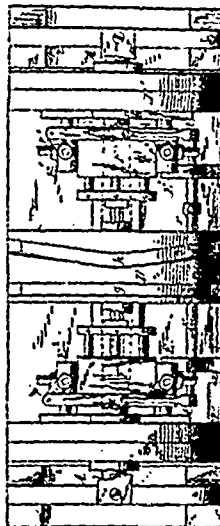
24669 Livengood's Machine for Cleaning Wheat.



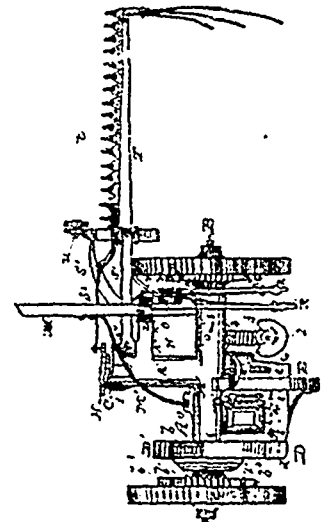
24670 Alsop's Hot Air Furnace.



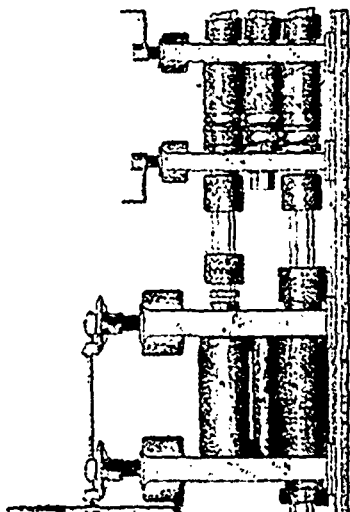
24671 Barden's Cream Separator.



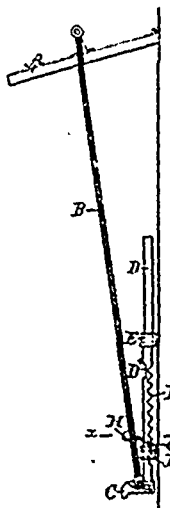
24672 Cross' Steam Engine.



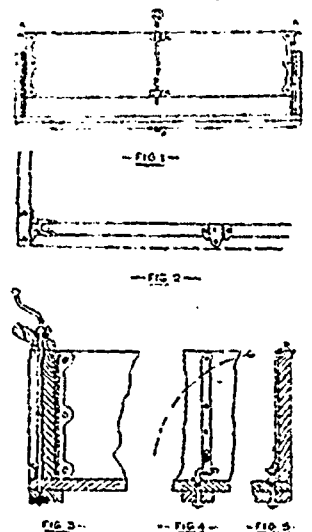
24673 Morgan's Mowing Machine.



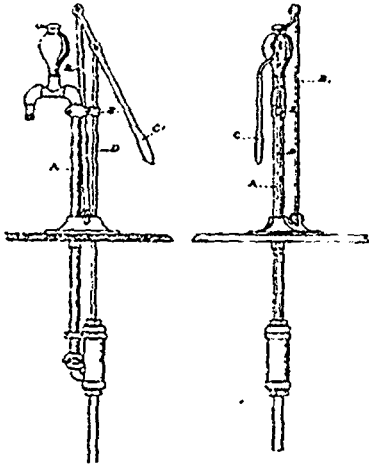
24674 Lauth's Method of Reducing old Railway Rails to Steel-Plates.



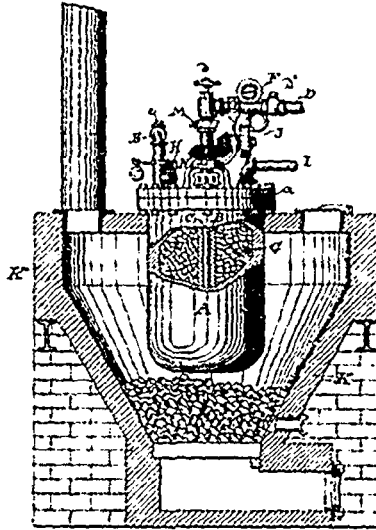
24675 Leopold's Transom Lifter.



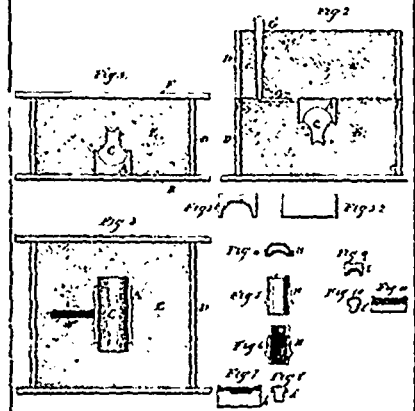
24676 Cochran's Wagon and Sleigh Box.



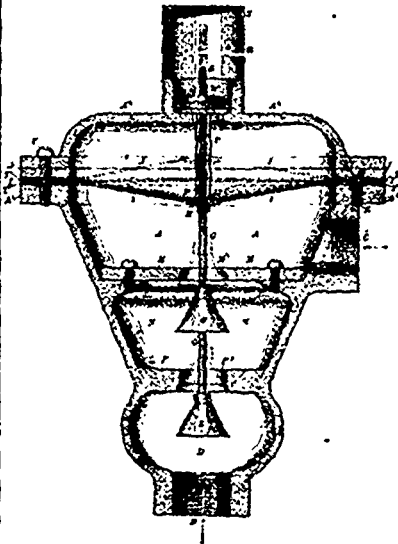
24677 Watson's Force and Lift Pump.



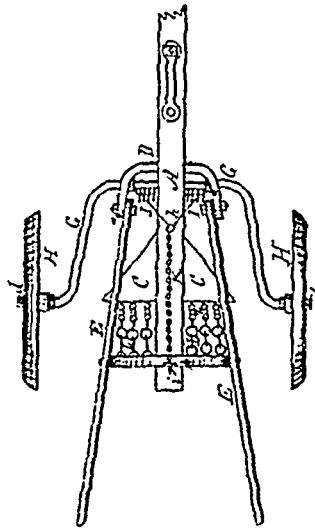
24678 Jay's Steam Generating Apparatus.



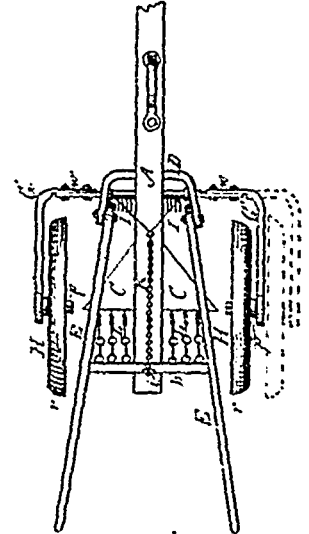
24679 Lappin's Journal Bearing.



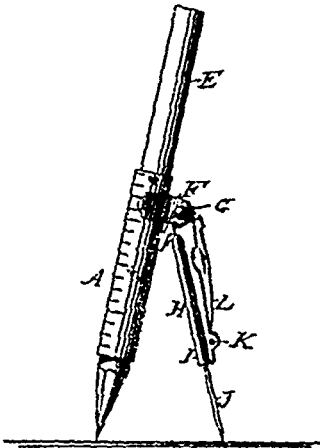
24680 Bromhead's Gas Governor.



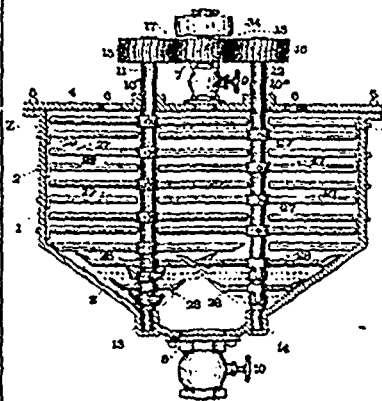
24681 Robinson's Potato Digger.



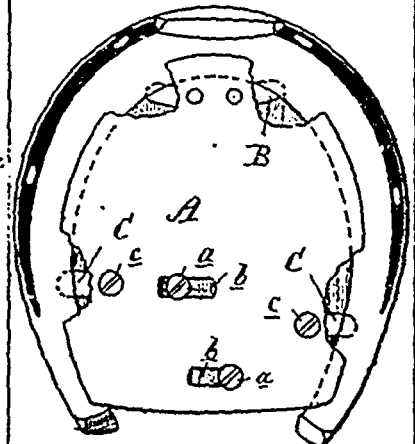
24682 Robinson's Potato Digger.



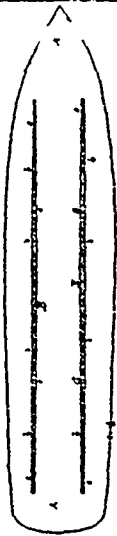
24683 Stuart's Compass.



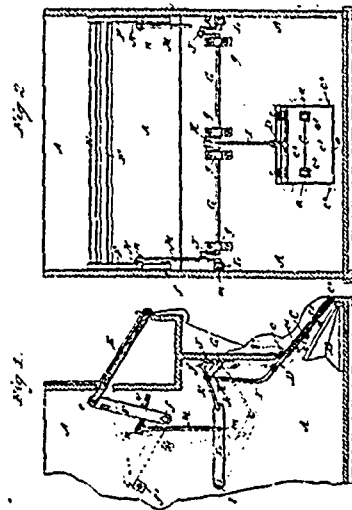
24684 Birge's Disintegrating Machine.



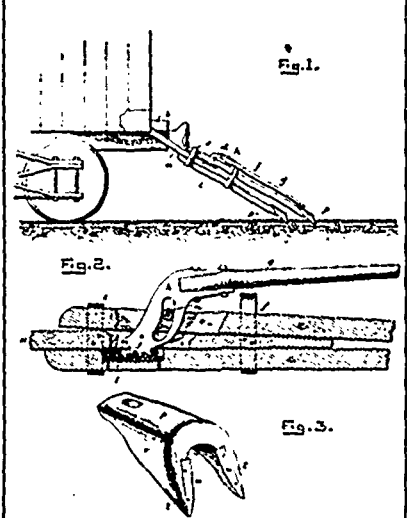
24685 Leonard's Hoof Pad.



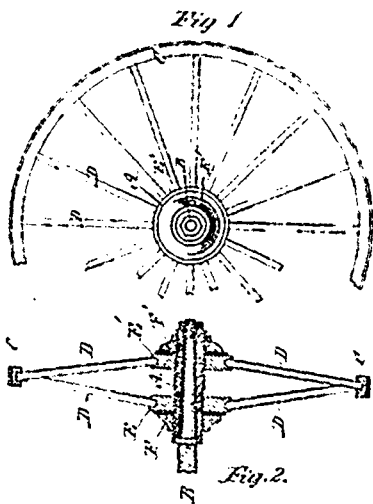
24686 Dodman's Ship Ventilator.



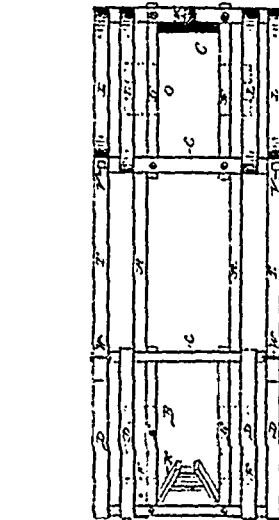
24687 Foley's Pedal Cover for Organs.



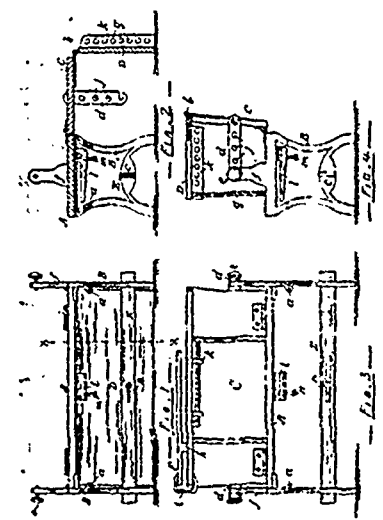
24688 Barnhart's Car Mover.



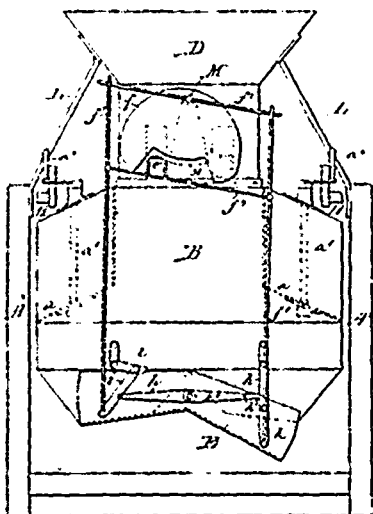
24689 Ball's Wheel.



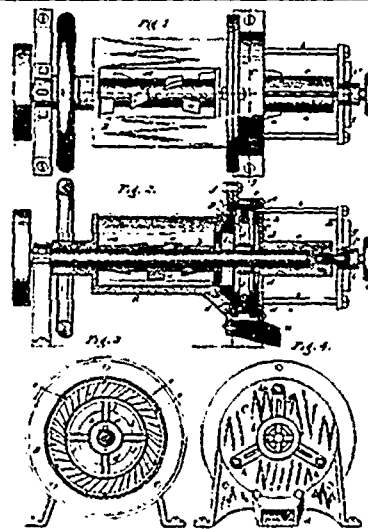
24690 Tanner's Hay Rack.



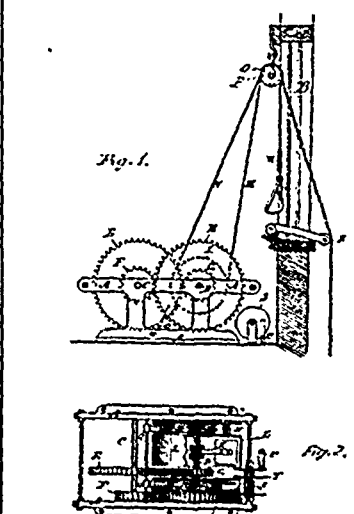
24693 Beaudre's Wash Bench.



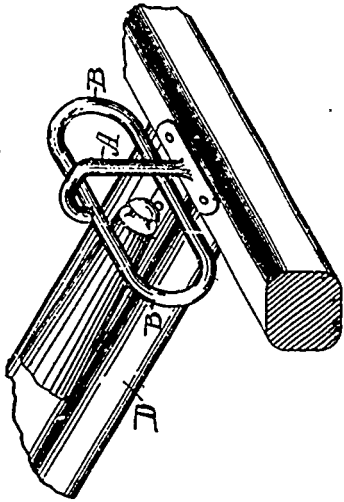
24694 O'Brien's Apparatus for Measuring and Weighing Grain.



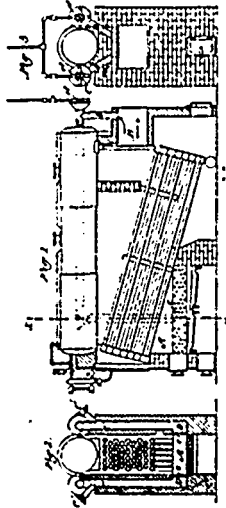
24695 Cadwgan's Feed Mill.



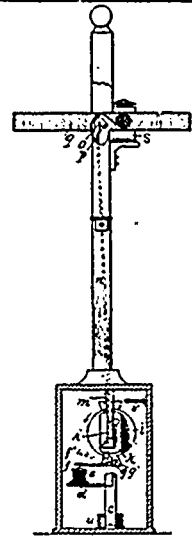
24695 Duffick's Fire Escape.



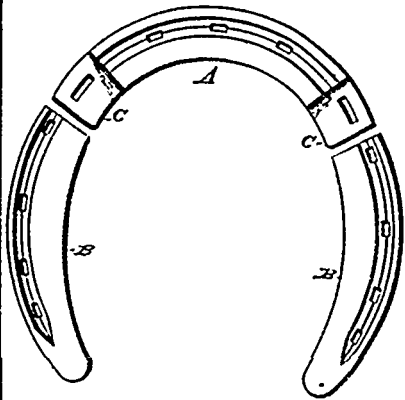
24697 Libby's Rein Guard for Whiffletrees.



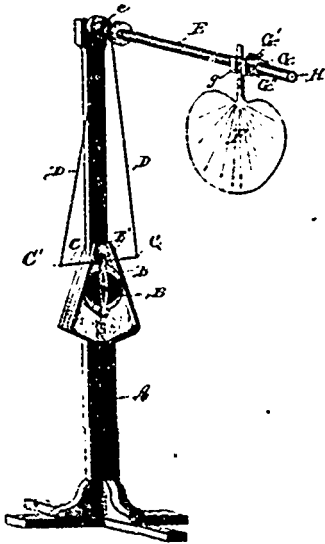
24698 Olphant's Apparatus for Promoting Combustion of Fuel.



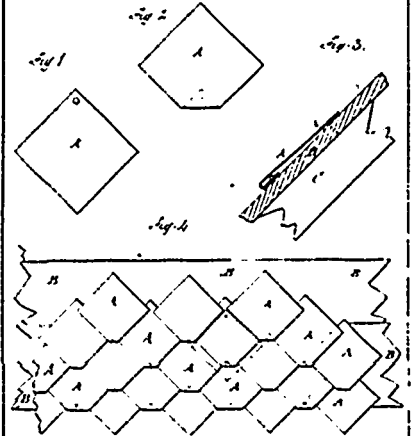
24699 Stitzel and Weindel's Semaphore.



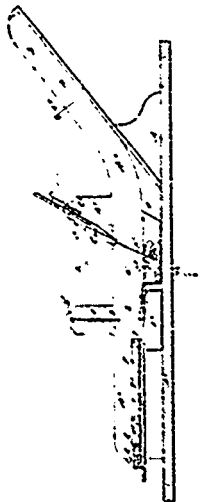
24700 Bingham's Sectional Horse Shoe.



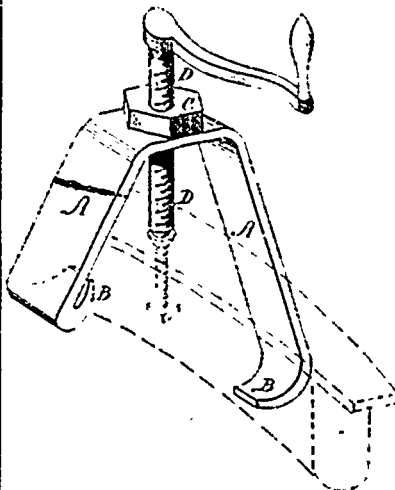
24702 Workman's Automatic Fan.



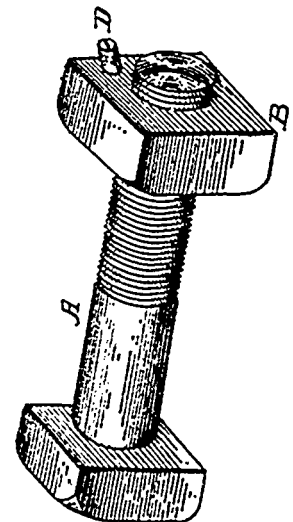
24703 Adams' Roofing.



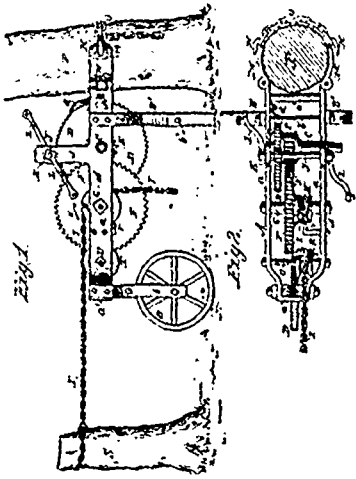
24724 Chambers' Labelling Machine



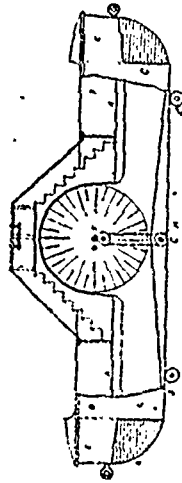
24705 Brown's Device for Clamping Loose Bolts.



24705 Goodrich's Nut Lock.



24707 Logan's Stump Extractor.



24708 Weston's Apparatus for Absorbing the Motive Force of Tides, etc., for the Purpose of Propelling Vessels.



24709 Walker's Thread Cutter.



Fig. 1

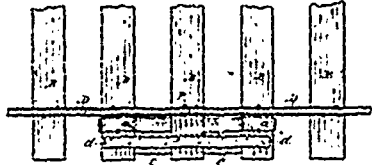
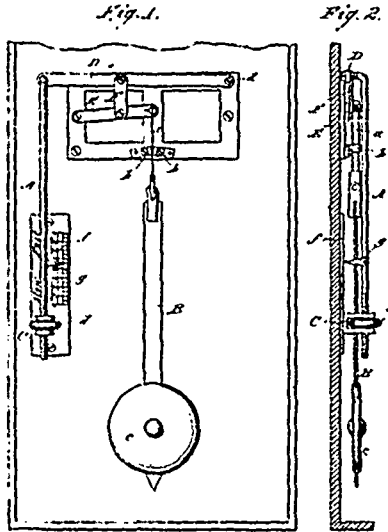


Fig. 2



Fig. 3

24710 Scott's Railway Tie Truss.



24711 Gerhardt's Compensating Pendulum.

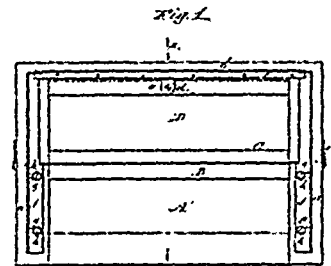


Fig. 1

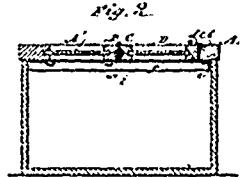
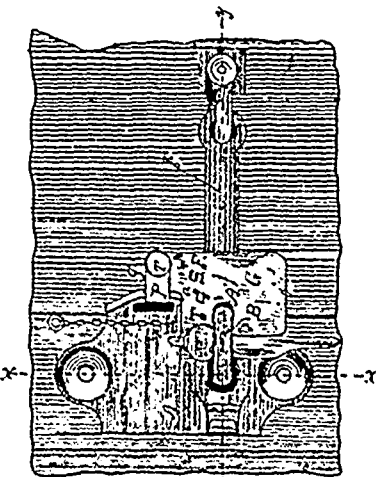
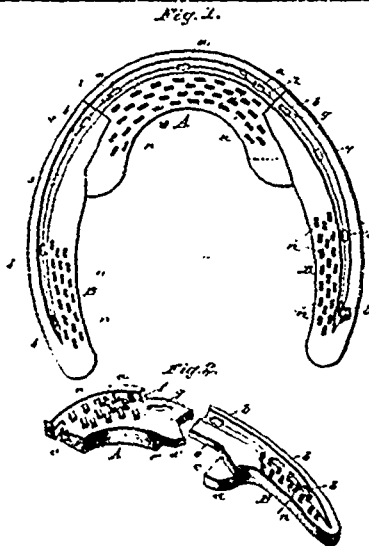


Fig. 2

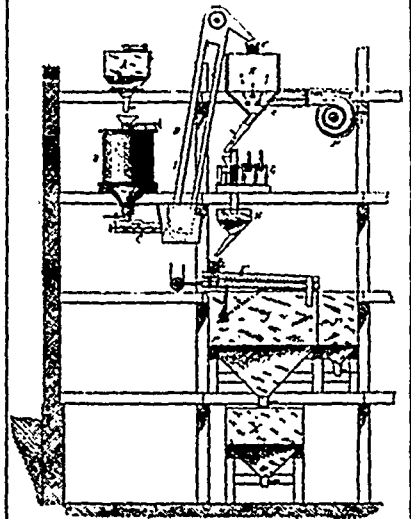
24712 Saadberg's Cover for Cracker Boxes.



24713 Smith's Seal Lock.



24714 Bligham's Horse Shoe.



24715 Schuman's Method of Preparing Starch.

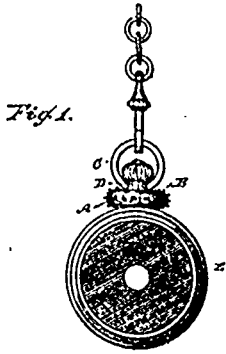
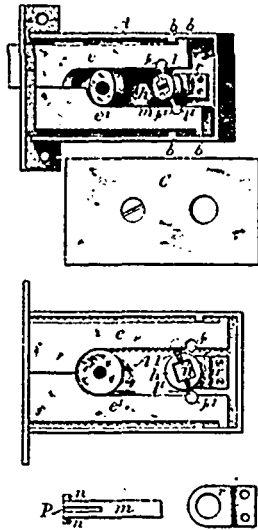


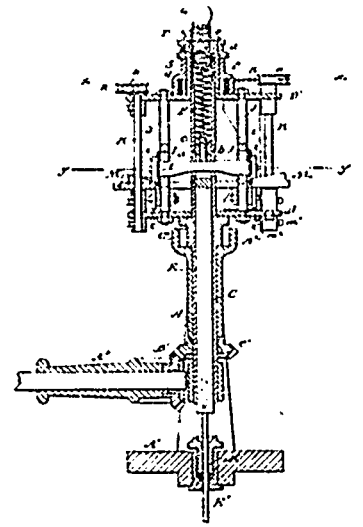
Fig. 1.



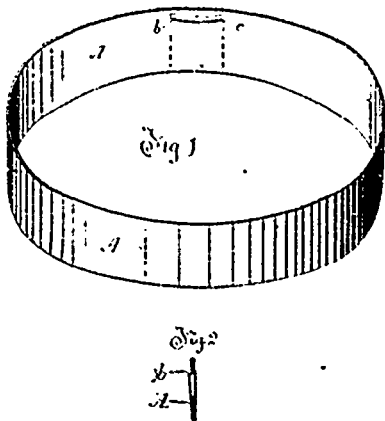
24716 Gardner's Rubber Watch Protector.



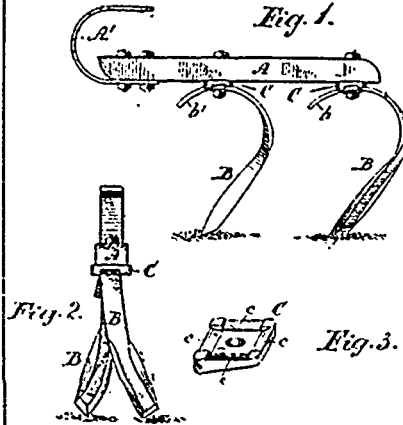
24717 Whittlesy's Door Lock.



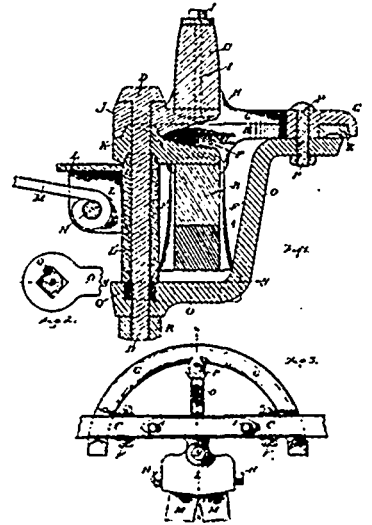
24718 Gerhard's Steam Governor.



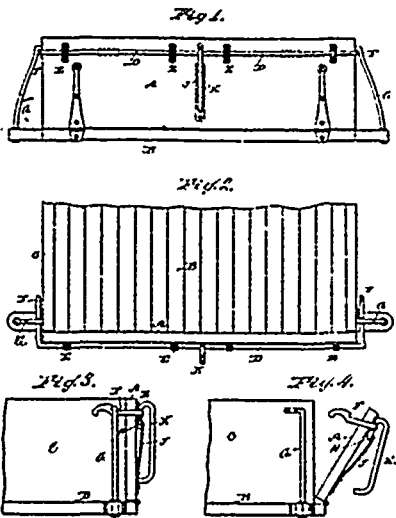
24719 Schorestene's Sweat Band.



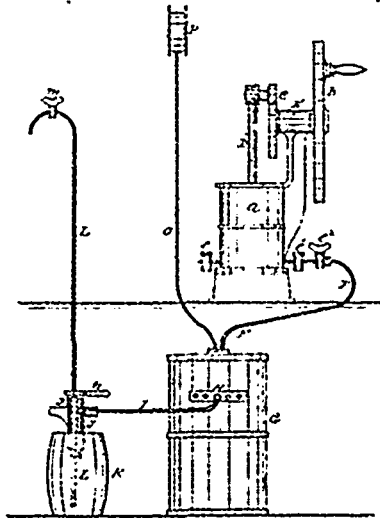
24720 Whipple's Harrow.



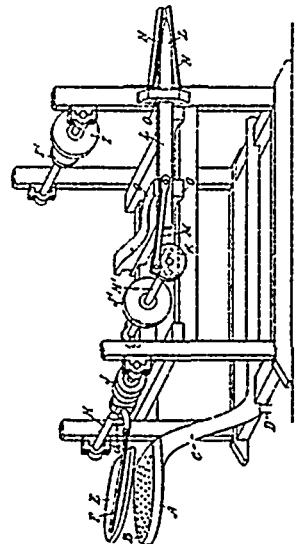
24721 Grier's Fifth Wheel for Vehicles.



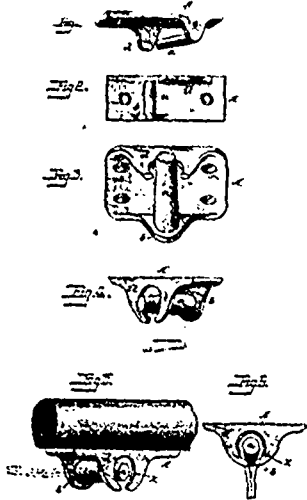
24722 McKinnon's End Gate Fastening for Wagon Boxes.



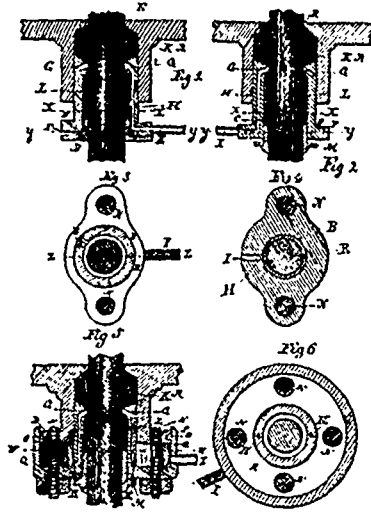
24723 Yule's Air Pressure Pump and Air Vessel.



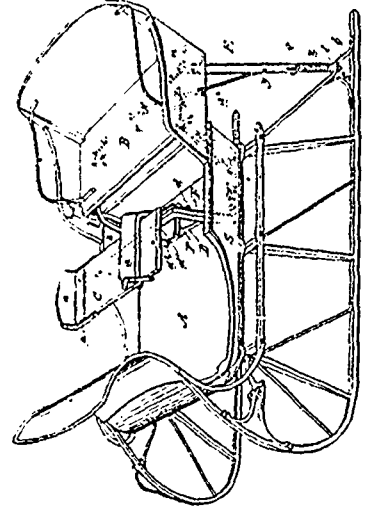
24724 Grosch & Rolston's Pelt Boot Felter and Expander.



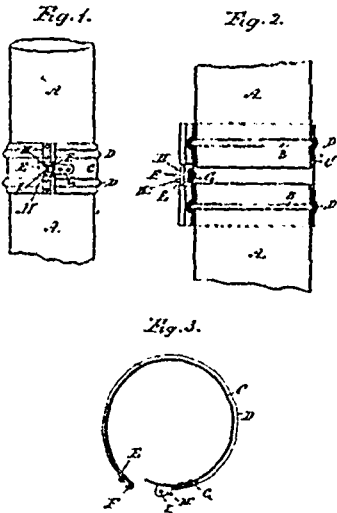
24725 Clegg and Eldredge's Hold-Back for Harnesses.



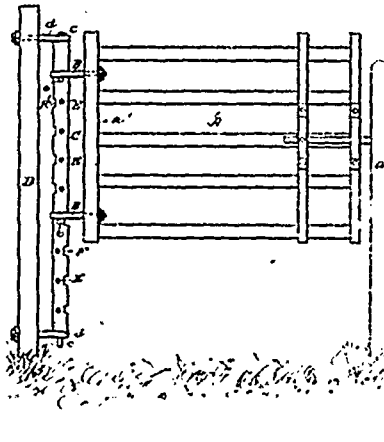
24726 Fryer's Gland for Stuffing Boxes for Steam Engines.



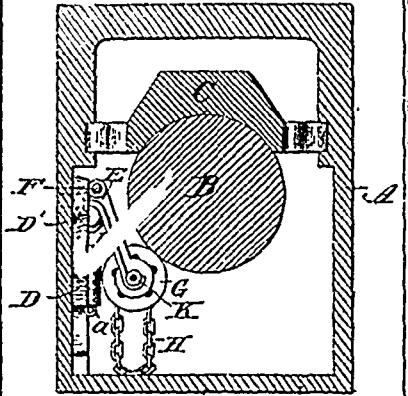
24727 S'elmbrocher's Shifting Seat for Sleighs



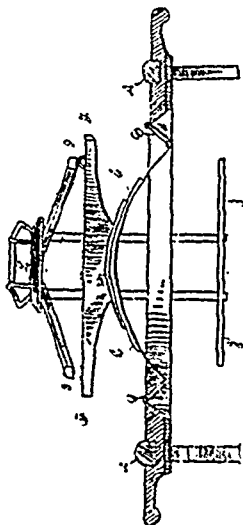
24728 Campbell's Stove Pipe Coupling.



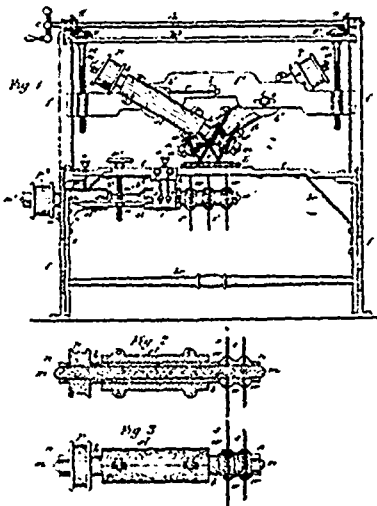
24729 Garman's Gate Hinge.



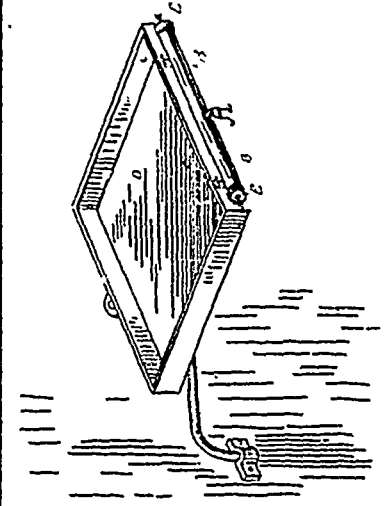
24730 Brownell's Lubricator.



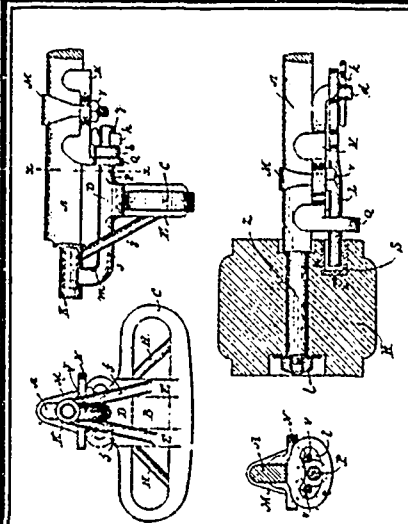
24731 Sherman's Two-Wheeled Cart.



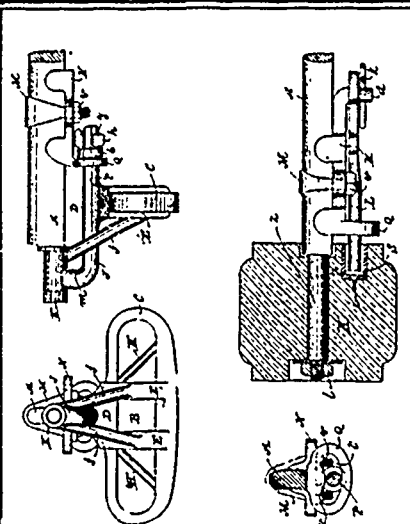
24732 Byrkit's Sheathing and Lath Machine.



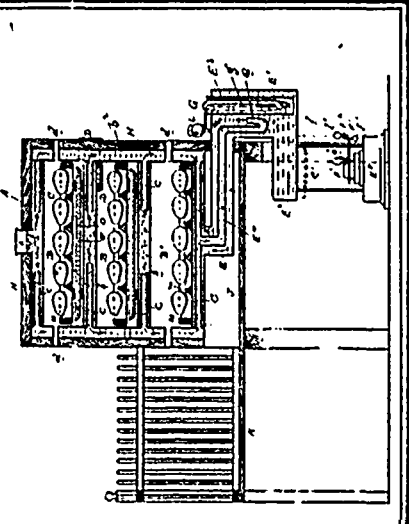
24733 Runyan's Dental Cotton Holder.



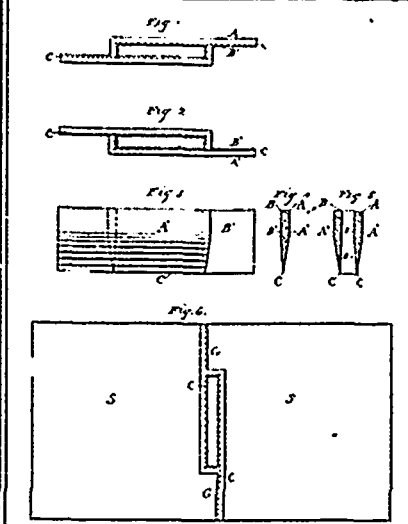
24734 Holland's Hub Runner.



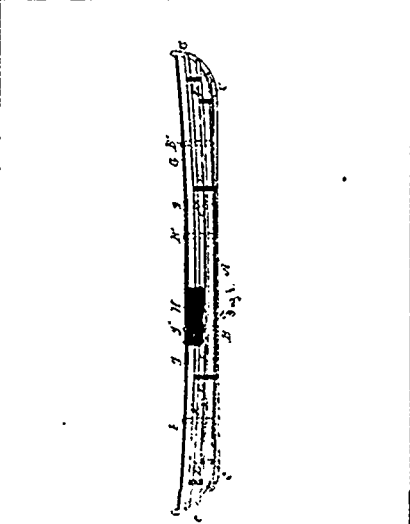
24735 Holland's Hub Runner.



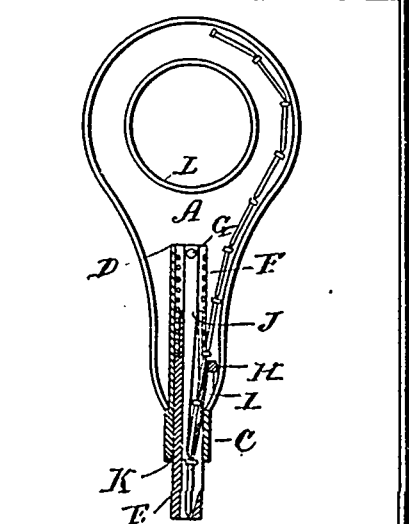
24736 Meschter's Incubator.



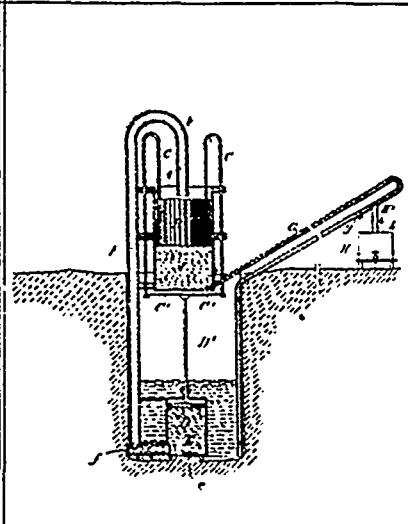
24737 Ames' Cutting Die for Envelopes.



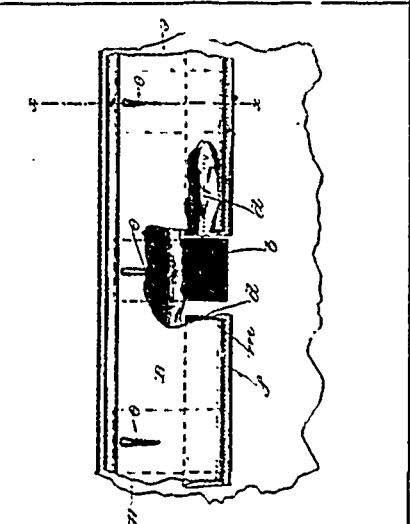
24738 Mosher's Folding Canvas Boat.



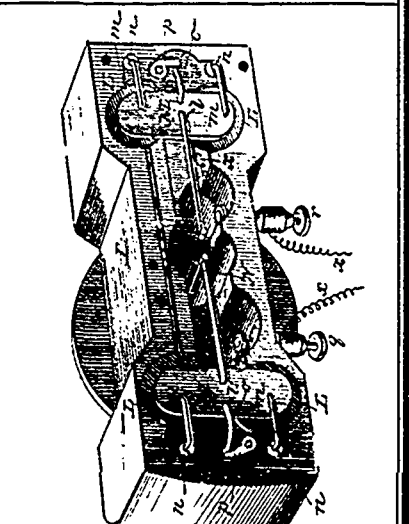
24739 Fowler's Nail Driving Machine.



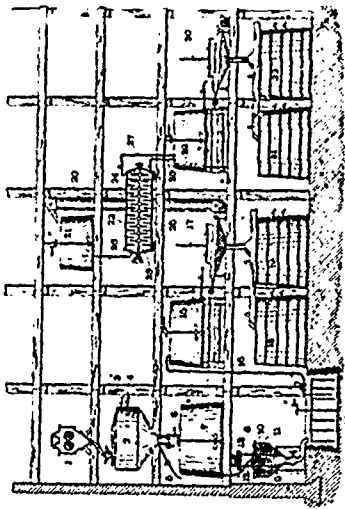
24740 Galtard's Apparatus for the Raising and Supply of Water.



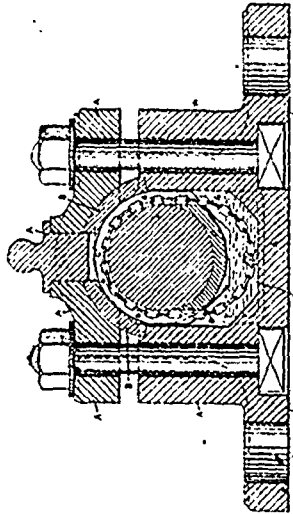
24741 Birnbaum's Waistband for Pants.



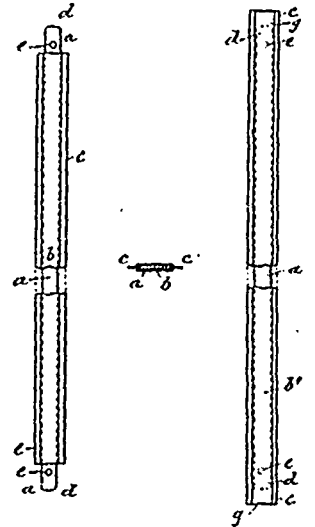
24742 Dann & Lipp's Telephonic Receiver.



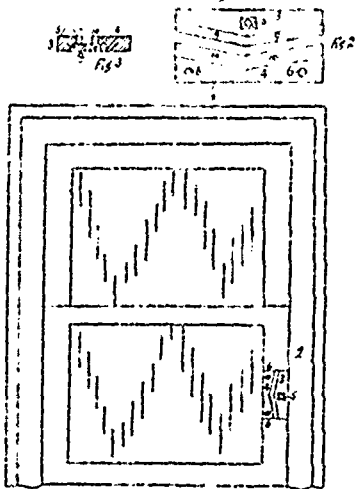
24743 Hlrgo's Manufacture of Starch.



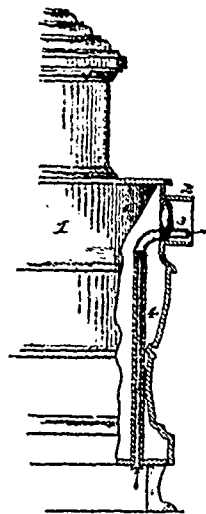
24744 Stevenson's Lubrication of Bearings.



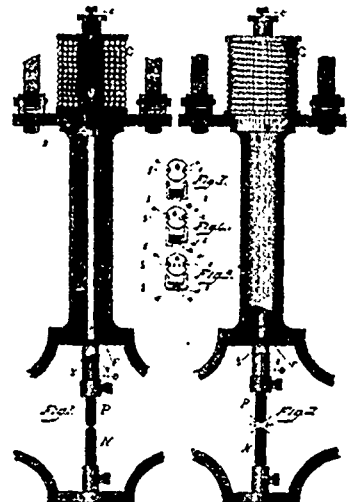
24745 Selligman's Stays for Garments.



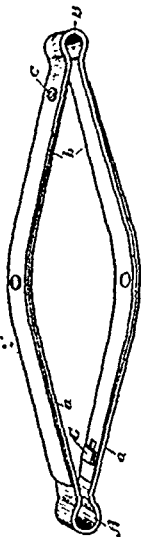
24746 Bates' Window Sash Pastener.



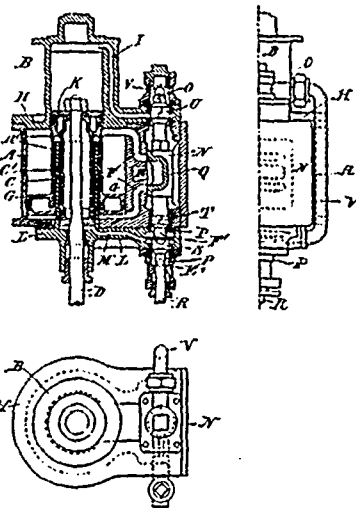
24747 Brinkerhoff's Ventilating Attachment for Stoves.



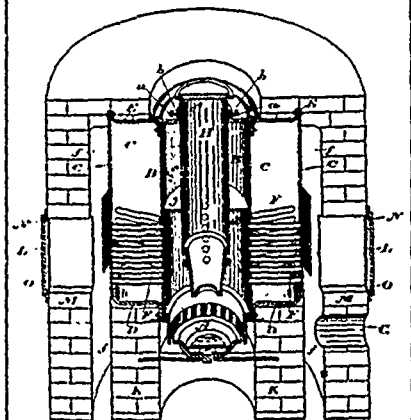
24748 Noble's Clutch for Electric Arc Lamps.



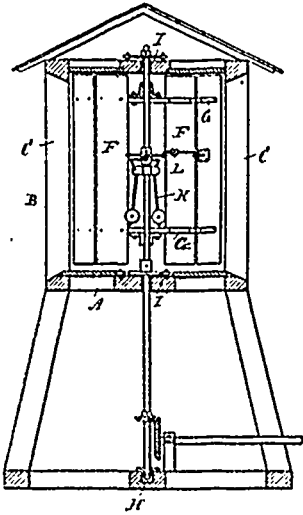
24749 Simpson's Elliptic Spring.



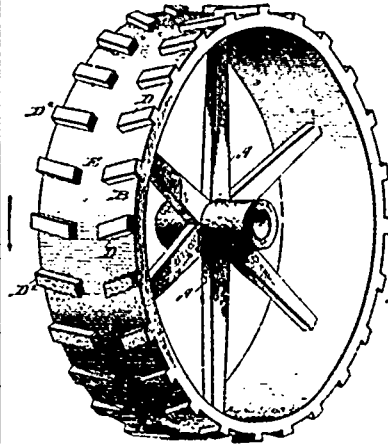
24750 Robertson's Steam Engine.



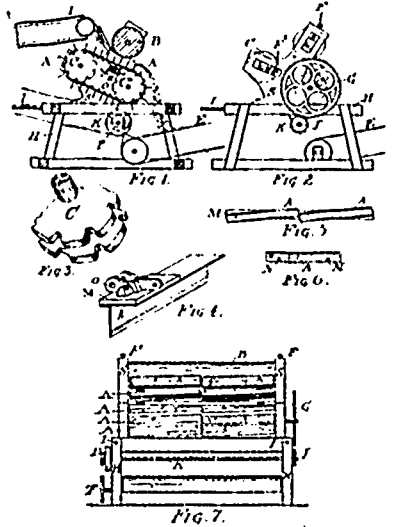
24751 Klug's Steam Boiler.



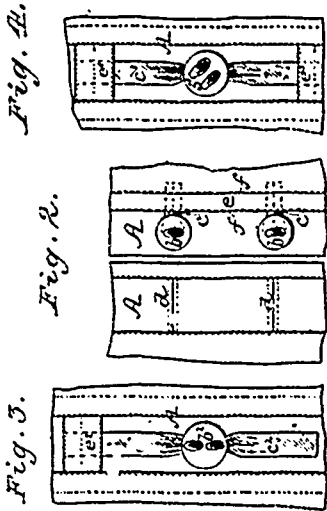
24752 Boutellier's Wind Mill or Engine.



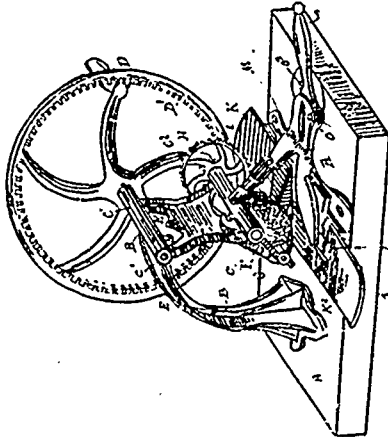
24753 Lavring & Anspaugh's Traction Wheel.



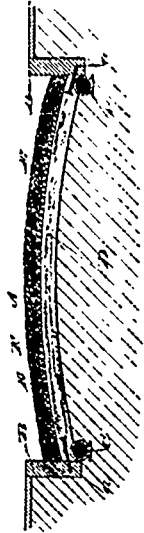
24754 Beaupré's Straw Cutting Machine.



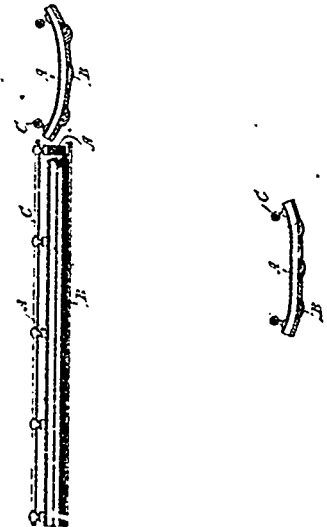
24755 Ferris' Button Fastening for Corsets, etc.



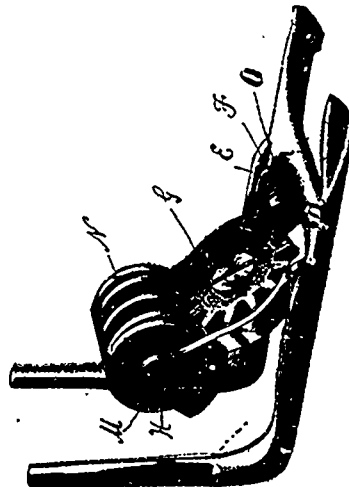
24756 Wobster's Harvester Knife Grinder.



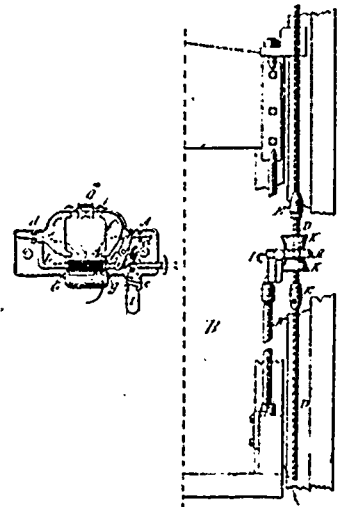
24757 Carroll's Pavement.



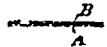
24758 McLaren's Toboggan.



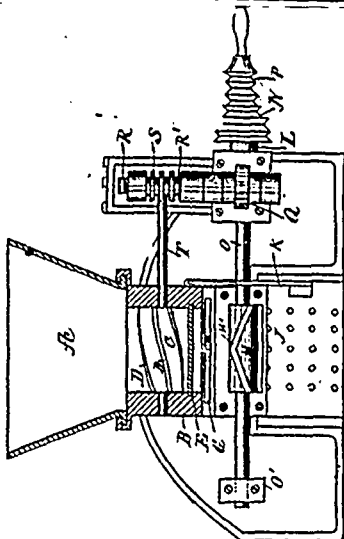
24759 Fréchette's Car Axle Lubricator.



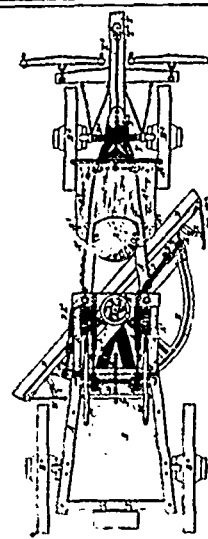
24760 Ashton's Elevator Floor Stop and Lock.



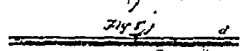
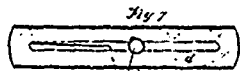
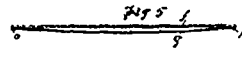
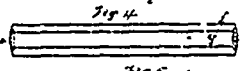
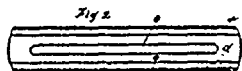
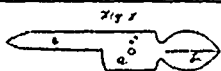
24761 Gulath's Price Ticket.



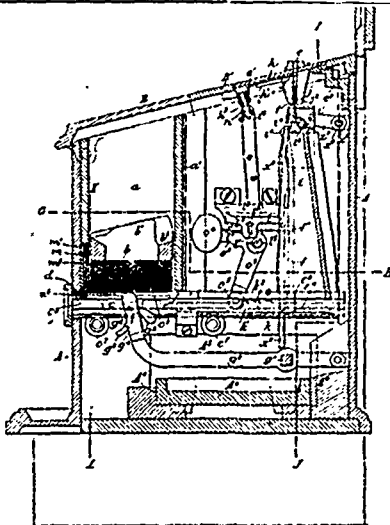
24762 Hodgkinson's Apparatus for Crushing and Measuring Fuel, etc.



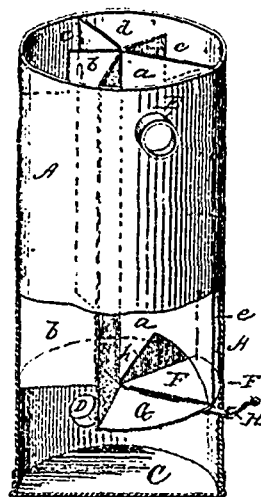
24763 Taft's Machine for Making, Repairing and Clearing Roads.



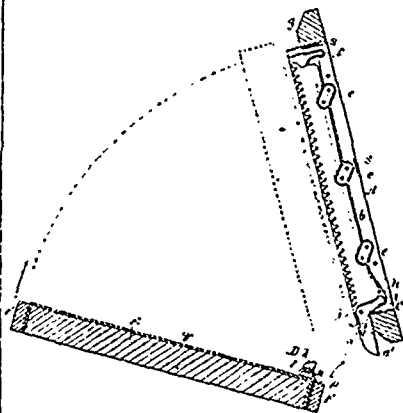
24764 Holdsworth's Eraser and Knife.



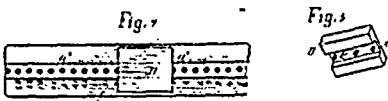
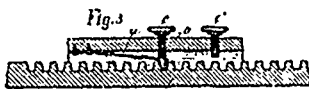
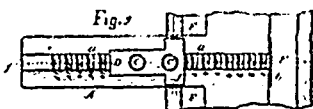
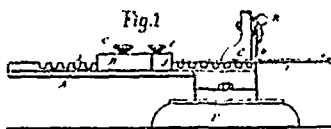
24765 Everitt's Apparatus for Receiving Payment for and Delivering Prepaid Goods.



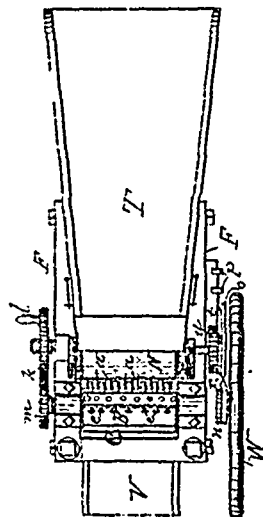
24766 Mark's Radiator used in Connection with Stoves



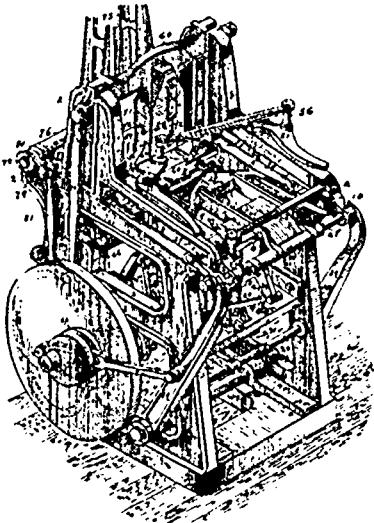
24767 Kennedy's Automatic Perforator for Printing Presses.



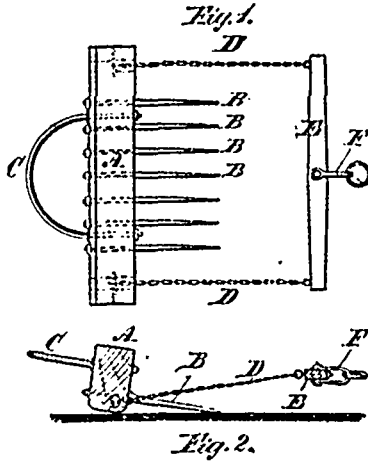
24768 Kellogg's Printer's Lead and Rule Cutter.



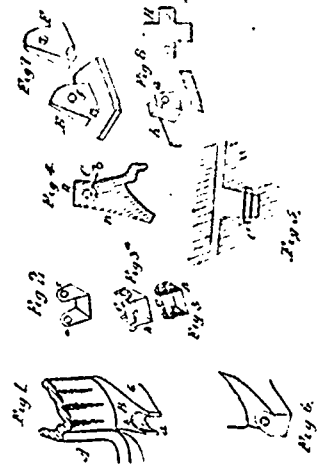
24769 LeClair's Tobacco Cutting Machine.



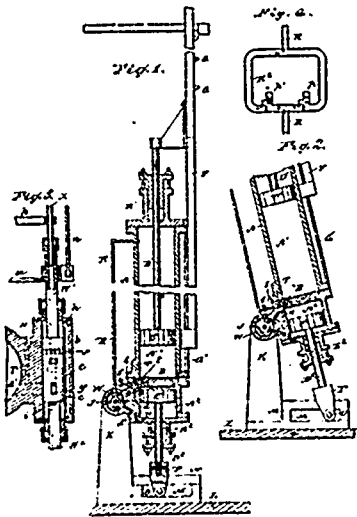
24770 Grant's Envelope Machine.



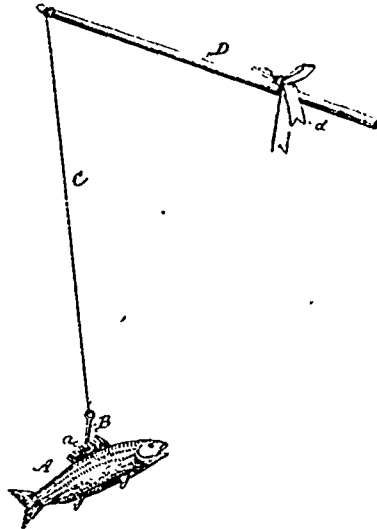
24771 Montgomery's Manure Drag.



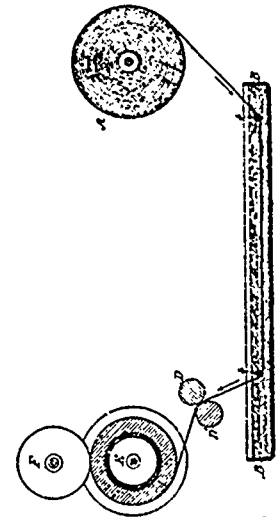
24772 Keep & Jamieson's Process of Forming Holes in Hinge Knuckles, etc., by Casting



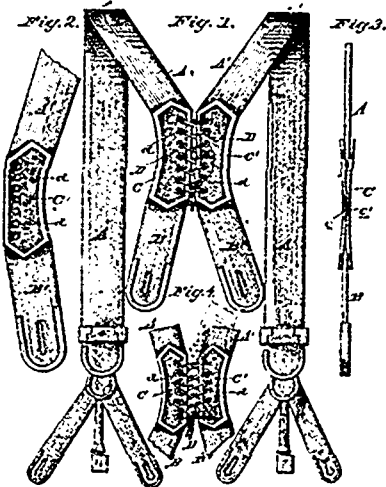
24773 Evered's Log Roller.



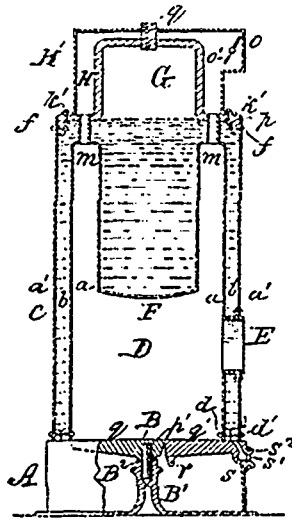
24774 Bullock's Game known as Progressive Angling.



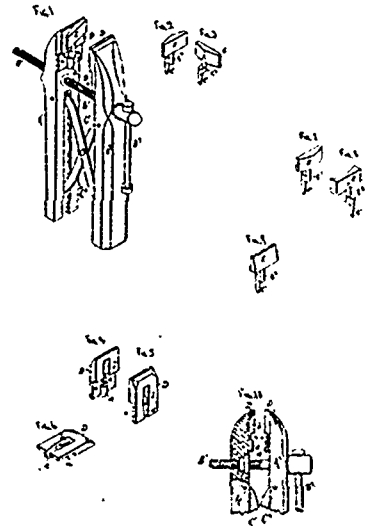
24775 Morrow's Treatment of Paper, etc.



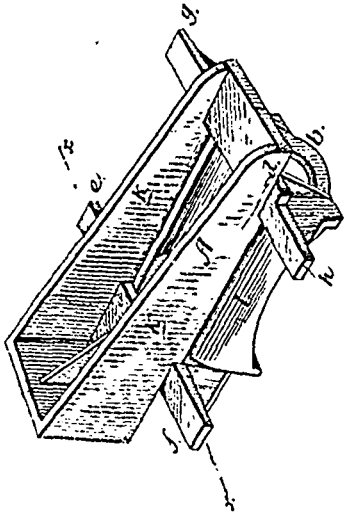
24776 Whitmarsh's Suspender.



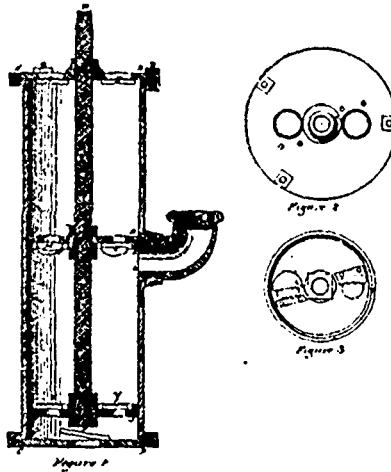
24777 Fisko's Steam Generator.



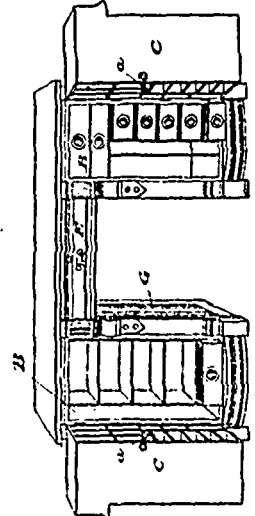
24778 Minca's Vice.



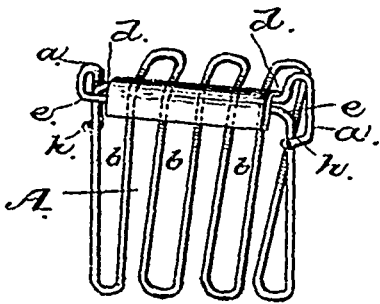
24779 Cloud's Draft Apparatus for Railway Cars.



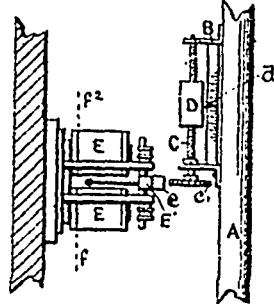
24780 Woodworth's Force Pump.



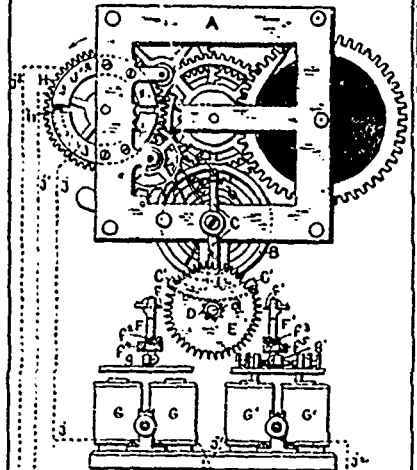
24782 Gunziberg's Desk.



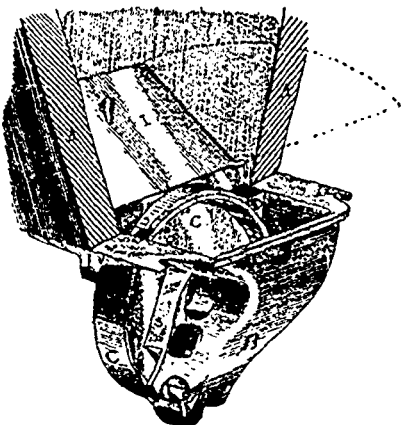
24783 Eshelman's Pencil Holder.



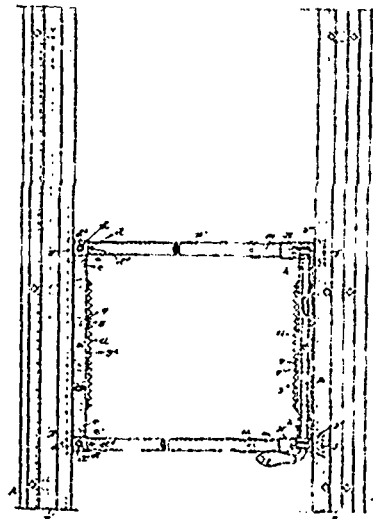
24784 Millard & Clarke's Regulating Pendulum Clocks from a Distance.



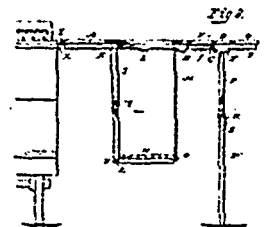
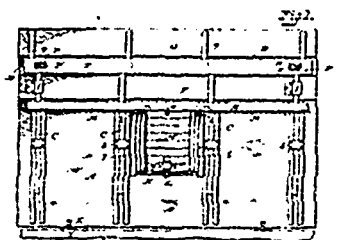
24785 Millard & Clarke's Regulating Marine Clocks from a Distance.



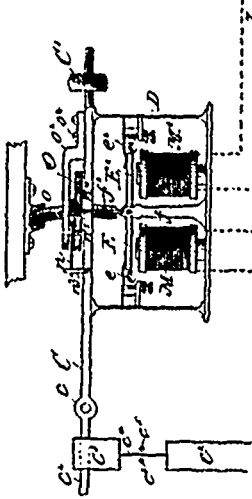
24786 Patrie's Force Food Seeding Machine.



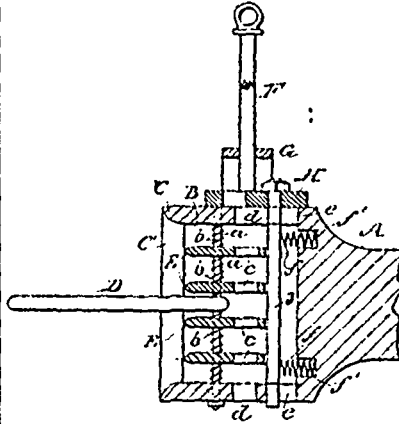
24787 Perkin's Shingle Machine Carriage.



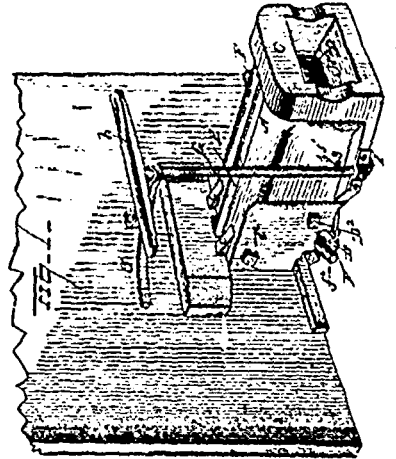
24788 Wetmore's Sheaf Table and Stand for Threshers.



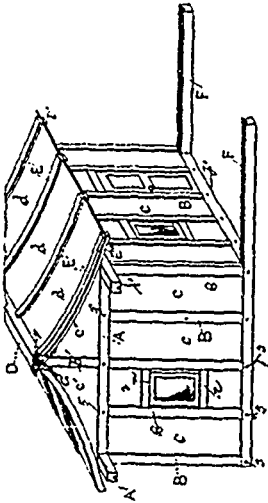
24789 Millard & Clarke's Regulating Clocks from a Distance.



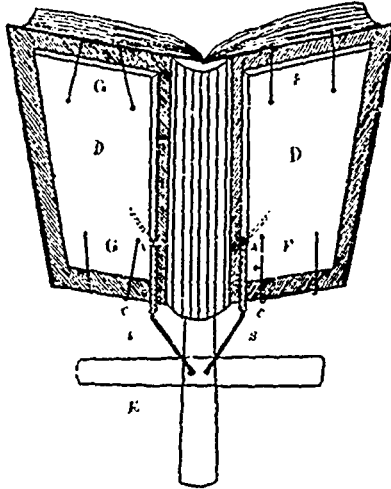
24790 Kaltenbeck's Car Coupler.



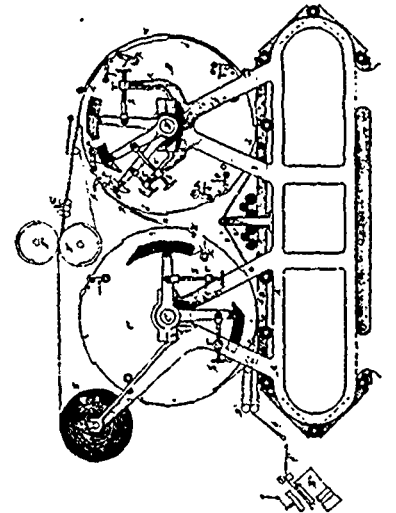
24791 Mowry's Car Coupling



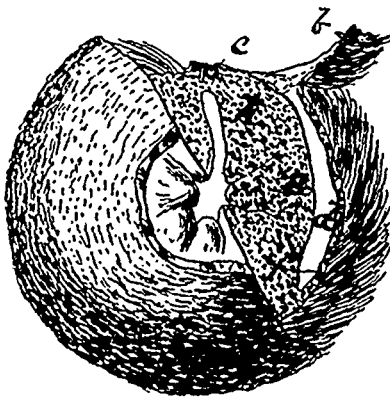
24792 Densmore's Portable House.



24793 Paradis' Book Holder.



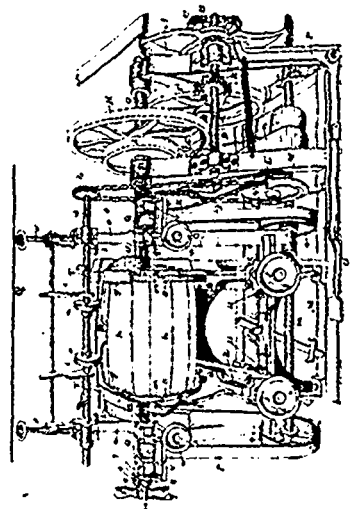
24794 Feister's Printing Machine.



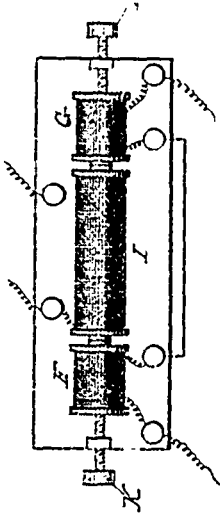
24795 Kosminski's Muff.



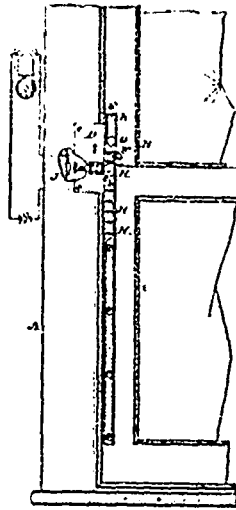
24798 Cunningham's Screw.



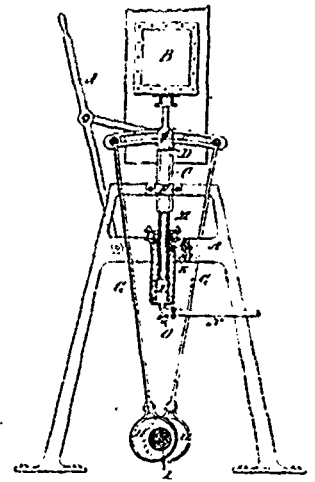
24799 Vate's Machine for Manufacturing Barrels.



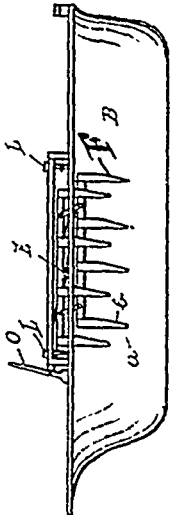
24800 Lockwood's Telephone and Telephonic System.



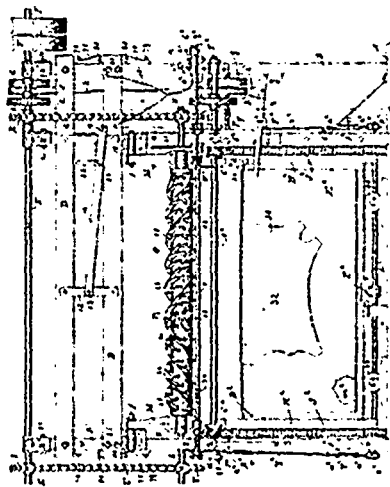
24801 Brady's Burglar Alarm and Sash Fastener and Lock.



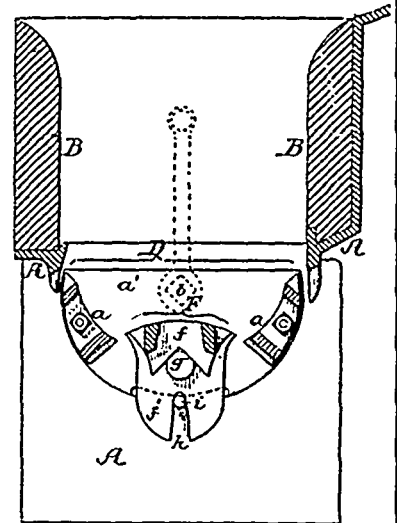
24802 Stewart's Counterbalance for Link Motion of Steam Engine.



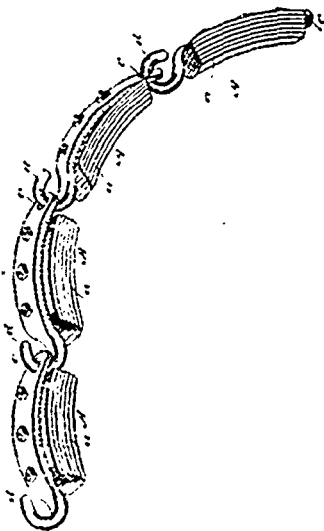
24803 Desmarais Mode of Propelling Ships.



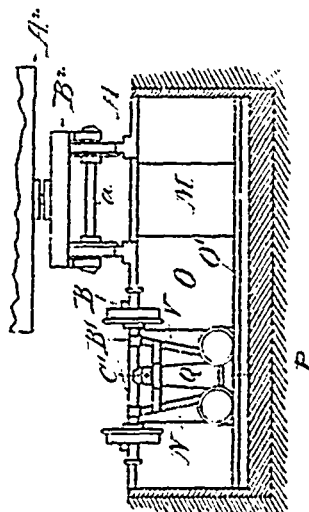
24804 Vaughn's Putting Out Machine.



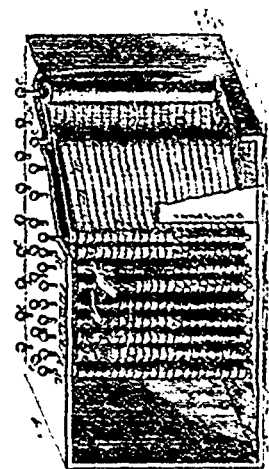
24805 Sloan's Grate for Stoves and Furnaces.



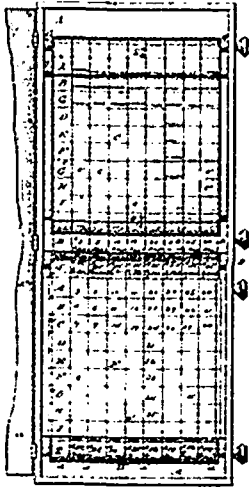
24806 Walker's Belt for Transmitting Power.



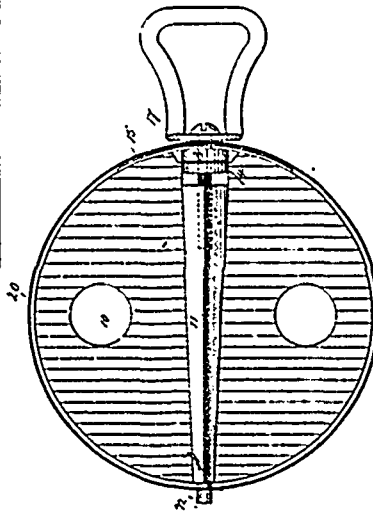
24808 Sym's Apparatus for Removing and Replacing Car Wheels and Axles.



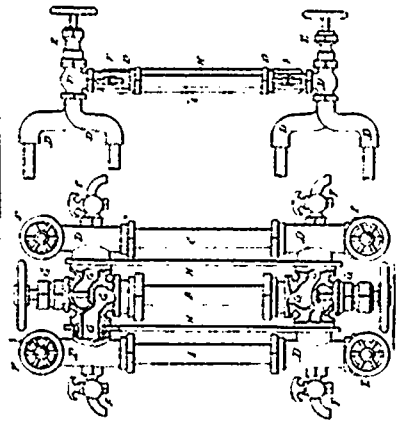
24811 Charpentier's Apparatus for Facilitating the Multiplication of Numbers.



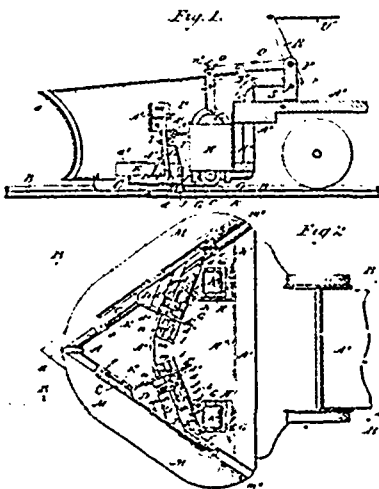
24812 Charpantier's Calculator.



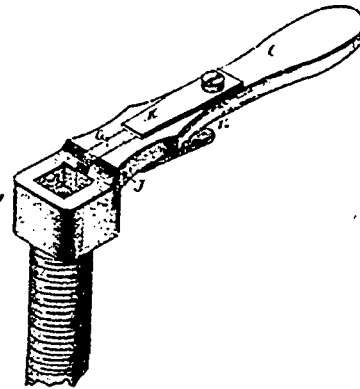
24813 Jeeves' Damper.



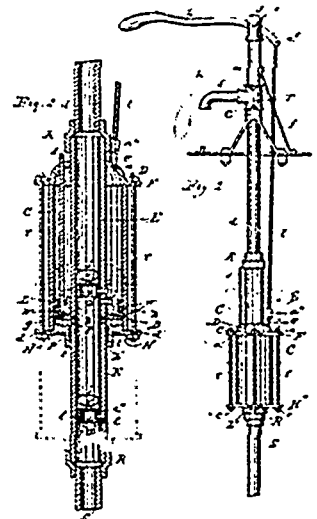
24814 Pyke's Water Gauge for Steam Boilers.



24815 Priest's Rail Clearer.



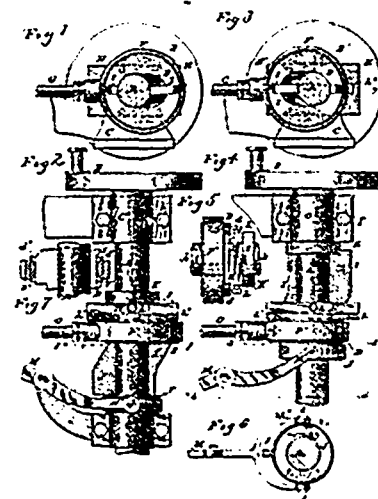
24816 Cook's Wrench.



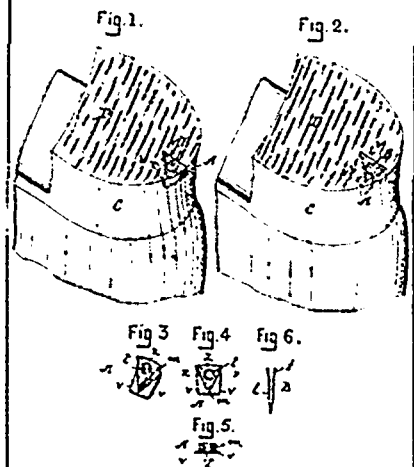
24817 Cloud's Force Pump.



24818 Wilton's Lacing for Corsets, Gloves, etc.



24819 Uffelman's Reversing Device for Engine.



24820 Sanford's Heel Protector for Boots and Shoes.

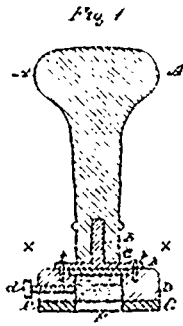


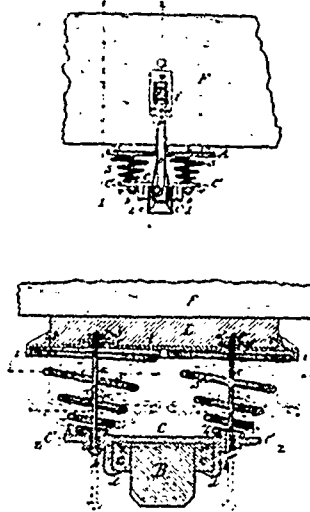
Fig. 3.



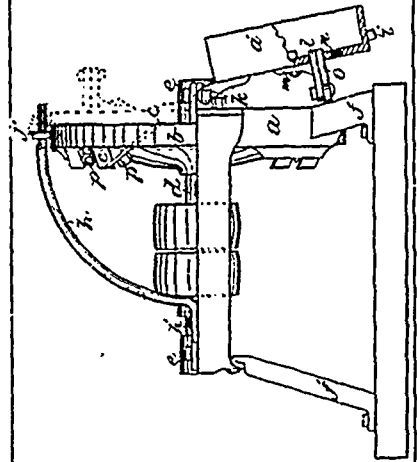
Fig. 4.



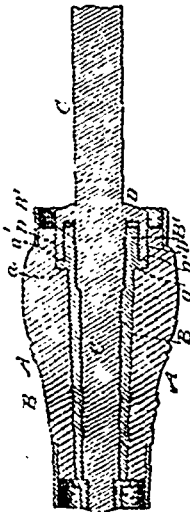
24821 Bernard's Machine for Rubber Stamp Printing.



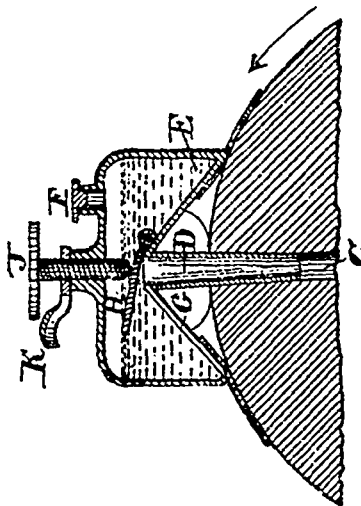
24822 Cliff's Wagon Bolster Spring.



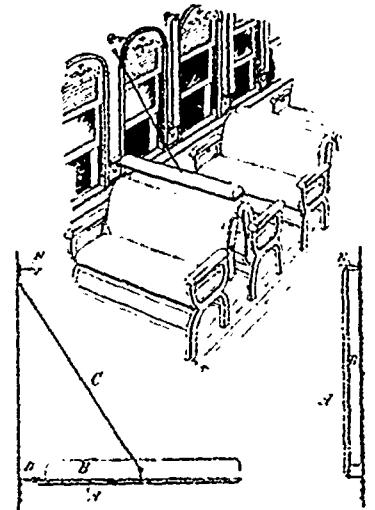
24823 Drake's Shingle Jointer.



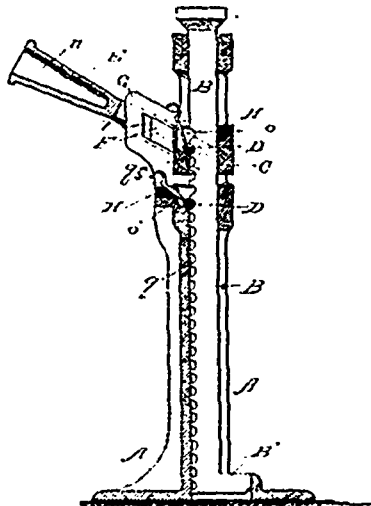
24824 Stillman's Axle and Sand Shield for Wheels.



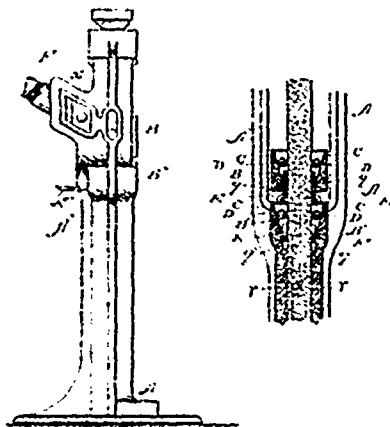
24825 Thomas' Lubricator.



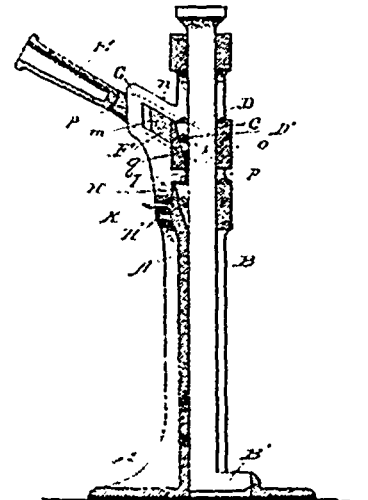
24826 Wiseman's Head Rest and Pillow for Railway Cars.



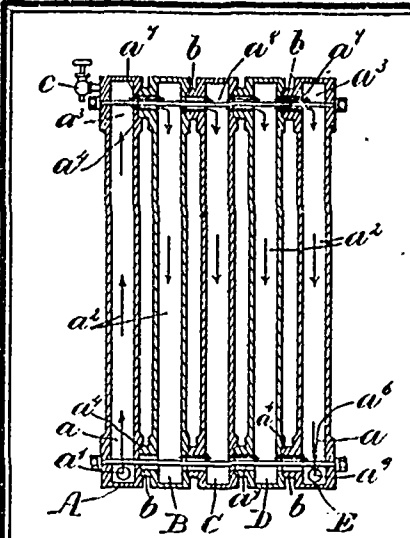
24827 Strom's Lifting Jack.



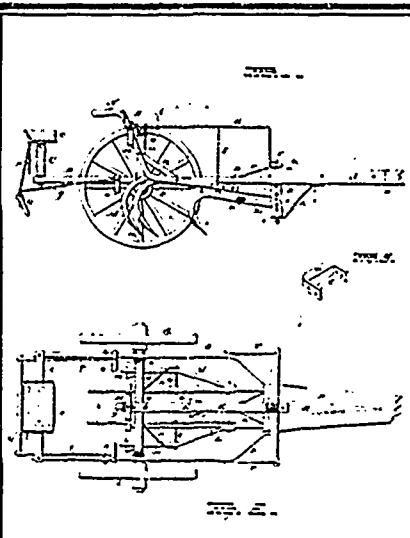
24828 Strom's Lifting Jack.



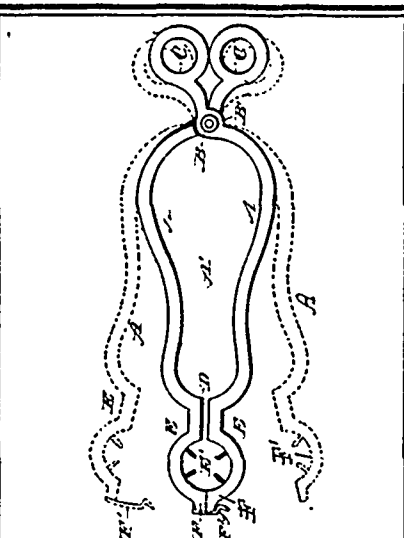
24829 Strom's Friction Clutch.



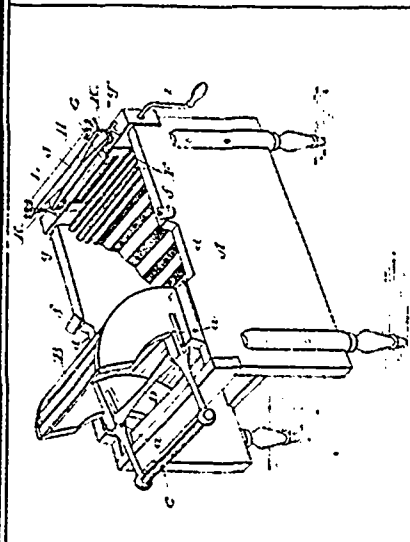
24830 Hughes' Steam or Hot Water Radiator.



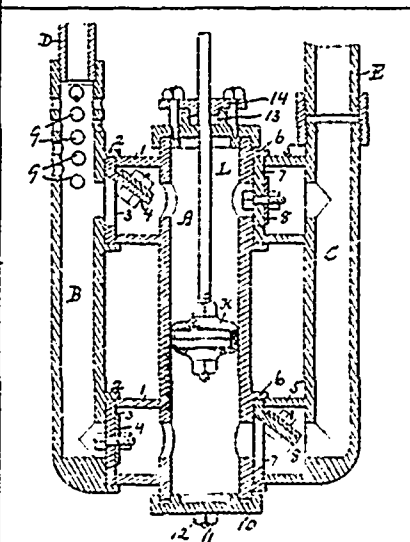
24831 Lloyd's Cultivator.



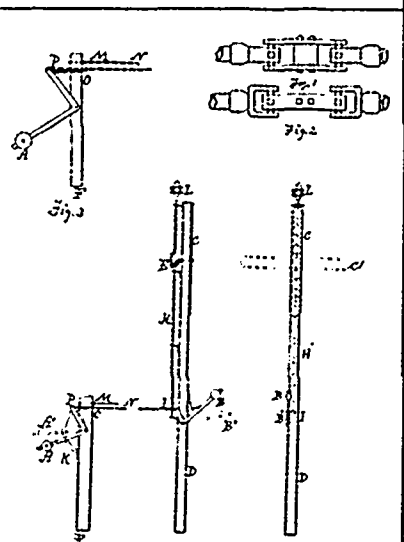
24832 Crittenden's Hopple.



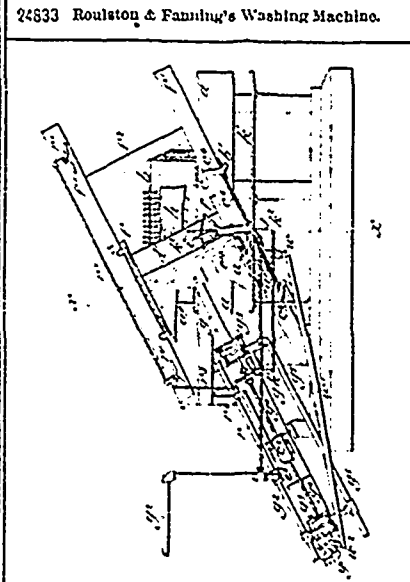
24833 Roulston & Fanning's Washing Machine.



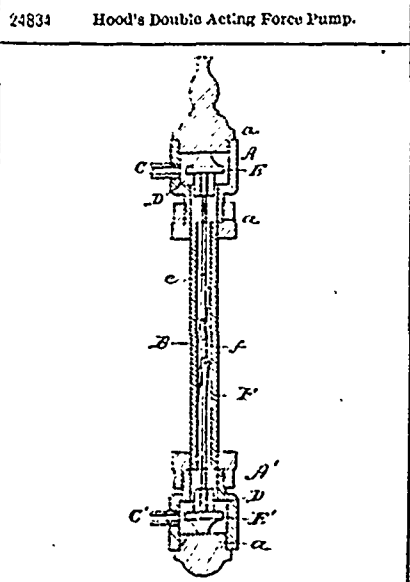
24834 Hood's Double Acting Force Pump.



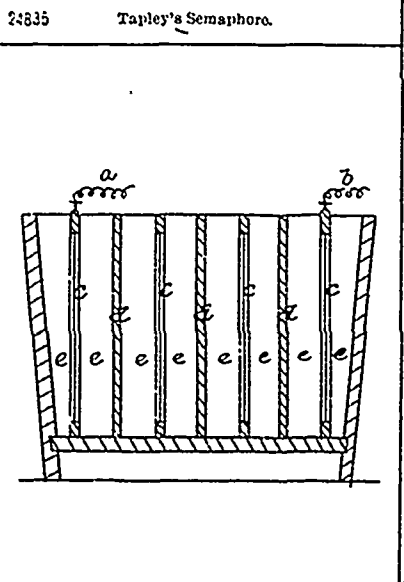
24835 Tapley's Semaphore.



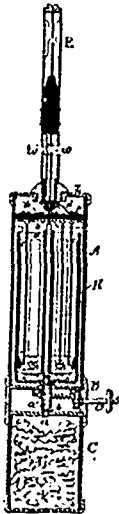
24836 Smith's Machine for Cutting Lumber.



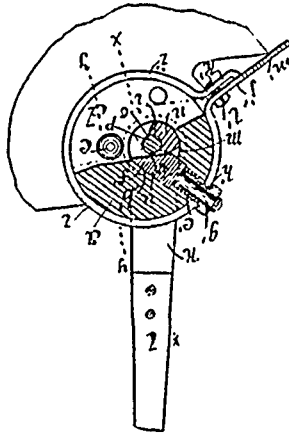
24837 Little's Gauge for Steam Boilers.



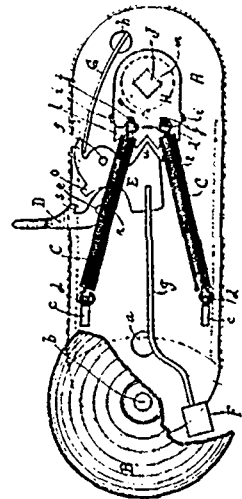
24838 Fabrig's Apparatus for the Manufacture of Sugar by Electrolysis.



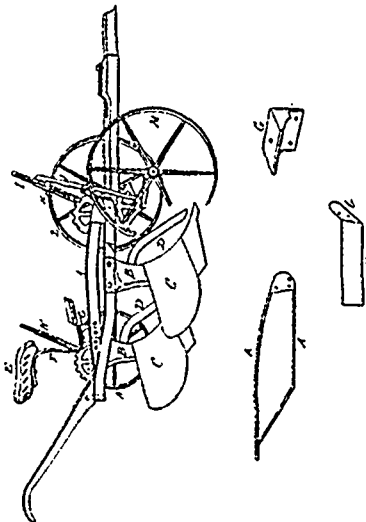
24839 Clark's Portable Electric Gas Lighting Apparatus.



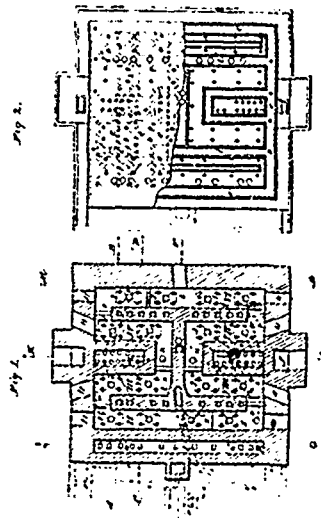
24840 Campbell's Saw Swaging Machine.



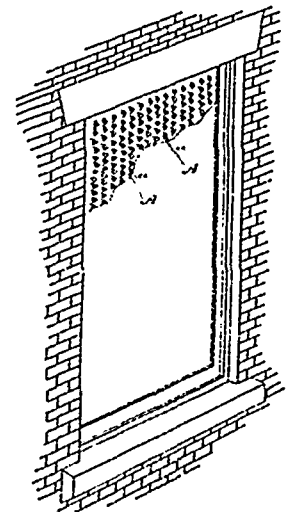
24841 Fee's Alarm Bell and Lock.



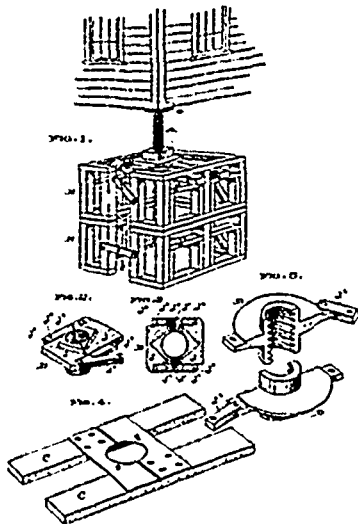
24842 Currie's Stubble and Sod Plough.



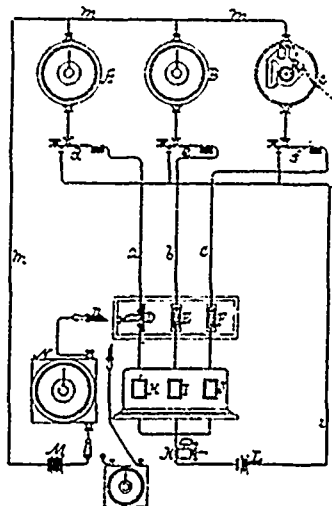
24843 Buhner's Brick Kiln or Furnace.



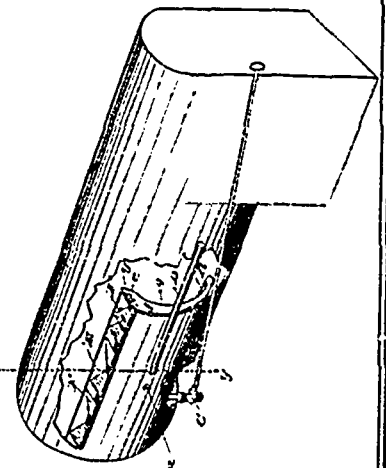
24844 Sheridan's Fly Screen.



24845 Maher's House Raising Apparatus.



24846 Herzog's Electric Signalling Apparatus and Circuit.



24847 Rushton's Steam Boiler.