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# The Canadian Patent Office

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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. 22,326. Self-Binding Harvester. (Moissonneuse-engerbeuse.)

John C. McLachlan, London, Ont., 1st September, 1885; 5 years.

*Claim.*—1st. The gear-segment A, pinion D, shaft E, having bearing F, ratchet H and lever J, substantially as shown and described and for the purpose specified. 2nd. The combination of segment A and tongue B, pivoted to sill by stud a cast on plate p, forming a bearing used as a fulcrum for operation of pinion D and segment A, substantially as and for the purpose specified. 3rd. The iron trusses K, K attached to sills of self-binding harvester and carrying the cross bar and sides of elevator and binder, substantially as shown and specified.

#### No. 22,327. Locking Gear for Windlasses. (Fermeture de Grindeaux.)

The American Ship Windlass Company (Assignees of Francis A. Grater), Providence, R.I., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. In a windlass, the combination with a wild-cat loosely mounted on the main or driving shaft, of a driving head rigidly secured to the shaft and having one or more locking-blocks, each connected by a suitable link with a screw-headed key arranged in the hub of the driving-head, said keys engaging with an annular nut mounted upon said hub and provided with means for operating the same, whereby the axial movement of the nut causes the locking-blocks to move in an outward or radial direction, substantially as shown and for the purpose set forth. 2nd. The combination, with a wild-cat mounted on the driving shaft, of the locking device herein described, consisting of one or more locking-blocks D, screw-threaded keys F, links M connecting said blocks, and nut R, having handles r and sockets r<sup>1</sup> therein, said nut engaging with the keys H and mounted on the hub of the driving-head between suitable thrust-collars, said device being mounted within the driving-head of the windlass, all substantially as shown and for the purpose set forth. 3rd. In a windlass, having a wild-cat loosely mounted on the driving shaft, and a driving-head secured to said shaft, the combination therewith, of one or more locking blocks and screw-threaded keys, mounted within the head, said keys being connected with the locking blocks and provided with a suitably arranged nut for operating the same, substantially as shown and described. 4th. The locking device herein described, consisting of one or more locking-blocks D, screw-threaded keys H, links M connecting said blocks and keys, and nut R engaging the keys H, the whole combined and arranged within the driving head of a windlass, whereby said nut in its axial movement is adapted to slide the blocks D, in an outward or radial direction, as and for the purpose set forth. 5th. The locking device herein described, consisting of one or more locking blocks D, screw-threaded keys h, links M and nut R, the whole combined and arranged within the driving head of a windlass, whereby said nut in its axial movement causes the block D to slide in an outward or radial direction for the purpose of interlocking with the pockets a of the loosely mounted wild-cat A, substantially as shown and set forth.

#### No. 22,328. Burglar Proof Sash Lock and Automatic Window Holder. (Fermeture de Châssis.)

J. Richard Clancy (Assignee of August Liesche, Syracuse, N. Y., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. An automatic burglar proof sash lock, which fastens the window when closed by means of cam-acting holder B, rotating upon a pivot screw G, with appliances for attaching the same, constructed substantially as shown for the purposes specified. 2nd. An automatic window holder B, with a rubber engaging surface G, pivoted upon base A, with appliances for attaching the same, constructed substantially as shown for the purposes specified. 3rd. A sash holder, consisting of base A, cam-acting, rubber-faced holder B, provided with handle E mounted upon the window frame, and engaging with the sash frame, substantially as shown and described.

#### No. 22,329. Electric Railway Signal. (Signaux Electriques de Railroute.)

William Vogel, William Heinemann and Otto Wasmausdorf, Chicago, Ill., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. The combination of a contact or contacts, placed along the track connecting wires, switch battery, with other contacts which are placed along the track, and connected to the telephone or other electrically operated signalling device, contacts on the locomotive, an electrically operated mechanism for blowing the whistle or sounding an alarm, and a second electrically operated device for sending or receiving messages or signals to or from the station, substantially as shown. 2nd. The combination of a contact or contacts, placed along the track and connected to the battery in the station, contacts on the locomotive, an electrically operated mechanism for sounding an alarm or blowing the whistle, and a second electrically operated signalling device, with a second contact, or a pair of contacts also placed along the track and connected to the telephone or other electrically operated device, both at the station and on the locomotive, substantially as described. 3rd. The combination of the strong battery M, weak battery o, switches, telephone, or other electrically operated signalling device, with contacts wire J, two contacts or sets of contacts, placed along the road, contacts on the locomotive, and suitable electrically operated mechanisms on the locomotive, substantially as set forth. 4th. The combination of the locomotive, with the electro-magnet A, armature C, provided with hook P, a train of wheels and the spring actuated lever which is connected to the whistle or other alarm, substantially as set forth.

#### No. 22,330. Apparatus for Beating and Manipulating Paper Pulp. (Appareil à Battre et Manipuler la Pâte à Papier.)

Smith, Winchester & Co., South Windham, Conn. (Assignees of Joseph Jordan, Philadelphia, Pa., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. In a closed pulp beating engine, the combination of the outer conical frustum A, the inner conical frustum F, the opposing frictional surfaces of which are armed with grinding serrations or knives, and two water pipes O, O<sup>1</sup> provided with suitable cocks, whereby water can be projected into the interior at one or two different points in the operation of grinding, substantially as described. 2nd. In a closed pulp beating engine, three water pipes O, O<sup>1</sup>, O<sup>11</sup>, provided with suitable cocks and projecting through the outer shell A, whereby water can be projected into the interior at one, two, or three different points in the operation of grinding, substantially as described. 3rd. In a closed pulp beating engine, a water pipe O, provided with a suitable cock and projecting through the outer shell A, whereby water can be projected into the interior at a point beyond that where the operation of grinding begins, substantially as described. 4th. In a closed pulp-beating engine, the water pipe O projecting through the outer shell A, and provided with a suitable cock and steam pipe P, connected with an opening through the outer shell A whereby either steam or water can be projected into the interior between the grinding surfaces at will, substantially as described. 5th. In a closed pulp-beating engine, the water-pipe O, projecting through the outer shell A, at one end provided with a suitable cock and connected to the other with a water-supply pipe or conduit, whereby water can be injected into the interior, substantially as and for the purposes described. 6th. In a closed pulp-beating engine, the water-pipe O projecting through the shell A, at one end provided with a suitable cock, and connected to the other end with a water supply or conduit, and a pump N to project water under pressure into the interior of the pulp engine, substantially as de-

scribed. 7th. In a closed pulp-beating engine, the water pipe O, provided with a suitable cock and projecting through the shell A at one end, and at the other attached to a water supply pipe M, which latter is connected at both ends with and draws from and empties into a main water supply conduit or holder L, substantially as and for the purpose described. 8th. In a closed pulp beating engine, the combination of the outer conical frustum A and the inner conical frustum F, the opposing frictional surfaces of which are armed with grinding serrations or knives E<sub>1</sub> of the smaller end of the frustum having its knives arranged in close clusters of two or more, with open spaces or pockets G between the clusters wider than the spaces between the knives forming said clusters, substantially as and for the purpose described. 9th. In a closed pulp-beating engine, the combination of the outer conical frustum A, and inner conical frustum F, the opposing frictional surfaces of which are armed with grinding serrations or knives, the section B: at the smaller end of said outer frustum being provided with a space containing the concave plate D, free from knives, immediately surrounding the opening C, to attain a larger feeding surface upon the revolving interior frustum, substantially as described. 10th. In a closed beating engine, where pulp is ground between two grinding surfaces, the process of continuously grinding the same and introducing water at the various stages of the process of grinding to attenuate the mass being treated, substantially as described. 11th. In a closed beating engine, wherein pulp is ground between two grinding surfaces, the process of continuously grinding the same, and introducing water to the mass actually being treated at various stages of the operation of grinding to attenuate the mass being treated, substantially as and for the purpose specified.

### No. 22,331. Telephone. (*Téléphones.*)

Lorenzo S. Fairbanks, Boston, Mass., U. S., 1st September, 1885; 5 years.

*Claim.*—1st. In a transmitting telephone, the combination with a diaphragm of vibrating electrodes, in the electric circuit, one of which consists of two parts or branches between which the other is placed, so as to be in contact with both, to secure great freedom and range of vibration without liability of breaking the contact, substantially as described. 2nd. In a transmitting telephone and in combination with the diaphragm thereof, two electrodes in the electric circuit, one being double and formed to two balls or pieces of carbon or other low conducting material attached to springs or arms which are branches of the conductor, and the other single, adjusted in light contact between them, substantially as and for the purposes specified. 3rd. In a transmitting telephone, the combination with the diaphragm of electrodes secured respectively to spring arms, one arm F being attached to spring P, and having means of adjustment, substantially as described. 4th. In a transmitting telephone, the combination and arrangements of the electrodes in the electric circuit with each other and in contact with the diaphragm, with means for adjusting them in contact, so that they may vibrate under the influence of sound waves upon the diaphragm, and thereby modify or vary the resistance of the circuit by corresponding variations of contact pressure, substantially as and for the purpose described.

### No. 22,332. Folding Paper Boxes.

(*Boîtes de Papier.*)

Charles W. Elliott and George E. Mackintire, Moncton, N. B., 1st September, 1885; 5 years.

*Claim.*—1st. In a folding paper box, the combination, with the body of the box, of inwardly-folding end flaps and pliable false ends external to said flaps, permanently attached to and adapted to fold up with the body of the box, substantially as and for the purposes hereinbefore set forth. 2nd. The body strip A, creased to form the sides 1, 3, and top and bottom 2, 4, in combination with the folding end flaps b and the pliable false ends c, as herein shown and described.

### No. 22,333. Oil Lamp Burner.

(*Becs de Lampes.*)

William Duffield, London, Ont., 1st September, 1885; 5 years.

*Claim.*—1st. The chimney holder A, having an upper rim E projecting internally so as to leave a recess a all around between inner walls of said chimney holder and the chimney, to allow of a current of warm air enveloping base of chimney before passing up to outside of flame, substantially as shown and specified. 2nd. The chimney holder A, provided in its centre with an open tapered wick-holder B and intervening solid plate C, furnished with studs or cleats D for chimney to rest upon, so as to allow of the passage of the warm air up into chimney and feeding the outside of flame thereby, substantially as shown and specified. 3rd. The lever bar J and rods K, L, L, in combination with collar G for regulating height of lamp wicks, substantially as shown and specified. 4th. The outer flat ring H, in combination with lifting ring G, for the purpose of confining and raising a pair of wicks I, I, substantially as shown and specified. 5th. The top flared button N, in combination with the tapered perforated air-distributor M, substantially as shown and specified. 6th. In combination with the heretofore described listing device, consisting of collar G, outer ring H, lever J and tube F, of a pair of broad flat wicks, confined at the point of ignition and open beneath to allow of the free passage of air to the centre of the flame, substantially as shown and specified.

### No. 22,334. Lead Lined Boiler.

(*Chaudière Doublée en Plomb.*)

Eugen Baron Ritter and Charles Kellner, Podgora, Austria, 1st September, 1885; 15 years.

*Claim.*—1st. The combination in a digester for treating fibrous materials, of the circumferential and longitudinal spaces E, E, E, left between the several plates composing the hard metal shell of same, the edges of which are bevelled so as to form a dovetail groove as shown, D, D, the soft metal lining plates, secured to E by autogen-

ous solder and filling strips E<sub>1</sub>, substantially as and for the purpose herein set forth. 2nd. Interposing between the joining flanges of a digester hard lead rings to which the adjoining sheets are secured by autogenous soldering substantially as and for the purpose herein specified.

### No. 22,335. Fire and Water-Proof Paint.

(*Peinture à l'Épreuve du Feu et de l'Eau.*)

Levi G. Allen, Ottawa, Ont., 1st September, 1885; 5 years.

*Claim.*—A fire and water-proof paint composed of coal tar, pulverized asbestos, alum, water cement, slaked lime, and resin compounded in the manner and in about the proportions above set forth.

### No. 22,336. Adjustable Reaper and Mower Knife Sections. (*Couteaux des Faucheuses-Moisseuses.*)

Thomas W. Van Sickle and John Turnbull, Detroit, Mich., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. A reaper or mower knife section, B, formed with a slot b<sub>1</sub>, substantially as shown and described and for the purpose specified. 2nd. A reaper or mower knife section, B, formed with shoulders b<sub>2</sub>, b<sub>2</sub> substantially as shown and described and for the purpose specified. 3rd. A washer C, formed with a slot c<sub>1</sub> and spring arm c<sub>2</sub> substantially as shown and described and for the purpose specified. 4th. A screw D, formed with an angular projection d<sub>1</sub>, substantially as shown and described and for the purpose specified. 5th. The cap E, formed with flanges e<sub>1</sub> substantially as shown and described and for the purpose specified. 6th. The combination of the cap E, formed with flanges e<sub>1</sub> and knife section B, with the cutter bar, A, substantially as shown and described, and for the purpose specified. 7th. The combination of the cap, E formed with flanges e<sub>1</sub>, and knife section B, formed with shoulders b<sub>1</sub> with the cutter bar, A, substantially as shown and described and for the purpose specified. 8th. The combination of the knife section, B, formed with slot b<sub>1</sub>, with the washer C, formed with the slot c<sub>1</sub> and spring arm c<sub>2</sub> screw, D, formed with angular projection or flange d<sub>1</sub>, and the cutter bar A, substantially as shown and described and for the purpose specified. 9th. The combination of the cap, E, formed with flanges, e<sub>1</sub> knife section B, formed with shoulders b<sub>2</sub>, and slot b<sub>1</sub>, washers C, formed with slot c<sub>1</sub>, and spring arm, c<sub>2</sub>, screw D, formed with angular projection, d<sub>1</sub>, and the cutter-bar A, substantially as shown and described.

### No. 22,337. Dynamo-Electric Machine.

(*Machine Electro-Dynamique.*)

Samuel C. Forsaith and William E. Drew, (Assignees of Edwin R. Whitney.) Manchester, N. H., U. S., 1st September, 1885; 5 years.

*Claim.*—1st. In a dynamo-electric machine, the poles and cores of the field magnets formed from a number of integral plates or sections secured together, with blocks or washers of non conducting material so arranged as to insulate each plate from its neighboring plates and leave air spaces between them, substantially as and for the purpose described. 2nd. An armature for a dynamo-electric machine, made up of an iron cylinder having a number of separate rings arranged on its periphery, with spaces between said rings and bobbins of insulated wire wound lengthwise with said cylinder and across said rings, in combination with a shaft and means for holding said armature thereon, substantially as described. 3rd. An armature for a dynamo electric machine made up of cylinder G, having peripheral rings H, H, arranged thereon with spaces between said rings, bobbins K, K, and separating bars L having slots l<sub>2</sub>, in combination with a shaft and means for holding said armature thereon, substantially as and for the purpose specified.

### No. 22,338. Belt Fastening.

(*Joins de Courroies.*)

Eugene C. Smith, New York, N.Y., 1st September, 1885; 5 years.

*Claim.*—A belt hinge composed of two double plates C and C<sub>1</sub>, each turned over, and hinged upon a continuous central rod or pintle D, as described, one or both of said plates being divided into sections and thereby made capable of flexure transversely and longitudinally and said plates provided with rivet holes b<sub>1</sub> b<sub>1</sub> set opposite to each other on opposite plates, as and for the purpose set forth.

### No. 22,339. Machine for Making Crimped Store-Pipes Elbow. (*Machine à Fabriquer les Coudes de Tuyau de Poêle.*)

Thomas S. Evans and Edwin H. Bissett, Winnipeg, Man., 1st September, 1885; 5 years.

*Claim.*—1st. The combination, with the annular rings B B<sub>1</sub>, of the male dies D, D<sub>1</sub>, E, cam plates C<sub>1</sub>, having cam slots D<sub>6</sub>, D<sub>7</sub>, E<sub>2</sub>, and female dies G, G<sub>1</sub>, to swage a rectangular tapering corrugation, as set forth. 2nd. The combination, with the annular rings B B<sub>1</sub>, and cam plates C<sub>1</sub> having slots D<sub>6</sub>, D<sub>7</sub>, E<sub>2</sub>, and lever C, of the male dies D, D<sub>1</sub>, E, female dies G, G<sub>1</sub>, segmental sections 2, 3, 5, 6, 8, spring H, shaft K, having cross heads L, L<sub>1</sub>, and bar F, whereby the blank is corrugated with rectangular tapering crimps, between the male and female dies, and subsequently the outer angles of the corrugations are pinched together in triangular form in cross section, as set forth. 3rd. The combination, with the annular rings B, B<sub>1</sub>, of the female dies G, G<sub>1</sub>, the latter having segmental sections 2, 3, 5, 6, 8, and both respectively provided with cams, M, M<sub>1</sub>, M<sub>2</sub>, and shaft K, provided with cross heads L, L<sub>1</sub>, whereby the dies are brought together to close the rectangular corrugation to a triangular form in cross section, and the outer die contracted to allow the crimped material to pass when feeding the dies, as set forth. 4th. The combination, with the bar F, carrying dies G, G<sub>1</sub>, provided with shaft K, carrying cam disk I, and provided with cross head L, L<sub>1</sub>, of the handle K<sub>1</sub>, provided with cam Q, push bar O, having racks O<sub>1</sub>, spring R, and plate P, whereby the

blank is fed to the dies simultaneously with contraction of one of the female dies, as set forth. 5th. The process of forming crimped stove-pipe elbows by impressing the blank successively with tapering corrugation into triangular form in cross section, and finally flattening the surplus metal on both sides of them seam, as set forth.

### No. 22,340. Reversible Plough.

(*Charrue Reversible.*)

Alfred H. Fitch, Santa Cruz, Cal., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. The reversible ploughs K, connected with boxes or hubs which turn upon the horizontal beam A, the landsides having the angular bend Q, and the stationary landside O, fixed to the beam by standards; so that the movable ones will fit and be supported by it, as herein described. 2nd. The ploughs K, connected with boxes or hubs, which turn upon a horizontal beam, by standards N, N<sub>1</sub>, one of which serves as a fulcrum, while the other is screw threaded or made to be lengthened or shortened to raise or lower the point of the plough, substantially as herein described. 3rd. The ploughs K, connected with boxes or hubs, which turn upon a horizontal beam, by standards N N<sub>1</sub>, so that one of the standards may be lengthened or shortened to raise or lower the plough-point and the fixed landside O, against which the movable one is supported, substantially as herein described. 4th. The right and left ploughs K, connected by removable standards with a horizontal beam, about which they may move to reverse, them, and having landsides with an angular bend Q, together with a fixed landside O, to which either of the ploughs may be fixed or supported to plough a right or left furrow, substantially as herein described. 5th. The right and left ploughs connected by standards with a horizontal beam, about which they may turn to reverse them, and having landsides L, as shown, together with the stationary landside O, against which either of the landsides L, may be supported from opposite sides, an angular bend on said landside, and a shoe R, projecting upon each side of the stationary landside, substantially as herein described.

### No. 22,341. Process of Reclaiming Rubber from Waste Scraps. (*Procédé à Reclamer le Caoutchouc des Rebutés.*)

Mallery Palmer, Montreal, Que., 1st September, 1885; 5 years.

*Claim.*—1st. The method or process of removing fibre from rubber scraps, which consists essentially in subjecting them to the action of a solution of vitriol, of substantially the strength specified, then drying, milling and washing the mass, substantially in the manner set forth. 2nd. The method or process of reclaiming rubber from vulcanized fibrous scraps, which consists in first grinding or comminuting same, and destroying the fibre with a solution of vitriol, then adding linseed or equivalent oil, and resin in about the proportions specified, then rolling same into an adhesive mass, then subjecting the mass to the action of heat, and then milling and washing the same, substantially as described.

### No. 22,342. Sewing Machine.

(*Machine à Coudre.*)

Charlotte Leuz, Cleveland, Ohio, U.S., 1st September, 1885; 5 years.

*Claim.*—The combination, with a sewing machine attachment adapted to be attached to the pressure-bar by means of a collar and set screws, of the plate H, provided with slots J and K, and the set-screw I, whereby said plate is adjustably secured to the collar of the attachment, for the purpose set forth.

### No. 22,343. Farm Gate. (*Barrière.*)

Leune J. Johnston, Petaluma, Cal., U.S., 1st September, 1885; 5 years.

*Claim.*—The combination, with a gate and its post of the lower or loose hinge D having the upper end of its pintle, provided with a friction roller H, a bearing plate T having shoulders J, J<sub>1</sub> and having its lower end pivoted in a split arm E the bell-crank lever G and a tip-bar K and tripping crank N, substantially in the manner and for the purpose herein set forth and specified.

### No. 22,344. Heating Stove. (*Poêle.*)

Ole Pederson, Joliet, Ill., U.S., 1st September, 1885; 5 years.

*Claim.*—1st. In a heating-stove, the fire-pot provided with lugs *c*, and the cold air pipes passing through the base of the stove, in combination with a horizontal segmental tubular chamber composed of two sections bolted together and formed within an opening between their ends, substantially as described. 2nd. In a heating-stove, the fire-pot, in combination with a horizontal tubular chamber formed in two section *f*, *f*, the section *f* having three short depending tubes *e* and the section *f* having a less number of short tubes *e* and pipes E and H, substantially as described. 3rd. In a heating-stove, the fire-pot and two-part horizontal and tubular chamber, in combination with cold-air pipes protruding through the base of the stove and engaging the lower section *f* and a less number of hot-air pipes extending from the upper section *f* through the top of the stove, substantially as described. 4th. In a heating-stove provided with a perforated plate M, the combination with a fire-pot and horizontal chamber, as described, of a register consisting of a sliding plate N, having openings front and rear concentric slots engaging the pipes, and a means such as a knob for operating the plate to open or close the register, substantially as described.

### No. 22,345. Washing Machine.

(*Laveuse Mécanique.*)

Charles Pelnuider, James H. Ballagh and Joseph G. Palmer, Rockwell City, Iowa, U.S., 1st September, 1885; 5 years.

*Claim.*—In a washing machine, the combination of the main frame,

the endless rubber passed around suitable rollers and provided with means whereby to carry the clothing, the frame D provided with the bar Dr, pivoted at one end *d* to the main frame, a spring D<sub>2</sub> connecting the opposite end of the frame D to the main frame, the back-board E pivoted in the frame D and having one end supported by the cross-bar D<sub>1</sub> of said frame, and a spring D<sub>1</sub> mounted upon the main frame and supporting the back-board at the end thereof opposite that supported by the bar Dr, all substantially as described and shown and for the purposes specified.

### No. 22,346. Spring Motors. (*Moteur a Ressort.*)

Joseph A. Fournier and William H. Broadhead, Ottawa, Ont., 1st September, 1885; 5 years.

*Claim.*—1st. A spring motor consisting of a series of spiral springs disposed cylindrically around a common centre, each end secured upon a rotary spindle journaled in a frame end forming one end of the cylinder, the spring extending longitudinally from one frame end to the other and each coiled in a tube, said spindles carrying pinions gearing in a central wheel to which at one end motion is transmitted from an adjacent winding shaft for winding up the springs and which are retained by ratchets and from which central wheel at the other end motion communicated by the springs is transmitted by intermediate speed gear to the driving wheel. 2nd. The combination of the frame ends A, A<sub>1</sub>, bolt A<sub>11</sub>, bed-plate B, spindle C, springs S, S<sub>1</sub>, pinions D, Dr, wheels E, E<sub>1</sub>, F, F<sub>1</sub>, G, G<sub>1</sub>, H, H<sub>1</sub>, H<sub>11</sub>, H<sub>111</sub>, I, shaft W, pinion E<sub>11</sub>, and friction gear I<sub>1</sub>, I<sub>11</sub>, I<sub>111</sub>, lever L and strap K. 3rd. The combination of the frame ends A, A<sub>1</sub>, central bolt and stud A<sub>11</sub>, bed-plate B, spindles C, springs S and tubes S<sub>1</sub>. 4th. The combination of the frame ends A, A<sub>1</sub>, central bolt and stud A<sub>11</sub>, bed-plate B, spindles C, springs S, tubes S<sub>1</sub>, pinions D and D<sub>1</sub>, and wheels E and E<sub>1</sub>. 5th. The combination of the frame ends A, A<sub>1</sub>, bolt A<sub>11</sub>, bed-plate B, spring S, tubes S<sub>1</sub>, spindles C, pinions D, wheels E, E<sub>1</sub>, shaft W and pinion E<sub>11</sub>. 6th. The combination of the frame ends A, A<sub>1</sub>, bolt A<sub>11</sub>, bed-plate B, springs S, tubes S<sub>1</sub>, spindles C, pinions D, Dr, wheels E, F, shaft W, intermediate speed gear and driving wheel H, H<sub>1</sub>, H<sub>11</sub>, H<sub>111</sub>. 7th. The combination of the frame-work A, A<sub>1</sub>, A<sub>11</sub>, tubes S<sub>1</sub>, springs S, spindles C, wheels D, F, F<sub>1</sub>, shaft W, intermediate speed gear driving wheel H, H<sub>1</sub>, H<sub>11</sub>, A<sub>111</sub>, wheel I, friction gear I<sub>1</sub>, I<sub>11</sub>, I<sub>111</sub>, brake lever L and strap K. 8th. The combination of the frame end A, spindles C, pinion D, and ratchet d, d<sub>1</sub>, d<sub>11</sub>, d<sub>111</sub>. 9th. The combination of the governor wheels H<sub>111</sub> and I<sub>1</sub>, friction gear I<sub>1</sub>, I<sub>11</sub> and I<sub>111</sub>, shaft W and the driving wheel H, H<sub>1</sub>, H<sub>11</sub>. 10th. The combination of a spring S, tube S<sub>1</sub>, pair of spindles C and ratcheted pinion D. 11th. The combination of the winding shaft W, pinion E<sub>11</sub>, wheel E<sub>1</sub>, segment spur rim E and ratcheted pinion D, all substantially as shown and described and for the purpose set forth.

### No. 22,347. Apparatus for Exercising the Fingers, Hand and Wrist. (*Appareil à exercer les doigts, la Main et le Poignet.*)

James Brotherhood, Stratford, Ont., 2nd September, 1885; 5 years.

*Claim.*—1st. The part B, provided with the lever C pivoted to the uprights *b*, *b*, acted upon at one end by the adjustable springs, and having the pad D projecting upwardly from its opposite end, substantially as and for the purpose described. 2nd. The combination of the spring-actuated pivotally-supported lever C, and the finger loop adjustably secured thereto, substantially as and for the purpose described. 3rd. The part E provided with the converging ribs formed of or faced with leather, or specified equivalent material, substantially as and for the purpose described. 4th. The part F<sub>1</sub> provided with the series of spring levers resting upon the adjustable posts, substantially as and for the purpose described. 5th. The combination of the spring levers, the base G, with which they are connected at one end, the rest H, and the base A with which the base G is adjustably connected, substantially as and for the purpose described. 6th. The part J provided with the pivotally supported lever K acted upon at one end by the spring or springs, or in the equivalent way described, (by the adjustable weight,) and having the downwardly-projecting pad at its opposite end, substantially as and for the purpose described. 7th. The combination of the lever K, the posts to which it is pivoted, the spring or specified equivalent thereof, the pad *f* on the underside of the lever, substantially as and for the purpose described. 8th. The parts B, E, F, and J, arranged upon the base A, all constructed and operating substantially as described.

### No. 22,348. Process of Scouring Wool.

(*Procédé à dégraisser la Laine.*)

Charles Toppan, Salem, Mass., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In the process of scouring wool, immersing the same in a warm solution of expressed oil of mustard-seed, petroleum products, and alkali, as described, and in the proportions mentioned. 2nd. In the art or process of scouring wool immersing the same in a warm solution, of expressed oil of mustard-seed, paraffine oil, vacuum oil, and alkali, as described, and in the proportion mentioned.

### No. 22,349. Machine for Loading Cartridge Shells. (*Machine à charger les Cartouches.*)

Orlando F. Belcher, Winthrop, Mass., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In a cartridge-loading machine, the combination with suitable measuring and loading devices of the hoppers composed of some transparent medium arranged and operated, substantially as stated. 2nd. A hopper, in combination with a disk J, which is movable on its axis and provided with a tubular valve or passage registering with the hopper outlets, a sleeve adapted to slide on said valve, and a vertically-adjustable shelf, which closes the bottom of said valve, when the latter is being filled, and also regulates the size of the charge, substantially as set forth. 3rd. In combination with the

hoppers for powder and shot and their outlets, an oscillating disk adapted to open one outlet, as it closes another, adjustable tubes carried by said disk, which receives the charges, as they pass from said outlets, and independently adjustable shelves for closing the said tubes and raising or lowering them, to regulate the charge, substantially as set forth. 4th. A shell-holder provided with a removable cap *p*, a removable bushing *o*, supported by said cap, and an additional bushing *n* at its upper end, having a flared mouth, substantially as set forth. 5th. The rocker-arm *P*, and rods *O*, *Q*, in combination with the disk *J*, oscillated thereby, the hoppers discharging through passages in said disk, the sliding charging-sleeves *f, f*, moving with said disk, the flanges for preventing said sleeves from descending too far, the shelves or disks which close the lower ends of said sleeves at certain points of their vibration, and the graduated screw-threaded adjusting rods *i* which act on said shelves, substantially as set forth.

### No. 22,350. Nut Lock. (*Arrête-écrou.*)

Obed H. Mitchell, Springfield, Mo., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. An improved nut-lock, composed of a plate *E*, having holes *e<sub>1</sub>*, *e<sub>2</sub>*, for bolts *C*, *C*, and a long projecting tongue *e*, cut and bent from the body of the same, having the parts *e<sub>6</sub>*, *e<sub>7</sub>*, and having holes *e<sub>2</sub>*, *e<sub>2</sub>*, for a key *G*, and an upper plate *F*, having a long narrow slot *f*, to receive the said tongue and large rectangular ends *f<sub>2</sub>*, *f<sub>2</sub>*, to rest against the inner sides *d*, of the nuts *D*, *D* and a key *G*, the said slot being strengthened by lips *f<sub>4</sub>*, *f<sub>4</sub>*, which have holes *f<sub>1</sub>*, *f<sub>1</sub>*, to receive the said key, all substantially as shown and described. 2nd. A plate *E*, placed on two bolts beneath the screw nuts on the same, said plate having a tongue *e*, cut and bent from the body of the same in which are holes *e<sub>2</sub>*, *e<sub>2</sub>*, combined with a key *G*, and a plate *F*, made to fit between the said nuts to prevent their turning off, said plate *F* having a slot *f*, to receive the tongue *e*, and holes *f<sub>1</sub>*, *f<sub>1</sub>*, to receive the key, all substantially as shown and described. 3rd. The combination of a plate *E*, having a tongue *e*, cut and bent from the body of the same, which has holes *e<sub>2</sub>*, *e<sub>2</sub>*, and holes *e<sub>1</sub>*, *e<sub>1</sub>*, with a plate *F*, having a slot *f*, strengthened by lips *f<sub>4</sub>*, *f<sub>4</sub>*, which have holes *f<sub>1</sub>*, *f<sub>1</sub>*, and with a key *G*, in the shape of a loop, together with a railway rail *A*, fish-plates *B*, and bolts *C*, having nuts *D*, all substantially as shown described, and for the purpose set forth. 4th. The combination of a plate *E*, having a tongue *e* cut and bent from the body of the same, with holes *e<sub>2</sub>*, *e<sub>2</sub>* and *e<sub>1</sub>*, with a plate *F*, having a slot *f*, and a key *G*, together with a railway rail *A*, fish-plate *B*, and all substantially as shown and described.

### No. 22,351. Roll Holders for Exposing Flexible Sensitive Photographic Films. (*Rouleaux à Exposer le Papier-Négatif Photographique.*)

George Eastman and William H. Walker, Worcester, N.Y., U.S., 2nd September, 1885; 15 years.

*Claim.*—1st. The combination, in a roll-holder for exposing photographic films, of the spool *F*, reel *H*, film-support *E*, and guide-rolls *I* and *I*, with a device acting to maintain the film in a tense condition during exposure, substantially as described. 2nd. In a roll-holder for exposing photographic films, the reel *H* provided with swinging clamp *p*, for fastening the end of the film to the reel, substantially as described. 3rd. The combination, with the casing *A*, adapted to be attached to a camera and provided with the exposing shutter *B*, of the removable back *D*, carrying the frames *C*, *C*, spool *F*, film-support *E*, and reel *H*, substantially as described. 4th. In a roll-holder for exposing photographic films, and in combination with the spool and reel, as described, a measuring roll in contact with the film and provided with an alarm device, in combination with a film support and devices for feeding the film across said support and roll, substantially as described. 5th. The combination, in a roll-holder for exposing photographic films, of the measuring roll *I*, provided with lugs or pin *h<sub>1</sub>*, and the spring *L*, arranged to operate substantially as and for the purpose set forth. 6th. The combination with a roll-holder for exposing photographic films, of a measuring roll in contact with the film and provided with an alarm attachment and a film-marking device, substantially as described. 7th. The combination with the casing *A*, adapted to be attached to a camera and provided with the exposing shutter *B*, of the removable back *D*, carrying the frames *C*, *C*, spool *F*, guide-rolls *I* and *I*, and reel *H*, substantially as described. 8th. As a new article of manufacture, the herein described roll of flexible sensitive photographic film having its inner end attached to a spool provided with means for inserting the spool and roll in a roll-holder and enclosed in a suitable light-tight case or wrapper, substantially as described. 9th. In a photographic film-holder, in combination with the light-excluding case provided with a shutter, as described, the removable back and the film-carrying and reeling mechanism supported wholly upon said back, whereby the reeling and carrying devices may be withdrawn from the case to facilitate the operations of removing the film after exposure and inserting a new film, substantially as described. 10th. In a photographic film holder and in combination with the enclosing case and the reel *H*, provided with means for detachably securing the end of the film, the spool *F*, grooved as described, and the film wound upon said spool with its end inserted and fastened within the groove therein, substantially as described. 11th. In a photographic film-holder and in combination with its enclosing case, the film carrying and straining mechanism independently mounted and inserted within the said case and removably attached thereto, substantially as described. 12th. As a new article of manufacture, the herein described roll of flexible sensitive photographic film, consisting essentially of a spool provided with means for detachably applying it to a holder, and a strip or roll of flexible sensitive film attached at one end to the spool and wound with its sensitive face inwards, substantially as described. 13th. In a photographic film holder and in combination with a film supply holder and feeding mechanism for transferring the film from the holder and into position for exposure, a tension regulator applied to the film and acting

to supplement the pull of the feeding mechanism, substantially as described. 14th. In a photographic holder, wherein are embodied an enclosing case with exposing aperture, a film supply holder and a feeding mechanism, such as indicated, and in combination with said supply holder and feeding mechanism a supplemental tension regulator applied to the film and operating after the requisite feed has been effected to maintain a constant pull upon the film lying between the support and in front of the exposing aperture, substantially as described. 15th. In a photographic film holder, such as described, and in combination with the film carrying and feeding devices, an elastic tension regulator adapted to draw upon and strain the film between its supports and to continue such action during the feeding of the film and independently of the feeding devices, substantially as described. 16th. In a photographic film holder and in combination with its enclosing case and shutter, a frame detachably secured within said case and provided with bearings to receive the detachable film supply spool and reel, substantially as described. 7th. In a photographic film holder and in combination with its light excluding case, provided with a shutter, as described, a removable frame inserted within said case and provided with a film support, guide-rolls and adjustable bearings at either end to receive the detachable spool and reel, whereby the entire film holding and actuating mechanism can be detached from its enclosing case and held in operative position for adjustment, removal or inspection, substantially as described. 18th. In a roll holder for exposing photographic films, the combination of the spool *F*, reel *H*, film support *E*, and guards *T*, substantially as described. 19th. In a roll holder for exposing photographic films, the combination of the spool *F*, reel *H*, film support *E*, guards *T*, attachable to the casing of the holder, substantially as described. 20th. In a roll holder for exposing photographic films, the combination of the spool *F*, reel *H*, guide rolls *I*, *I*, film-support *E*, guards *T*, substantially as described. 21st. The spool wound with sensitized photographic film, and provided with a socket, at one end and a socket and cross groove at the other, whereby it is adapted to be inserted between the adjusting screw and the stud, and connected so as to be rotated with the latter, substantially as described. 22nd. The combination with the casing of a roll holder for exposing photographic films, provided with a removable back, of a suitable frame supporting the film carrying rolls detachably affixed thereto, substantially as described. 23rd. The combination with the casing of a roll holder for exposing photographic films, of a removable back having a frame adapted to support the film-carrying rolls hinged thereto, substantially as described. 24th. The combination, with the removable back *D*, of a roll holder, of the frames *C*, *C*, plate *E*, spool *F*, reel *H* and catches *J*, *J*, substantially as described. 25th. The combination of the frames *C*, *C*, plate *E*, spool *F* and reel *H*, of the projecting ends *d*, *d*, at one or both ends of the frame, substantially as described. 26th. The combination with the casing and film-carrying roll of a roll holder, of the light tight key connection *P*, substantially as described. 27th. The combination, with the casing *A*, of the reel *H*, grooved ratchet *O*, and key connection *P*, substantially as described. 28th. In a roll holder, and in combination with the enclosing case and the film carrying spool and winding reel located therein, the guide rolls *I*, provided with a longitudinal groove *m*, substantially as and for the purpose set forth. 29th. The combination in a roll holder, of the guide roll *I*, provided with longitudinal groove *m*, and film-marking point *R*, substantially as described. 30th. The combination in a roll holder of the guide roll *I*, provided with longitudinal groove *m*, substantially as described. 31st. The combination with the reel *H*, provided at one end with a grooved collar *O*, having a central threaded opening of a light-tight perforated key connection *P*, arranged to slide through the casing of the holder, substantially as described. 32nd. In a holder for photographic films, and in combination with the enclosing case provided with a shutter, as described, a removable film carrying and feeding mechanism hinged or pivoted to its supporting frame, whereby the film actuating mechanism cap be removed from the case and turned up, as and for the purpose set forth. 33rd. In a holder for photographic films, and in combination with the enclosing case provided with a shutter as described, a film carrying and feeding mechanism detachably secured to the back, and the latter removably applied to the enclosing case, substantially as described. 34th. In a holder for photographic films, the frame supporting the film carrying and feeding mechanism, secured to the base or back board, by transverse movable bolts at each end, whereby the said mechanism may be detached at either end, and swung or turned back upon the bolts at the opposite end, substantially as described. 35th. In a roll holder for photographic films, and in combination with the ruling devices arranged within the enclosing case, and adapted to be operated from the exterior of said case, the light-excluding socket or tube projecting through the case and engaging the end of the reel operating mechanism, to which the key is applied, substantially as described. 36th. In a roll holder, and in combination with the enclosing case and a removable film-carrying and reeling mechanism applied thereto, a light-excluding socket engaging a portion of the ruling mechanism, and provided with an opening for the passage of the operating key, substantially as described.

### No. 22,352. Telephone Circuits and Apparatus. (*Appareils et Circuits Téléphoniques.*)

The Bell Telephone Company (Assignee of Ezra T. Gilliland, Boston, Mass.), Montreal, Que., 2nd September, 1885; 15 years.

*Claim.*—1st. A system of telephonic intercommunication, comprising a number of subscribers' stations connected directly together, without the intervention of a central office, by a series of main lines entering each station, a call bell at each station, permanently connected with one main line, and a single telephonic and signaling apparatus at each station, normally included in the circuit of one of the said main lines, but adapted to be withdrawn therefrom and introduced into any other of the said main lines, whereby a subscriber normally connected with any one of the lines may connect himself with any other of the said lines and communicate with subscribers normally connected therewith. 2nd. In a system of telephonic intercommunication, a series of subscribers' stations connected directly together, without the intervention of a central office, by a series of main lines entering each station, each station being appro-

riated to a particular line, so that a given number of stations are normally connected with each line, a call bell at each station, permanently connected with the particular main line to which that station belongs, telephonic and signalling apparatus normally connected with that line, and means, substantially as indicated, for withdrawing said telephonic and signalling apparatus from the said main line, and for including it in the circuit of any other main line, so that call telephone signals may be exchanged between it and the stations on the second line. 3rd. The combination, substantially as hereinbefore described, of a series of subscribers' stations, a series of main lines, each of the said lines extending to all of the said stations, a telephonic and signalling apparatus at each station, normally in circuit with one of the said main lines, on which incoming calls may be received and conversation carried on, switching devices whereby the said apparatus may be included for outgoing calls and conversation in any other of the said main lines, and means for the automatic restoration of the said apparatus to its normal line circuit, upon the conclusion of a communication, substantially as described. 4th. The combination, substantially as hereinbefore described, of a series of subscribers' stations, a series of main lines, all of which extend to and into all the stations, a series of spring-jacks, or other loop-receiving devices, one for each line at each station, a telephone and signalling apparatus at each station, the said apparatus consisting of a signal bell for receiving call signals, a generator for sending calls, a telephone or telephones, and a switch for constituting a support for the receiving telephone, with switching devices included, normally in one of the said main lines, but adapted to be withdrawn therefrom and included in any one of the line circuits by means of the spring-jacks therefor, means, controlled by the telephone holding switch bar, for maintaining the said apparatus in the desired line circuit during the displacement of the telephone, and other means, actuated by the telephone holding support when the telephone is replaced therein, for automatically transferring the apparatus to its normal connection. 5th. In a system of telephonic inter-communication, in which a number of stations are directly connected together by a series of main lines, and at each station thereof a series of spring-jacks or other loop-receiving and circuit-closing devices, each jack or circuit closer itself constituting a station loop of a separate main line circuit, a signal bell for receiving incoming calls permanently connected in the circuit of one of the said main lines, an instrument loop including in its circuit a generator for sending out-going call-signals, and a telephone, or telephones, and adapted to be normally included in and form a part of that main circuit in which the signal bell is connected, but capable of transference therefrom to any other of the said main lines by means of the respective loop receiving devices, whereby the subscriber at any station is enabled to signal and converse with any station on any of the lines, and at the same time may receive a call signal upon his own line, substantially as described. 9th. In a system of telephonic communication comprising a number of main lines entering all the stations and terminating thereat in spring-jacks, one for each main line, the combination of the telephonic and signalling apparatus in a loop at each station, and the wedge forming the terminals of said loop, said wedge being carried by the telephone supporting arm, and being adjustable thereon, to make contact with the spring jacks of any line circuit, whereby on adjusting the said wedge and removing the telephone the said loop is automatically included in the desired main line circuits, and on restoring the telephone such connection is broken, substantially as described. 7th. In a telephone system of the character described, the combination, at a station, of the spring-jacks, one for each main line, the wedge forming the terminals of a loop, including the telephone and signalling apparatus, said wedge being carried by and adjustable on the telephone supporting arm, so as to make contact with one of the spring jacks when the telephone is removed, an auxiliary spring jack permanently included in the circuit of the particular main line to which the station belongs, and a second wedge, also carried by the supporting arm, and arranged to make contact with said last-named spring-jack when the telephone is in place, whereby the removal of the telephone automatically includes the said loop in one of the main line circuits, determined by the position of the adjustable wedge, and its replacement automatically restores said loop to the particular line to which the station belongs, substantially as described.

### No. 22,353. Double Acting Pump.

(*Pompe à Double Effet.*)

Daniel R. Cloud, Detroit, Mich., U. S., 2nd September, 1885, 5 years.

*Claim.*—1st. In a pump, as set forth, the combination of the valve-chamber B, the ledge l, the valve H, its thimble n fitting over the thimble O containing the coiled spring, the arms m supporting the guide pins i, the free ends of said pins engaging with the wall of the cell, as and for the purposes set forth. 2nd. In a double-acting pump, the combination of the body having the parts formed integral, as set forth, of the horizontal valves and ports t, t', the vertical valves, as specified, having ports f, f', of the plunger or piston head operated by the means set forth, of the plate N<sub>1</sub>, the plate N<sub>2</sub> having stuffing box and discharge pipe R, said pipe located vertically over the horizontal valves of a supply pipe located between the vertical valves and ports leading into the chamber D, of a vent and drip-cock and bolts for securing said parts together, as and for the purposes specified. 3rd. In a pump, substantially as specified, the combination of the body containing the barrel C, the valve chambers and ledges with chamber D, the partition E having ports t, t', the U-shaped supply openings leading from the chambers B into the barrel C, said parts formed integral of the valves, as set forth, the plates N, N<sub>1</sub> having the annular flanges D<sub>1</sub> and cut out portions i, said flanges fitting within the barrel, as specified, the bolts for securing said plates to the body, the supply and discharge pipes, the piston-head and means for operating said piston-head, substantially as set forth. 4th. In a pump, substantially as set forth, the body A having the chambers formed integrally therewith, the plates N, N<sub>1</sub> adapted to fit over said chambers, said plates having the annular flanges D<sub>1</sub> with openings i fitting within the ends of the barrel C, as and for the purposes specified.

### No. 22,354. Temporary Binders for Holding Blank Leaves, etc. (*Relieure Mobile pour les Feuilles, etc.*)

John W. Appleby, Kalamazoo, Mich., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. The combination of the cover and contents, the binder provided with the arms passed through the holes in the cover, one arm jointed, the free ends of the arms being perforated, the horizontal bar of the binder being buried in the cover, and a rod passed through the perforated free end of the arms, substantially as set forth. 2nd. The combination of the cover, the horizontal bar provided with the arms extending through the cover, one arm jointed, and a rod forming detachable connection with the free ends of the arms, substantially as set forth. 3rd. The combination of the cover, the binder having the arms passed through the cover, one arm jointed, both having a series of holes in their free end and a rod passed through said holes, substantially as set forth. 4th. The combination of the contents, the cover having the thin portions at the rear on one side, and the binder and binding-rod, all arranged substantially as set forth.

### No. 22,355. Nitrous Oxide Gasometer.

(*Gazomètre à Oxyde Nitreux.*)

Hugh McLaren, London, Ont., 2nd September, 1885; 5 years.

*Claim.*—1st. In a gasometer, the inner cylinder B closed at top and bottom in combination with cylinder A and gas receiver C, substantially as shown and described and for the purpose specified. 2nd. In a gasometer, the hollow air-tight flange or float J formed on inner face of the gas receiver C, in combination with the cylinder B, substantially as shown and described and for the purpose set forth. 3rd. In a gasometer, the band I, in combination with the inner cylinder B and gas receiver C, substantially as shown and described and for the purpose specified. 4th. In a gasometer, the band I and inner cylinder B, in combination with the gas receiver C formed with the hollow and tight flange J, substantially as shown and described and for the purposes specified. 5th. In a gasometer, the screw L and sustaining ring M, in combination with the gas cylinder F, substantially as shown and described and for the purpose specified.

### No. 22,356. Device for Suspending Fire Grenades. (*Appareil pour Suspendre les Grenades à Incendie.*)

James A. House, Bridgeport, Conn., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In a device of the character described, a receptacle containing a fire-extinguishing fluid and suspended by a fusible connection, in combination with a breaker, substantially as described, attached to said receptacle, whereby upon the fusing of the connection the receptacle is caused to fall and be crushed, substantially as set forth. 2nd. An automatic fire-extinguisher, the same consisting of a receptacle containing a fire-extinguishing fluid, a connection of metal fusible at low temperature for suspending the same and a breaker substantially as described, attached to said receptacle whereby upon the fusing of the connection the breaking of the receptacle may be accomplished, substantially as set forth. 3rd. In a fire extinguisher, the receptacle containing the fluid suspended by a fusible connection, in combination with a breaker, substantially as described, connected to the receptacle and also connected independently with the support for the receptacle, whereby when the fusible connection is destroyed the receptacle falls and operates the breaker to destroy the same.

### No. 22,357. Fire Grenades.

(*Grenades à Incendie.*)

James A. House and Charles H. Dimond, Bridgeport, Conn., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In a fire-extinguisher of the character described, the combination with a suspended fragile receptacle containing the fire-extinguishing fluid of a spring wire bent as described, and provided with hammers upon its ends, wires adapted to retain said spring wire against its resiliency and a fusible band placed around the extremities of said wires and thereby securing the latter in their position around the spring wire, substantially as set forth. 2nd. In a fire-extinguisher of the character described, the combination with a suspended fragile receptacle containing the fire-extinguishing fluid of hammers secured to the two extremities of a single spring wire and a fusible lind or band attached to said wire and adapted to resist its resiliency and keep said hammers in a distended position, substantially as shown and described. 3rd. In a fire-extinguishing apparatus, the combination with a suspended fragile receptacle containing the fire-extinguishing fluid, of hammers secured to the extremities of a spring wire bent as shown, and means secured to said wire by a fusible connection and adapted to hold said hammers distended, whereby upon the fusing of the connection the wire may be released and the hammers dashed against said receptacle, substantially as set forth. 4th. The combination, with the suspended receptacle, of wire A bent as described and provided with hammers E, the securing-wires F, H, and the fusible band T, all arranged as described and for the purpose specified.

### No. 22,358. Pruning Implement. (*Secateur.*)

Horace Case, Freeport, Mich., U.S., 2nd September, 1885; 5 years.

*Claim.*—The double cutting-blades A, B, hinged together by the rivet d and adapted to cut in either direction and provided with the handles e, f, and having the shorter handle e laterally bent at a right angle to the longer handle f, substantially as described.

**No. 22,359. Roller Grinding Mill.***(Moulins à Cylindre)*

William H. Wakeford, Baltimore, Md., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In a roller grinding mill, the breaks of which are arranged in one and the same horizontal plane, the combination, substantially as before set forth, with the adjustable roller of one break and the adjustable roller of the next succeeding break of the chain wheels, and drive-chains for transmitting the motion of one adjustable roller to the other adjustable roller. 2nd. The combination, substantially as before set forth, of an adjustable box, and adjustable knee and a toggle-joint for connecting said box to said knee. 3rd. The combination, substantially as before set forth, of an adjustable box, an adjustable knee, a toggle-joint for connecting said box to said knee, and a screw for holding and adjusting the knee. 4th. The combination, substantially as before set forth, of the adjustable boxes, of an adjustable roller, an adjustable knee for each box toggle-joints for connecting the boxes to the knees, a rock-shaft provided with arms and links for connecting the arms of the rock-shaft with the toggle-joints.

**No. 22,360. Traction Wheels.***(Roues du Traction.)*

William M. Biendorf, Litchfield, Ill., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. A traction wheel having pins projected at intervals through and movable beyond the rim, a ring and links connecting said pins and ring, and having its hub extended at A inward and adapted to serve as a bearing for the eccentric, and the eccentric journaled on the extension A of the hub, and provided with a gear ring or wheel suited to be engaged by a proper gear on the framing, substantially as set forth. 2nd. The combination with the wheel, the eccentric secured on the framing, the ring E and pins F, of the wheel G secured to the spokes midway the hub and jolly and provided with slots *g* and the links *l* passed through slots *g* and pivotally secured at their opposite ends to the pins and ring E, substantially as and for the purposes specified.

**No. 22,361. Toboggan. (Traine Sauvage.)**

Richard Gould, St. John, Que., 2nd September, 1885; 5 years.

*Claim.*—1st. A toboggan made up of two parts or sections adjustably connected together in such manner that the direction of travel may be changed by moving one of said sections, substantially as described. 2nd. A toboggan made up of a main body forming the seat portion and a movable front, substantially as and for the purpose specified. 3rd. In a toboggan, the combination, with main body A and movable front B, of plates C and D having curved meeting surfaces, tongue E and plate F, substantially as and for the purpose described. 4th. The combination with the main body A and movable front B, of the plug G adapted to hold same firmly together, substantially as described.

**No. 22,362. Saws. (Sci.)**

Charles T. Shoemaker, Philadelphia, Pa., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. The within-described improvement in the mode of manufacturing saw blades, said improvement consisting in first rendering the blade true by grinding, then tempering the blade and finally grinding and polishing the same, as described, whereby the blade at and near the cutting edge retains the surface due to the tempering operation, as set forth. 2nd. A saw blade having at and near the cutting edge a tempered surface and on the other portions of the blade a ground surface, as set forth.

**No. 22,363. Plaiting Apparatus.***(Appareil à Plisser.)*

Ollie T. Raney, Melissa, Texas, U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. The combination in a plaiting apparatus of a fixed transverse bar, a second transverse bar adapted to be adjusted relatively thereto and means for securing the said adjustment each of said bars being provided with a transverse metallic strip bent to form inclined ribs, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in a plaiting apparatus, of metallic strips bent to present inclined ribs and spring clip devices adapted to engage said ribs to hold the material when folded thereon, substantially as and for the purpose hereinbefore set forth. 3rd. The combination in a plaiting apparatus, of an adjustable folding frame having two parallel bars provided with metallic ribs to be formed by bending said metallic strips, substantially as and for the purpose hereinbefore set forth. 4th. The combination in a plaiting apparatus of the bars A having holes *a* therein, the fixed bars B, the adjustable bar B' provided with pins *b*, the hinged braces *c* and the metallic strips C and C', substantially as and for the purpose hereinbefore set forth. 3rd. The combination in a plaiting apparatus, of an adjustable folding frame provided with the metallic strips C and C', bent to present ribs and clips E, consisting of jaws *i* centrally pivoted together and provided with the spring *b*, substantially as and for the purpose hereinbefore set forth.

**No. 22,364. Brick Press. (Machine à Brique.)**

Hiram Lupher, Tullahoma, Tenn., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. The combination of the feed-slides having pockets and the alternately acting plungers and rams, said slides being operated by levers connected by arms to rockers and acted upon by arms connected to the pendulum or working-lever, substantially as and for the purpose described. 2nd. The combination of the feed-slides having pockets, the boxes having passages and the alternately acting plungers and rams, said slides being operated by levers con-

nected by arms to rockers and acted upon by arms connected to the pendulum lever, substantially as and for the purpose described. 3rd. The combination of the rods *v*, pivoted to the pendulum lever, push-studs *t* attached to said rods, guide *u* for the push-studs, feed levers *p*, guide *s* for the feed-levers, and feeders *l* with the duplex moulds *a*, rams *g* and ejectors *c*, substantially as described. 4th. The combination of the pendulum-levers *j*, rock-beam *h*, duplex rams *g*, moulds *a* and plungers *c*, and the rock-lever *d*, substantially as described. 5th. The combination of the pendulum lever *j*, rock-beam *h*, duplex rams *g*, moulds *a*, plungers *c*, connecting rods *v*, push-studs *t*, feed-levers *p*, feed-slides *l* and feed-boxes *k*, said levers *p* and push-studs having guides *s* and *u*, substantially as described.

**No. 22,365. Axle Lubricator.***(Graisseur d'Essieu.)*

Lewis F. Morison and François X. Bertrand, St. Hyacinthe, Que., 2nd September, 1885; 5 years.

*Claim.*—1st. The rollers L and L2, having grooves or elevators M and M2, respectively in their ends, or their equivalents, for the purposes set forth. 2nd. And in the way and manner of cutting such grooves or elevators from the circumference to the centre of above or below the centre of such rollers L and L2 respectively, to increase or decrease the supply to the shaft or axle of the lubricating substance. 3rd. The combination of plate A with plate D, screw points C, axle or pivot B, arms H, axle or pivot J, spring E, pin F, roller L, having grooves or elevators in each of its ends, with axle or pivot P, and the shaft or axle Q, or their equivalents, the whole constructed and arranged, substantially as and for the purposes set forth. 4th. The combination of plate A, with plate D2, screw-point C2, axle or pivot J2, spring E2, pin F2, roller L2, having grooves or elevators in each of its ends, with axle or pivot P2, and the shaft or axle Q, or their equivalents, the whole constructed and arranged substantially as and for the purposes set forth. 5th. The combination of plate A, with plates D and D2, axles or pivots B and B2 respectively, arms H and H2 respectively, axles or pivots J and J2 respectively, springs E and E2 respectively, pins F and F2 respectively, rollers L and L2 respectively, having grooves or elevators in each of their ends, with axles or pivots P and P2 respectively, and the shaft or axle Q, or their equivalent, in lubricating box or reservoir T, the whole constructed and arranged, substantially as and for the purposes set forth.

**No. 22,366. Thill Couplings.***(Armons de Limonières.)*

Thomas F. Van Luyen and Benjamin W. Folger, Kingston, Ont., 2nd September, 1885; 5 years.

*Claim.*—1st. The combination of the socket A, provided with clip B, rubber cushion C1, thill iron E, having hollow trunnion F, bolt J, and pin K, as set forth. 2nd. The combination with the socket A, provided with clip B, and having a shoulder A1, of the thill iron E having hollow trunnion F, bolt J, and pin K, whereby the head of the pin will be covered by the shoulder when the shafts are in a normal position, to prevent uncoupling, as set forth. 3rd. The combination with the socket A, having clip B, thill iron E, having hollow trunnion F, bolt J, and cushion C1, and wedge D, to prevent rattling, as set forth.

**No. 22,367. Rheumatic Belt.***(Ceinture Rhumatismale.)*

John O'Flaherty, Lachine, Que., 2nd September, 1885; 5 years.

*Claim.*—A compound of pulverized sulphur, and hierpiera, substantially in the proportions and for the purposes set forth as above mentioned.

**No. 22,368. Roller Skates. (Patins à Roulettes.)**

Frederick Mallory, Brockville, Ont., 2nd September, 1885; 5 years.

*Claim.*—The combination, with the hinged truck sections D, E, of the wire springs G, H, coiled reversely around the pintle F, as set forth for the purpose described.

**No. 22,369. Calf Feeders. (Elevateur de Veaux.)**

Josiah B. Small, Somerville, Mass., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. In a calf-feeding device, the vessel A, A2, provided with flanges *a*, having shoulders *s*, at the tops thereof, combined with guideways or blocks *a2*, on the tops of which the shoulders rest, to retain the vessel in position, substantially as set forth. 2nd. In a calf-feeding device, the vessel A, A2, having the nozzle *d*, combined with the nipple and tapering plug therein, to hold the nipple in the nozzle by pressure between the nozzle and plug, substantially as described. 3rd. In a calf-feeding device, the vessel A2, having the nozzle and the nipple, combined with a plug provided with a valve to check or prevent the return of the liquid from the nipple into the vessel, and yet permit the liquid to enter the nipple by gravity, substantially as set forth. 4th. The liquid-holding vessel A, provided with the side flanges *a*, and the stops *s*, and the nipple B, attached to the said vessel, and the nipple-holding plug, combined with the guide-piece *a2*, to receive and hold the flanges *a*, substantially as described. 5th. In a calf-feeding device, the combination with a vessel, having a nipple or teat, of a valve *b*, in said nipple or teat at its educt, substantially as and for the purpose set forth. 6th. In a calf-feeding device, the combination with a vessel having a nipple or teat, provided with a valve *b*, at its educt, of a plug *c*, located in said nipple or teat, and the valve *c*3, substantially as set forth.

**No. 22,370. Railroad Ditching Machine.***(Machine à Fossoyer les Railroutes.)*

Alonzo H. McGrew, Hurley D.T., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. A ditching machine constructed with a movable platform, horizontally-swinging derricks, levers pivoted to the derricks and adapted to enter notches or catches on the platform, ditching scoops suspended from the derricks by ropes or chains, means for hauling-in and paying-out the ropes for raising and lowering the scoops, and draft ropes or chains connecting the scoops with the platform, substantially as herein set forth. 2nd. In ditching machines, the combination, with a movable platform A, of derricks E, mounted to swing in horizontal plane, and provided with windlasses Er, and means for holding the derricks in position, ropes H, leading from the windlasses to the scoops J, which have longitudinally ranging bail-bars i, with which the ropes H connected by slip-rings, and draft chains L, connecting the forward ends of the scoops with the platform A, substantially as herein set forth. 3rd. In ditching machines, the combination, with a movable platform A, of horizontally-swinging derricks E, having windlasses Er, and means for holding the derricks in position, ropes H, scoops J, having longitudinally ranging rear bail-bars i, with which the ropes H, connect by slip-rings, and draft-chains L, connecting the forward ends of the scoops with draft beams M, pivoted to the platform, and means for holding said beams extended laterally from the platform, substantially as herein set forth. 4th. In ditching machines, the combination, with a movable platform A, of horizontally-swinging derricks E, having windlasses Er, provided with ropes H, which are connected by slip-rings to longitudinally ranging bail-bars i, of the scoop J, substantially as specified, of levers R, pivoted to the derricks, notches 2, 4, in the platform and flexible draft connections from the front ends of the scoops to the platform, substantially as herein set forth. 5th. In ditching machines, the combination with a movable platform A, of horizontally-swinging derricks E, having windlasses Er, with ropes H, connected by slip-rings to the bail-bars i, of scoops J, substantially as specified, of levers R, pivoted to the derricks, notches 2, 3, 4, in the platform, and flexible draft connections from the forward ends of the scoops to the platform, substantially as herein set forth. 6th. In ditching machines, the combination with a movable platform A, of horizontally-swinging derricks E, having windlasses Er, with ropes H, connected by slip-rings to the bail-bars i, of scoops J, substantially as specified, of levers R, pivoted to the derricks, and notches 1, 2, 3, 4, P, in the platform, and flexible draft connections from the forward ends of the scoops to the platform, substantially as herein set forth. 7th. In ditching machines, the combination with a movable platform A, of horizontally-swinging derricks E, having windlasses Er, with ropes H, connected by slip-rings to longitudinally-ranging bail-bars i, of scoops J, substantially as specified, of levers R, pivoted to the derricks, notches 1, 2, 3, 4, P in the platform and chains L, connected to bails K, at the forward ends of the scoops J, and to draft beams M, pivoted at m, to the platform A, and means for holding the beams M, against the pull of the scoops, substantially as herein set forth. 8th. A ditching machine, constructed with two derricks E, E, pivoted to swing horizontally one at each of a moving platform A, and having windlasses Er, with ropes H, connected with ditching scoops J, which have draft-connections to the platform, and said derricks having pivoted levers R, adapted to enter notches 1, of the platform, which also has notches P, as specified, and said notches 1, P, being reversely arranged at opposite derricks to be swung toward opposite ends of the car, and be locked in place, and also allowing the scoops to be laid by the derricks one on each end of the car platform to evenly distribute the weight thereon, substantially as herein set forth. 9th. In ditching machines, the ditching-scoops constructed with means for connecting a draft rope or chain to its forward end, and with a rear bail I, having a longitudinally-ranging bar i, extending from the rear end of the scoop to a point forwards of its transverse center, substantially as herein set forth. 10th. In ditching machines, the ditching-scoop constructed with a forward bail K, and a rear bail I, having a longitudinally-ranging bar i, extending from the rear end of the scoop, to a point forward of its transverse center, substantially as herein set forth. 11th. In ditching machines, the ditching-scoops constructed with a forward bail K, and with a rear bail I formed of two bars or rods lying together to form the central longitudinally-ranging bar i, bent towards and made fast to the sides of the scoop, substantially as herein set forth. 12th. In a ditching machine, the combination with the platform A, of the derrick E, provided with a windlass, and having the lever R, arranged to be engaged with notches in the side of the platform, the rope H, the scoop J, draft-chain L, and pivoted draft-beam M, substantially as shown and described.

#### No. 22,371. Trace Fasteners. (*Accroche-Traits.*)

Charles L. Bellamy, Arlington, N.J., U.S., 2nd September, 1885; 5 years.

*Claim.*—1st. A trace-fastener having a screw-like head or extremity, substantially as and for the purpose set forth. 2nd. A trace-fastener consisting of the shank a, neck b, twisted or screw-like flange c, substantially as set forth. 3rd. In combination, a fastener having a screw-like head and a trace with a metallic reinforcing plate at the eye thereof.

#### No. 22,372. Railway Frog and Switches. (*Aiguilles et Rails de Croisement de Rail-roules.*)

Charles B. Price, Pittsburgh, Pa., U.S., 3rd September, 1885; 5 years.

*Claim.*—1st. The combination of main and branch rails and a movable frog constructed to be thrown from both rails, and also to be thrown across the main rail to then constitute a continuation over the same, of the branch track and also an elevated continuation of the main track so that cars may travel on either track. 2nd. The combination of the said frog and switch-rails and connections whereby both may be simultaneously set in or out of position. 3rd. A frog arranged to be carried to and upon the main rail of a track and when upon the latter to coincide at its inner edge with the inner edge of said rail extending to the rail of the branch track and affording a tread over the main rail in line with the latter and a tread across the main rail in line with the branch rail, substantially as described.

4th. The frog constructed to coincide when upon the main rail with the inner edge of the latter and extending to the siding rail and grooved to afford a channel across and over the main rail for the flange of the car wheel, substantially as described. 5th. The combination of the grooved movable frog adapted to be brought above the main rail and terminating at the inner edge of the latter and a lead rail with its inner side level with the face of the frog and extending to opposite sides of the tread of the latter to afford a continuous bearing for the tread of the wheel across the space between the lead rail and frog, substantially as described. 6th. The combination with the main rail and sliding rail of a movable frog rail provided with an edge tread inclining upward from each end and with a tread S at an angle to the edge tread, substantially as described. 7th. The combination with the siding rails and rail of the main track of a frog rail having a portion adapted to lie upon the main rail and constitute a tread r above the same and with a tread leading at an angle to the tread r to the switch rail, substantially as described. 8th. The lead rail increased in height at the inner stationary end, in combination with a movable frog rail provided with a tread leading to the branch rail at the same height as the height at the end of the lead rail, substantially as described. 9th. The combination with the movable rail of a switch end a movable frog rail at separated points of a crank shaft H connected to said rails and provided with a switch lever arranged midway between the cranks to operate the switch and frog rails in unison, substantially as described. 10th. The combination with the movable switch rails or frogs, of a cranked shaft pointed links connected to the said movable parts and pivoted to stationary pins and sliding rods connecting said links and the cranks of the shaft, substantially as set forth. 11th. The combination with the sliding rod, of a switch or frog of toggle levers arranged to operate, as set forth. 12th. The combination with the tracks Y, Z, having continuous rails of cross over rails, and movable frog pieces each constructed to form a communication between sections of the cross-over rails over the main track rail without obstructing the latter and each being capable of being swung away from the main track rail, substantially as set forth. 13th. The combination of the continuous tracks Y, Z, cross-over rails connected to form switches, movable bridge frogs constructed to transfer cars over the continuous main rails and a switch lever and connections for operating simultaneously therefrom from both frogs and both switches, substantially as set forth. 14th. A movable frog consisting of rail pieces and a point piece bolted together and constructed substantially as set forth. 15th. The combination in a movable switch frog of a supporting plate sections of rails and a point-piece and filling-pieces u bolted thereto and arranged substantially as set forth. 16th. The combination in a movable switch frog, of rail pieces, a separate cast metal point-piece and a support plate bent to form flanges of different heights, the lower flange supporting the rails and the upper supporting the point-piece, substantially as set forth. 17th. The mode described of pivoting the link beneath the rail by securing the pivot to a block clamped between the track rail and safety rail, substantially as set forth.

#### No. 22,373. Faucet. (*Robinet.*)

William McShane, St. John, N.B., 3rd September, 1885; 5 years.

*Claim.*—As an improved article of manufacture, a faucet consisting of the straight tubular shell A, internally screw-threaded, having a branch E and provided with valve seat f and removable screw plug B filling the shell and having a key hole a whereby the plug can be wholly removed from the shell and is protected against accidental turning, as set forth.

#### No. 22,374. Window Holder. (*Arrête-Croisée.*)

William Norris, Montreal, Que., 3rd September, 1885; 5 years.

*Claim.*—1st. A window adjusting and holding device, consisting of a rack placed upon one edge of the sliding sash, a pawl contained within the window frame and engaging with said rack, and a spindle or handle for releasing said pawl, substantially as specified. 2nd. The combination with a window sash and its frame, of a rack C placed on the edge of said sash, a pawl D having its greatest weight at the point thereof, and arranged within the frame a spindle e connected to said pawl and projecting through said frame, and a thumb-piece or button dt on the outer end of said spindle, all substantially as and for the purpose specified.

#### No. 22,375. Lubricator. (*Graisseur.*)

Cushing C. Harlow, Brocton, Mass., U.S.; 5 years.

*Claim.*—1st. In a lubricator, the combination with a reservoir of the inlet and outlet tubes located therein on a plane at right angle to the forcing rod and projecting in opposite directions, and the forcing rod acting between the adjoining ends of the said tubes, substantially as and for the purpose set forth. 2nd. In a lubricator, the combination with a reservoir of the inlet tube contained within the reservoir and extending across the same an outlet tube projecting from the reservoir, the inlet and outlet valves respectively located and acting on a corresponding transverse plane within the inlet and outlet tubes and a forcing rod working between the ends of said tubes at right angles to the movement of the valves, substantially as and for the purpose set forth. 3rd. In a lubricator, the combination with a reservoir of the box or chamber C within the same inlet and outlet tubes entering the same on diametrically opposite sides and carrying valves and the forcing rod acting within the chamber between the adjoining ends of the tubes and on a plane at right angles to the valves, substantially as set forth. 4th. In a lubricator, the combination with a reservoir and the forcing rod therein, of an inlet tube located within the reservoir and carrying the inlet valve and outlet tube projecting from the reservoir and provided with the outlet valve and valve-rod working through the inlet tube to regulate the supply of lubricant thereto, substantially as set forth. 5th. In a lubricator, the combination with a reservoir having the box or chamber C, of the inlet and outlet tubes provided with valves and entering said box, the inlet tube being contained within the reservoir and extending across the same, and provided with inlet openings, the valve rod f<sub>2</sub> working in the tube with respect to said openings to regulate



the supply of the lubricant thereto, and the forcing rod working between the adjoining ends of the said tubes, substantially as set forth. 6th. In a lubricator, the combination of the reservoir having the box or chamber C at one end, the inlet tube located across the reservoir at right angles to said chamber and entering the same, said tube being provided with inlet openings covered by a strainer and with a valve between these openings and its inner end, the outlet tube extending from said chamber and provided with a valve, the forcing rod working between the adjoining ends of the inlet and outlet tubes, and the adjustable valve-rod  $\frac{1}{2}$  extending from the outside of the reservoir into the inlet tube, the entire regulation of the flow of the lubricant being effected by the adjustment of said valve rod with respect to the openings of the inlet tube, substantially as set forth. 7th. In a lubricator, the combination with the inlet tube located within the reservoir and provided with the openings and valve and a forcing rod for actuating said valve, of the adjustable valve rod  $\frac{1}{2}$  working through said tube with relation to the openings, substantially as and for the purpose set forth. 8th. In a lubricator, the combination with a reservoir of the box or casing located on a corresponding horizontal plane and entering said box on diametrically opposite sides, the valves in said tubes and the openings in the inlet tube and a forcing rod operating at right angles to the valves and a regulating rod working in the inlet tube, substantially as and for the purpose set forth. 9th. In a lubricator, the combination with a reservoir having a box or casing within the same and provided with the forcing rod of the inlet tube having the openings in its shell, and a strainer fitted around the tube and over said openings, substantially as set forth. 10th. In a lubricator, the combination with an inlet tube located within the reservoir and having inlet openings of the regulating valve consisting of the screw threaded stem working longitudinally in said tube and provided with an end disc having a graduated face, substantially as and for the purpose set forth.

### No. 22,376. Steam Boiler. (*Chaudière à Vapeur.*)

William Malam, Edgemore, Del., U. S., 3rd September, 1885; 5 years.

*Claim.*—1st. The combination of the casing and turbed cylindrical barrel of a boiler, of the locomotive type with a fire box casing having tubed transverse water legs in the upper portion of the combustion chamber, as set forth. 2nd. The combination of the casing and tubed cylindrical barrel of a boiler, of the locomotive type with the fire box casing having tubed transverse water legs Y and crown plates K, as set forth. 3rd. The combination of the casing and tubed barrel of a boiler, of the locomotive type with a fire box casing having tubed transverse water legs in the upper portion of the combustion chamber, the forward leg being deeper than the rear leg, as set forth. 4th. The combination of the fire box casing having tubed transverse water legs, the tubes G, the smoke box and stack and the boiler casing extended to enclose the smoke box and lower portion of the stack, and having a drum N enclosing the upper part of the stack, as set forth. 5th. The combination of the tube sheet, the smoke stack and the smoke box having a corrugated casing, with the casing A of the boiler, having an expanded front sheet enclosing the smoke-box, as set forth.

### No. 22,377. Saw Set and Nail Punch.

(*Tourne-Gauche et Poignon.*)

Albano F. Peelman, Kensington, Ill., U. S.; 3rd September, 1885; 5 years.

*Claim.*—1st. A saw set, as herein described, consisting of a bar *a* having on one side a fish bellied edge *c* and sides *d*, *d*, substantially as and for the purpose specified. 2nd. The combined saw and nail set, formed of a bar *a*, having point *b* and fish-bellied edge *c* with flat sides *d*, *d*, substantially as and for the purpose specified.

### No. 22,378. Base Burning Steam Boiler.

(*Chaudière à Vapeur.*)

Michael E. Herbert, St. Joseph, Mo., U. S., 3rd September, 1885; 5 years.

*Claim.*—The combination of the upper section having a semi-annular chamber communicating with a semi-cylindrical chamber at its rear end, the lower and inner section having a semi-annular chamber and having the hollow bridge communicating therewith, the circulating pipes connecting said sections together, and the coal magazine located at the front end of the boiler, substantially as shown and described.

### No. 22,379. Clothes Dryer. (*Séchoir à Linge.*)

Joseph J. Bisel, Philadelphia, Pa., U. S., 3rd September, 1885; 5 years.

*Claim.*—1st. A frame provided with vertical guideways, in combination with a self-locking pulley arranged at the top of said frame, a slide with moves up and down in said guideway, a shelf hinged to said slide and provided with an angular slot, clothes supporting arms attached to said shelf, and a cord which passes over said pulley and down through said slot to said slide, where it is attached, substantially as set forth. 2nd. A slide provided with anti-friction rollers and an arm-supporting shelf hinged to said slide, in combination with a frame provided with vertical guideways, a self-locking pulley at the top of said frame and a cord which passes over said pulley and is attached to said slide, substantially as set forth. 3rd. A slide provided at each end with two sets of anti-friction rollers, arranged at right angles to each other, in combination with an upright frame having on each side a vertical guideway in which one set of said rollers runs, a shelf attached to said slide, clothes-supporting arms carried by said shelf, and means for raising and lowering said shelf and slide substantially as set forth. 4th. A vertically moving slide in combination with anti-friction rollers, a frame having vertical guideways, a shelf hinged to said slide and provided with clothes supporting arms, a cord attached to said shelf for raising and lowering it, and a detachable fastening device whereby said shelf may be held horizontal while being raised and lowered, substantially as set forth. 5th. A vertically moving slide and shelf in combination with the clothes

arms supported on said shelf, the frame for supporting and guiding said slide and shelf, and a cord and pulley for lifting and locking the same, said frame being provided with a forward extension, said pulley being attached to said extension at a point above the forward part of said shelf, and said cord being attached to the forward part of said shelf and extending up over said pulley. 6th. A set of pivoted clothes-supporting arms, arranged to fold laterally together, converging towards a central line, in combination with a hinged shelf to which they are attached, and a frame which allows said shelf and arms to be turned up within it, said frame being provided at the top with a cross-bar, which is recessed to receive the free ends of the clothes-supporting arms thus folded together, substantially as set forth. 7th. In combination with a fixed frame, a set of clothes-arms, a sliding support for the same, and anti-friction rollers arranged on each side thereof in double sets, operating at an angle to one another, as set forth.

### No. 22,380. Bedstead and Wardrobe.

(*Couchette et Garde-Robe.*)

Albert F. R. Arndt, Detroit, Mich., U. S., 3rd September, 1885; 5 years.

*Claim.*—As an improved article of manufacture, a wardrobe having a bed A, with hinged legs C, and attached to the inside of its back B, a shelf D and drawers E, arranged in the said wardrobe, which is also provided with doors F, having hooks *e*, and a curtain G, arranged between the doors, as specified.

### No. 22,381. Calculator. (*Calculateur.*)

Jules V. Charpentier, New Orleans, La., U. S., 3rd September, 1885; 5 years.

*Claim.*—1st. The combination of the box A, having the holes B, the two rollers C journalled in the said holes, the screw D mounted as a belt on the said rollers, and having the transverse aperture J spaced along its edge, and the spaces marked indicating different units of time and the tabulated cards J spaced to correspond with the spaces on the screen D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the box A, having the holes B in its side-edges, and the slit G in the edge, in a plane tangent to the front sides of the said rollers, the screen D fitted around the rollers, and the tabulated cards F, of a length to be held between the screw and the rollers, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the box A, the rollers C journalled therein, the screen D mounted as a belt on the roller, and having the transverse aperture J and the cards F placed behind the screen, each card having dates marked in columns and horizontal lines on it, and the screen marked at the edge of the said aperture, in column with the dates II, on the cards, the markings on the screen and on the card behind it bearing an arbitrary ratio to each other, substantially as shown and described, whereby any number on the screen being added to a date in the left hand column of the card, the sum of the addition is indicated on the card on the same horizontal line, and in the column of the added number on the screen.

### No. 22,382. Plane Bit. (*Fer de Varlope.*)

William F. Kellott, Chicago, Ill., U. S., 3rd September, 1885; 5 years.

*Claim.*—1st. The combination, with the base-plate having the thin steel chisel adjustably connected therewith, the adjacent surfaces of the two being plane surfaces of the cap connected with the base plate by a clamp-screw to clamp the chisel rigidly against the back plate, substantially as and for the purposes specified. 2nd. The combination with the slotted base-plate, of a chisel connected therewith by a clamp screw at its upper end, whereby the chisel may be adjusted longitudinally on the base-plate and of the cap connected with the base plate by a clamp screw whereby the chisel may be firmly clamped against the base-plate when so adjusted substantially as and for the purposes specified. 3rd. The combination with the base A, chisel C, and cap B, provided with the slots *o*, *n*, *s*, and holes *r*, *w*, of the set-screw E, and set-screw D, and nut G, substantially as and for the purposes set forth. 4th. The combination, with the base A, of the cap K, substantially as and for the purposes set forth.

### No. 22,383. Harrow. (*Herse.*)

Louis Deloria, Chautauqua, Ks., U. S., 3rd September, 1885; 5 years.

*Claim.*—1st. In a harrow, the combination of two side frames coupled to each other and provided with a draft attachment, said frames enclosing harrow-sections, each pivotally secured at two opposite corners to the side frame in which it is located, substantially as shown, and for the purpose set forth. 3rd. The combination in a harrow, of the rectangular frames A, *A*, having hollow squares formed therein, said frames being coupled to each other, and provided with a draft attachment, and frames D pivotally secured at two opposite corners, within said hollow squares, as shown, and connected on one side to the side bars by connections *d*, substantially as shown, and for the purpose set forth.

### No. 22,384. Seeding Machine. (*Semoir.*)

George W. W. Billings, Oshawa, Ont., 3rd September, 1885; 5 years.

*Claim.*—1st. The combination in a seeding machine, of the draft rollers B, C, geared together, and draft chain F, secured at the end to the middle of said rollers, to wind and unwind thereon by the power of the draft hitches to the chain, for alignment of the drill hoes, and adjusting them zig-zag, as set forth. 2nd. The combination with the shell J, of a seed distributor of the cut-off L, provided with ring M, and hook M', and the feed wheel N, having a boss journal N', whereby the cut-off is loosely connected to the feed wheel, and follows its adjustment on the distributor rod, as and for the purpose set forth. 3rd. In a seeding machine, having seed distributors secured to the bottom of the hopper, a divided distributor rod, passing through the distributor, and separately geared to the ground wheels,

whereby each section of the rod will move independently of one another, as set forth, for the purpose described. 4th. The combination with the drill hoe T, and drag bars D, of the divided socket R, provided with bosses R<sub>2</sub>, and slots R<sub>3</sub>, rollers S, and cutter key S<sub>1</sub>, to removably hold the hoe, having fins T<sub>1</sub>, T<sub>2</sub>, for replacement by cultivator teeth, as set forth. 5th. In combination with a flexible seed conducting tube V, provided with a button hole, near the lower end of the removable curved foot *w*, having a button *w*<sub>1</sub>, as set forth for the purposes described. 6th. The combination in a seeding machine, of the bracket 5, having cam grooves 6, 7, 8, and fixed to frame A, and arms 3, having pins 4, 4<sub>1</sub>, and secured to the ends of lifting bar 2, whereby the bar can be lifted by two successive stages, and finally become automatically locked, thereby retaining the hoes lifted from the ground, as set forth.

### No. 22,385. Weather Strip. (*Bourrelet de Porte.*)

Daniel D. Mayfield, Pleasantville, Ind., U.S., 3rd September, 1885; 5 years.

*Claim.*—1st. The weather strip, consisting of the metallic cap-plate A, having the semi-cylindrical box-bearing D, provided with the end pieces G, and the strip-plate B, having a curved offset-flange H, adapted to fit within the box-bearing of the cap-plate, substantially as specified. 2nd. The combination with the door sill and threshold provided with the metallic wear-plate Y, of the door having the sheet-metal weather-strip B, substantially as specified.

### No. 22,386. Castor Wheels for Hoisting Buckets. (*Roulettes de Godets Elevateurs.*)

Alexander E. Brown, Cleveland, Ohio, U.S., 3rd September, 1885; 5 years.

*Claim.*—1st. A hollow castor wheel for hoisting buckets, provided with an interior circumferential strengthening rib or ribs, substantially as set forth. 2nd. A hollow cast-metal castor wheel for hoisting buckets, having the holes necessary for the extrication of the core used in casting the wheels securely closed up by plugs fastened therein, for the purpose of preventing the entrance into the interior of such wheels of the fire-coal or other material, into masses of which the wheels of hoisting and conveying have to be placed.

### No. 22,387. Sleigh Brake.

(*Frein de Traîneau.*)

Burd P. Pott, Thompson Falls, Mon., U.S., 3rd September, 1885; 5 years.

*Claim.*—The combination of the short arms *g*<sub>2</sub>, of the lever bar *g*<sub>1</sub>, the foot-boards *b*, *b*<sub>1</sub>, side bars *i*, *i*<sub>1</sub> and dogs D, whereby the upward throw of the arms *g*<sub>2</sub>, will be arrested by the boards *b* and the dogs D held to their work and the sleigh prevented from backward movement, substantially as described.

### No. 22,388. Vehicle Spring.

(*Ressort de Voiture.*)

Phaon J. Kern, Frankfort, Ind., U.S., 3rd September, 1885; 5 years.

*Claim.*—1st. In a vehicle spring, the combination with the direct torsion-spring D, having the intermediate spiral portion of a reverse torsion-arm E rigidly secured to the inner portion of said torsion-spring, as shown, and provided at its outer end with a socket-plate fastening whereby it is rigidly secured to said outer end of the vehicle, substantially as specified. 2nd. In a vehicle-spring, the combination with the reversed torsion-arm having a rigid fastening at its outer end, of an axially-working spiral-spring working in journal bearings and rigidly connected to said torsion-arm at or near its inner end, and the respective arms meeting in an angular reduced terminal bearing portion, substantially as specified.

### No. 22,389. Boiler for Heating Buildings, etc. (*Chaudière à Chauffer les Bâtisses, etc.*)

William H. Byram, New York, U.S., 3rd September, 1885; 5 years.

*Claim.*—In a boiler composed of independent sections arranged one above the other, the sections B, each provided with the lugs *f*, the sides *d* and the series of parallel tapering communicating ducts C of less depth than the sides, and provided with the tubular projections *h* at their ends on opposite sides thereof for establishing communication between the series of ducts of the several sections, the said projections being fitted together by tongue and groove joints and the several sections being secured together by bolts *e*, passing through the said lugs, substantially as herein shown and described.

### No. 22,390. Stereotyping Machines.

(*Machine à Cliché.*)

Noé Cameron, Quebec, Que., 3rd September, 1885; 5 years.

*Réclame.*—1o. Dans une machine à cliché, la crampe E, en combinaison avec les plateaux B et C, et la vis de pression F, tel que décrit pour les fins sus-mentionnées. 2o. Dans une machine à cliché, les vis H en combinaison avec l'essieu G et le support A, tel que décrit pour les fins mentionnées. 3o. Dans une machine à cliché, la chemise M, en combinaison avec les plateaux B et C, la crampe E, et le support A tel que décrit pour les fins mentionnées. 4o. Dans une machine à cliché, la combinaison de plateaux B et C, la crampe E, les vis F, l'essieu G, la chemise M, les vis, H et le support A, le tout arrange et combiné, tel que décrit pour les fins sus-mentionnées.

### No. 22,391. Metallic Burial Casket.

(*Cercueil Métallique.*)

Scipio E. Baker, Springfield, Ohio, U.S., 4th September, 1885; 5 years.

*Claim.*—1st. In a burial casket, a main body, the upper rim of which is provided with an upwardly projecting flange extending longitudinally around the same near its outer edge, said flange being formed either integral with the rim or separately and secured thereto in any desired manner, for the purpose of holding the cement, which cements the body and cover together from outward displacement, substantially as described. 2nd. In a metallic casket, the sides A and ends B secured together and having an internally projecting flange at their lower ends to which the bottom C is fastened, as shown, and having an internally and externally projecting rim *a*, having the upwardly projecting flange *b*, formed integral therewith and extending above the horizontal plane of the rim, longitudinally around its outer edge, for the purpose and substantially as described. 3rd. In a metallic casket, the sides A and ends B, provided with the rim *a*, having the upwardly projecting flanges *b*, as described, and the flexible gasket *h*, secured thereto by cement or otherwise at a distance more or less remote from the upwardly projecting flange to leave a space between the casket and flange for the reception of cement, substantially as described. 4th. The combination with the body or sides and ends of a metallic casket of the cover D, the sides of which are curved at the base, vertically straight at the centre, and beaded at the top substantially as described. 5th. In a metallic casket, the cover D, of suitable shape, having face glass openings in its face, in combination with the face glass frame E, preferably T-shaped in cross section, as shown, secured to the cover and adapted to fit the face glass openings therein, and the face glass F, secured to the frame from its under side, in the manner and substantially as set forth. 6th. In a metallic casket, the cover D, secured to the body in a suitable manner, having face glass openings in its upper face, as described, provided with the face glass protecting caps E, secured to the cover by screws or otherwise, substantially as described. 7th. The combination with the cover D, having face glass openings in its face, as described, of the face glass frame E, T-shaped in cross-section, having glass-holding pins cast in its depending flange, and the face glass F held in said frame by said pins, substantially as set forth. 8th. The combination with the body of a metallic casket, of the cylindrical cap or cover I secured to the inside of the casket over the screw-holes for the purpose of sealing said holes and assisting in rendering the casket air-tight, substantially as described.

### No. 22,392. Gas Engine. (*Machine à Gaz.*)

Peter Murray, jr., Newark, N.J., U.S., 4th September, 1885; 5 years.

*Claim.*—1st. In a gas engine, the combination of a mixing chamber provided with a gas inlet, with an adjustable cock or gate controlling an air opening to said mixing chamber, and a pump for drawing the gas and air into said mixing chamber, substantially as described. 2nd. In a gas engine, the combination with a mixing chamber provided with a mixing apparatus, substantially such as described, and with openings for admitting the air and gas upon one side of said mixing apparatus, of a pump communicating with the chamber upon the other side of said mixing apparatus for withdrawing the mixture therefrom, substantially as described. 3rd. In a gas engine, the combination, with a mixing chamber provided with a mixing apparatus, substantially such as described, and with openings for admitting the air and gas upon one side of said mixing apparatus, of a pump communicating with the chamber upon the other side of said mixing apparatus for withdrawing the mixture therefrom, and an inwardly opening valve or valves for said air and gas openings, substantially as described. 4th. In a gas engine, the combination, with the mixing chamber 98, provided with the partitions 4, placed a short distance from each other, and having apertures 3, which are arranged so as not to coincide with each other, and with opening for admitting air and gas upon one side of said partitions, of a pump communicating with the chamber upon the other side of said partitions for withdrawing the mixture therefrom, substantially as described. 5th. In a gas engine, the combination, with the mixing chamber 98, provided with the partitions 4, placed a short distance from each other, and having apertures 3, which are arranged so as not to coincide with each other, and with openings for admitting air and gas upon one side of said partitions, of cocks, gates, or valves 6, 7, for controlling said openings, and a pump communicating with the chamber upon the other side of said partition, for withdrawing the mixture therefrom, substantially as described. 6th. In a gas engine, the combination, with the mixing chamber 98, provided with partitions 4, placed a short distance from each other, and having apertures 3, which do not coincide with each other, of openings for admitting the air and gas into said chamber upon one side of said partitions, a pump connected to said chamber upon the other side of said partitions, and arranged to draw the mixture therefrom, and a tank arranged to receive the mixture from said pump, substantially as described. 7th. The combination, with a gas chamber 139, of an air chamber 138, of a larger area than the gas chamber provided with a valve opening inward, a mixing chamber 137, connected by apertures with said gas and air chambers, a valve opening into said mixing chambers for controlling said apertures, and a pump with openings between said mixing chamber and the pump cylinder, and with an induction valve or valves opening from said mixing chamber toward the pump, substantially as described. 8th. The combination, with a gas chamber 139, of an air chamber 138, of a larger area than the gas chamber provided with a valve opening inward, a mixing chamber 137, provided with a mixing apparatus, and connected by apertures with said gas and air chambers, a valve opening into said mixing chamber for controlling said apertures and a pump with opening between said mixing chamber and the pump cylinder and with an induction valve or valves opening from said mixing chamber towards the pump, substantially as described. 9th. The combination, with a gas chamber 139, of an air chamber 138 of a larger area than the gas chamber, provided with a valve opening inward, a mixing chamber 137, connected by apertures with said gas and air chambers, a valve opening into said mixing chamber for controlling said apertures, and a pump with openings between said mixing chamber and the pump cylinder, and with an induction valve or valves opening from said mixing chamber towards the pump, a reservoir for receiving a mixture of gas and air from the pump, and a valve or valves opening outward from the pump, substantially as described. 10th. In a gas engine, the combination, with the pump 102, and tank 103, of the pipes or passages

82, 83, and a valve 86, controlled by a governor, substantially as described. 11th. In a gas engine, the combination, with the mixing chamber, the pump and the tank, of a passage connecting said tank and chamber, a valve controlling said passage, and a governor operated by the engine for moving said valve, substantially as described. 12th. In a gas engine, the combination, with the mixing chamber for receiving the gas and air, the pump for withdrawing said gas and air from the chamber, and the tank for receiving the mixture from the pump, of a passage connecting said tank and chamber, a valve controlling said passage, a governor operated by the engine, for moving said valve, and the valve 5, for preventing the escape of the mixture from the mixing chamber, through the admission openings, substantially as described. 13th. The combination, with a pump and valves controlling the openings to the pump for the gas and air mixture, of a passage connecting the two sides of the pump, a valve for controlling said passage and a governor operated by the engine for actuating said last mentioned valve, substantially as described. 14th. The combination, with weighted levers pivoted to a revolving support, of a spring for drawing the weighted ends of said levers towards the centre of said revolving support, a loose-internally screwed sleeve connected to, and operated by, said weighted levers, a threaded support upon which said screwed sleeve works, a valve operated by said sleeve, and a pump having a passage connecting the two sides of the same, controlled by said valve, substantially as described. 15th. The combination, with the weighted levers pivoted to a revolving support, of a spring for drawing the weighted ends of said levers towards the centre of said revolving support, a loose internally screw-threaded sleeve, connected to, and operated by, said weighted levers, a threaded support upon which said sleeve works, a valve operated by said sleeve, and a lever for actuating said valve, provided with a bowl against which the threaded sleeve works, and a pump having a passage connecting two sides of the same, controlled by said valve, substantially as described. 16th. The combination, with the pulley 118, of the levers 91, provided with weights 90, pivoted to the web of said pulley and curved so as to lie properly within the same, a spring 89, for drawing the weighted ends of said levers towards the center of the pulley, an internally screw-threaded sleeve 88, connected by rods with the ends of said levers, a threaded hub 92 forming part of said pulley, and secured to the main shaft of the engine, and a lever for operating a valve provided with a bowl running in contact with the flange of said internally screw-threaded sleeve, and a pump having a passage connecting the two sides of the same, and controlled by said valve, substantially as described. 17th. The combination, with the cylinder of a gas engine, of a pipe for receiving the products of explosion, of the explosive mixture, and a reservoir for containing said mixture through the interior of which said pipe passes to the open air, so that said products will heat said mixture in passing through said pipe, substantially as described. 18th. The combination, with a reservoir for the explosive mixture, of a power cylinder and piston, and an induction valve or valves positively opened to admit a charge or charges of said mixture to said cylinder and exhaust ports opened by the power piston, substantially as described. 19th. The combination, with a reservoir for containing the explosive mixture under pressure, of a power piston, its cylinder provided with exhaust ports placed so as to be entirely opened upon the completion of a stroke of said piston, an induction valve positively opened to admit a charge of the explosive mixture from the reservoir to the power cylinder at that end of it in which the explosion has just taken place, and after the power piston has uncovered the exhaust ports, to force out the products of said explosion, substantially as described. 20th. The combination, with the power cylinder and its piston of a double-acting engine, of exhaust ports arranged at or about the middle of said cylinder, and an induction valve controlling the admission of the explosive mixture at each end of the cylinder, whereby the explosive mixture is admitted to the cylinder after the exhaust ports are partially or wholly opened, substantially as described. 21st. The combination, with the power cylinder and its piston of a double-acting gas engine, of exhaust ports arranged at or about the middle of said cylinder, an induction valve controlling the admission of the explosive mixture at each end of the cylinder, and a reservoir for containing the explosive whereby the mixture is admitted from the reservoir to the cylinder after the exhaust ports are partially or wholly opened, substantially as described. 22nd. The combination, with the power cylinder and its piston of a double-acting gas engine, of exhaust ports arranged at or about the middle of said cylinder, and an induction valve controlling the admission of the explosive mixture at each end of the cylinder, and a piston rod passing through the end of said cylinder, substantially as described. 23rd. In a double-acting gas engine in which the charges are admitted into the power cylinder in front of the advancing piston so as to be compressed thereby, the combination with the power cylinder provided with the induction ports 20, 21, at its opposite ends and with the valve chest 113, communicating with both of said ports, of the single reciprocating valve 121 arranged to control both of said ports and provided with elongated ends 70, 71, whereby the ports 20, 21 are kept close except when in communication with the valve chest 113, substantially as described. 24th. In a double-acting gas engine in which the charges are admitted into the power cylinder in front of the advancing piston so as to be compressed thereby, the combination of the power cylinder provided with the induction ports 20, 21 at its opposite ends and with the valve chest 113, communicating with both of said ports, of the hollow reciprocating valve 121, provided with the ports 24, 26, 27, and with the elongated ends 70, 71, whereby the ports 20, 21 are kept closed, except when in communication with the valve chest 113, substantially as described. 25th. In a double-acting gas engine in which the charges are admitted into the power cylinder in front of the advancing piston so as to be compressed thereby, the combination with the power cylinder provided with induction ports 20, 21, at its opposite ends and with the valve chest 113 communicating with both of said ports, of a single valve arranged to open and close said ports alternately to admit and confine the charges, the firing ports 28, 29, communicating with the induction ports and the valves 54, 55, carrying igniting burners to fire the charges after they have been compressed in the power cylinder. 26th. The combination, with a power cylinder provided with a port and a passage communicating therewith, of an igniting valve provided with a burner supplied by a part of the explosive mixture in said power cylinder through said port and passage, substantially

as described. 27th. The combination, with a power cylinder having a port as 28 or 29, communicating with the interior thereof, of an igniting valve carrying a burner, suitable passages through which said burners is fed from the charge in the cylinder, and a port or ports, as 30, or 31, or 136, through which the charge in the cylinder is brought into communication with the flame of the burner, substantially as described. 28th. The combination, with a power cylinder having a port, as 28 or 29, communicating with the interior thereof, of an igniting valve provided with a recess, as 52 or 53, in which is located an igniting burner, suitable passages, as 42, 48, 34, 32, through which said burner is fed from the charge in the cylinder, and a port, or ports, as 30, or 31, or 136, through which the charge is fired, substantially as described. 29th. In a gas engine, the combination with the power cylinder having a port through which the charge is fired, of a moving valve, carrying an igniting burner, suitable passages through which said burner is fed from the charge in the power cylinder, and a valve by which communication inward to the power cylinder through said passage is cut off from the time when the charge is exploded, or should be exploded, until after the power piston has opened the exhaust ports, substantially as described. 30th. In a double acting gas engine, the combination, with the power cylinder having parts through which the charges are fired in the opposite ends of the cylinder of moving valves carrying igniting burners, suitable passages through which said burners are fed from the charges in the power cylinder, and valves by which communication inward through said passages to the power cylinder is cut off from the time when the charges are exploded, or should be exploded, until after the power piston has opened the exhaust ports, substantially as described. 31st. In a gas engine, the combination, with the power cylinder having a port through which the charge is fired, of a valve carrying an igniting burner, suitable passages through which said burner is fed from the charge in the cylinder, and an outwardly opening valve 47, controlling said passages, substantially as described. 32nd. In a gas engine, the combination, with the power cylinder having a port through which the charge is fired, of a valve carrying an igniting burner, suitable passages through which said burner is fed from the charge in the cylinder, an outwardly opening valve 47, controlling said passages, a port 60, opening outward to the air from said passages and an inwardly opening valve 19, controlling said port, substantially as described. 33rd. The combination, with an igniting valve provided with a burner located in a recess in said valve, of a port or ports for placing said recess in communication with the air when the burner is to be lighted after each explosion, an aperture through the valve cover communicating with said recess when the burner is being lighted, and a stationary burner and chimney in front of said aperture, whereby the burner in the valve has been lighted, air will be caused to pass through said port or ports and recess to clear the same of the products of the previous explosion, substantially as described. 34th. The combination, with an igniting valve 54, or 55, provided with a burner located in a recess 52, or 53, and passages 38, or 39 communicating with the air through openings 40, 41, when said burner is relighted, an aperture 62, or 63, through the valve corner, and a chimney and stationary burner, substantially as described. 35th. A burner provided with a hollow stud through which the burning fluid is supplied and disks with flanges having small openings located thereon, said stud being perforated between said disks and said perforations being less in area than the openings in the flanges, in combination with an igniting valve having a recess in which said burner is located, and a recess or recesses extending therefrom, substantially as described. 36th. A burner provided with a hollow stud through which the burning fluid is supplied, and disks with flanges, having small openings located thereon, said stud being perforated between said disks, and said perforations being less in area than the openings in said flanges, and a valve for controlling the flow of said fluid through said stud, in combination with an igniting valve having a recess in which said burner is located and a recess or recesses which extend therefrom, substantially as described. 37th. In a gas engine, the combination with a port 28, or 29, communicating with the interior of the power cylinder, of an igniting valve 54, or 55, having port, or ports 30, or 31, or 136 communicating directly with the flame of an igniting burner, and arranged to be brought into communication with said port 28, or 29 to fire the charge, said port being made of different forms so as to prevent a too rapid opening of communication between the two, substantially as described. 38th. In a gas engine, the combination with a port 28, or 29, communicating with the interior of the power cylinder, of an igniting valve 54, or 55, having a port or ports 30, or 31, 136, communicating with the flame of an igniting burner and arranged to be brought into communication with said port 28, or 29, to fire the charge, one of said ports being of polygonal and the other of rhomboidal form, substantially as described. 39th. In a gas engine, the induction valve 121 provided with oil chambers at its opposite ends, said chambers having ports 2, through which the oil is supplied to the bearing of the valve, substantially as described. 40th. In a gas engine, the induction valve 121 provided with oil chambers at its opposite ends and having the openings 75, 1, and valve rod 74, by which the oil is supplied from one chamber to the other, substantially as described. 41st. In a gas engine, an oil cup 76 or 77, the stem of which is provided with a check valve 80, and communicates with a passage through which the explosive mixture passes in entering the power cylinder, substantially as described. 42nd. In a gas engine, the combination, with the power cylinder having its exhaust opening at or near the middle of its length, of a power piston provided with an annular air chamber which is brought into communication with the exhaust opening as the piston reciprocates, substantially as described. 43rd. The combination, with the cylinder of a gas engine, of means substantially as described, which will open by the force of the explosion of the explosive-mixture in the cylinder, and not by the compression of said mixture to clean the cylinder. 44th. The combination, with the cylinder of a gas engine, of a cleaning pipe and valve controlling the same, constructed so that said valve will open by the force of the explosion of the mixture in the cylinder, and not by the compression of said mixture, to clean the cylinder, substantially as described. 45th. The combination, with the cylinder of a gas engine, of a pipe 143, a differential valve 141, 142, and means for preventing the action of said valve except when the cylinder is to be cleared out, substantially as described. 46th. The combination, with the cylinder of a gas engine, of a pipe, as 143, a

differential valve 141, 142, and a cock, as 146, substantially as described.

### No. 22,393. Overshoe Lift. (*Chausse-Pieds.*)

Sidney Blenkhorn, Canning, N.S., 4th September, 1885; 5 years.

*Claim.*—An overshoe lift consisting of the two-part handle A, A', having a spring connection at one end and coinciding-curved jaws B, B', at the opposite end to grip the back of the overshoe spring catch C to hold the jaws closed and roller E to travel up the back of the boot when the overshoe is being pulled on, as set forth.

### No. 22,394. Nitro-Glycerine Shell.

(*Obus à Nitro Glécérine.*)

Bernard Fannon, Westborough, Mass., U.S., 4th September, 1885; 5 years.

*Claim.*—1st. In a nitro-glycerine shell, the combination of the following instrumentalities, to wit: a body provided with a detachable breech-plug or base, suitable frangible jaws or vessels for containing the ingredients, of which nitro-glycerine is composed and keeping them properly separated, a plunger for crushing or breaking said jars or vessels and mixing said ingredients, means for firing said plunger after the shell has left the gun and causing it to break said jars or vessels, and a cylindrical case and elastic straps or means for cushioning said jars and enabling the insertia of the jars to be overcome without breaking them prematurely when the shell is fired, substantially as described. 2nd. In a nitro-glycerine shell, substantially such as described, the plunger S, provided with chamber E, for containing a charge of powder, and fuse-plug I for closing said chamber, in combination with the breech-plug J, having the chamber K, hole  $\rho$ , and fuse-plug T, substantially as set forth. 3rd. In a nitro-glycerine shell, the body H, plug J, jars M, O, plunger S, fuse-plug T, case L and elastic straps  $f$ , constructed combined and arranged to operate, substantially as described. 4th. In a nitro-glycerine shell, substantially such as described, the jars M, O, provided with the cap N, and stopple P, constructed, combined and arranged, substantially as set forth. 5th. In a nitro-glycerine shell, substantially such as described, the cylindrical case L provided with braces or cross-bars  $\alpha$ , in combination with the jars M, O, elastic straps  $f$ , and wires or straps  $c$  for attaching said elastic straps to said bars, substantially as described. 6th. In a nitro-glycerine shell, substantially such as described, the auxiliary strap Q, in combination with the case L, substantially as and for the purpose set forth. 7th. In a nitro-glycerine shell, substantially such as described, the percussion cap  $u$ , in combination, with the plungers S, jars M, O, case L, straps  $f$ , plug J, and body H, having the chamber R and hole  $\rho$  in its forward end, substantially as described. 8th. In a nitro-glycerine shell, the studs  $j$  and straps or wires  $n$ , in combination with the case L, jars M, O, and straps  $f$ , substantially as and for the purpose set forth. 9th. In a nitro-glycerine shell, the body A, base B, plunger E, disks D, spring C, fuse  $c$  and cushions  $d$ , combined and arranged to operate, substantially as and for the purpose specified. 10th. In a nitro-glycerine shell, substantially such as described, the hollow disk D, provided with the partitions D<sub>i</sub> and openings D<sub>ii</sub>, in combination, with the cushions  $d$ , substantially as described. 11th. In a nitro-glycerine shell, substantially such as described, the plungers C, provided with the annular groove E<sub>ii</sub> and prongs E<sub>i</sub>, substantially as and for the purpose specified. 12th. In a nitro-glycerine shell, substantially such as described, the combination of the disks D, spring C, plunger E, base B, wire H, and body A, having a cap S, chamber  $\delta$ , and hole  $\rho$  at its forward end, substantially as and for the purpose specified. 13th. In a hollow projectile or shell adapted to be exploded by nitro-glycerine, the combination of the following instrumentalities, to wit: one or more frangible jars, vessels or receptacles adapted to contain the ingredients of which nitro-glycerine is composed and keep them properly separated until said jars are crushed or broken to mix said ingredients, a plunger or suitable device for crushed or breaking said jars, vessels or receptacles, said plunger or device being adapted to be fired or actuated by the explosion of the gun-powder, or other suitable explosive disposed in the shell or some part thereof, a cylindrical case and elastic straps, or other suitable means for cushioning said jars, vessel or receptacles and enable the insertia of the same to be overcome without breaking said jars, vessels or receptacles prematurely when the projectile or shell is fired and a hollow body having a detachable breech-plug or base, said projectile or shell being provided with a chamber for containing the gun-powder, or other explosive, for firing said plunger and with a hole communicating with said chamber through which the gun-powder or explosive may be ignited by means of a fuse percussion cap of other suitable means, substantially as described. 14th. In a hollow projectile or shell, the combination of the following instrumentalities, to wit: one or more frangible jars, vessels or receptacles, adapted to contain the ingredients of which nitro-glycerine is composed and keep the same properly separated until said jars, vessel or receptacles are crushed or broken to mix said ingredients, means for cushioning or keeping said jars, vessels or receptacles out of contact with the breech or base of the shell when it is fired and a hollow body having a detachable breech-plug or base, said projectile or shell being provided with a chamber for containing gun-powder, or other explosive for breaking said jars, vessels or receptacles and igniting the nitro-glycerine and with a hole communicating with said chamber through which said gun-powder or explosive may be ignited by means of a fuse or percussion cap, substantially as set forth. 15th. In a hollow projectile or shell, the combination of the following instrumentalities, to wit: a body, a detachable breech-plug or base for closing said body, a suitable quantity of nitric acid, glycerine and sulphuric acid, frangible jars, suitable vessels or receptacles for containing said acids and glycerine and keeps them properly separated until said jars, vessels or receptacles are purposely broken to mix their contents, means for cushioning said jars, vessels or receptacles, a charge of gun-powder, or other explosive disposed in a chamber or other suitable receptacle within the projectile or shell, said chamber or receptacle being connected by a suitable hole or opening with a fuse or percussion cap, substantially as described. 16th. A hollow projectile or shell containing nitric acid, glycerine, and sulphuric acid properly

separated and a charge of gun-powder or other explosive, in combination with means for exploding the gun-powder or other explosive after the projectile or shell leaves the gun mixing said acids and glycerine to form nitro-glycerine and igniting the nitro-glycerine to explode the projectile or shell, substantially as and for the purpose set forth.

### No. 22,395. Dumping Waggon.

(*Wagon à Bascule.*)

Thomas S. Stewart, Saltsburg, Penn., U.S., 4th September, 1885; 5 years.

*Claim.*—1st. In a dumping waggon or cart, the combination with the waggon body, the body rails, the shafts fixed by their inner ends to the axle, and having the said inner ends bevelled downward and backward, and any proper device to lock the body rails on the shafts of two hinges having their front leaves secured to the upper surface of the shafts, their joints lying immediately above the upper front edges of the bevels, and the rear leaves loosely connected by their rear ends to the body rails, and having the same length as the bevels, substantially as specified. 2nd. In a dumping waggon or cart, the combination of the body A provided with the body rails D, the axle F and shafts E of the clevises B, B', connected by the rod  $\delta$ , the hinge joints G and the hooks or staples  $\rho$ , substantially as specified. 3rd. In a dumping waggon, an end gate having side straps forming part of said gate to the lower ends of which straps the end board is pivoted and to the upper edge of which straps the board is connected by automatic catches, substantially as specified. 4th. In a dumping waggon, an end gate composed of vertical end straps, carrying head blocks on the upper end and hinged at their lower ends to the vertical straps to which the end board is fixed, and suitable devices to automatically engage the head blocks to the end board, substantially as specified. 5th. In a dumping waggon, the combination with the body A, shafts E, side bars H and actuating rods K, of the end gate I hinged to the upper ends of the standards and composed of the standards  $h$ , hinges G, head pieces M, and any suitable devices to connect and disconnect said head pieces and end board at will, substantially as specified. 6th. In an end gate for a dumping waggon, the combination of the straps L, head pieces M, latches  $m$ , with hinges G, straps O and board I and notches Q adapted to receive and hold the points of the latches, substantially as specified. 7th. In a dumping waggon, the combination of the waggon body A, body rails D, shafts E, provided with the bevels  $e$  and clevises B turning on the rod  $\delta$  with the hinge joints G, each composed of the front leaf  $\rho$  fixed to one of the shafts and the rear leaf  $\rho'$  fixed by the staple  $\rho'$  to the body rail, substantially as specified. 8th. In a dumping waggon, the combination of the waggon body A and hinge joints G, composed of the leaves  $\rho$  and  $\rho'$ , with the end gate I, actuating bars K, side bars H and standards  $h$ , substantially as specified.

### No. 22,396. Scissors and Shears. (*Ciseaux.*)

George T. Atkins (Assignee of Robert Q. Monday), Dallas, Tex., U.S., 4th September, 1885; 5 years.

*Claim.*—1st. The combination with a suitable frame, of cutting discs or wheels, and a wheel adapted to operate the same, said last-mentioned wheel being operated by the forward movement of the frame, as set forth. 2nd. The combination with a suitable frame, of cutting discs or wheels arranged therein, one of said discs being rigidly connected with a cog wheel, and a gear wheel for operating said cutting discs, as set forth. 3rd. The combination with a suitable frame, of cutting discs arranged to revolve therein, rubber discs arranged adjacent to said cutting discs, and a gear wheel for operating said cutting discs, as set forth. 4th. The combination with a suitable frame having seats or recesses, of a wheel C, a portion of which bears upon the table or other object when the device is operated, and cutters operated by said gear wheel, as set forth. 5th. The combination of the cutting discs mounted upon suitable shafts, of a spring or plate adapted to be tightened upon one of the said shafts whereby the friction is increased, as set forth. 6th. The combination with a suitable frame of cutting discs mounted upon shafts having bearing in said frame, rubber discs mounted upon said shafts, said cutting discs being grooved, as shown, and a wheel for operating the cutting discs, as set forth. 7th. The combination with the frame, having an upwardly extending post, of a handle having an opening at its end, said handle being seated upon said post, and a screw engaging an opening in the end of the post to hold the handle in place and secure the same at any desired adjustment, as set forth.

### No. 22,397. Suspension Wheel for Cars and Bicycles. (*Roue de Suspension pour Wagons et Vélocipèdes.*)

Henry C. Gallup Austin J. Hanks and, both of Wilmington, O., U.S., September 4th, 1885; 5 years.

*Claim.*—1st. The combination of the tubular hub, having at opposite ends the right and left screw threads, in combination with the double disks at each end, one of said disks having at suitable intervals projecting lugs to hold the spokes or suspension wires, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the double disks on opposite ends of the screw-threaded hub, one or both of said disks having pins or lugs, with the spokes or suspension wires, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the hub, having at the ends the right and left screw-threads, the double disks at each end screwed thereon, having projecting lugs, the continuous wire provided with suitable eyes at intervals, and with the tubular rim slotted to receive the suspension wires and the cross-pins, substantially as and for the purpose hereinbefore set forth.

### No. 22,398. Bottle Stopper.

(*Bouchons de Bouteilles.*)

Edwin L. Loyd and Charles Joly, both of Philadelphia, Pa., U.S., 4th September, 1885; 5 years.

*Claim.*—1st. The combination of the stopper having a yoke, with the bail having side bars, and a top loop bearing on the stopper, and projecting in advance of the side bars of the bail, as set forth. 2nd. The combination of the stopper having a yoke, with the bail having side bars, and a top bearing loop projecting in advance of said side bars, and having that portion in advance of the bearing bent upward, as specified. 3rd. The combination of the stopper having a yoke and a recess  $m$ , with the bail having side bars, and a top bearing loop projecting in advance of said side bars, and having projections  $h$ , adapted to the recess  $m$ , as set forth. 4th. The combination of the stopper having a yoke, with the bail having side bars, a top bearing loop projecting in advance of the bars, and opposite return bends, as specified. 5th. The combination of the stopper having a yoke, with the bail having side bars, a top bearing portion projecting in advance of said bars, and opposite projections  $i$  extending above the bearing portion, so as to engage with the yoke and retain the stopper centrally on the bail, as specified.

### No. 22,399. Gang Cheese Press.

(*Presse à Fromage.*)

David Hamlin Burrell, Edward J. Burrell and Walter W. Whitman Little Falls, N. Y., (Assignees of Robert Wilson Jacobs, Rome, N. Y., U. S., 4th September, 1885; 5 years.

*Claim.*—1st. A gang cheese press, having its opposite sides arranged for pressing a series of large cheese and a series of small cheese respectively, substantially as described. 2nd. In a gang cheese press, the combination with the frame A, having ways C, C, bulkhead M, and removable pins K, K, of the troughs B, B, adjustable platens D, D, adjustable head blocks E, E, power screws F, F, and actuating mechanism, the opposite sides of said press being of unequal size, substantially as described.

### No. 22,400. Thill Coupling. (*Armon de Limonière.*)

Elisha W. Randall (Assignee of Timothy P. Randall), Adrian, Mich., U. S., 4th September, 1885; 5 years.

*Claim.*—1st. The combination, with a draw-iron of a detachable plate carrying a journalled thill-iron, and a spring actuated thumb-piece to engage in openings in the draw-iron and plate, and adapted to be turned, substantially as described, to hold the parts in an unlocked position, as set forth. 2nd. The combination, in a thill-coupling, with the draw-iron and a detachable plate located therein, of a bushing located in an opening in the draw-iron, a thumb-piece working in said bushing and a spring located on the thumb-piece, as set forth. 3rd. The combination with a draw-iron and a detachable plate carrying the journalled thill-iron, of a bushing located in an opening in the draw-iron, a thumb-screw having a head, an elongated lug, and adapted to engage openings, substantially as described, in the draw-iron, and a recess in the detachable plate, and a spring on the thumb-piece, as set forth. 4th. In a thill-coupling, the draw-iron, in combination with the detachable plate carrying the thills, and a catch for holding the plate to the draw-iron, as set forth. 5th. In a thill-coupling, the draw-iron, in combination with the detachable plate carrying the thills, and a spring plate for holding the parts in position, as set forth. 6th. In a thill-coupling, the draw-iron having a dove-tailed recess, of a dove-tailed plate carrying the thill iron, and a catch, thumb-piece, spring plate, or equivalent device, for holding the parts in position, as set forth.

### No. 22,401. Fish Plates for Railway Rail Joints. (*Eclisses pour Rails de Chemin de Fer.*)

Thomas A. Davies, New York, U. S., 5th September, 1885; 5 years.

*Claim.*—1st. A fish-plate C, made substantially as herein shown and described, with a flange D upon its inner side, near its upper edge, whereby the said fish-plate will always adjust itself to three distinct bearings, as set forth. 2nd. The combination, with the rails A, B, and the fish-plates C fitting between the heads and base flanges of the rails, and having flanges D along their inner sides, near their upper edges, resting against the webs of the rails of the angular spring washers G and the bolts and nuts E, F, substantially as herein shown and described, whereby the ends of the rails will be held rigidly from vertical and lateral movement, as set forth.

### No. 22,402. Barbed Metallic Fencing.

(*Clôture Métallique Barbelée.*)

James B. Oliver, Pittsburg, Penn., U. S., 5th September, 1885; 5 years.

*Claim.*—1st. A flat metallic fence strip, having flat narrow-pointed barbs wrapped closely around it, with their pointed ends extending from the opposite edges and the whole galvanized or painted, substantially as and for the purposes described. 2nd. A twisted flat metallic fence strip, having flat narrow-pointed barbs wrapped closely around it, with their pointed ends extending from the opposite edges and the whole galvanized or painted, substantially as and for the purposes described.

### No. 22,403. Signalling Apparatus for Railway Crossings. (*Signal de Traversée de Railroute.*)

William Nelson, Bath, Mich., U. S., 5th September, 1885; 5 years.

*Claim.*—1st. The combination of a locomotive rack I, shaft N carrying spokes  $l$  or friction wheel O and pinion M and spur sector  $l$  carrying the vibrating signal rod  $d$ , substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the flag gates G, signal flags G $l$ , signal lamps J rigidly fixed to rods  $d$ , with two cross wires  $d$ , arranged to operate substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the pivoted rods  $c$  carrying the wire  $c$  by means of the cranks  $c$ , and having the cranks  $c$  at top, and flat spring cranks  $c$  at bottom, adapted to be

operated substantially as and for the purpose hereinbefore set forth. 4th. The combination with a lateral projection in a locomotive tender or car, of the spring levers  $c$  and the spring spokes  $l$ , or the friction wheel O adapted to respectively ring the bell F, display signals, close gates and open gates and restore signals and the whole device to its normal condition, substantially as and for the purpose hereinbefore set forth. 5th. The lateral projection of a ladder I on a locomotive tender or car adapted to operate an alarm bell, display lamp and other signals, close crossing gates and to open said crossing gates and restore said lamp and signals to their normal condition, as set forth. 6th. The lateral projection of a spring on a locomotive tender or car, adapted at the highest speed to display signals, close crossing gates and to re-open said gates, and restore the signals to their normal condition after the train has passed the crossing, substantially as and for the purpose hereinbefore set forth.

### No. 22,404. Binding for Carpets.

(*Bordure de Tapis.*)

Charles E. Knapp, New York, N. Y., U. S., 5th September, 1885; 5 years.

*Claim.*—1st. A binding for carpets, rugs and mats, consisting of two portions of rubber, or other similar material, joined together at one of their edges, substantially as and for the purpose set forth. 2nd. In combination with a strip of carpet, or with a rug or mat, the elastic binding composed of the parts B and C and cap E, the parts being constructed and arranged substantially as and for the purpose set forth.

### No. 22,405. Instrument for Slaughtering Animals. (*Instrument à Abattre les Animaux.*)

Joe Blackburn Stringer, Lancaster, Ont., 7th September, 1885; 5 years.

*Claim.*—The combination, with a slaughtering punch, of a punch holder provided with elastic springs or other attachment, substantially as shown and described for the purpose set forth.

### No. 22,406. Shovel. (*Pelle.*)

Henry M. Whitney, Oswego, N. Y., U. S., 7th September, 1885; 5 years.

*Claim.*—In combination with a shovel-blade having integral there-with an outwardly-depressed, of a handle fitted to the inner face of said blade, and seated within the depression formed in its back rim and secured in place, substantially as shown and described.

### No. 22,407. Devices for Suspending Machinery. (*Appareil à Tenir le Machinery en suspens.*)

Joseph D. Huntington, Chicago, Ill., U. S., 7th September, 1885; 5 years.

*Claim.*—1st. The combination, with the shaft bearing boxes independent of each other and springs or rods for suspending the same, of the vertical rod or rods connecting the same directly or indirectly to the floor. 2nd. The combination of the shaft A, the bearing boxes independent of each other in which said shaft is journalled, of frame E, one or more cross-bars C and one or more vertical rods F, substantially as described. 3rd. The combination with the shaft bearing boxes independent of each other, and springs for suspending the same, of the links-cross-bars and vertical rod or rods, as set forth. 4th. The combination with a shaft and bearings thereof, of a frame E between the legs of which said bearing is cushioned and a vertical rod or rods for connecting said bearings to the floor. 5th. The combination in a grinding or polishing machine, with the bearings of a shaft having a cylindrical boss extending therefrom, the outer edges of which are bevelled, of a collar having the annular edges of the central aperture or bore counter-sunk and universally bevelled. 6th. The combination with a shaft and bearings thereof suitably suspended and independent of each other, having recess  $a$ , of the spring cross-bars, the ends of which enter said recesses, and cores having elongated eyes through which the bolt securing them passes and the vertical rod or rods for connecting said cross-bar to the floor. 7th. The combination with the shaft and bearings, of the stirrups suitably suspended, of the vertical rod or rods for connecting said bearings to the floor. 8th. The combination with the shaft bearings in which said shaft is journalled, of the stirrups supporting the same, the springs by which said stirrups are cushioned, and the rod or rods for connecting the same directly or indirectly to the floor. 9th. The combination with the shaft and bearings in which the same is journalled, of frame E, spring  $d$ , and a rod of rods connecting said bearings to the floor. 10th. The combination with a shaft and bearings thereof, of frame E, both passing transversely through said frame and bearings which is suitably cushioned at or near its ends, and a vertical rod or rods for connecting said bearing to the floor. 11th. The combination with a shaft and bearings in which the same is journalled, of a frame  $d$  resting thereon and supporting said bearings and a vertical rod or rods F, as and for the purpose set forth.

### No. 22,408. Dynamo-Electric Machine.

(*Machine Dynamo-electrique.*)

Josiah S. DuBois, Philadelphia, Pa., U. S., 7th September, 1885; 5 years.

*Claim.*—1st. A dynamo-electric machine, having its armature enclosed within a case in which a partial vacuum is maintained, substantially as and for the purpose specified. 2nd. A dynamo-electric machine, having its armature and poles, of its field magnets enclosed within a stationary case in which a partial vacuum is maintained, substantially as and for the purpose specified. 3rd. A dynamo-electric machine, having its armature enclosed within a case in which a partial vacuum is maintained, in combination with

vacuum-creating mechanism and connecting pipes, substantially as and for the purpose specified. 4th. The combination of a series of dynamo-electric machines, having their armatures enclosed in vacuum boxes, with pipes I, main J, and vacuum pump N, substantially as and for the purpose specified. 5th. The combination of a series of dynamo-electric machines, having their armatures enclosed in vacuum boxes, with pipes I, valves Ix, main J, and vacuum pump N, substantially as and for the purpose specified. 6th. A dynamo-electric machine, provided with an air-tight case enclosing the armature in which a partial vacuum is maintained, and a removable cover or door to said case, substantially as and for the purpose specified. 7th. The combination in a dynamo-electric machine, of field magnet poles B, armatures C, shaft Cr, vacuum case D, metallic ring L, insulator disc J, and wires K passing to the commutator, substantially as and for the purpose specified.

**No. 22,409. Portable Letter Press and Letter Book.** (*Livre de copies de lettres et Presse à copier.*)

Angus MacGregor and Andrew Greig, Toronto, Ont., 7th September, 1885; 5 years.

*Claim.*—1st. In a roller letter-press, the hollow semi-cylindrical rollers A, I, having projections provided with holes B and screws F, as shewn and described. 2nd. In a roller letter-press, the hollow semi-cylindrical rollers A, I, having ridges C, holes D, and spikes E, as shewn and described. 3rd. In a roller letter-press, the letter-book B, I, having holes G, in combination with the hollow semi-cylindrical roller A, I, having spikes E and holes D, as shewn and described. 4th. In a roller letter-press, the rounding off of the upper semi-cylindrical roller on the side on which the letter-book B, I is placed, between the semi-cylindrical rollers, as shewn and described.

**No. 22,410. Tag.** (*Etiquette.*)

Clinton F. Webster, Brocton, Mass., U.S., 7th September, 1885; 5 years.

*Claim.*—1st. In a folding tag, the combination of the following instrumentalities, to wit: a body, an envelope cemented, or attached, to the inner side of said body, a flap and a socket adapted to receive and protect the free ends of said body and flap, the free end of the body being inserted in the socket and secured to the under side, or bottom thereof by an eyelet, and the upper side or top of said socket and also the free end of the flap being respectively provided with eyelets, all of which eyelets register when the ends of the flaps and body are inserted in the socket, substantially as described. 2nd. In a folding tag provided with a socket, an envelope having one of its ends secured to the free end of the body of the tag, and to the bottom portion of the socket, substantially as and for the purpose specified. 3rd. The improved folding tag herein described, the same consisting of the body A, flap B, envelope D, socket C and eyelets *h, n, z, c*, constructed, combined and arranged to operate, substantially as set forth.

**No. 22,411. Drag Saw.** (*Scie traînante.*)

John J. Parker, Aitkin, Min., 7th September, 1885; 5 years.

*Claim.*—1st. In a sawing-machine, substantially as described, the combination, with a main frame comprising two standards, as Q, with extension legs, as B, of a clamp, as I, carried upon the upper cross-bar of said frame, and a rod having an end to be engaged to the tree, and a shank to be engaged by the clamp, whereby the proper position of the machine may be obtained and the tree used as a support, as set forth. 2nd. The combination, with a main frame and an inner frame, as C, centrally pivoted therein, of a reciprocating carrier supported on the inner frame and a swing-frame pivoted within the frame C having connections with the saw, whereby horizontal and vertical movements is obtained by lever D<sub>1</sub>, as set forth. 3rd. In a sawing machine, substantially as described, a swinging segment, as D, *d<sub>1</sub>*, pivoted in a horizontally-oscillating frame, as *c*, and supported over, and in close proximity to, a reciprocating saw-carrier working in guides in said frame C, in combination with such carrier and with elastic straps securing the segment to the carrier and running in opposite directions from their points of attachment to the carrier to opposite sides of the segment, as set forth. 4th. The combination with the carrier F supported in an oscillating frame, as C, of a swinging frame pivoted centrally in said frame C over the path of the carrier and having a segment supported against the carrier, an opening-lever for moving the frame D upon its pivots in a vertical direction and the frame C upon its pivots in a horizontal direction and flexible straps securing the segment to the carrier, as set forth. 5th. The combination with the carrier F and the saw, of the pivoted oscillating frame D having segment *d<sub>1</sub>*, the straps *d<sub>2</sub>* arranged near the outer edges of the carrier and connecting its rear portion with the opposite side of the segment, and the strap *d<sub>3</sub>* arranged reversely between the straps *d<sub>2</sub>*, to apply uniform central force to the carrier in each direction of its stroke as set forth. 6th. The combination with the frame A, B, supported upon one side of the tree being operated upon by an adjustable bar, as F, and with a felling-saw and its carrier reciprocating in said frame, of a spiral spring H having a fastening device, as *h*, secured at one end to the free end of the felling-saw and at the other end to the side of the tree opposite the frame, as set forth. 7th. In a sawing-machine, substantially as described, the combination with a saw-carrier having a longitudinal track, as L, of a spring-arm M attached to the supporting-frame of the saw and having a friction-roller *n* engaged with said track and a dog for holding the arm in a strained position in the direction of the works, as set forth. 8th. The combination with the frame A, B, and brace rod for connecting the said frame to the tree being operated upon of a horizontally-oscillating frame, as *c*, supporting the saw-carrier, a vertically-swinging frame having a segment connected to the carrier and a spring-arm for holding the saw to the work, as and for the purpose set forth.

**No. 22,412. Machine for Jointing Compressed Bent Staves.** (*Machine à jointoyer les Douves.*)

Edward M. Jewett, Buffalo, N.Y., U.S., 7th September, 1885; 5 years.

*Claim.*—In a machine for jointing compressed bent staves, a stave-rest having the top curved to fit the bend in the stave to be jointed, substantially as specified, and the side curved to give the proper shape for forming the bilge, as and for the purposes described.

**No. 22,413. Window Sash Lock.**

(*Arrête-Croisée.*)

Thomas R. Nichols, Lynn, Mass., U.S., 7th September, 1885; 5 years.

*Claim.*—The duplex sash lock, substantially as described, consisting of the support-plate provided with the slide and bolt-guides, the two bolts having studs, as described, and one of the two obliquely-grooved bolt slides, and their impelling knobs and retracting springs, all being arranged and applied essentially as set forth.

**No. 22,414. Drill Seeder and Grain Cultivator.** (*Semoir-Traceur et Cultivateur.*)

James W. Rogers, Kingsmill, Ont., 7th September, 1885; 5 years.

*Claim.*—1st. The forked upright D, guiding wheel E, and shaft Er, in combination with the collar or flange F, formed with mortises F<sub>1</sub>, collar G, formed with studs G<sub>2</sub>, handles H, H, and frame C, substantially as shown and described and for the purpose specified. 2nd. The forked upright D, guiding wheel E and shaft Er, in combination with collar G<sub>1</sub>, formed with studs G<sub>3</sub>, tongue J<sub>5</sub>, cap J, formed with mortises J<sub>1</sub>, shoulder or collar X, dog H<sub>2</sub>, spring J<sub>3</sub>, handles H, H, rods H<sub>6</sub> and levers H<sub>1</sub>, or their equivalent, substantially as shown and described and for the purpose specified. 3rd. The cog segment H<sub>9</sub>, brace H<sub>7</sub> formed with flanges H<sub>8</sub>, J<sub>8</sub>, and handles H, H, in combination with the levers H<sub>3</sub>, or their equivalent, rods H<sub>5</sub>, spring bolt H<sub>4</sub>, formed with flange J<sub>4</sub> and spring J<sub>7</sub>, substantially as shown and described and for the purpose specified. 4th. The draw bar K, pivotally secured to the frame of the machine, in combination with the connecting rods N, N, hangers N<sub>1</sub>, N<sub>1</sub>, and draw bar L, substantially as shown and described and for the purpose specified. 5th. The bar G, formed with slot O<sub>1</sub>, in combination with the bolt O, draw bars L, K, and O<sub>4</sub>, rod O<sub>9</sub>, chains O<sub>2</sub> and O<sub>7</sub>, or their equivalent, rods N, N, hangers N<sub>1</sub>, shaft O<sub>5</sub>, pivotal arms G<sub>3</sub>, and draw bars O<sub>6</sub>, substantially as shown and described and for the purpose specified. 6th. The combination of the draw bars O<sub>6</sub>, tooth holder O<sub>8</sub>, socket arm Q, braces Q<sub>1</sub>, elliptic spring Q<sub>3</sub>, bracket Q<sub>4</sub>, block Q<sub>5</sub>, flange piece Q<sub>7</sub>, with the drill teeth S<sub>1</sub>, or cultivator teeth S, or S<sub>1</sub>, substantially as shown and described and for the purpose specified. 7th. The guide strip P<sub>2</sub>, rigidly secured to and suspended from the machine between each of the draw bars O<sub>6</sub>, substantially as and for the purpose specified.

**No. 22,415. Food Compound.**

(*Composition Alimentaire.*)

John L. Bray, Hopewell, N.B., 7th September, 1885; 5 years.

*Claim.*—A compound or meal composed of equal parts of wheat, hulled barley and rice, to be used as an article of food for domestic use, as hereinbefore set forth.

**No. 22,416. Locomotive Engine.**

(*Machine Locomotive.*)

Madison L. Johnson, Galena, Ill., U.S., 7th September, 1885; 5 years.

*Claim.*—The combination with a locomotive engine, of the pipe E, constructed as shown, leading from the smoke-box downwardly and rearwardly, adjacent to the drive wheels and track-rails, and the steam-pipe F, leading from the boiler forwardly and rearwardly through the lateral opening *e<sub>1</sub>*, of the pipe E, to near its discharge end, whereby the particles of combustion may be driven by a blast of steam against the rails and drive-wheels of an engine, substantially as and for the purposes specified.

**No. 22,417. Embroidering Machine.**

(*Machine à Broder.*)

Peter Whittle, Mount Forest, Ont., 8th September, 1885; 5 years.

*Claim.*—1st. In an embroidering machine, the needle B, having the groove or channel *a*, formed in its face side, substantially as and for the purpose described. 2nd. In an embroidering machine, the metallic plate E attached to the inner or rubbing face of one of the main parts, and having the slots *b, b*, formed in it, substantially as and for the purpose set forth. 3rd. In an embroidering machine, the spring part D having a part of it, F, made removable, substantially as shown and for the purpose set forth.

**No. 22,418. Driving Check.** (*Rêne à Cheval.*)

Erastus Lovell, Metcalf, Franklin, Mass., U.S., 8th September, 1885; 5 years.

*Claim.*—1st. The combination of the nose-band and its forks, provided with the cross-bars and friction rollers, as described, with the two rein straps extending in opposite directions between the forks, and crossing each other, and each connected with one and going through the other of such forks, all being substantially and to operate as and for the purpose as set forth. 2nd. The combination of the nose-bow, framed essentially as described, with two straps fastened to it near its end, and extending in opposite directions across and through it, and crossing each other in their passage across it, so as when used to bear against the rear of a horse's head, all being substantially as set forth.

**No. 22,419. Car Brake.** (*Frein de Char.*)

Robert R. Marsh, Oroosso, Mich., U.S., 8th September, 1885; 5 years.

*Claim.*—1st. A brake mechanism, consisting of a windlass, ratchet and pawl connecting with the brakes, a weighted lever for operating the windlass and a tripping device for setting and tripping the mechanism, substantially as and for the purpose set forth. 2nd. In a mechanism for operating the brakes of cars, consisting of a weighted lever, a windlass, ratchet and pawl attached to the brakes by suitable chains, a rod to which the windlass is secured, provided with an arm, in combination with a sliding trip-lever, substantially as and for the purpose specified. 3rd. In a brake mechanism, a rod provided at one end with a windlass and weighted lever, and at the opposite end with an arm having a button and spring, in combination with a trip-lever, substantially as and for the purpose described.

**No. 22,420. Fire Escape.** (*Sauveteur d'Incendie.*)

Louis Sees, Port Elgin, Ont., 8th September, 1885; 5 years.

*Claim.*—1st. In a fire escape, the combination of tapering ladder sections hinged together, and a drum winding the sections thereon, as set forth. 2nd. In a fire escape, the combination with tapering ladder sections hinged together, of a drum winding the section thereon, a rope winding with the sections and a windlass unwinding the drum to elevate the ladder, as set forth. 3rd. The combination in a fire escape, of tapering ladder sections hinged together and winding on a drum by the weight or down haul of the ladder, a rope winding on the drum by the downward movement of the ladder sections, and a windlass unwinding the drum, whereby the ladder sections fold within one another on the drum, and the drum unwinding forces up the ladder sections to an elevated position, inclined against the frame of the machine, as set forth. 4th. In combination with the frame A and drum C, the sho T, for self winding the ladder sections, as set forth.

**No. 22,421. Vice.** (*Etau.*)

George A. Colton, Syracuse, N. Y., U. S., 8th September, 1885; 5 years.

*Claim.*—1st. In a vice, a sleeve open at both ends and provided with a nut supported independently and outside of the inner walls of the sleeve, whereby the interior of the sleeve may be finished without removal of the nut, substantially as specified. 2nd. In a vice, a fixed jaw, a sleeve, an exterior nut, and its supporting bracket arranged independently of the walls of the sleeve, the whole cast in one piece, whereby said sleeve may be interiorly finished, substantially as specified. 3rd. The combination of two castings, the one comprising a fixed jaw, a sleeve, a nut and its supporting bracket arranged independent and outside of the sleeve and a supporting base, and the other comprising a jaw and a hollow cylindrical slotted sliding bar with a suitable jaw-operating screw, substantially as specified. 4th. The combination of the fixed jaw A, plate A', sleeve B, nut C and bracket C', arranged as described, and cast in one piece with the integral slotted sliding bar F and jaw E, substantially as shown and described. 5th. The combination with a sliding bar having a standard in which is formed a swivel-jaw seat and curved wall, of a swivel jaw having a pivot in line with its face, and a wall curved to fit the standard, substantially as specified.

**No. 22,422. Mechanical Motor.**(*Moteur Mécanique.*)

Charles Tye (Assignee of Raoul Duperrouzel), both of Montreal, Que., 9th September, 1885; 5 years.

*Claim.*—The combination of an arbor suitably carried and having radial arms projecting therefrom, on which slide weights running in a guide or guides, formed in a ring or rings, set eccentrically to the arbor, all substantially as and for the purposes set forth.

**No. 22,423. Machine for Rounding Circular Saws.** (*Estampes de Scie.*)

George Mealey Portland, (Assignee Robert Gaskin, Fairville, N.B.), 9th September, 1885; 5 years.

*Claim.*—1st. The combination, in a machine to round circular saws, of a clamp to hold the saw flatwise, horizontally and adjustable vertically and laterally, and a grindstone or wheel rotated sidewise to the plane of the saw, as set forth, whereby the saw is moved towards and from the stone and the side of the stone will wear straight, as set forth. 2nd. The saw holder or clamp, consisting of a bearing 3, having socket 2 provided with screws K, K', screwing 4, sleeve 5', stem 6 having disk 7 and provided with a nut 8 and a bevelled face, follower 9 centering the saw, as set forth. 3rd. The saw holder or clamp, as set forth, having a rack bar F, operated by a pinion G for advancing and retiring the saw from a grindstone or emery wheel, as described.

**No. 22,424. Carbureters.** (*Carburateurs.*)

Eugene Arthur, Lenville, N. Y. (Assignee of William F. Singer, Carthage, N. Y., U.S.), 9th September, 1885; 5 years.

*Claim.*—1st. In a carburetter, the storage tank D, having an inlet pipe provided with an air-tight cover, a series of gauge cocks and an outlet pipe communicating with the carburetting chamber, substantially as and for the purpose specified. 2nd. In combination with a carburetter, provided with a vent pipe, an air-tight oil reservoir communicating therewith through pipes, substantially as and for the purpose specified. 3rd. In a carburetter, or carburetting chamber, having a lining of cotton, and a series of sponges attached to the lining by means of wicks, substantially as and for the purpose specified. 4th. A carburetting chamber, having its inner sides lined with cotton, the openings at its ends covered with metallic screens, a packing of coke at each end, the portion of the chamber intermediate of the ends filled with saw-dust, and having a series of sponges or other absorbent material arranged within the body of the saw dust.

the sponges being attached to the lining of the carburetter by means of wicks, substantially as and for the purpose specified. 5th. A series of detachable carbureters communicating with each other by means of pipes, and having an air-supplying pipe and a pipe for conveying the carburetted air from the carbureters, substantially as and for the purpose specified. 6th. In a carburetting device, an air-tight storage tank provided with an air inlet pipe having an air-tight cover, a series of gauge-cocks and an outlet pipe, in combination with a series of detachable carburetting chambers, communicating with each other by means of pipes, having an air-inlet pipe, a pipe for the passage of gas from the carbureters, and a vent pipe, substantially as and for the purpose specified. 7th. The air-tight storage tank D, provided with gauge cocks e, outlet pipe d, and an inlet pipe b having a soft metal cap b' provided with lever arms, substantially as and for the purpose specified. 8th. A series of detachable carbureters, communicating with each other at their ends by means of pipes having an air inlet pipe, a pipe for the passage of gas from the carburetter and a vent pipe, each of the carbureters having its inner sides lined with cotton, the openings at the ends covered with a screen, the ends packed with coke, the portion of the interior intermediate of the ends filled with saw-dust, and having a series of sponges, or equivalent absorbent material, arranged within the body of the saw-dust and attached to the cotton lining by means of capillary material, substantially as described. 9th. The combination, with a carburetter, provided with an air inlet pipe and gas exit pipe, of an air-mixer connected with a gas exit pipe, and an air pipe connecting said gas pipe with the air inlet pipe of the carburetter, substantially as and for the purpose described. 10th. The combination of a series of detachable carbureters communicating with each other by means of pipes having an air inlet pipe, a gas exit pipe and a vent pipe, each of the carbureters having its inner side lined with cotton, the openings at the ends covered with a screen, the ends packed with coke, the portion of the interior intermediate of the ends filled with saw-dust, having a series of sponges, or equivalent absorbent material, arranged within the body of the saw-dust and attached to the cotton lining by means of wicks, with an air-tight storage tank provided with an air inlet pipe having an air-tight cover, a series of gauge-cocks and an outlet pipe, substantially as and for the purpose specified.

**No. 22,425. Thill Couplings.**(*Armons de Limonières.*)

Winfield S. Shanahan and George F. Dickinson, East Chatham, N. Y., U.S., 9th September, 1885; 5 years.

*Claim.*—As an article of manufacture, a thill-coupling composed of a clip having a slotted eye in which rests a spring-surrounded recessed block and a shaft iron having two wing and a cross-bar which is surrounded by rawhide, or its equivalent, the wings having secured to and extending between them a metallic strip which in normal position covers the slot in the eye, the entire device operating substantially as and for the purpose set forth.

**No. 22,426. Light.** (*Lumière*)

Abel H. Sawyer and John S. Morris, (Assignees of John B. Mitohell, both of Portland, Me., U.S., 9th September, 1885; 15 years.

*Claim.*—1st. The combination of a plug or taper of chalk, clay or similar absorbent substance, with paraffine tallow, petroleum or similar illuminating material, substantially as described. 2nd. The combination of a plug or taper of chalk, clay or similar absorbent material, with paraffine, tallow, petroleum or similar illuminating material and a friction match, substantially in the manner described. 3rd. As a new article of manufacture, a ready light consisting of a taper of absorbent earth of similar material saturated with an illuminating material and enclosing a friction match, substantially as described.

**No. 22,427. Gravity Railway.**(*Glissoire à roulettes.*)

John H. Joyce, (Assignee of Joseph P. Yearick), Windsor, Ont., 9th September, 1885; 5 years.

*Claim.*—1st. A gravity railway consisting of two tracks A and B converging at either end into single tracks C and D, said tracks being provided with starting level, a reversing point C and stopping level e, arranged substantially as shown and described for the purposes set forth. In a gravity railway, in combination with tracks A, B, C and D, grades or inclines a, g, b, e, c, d, e and e, a, substantially as shown and described for the purposes set forth.

**No. 22,428. Kiln for Drying Grain.**(*Séchoir à Grain.*)

Francois X. Loyer, Hull, Que., 10th September, 1885; 5 years.

*Claim.*—1st. In a grain-drying kiln, the upright shaft C connected with a driving power by the level gears D and E and shaft F, and having fixed rigidly to it the agitator G, and the brush arm H with its adjustable brush I and the cam L, substantially as and for the purpose shown and described. 2nd. The sleeve J, on the shaft C having the coupling e which is held by the set-screw f, either in or out of gear with the mitre wheel d, as shown and described. 3rd. The jointed arms K carrying the scrapers f, provided with the rollers i, and pivoted to the knuckles h which are formed on the sleeve J, substantially as set forth. 4th. In a grain drying kiln, the hinged section M, arranged substantially as shown and for the purpose herein set forth.

**No. 22,429. Seats and Backs for Chairs and Other Articles of Furniture.**(*Sièges et dossiers de chaises et autres meubles.*)

Frederick Latulip, Syracuse, N. Y., U.S., 10th September, 1885; 5 years.

*Claim.*—1st. A seat or back for chairs or other articles of furniture, composed of caoutchouc, rubber or other plastic substance and provided with intersecting re-enforcing ribs and with a plain rim for securing the seat or back to the framework of the furniture. 2nd. The combination, in the seats or backs of chairs, or other articles of furniture, of a metallic web composed of wires or metallic ribbons interwoven with a caoutchouc, rubber or other plastic material, substantially as herein shewn and described.

**No. 22,430. Solution for and Preparation of Moist Water Colour Paint.**  
(*Préparation de la peinture à Aquarelle.*)

Charles F. Nicholson, Rochester, N.Y., U.S., 10th September, 1885; 5 years.

*Claim.*—A semi-plastic water-colour consisting of a dry-colour in a finely powdered condition, thoroughly mixed and incorporated with a solution composed of glucose, gum arabic and sirups, substantially as herein described.

**No. 22,431. Water Closet.** (*Latrines.*)

Henry W. Simmes, Bay City, Mich., U.S., 11th September, 1885; 5 years.

*Claim.*—1st. In a water closet, the combination, with a bowl *b* having the side discharge opening *b*, of a casing *d* having the inlet opening *c* and discharge opening *e*, and a hollow plug *f* within the said casing, and provided with the inlet opening *k* and discharge opening *i*; and a lever *l*, substantially as and for the purpose set forth. 2nd. In a water closet, the combination, with a bowl *a* and a hinged cover *g*, of an exhaust fan *q* connected with the said bowl by a pipe *p*, a water motor *s* connected with and driving the said exhaust fan, the water supply pipe *r* having the valve *v*, a discharge pipe *r* connecting the motor with the bowl, and mechanism, substantially as described, for operating the said valve *v* by pressure upon the said cover *g*, substantially as and for the purpose set forth. 3rd. In a water closet, the combination, with the casing *d* having the inlet opening *c* and discharge opening *e*, and a hollow plug *f* within the said casing, and provided with the inlet opening *k*, and discharge opening *i*, and a lever *l*, of a spring *n* adapted to bring the said lever to a predetermined position, substantially as and for the purpose set forth. 4th. In a water closet, the combination, with a casing *d*, located as described, and provided with the inlet opening *c* and discharge opening *e*, and a hollow plug within the casing, and provided with the inlet opening *k* and discharge opening *i*, and a lever *l* secured to the plug, of a cover *k* secured to the upper part of the said casing and provided with an opening *o* for the lever, substantially as and for the purpose set forth. 5th. In a water closet, the combination, with a bowl *a* having a side outlet *c* connected with a casing *d*, a hollow plug within the casing arranged to receive and discharge the contents of the bowl, with a chamber *d*, located as described, a pipe *ci* connecting the chamber with the bowl, a float *ci* within the chamber, a valve *vi* in the water supply pipe and a rod connecting the float with the valve, substantially as specified and for the purpose set forth.

**No. 22,432. Double Action Hay Car.**  
(*Porte-Foin à double effet.*)

Joseph Drader, London, Ont., 11th September, 1885; 5 years.

*Claim.*—1st. In a double-action hay car, the latch *D*, shaped and operating substantially as shown and described. 2nd. The grappels *E*, *E'*, joined lug, pivoted arms *G*, *G'*, substantially as shewn and described. 3rd. The combination of latch *D* and grappels *E*, *E'*, with ordinary stop-block *C* and head of pulley-block *F*, substantially as shewn and described.

**No. 22,433. Sleigh Coupling.**  
(*Atelage de traîneau.*)

William H. Humphries, Lebringtonville, Ont., 11th September, 1885; 5 years.

*Claim.*—The combination of the knuckle *C*, the hole *D* and the pin *E*, substantially as and for the purpose hereinbefore set forth.

**No. 22,434. Machine for Cutting Paving-Blocks.** (*Machinerie à couper les careaux à Paver.*)

John W. Winnett, Winnipeg, Man., 11th September, 1885; 5 years.

*Claim.*—1st. In a machine for sawing paving-blocks, the saw arbors *D* and *B*, placed as shewn, one in advance of the other, and each carrying a number of circular cut-off saws, substantially as described. 2nd. In the herein-described paving-block machine, the rebated rails *F* having the overhanging iron band *e* fixed on the central raised portion *d*, substantially as shewn and described. 3rd. In a paving-block machine provided with two or more separate gangs of circular saws, the feed hooks *G* attached to the endless chains *H* running over the horn wheels *I*. 4th. The herein-described sawing machine provided with the hinged binders *J*, arranged to drop between the saws, substantially as shewn and for the purpose herein set forth.

**No. 22,435. Bob Sleighs.** (*Trainaux-jumaux.*)

Peter Stewart, Gloucester, Ont., 11th September, 1885; 5 years.

*Claim.*—1st. A bob-sleigh, the combination of the front bolster *C*, slotted horizontally at the middle, the chain *G* provided with plate *H* having a hole at one end, secured in the slot by the bolster pin *F*, and the other end provided with a hook *T* passing through a plate *J* bolted to the roller *E* for attachment to whiffletrees *K*, as set forth for the purposes described. 2nd. In a bob-sleigh, the combination of the reach *L* hinged to the front bolster *C*, and chains *V*, *O* connecting the reach with the nose of the rear bob, as set forth for the purpose described.

**No. 22,436. Hay Elevator.** (*Élévateur de Foin.*)

Harvey McCown and Luther M. McCown, both of Enon Valley, Pa., U.S., 11th September, 1885; 5 years.

*Claim.*—1st. As an improvement in hay elevators, a carriage which is arranged to travel along a substantially horizontal track, and is provided with a latch for engagement with a fixed stop, in combination with a weighted cord which is connected with said carriage, and operates to return the latter to its normal position when moved therefrom, and which passes over and presses upon said latch with a yielding pressure at or near its engaging end, substantially as and for the purpose described. 2nd. In a hay elevator, in combination with a carriage supported at or near each end with a set of rollers, a weighted rope or cord attached to the carriage and acting to return it to its normal position, the tackle for elevating the hay suspended from, at or near, the center of the carriage, and the substantially horizontal track upon which the carriage rollers run, provided with notches or recesses into which, when the carriage is in its normal position, the forward rollers drop so as to give a forward inclination to the body of the carriage, substantially as and for the purpose described. 3rd. As an improvement in hay elevators, in combination with a carriage which is supported on two sets of rollers or wheels, one set being at each end and travels along a substantially horizontal track, the track constructed at its forward end to allow the front set of rollers to drop lower than the rear set to give a downward and forward inclination to the carriage *r* when its is at its forward and normal position, so that the weight of the load of hay suspended from the carriage will tend to keep the carriage in such position, substantially as and for the purpose described. 4th. In combination with the carriage, constructed substantially as shown, and provided with the latch-bar *G*, the weighted rope *I* attached to the carriage, the stop-bar *H* secured to and extending downward from the track *A* and provided with the opening *h* for the passage of the outer end of said latch-bar, substantially as and for the purpose set forth. 5th. In combination with the carriage shown having pivoted to its lower side the jaws *M*, which are adapted to be automatically moved from or toward each other, the pulley-block *F* formed at its upper with the laterally projecting arms *f* and provided with washer *f*<sub>2</sub> above the arms *f*<sub>3</sub>, substantially as and for the purpose specified. 6th. In combination with the latch-bar *G* pivoted within the carriage-body *B* and provided with an engaging spur *g*, the bar *H* adapted to be engaged by said latch-bar, the cord *I* having one end secured within said block and provided at its opposite end with the weight *W*, and the pulley *k* journalled within the bearing *K* upon said bar *H*, substantially as and for the purpose shown.

**No. 22,437. Rope Reel.** (*Dévidoir à Cable.*)

Ephraim M. Bishop, Olive Bridge, N. Y., U. S., 11th September, 1885; 5 years.

*Claim.*—1st. In a rope reel, a shaft having bearings at its ends and screw-threads and shoulders near the bearings, and nuts for said screw-threads, in combination with two centrally perforated disks having radial arms notched on their edges, and rods of bars to rest in said notches, substantially as and for the purpose specified.

**No. 22,438. Ash Receptacle for Furnaces.**  
(*Reservoir à Cendres pour Fournaies.*)

Elisha W. Visger, Alexandria Bay, N.Y., U.S., 12th September, 1885; 5 years.

*Claim.*—In combination with the furnace and exit flue, a case separate and detached from the furnace and its ash-pit, a pipe leading from said case to the exit flue, and an ash receptacle removably inclosed in the case, substantially as set forth and shown.

**No. 22,439. Power Transmitting Machinery.**  
(*Machinerie à Transmettre la Force.*)

Edwin Winans, New York, N.Y., U.S., 12th September, 1885; 5 years.

*Claim.*—1st. The combination of the circular or concentric wedges *f* and *g*, with two or more portions of a friction coupling, whereby pressure is brought to bear upon the faces of the coupling, and cause the same to act substantially as set forth. 2nd. The combination of a shaft, the fixed portion of a friction coupling attached thereto, a movable half of the friction coupling having circular or concentric wedge or wedges attached thereto, and a movable spool gear wheel or pulley having circular or concentric wedge or wedges attached thereto and mating with those of the movable half of the friction coupling, whereby a pressure is brought to bear upon the concentric or circular wedges and thence upon the friction coupling, and by the reverse movement or action the friction coupling released, substantially as set forth. 3rd. The combination, in a friction coupling, of a fixed portion or face, a loose portion or face having engaging wedge or wedges concentric with the operation of coupling, a spool gear-wheel or pulley having concentric wedge or wedges mating those of loose portion of coupling, whereby pressure is brought to bear upon and operate the friction coupling and connected shafting, substantially as set forth. 4th. The combination, with a friction coupling, substantially as set forth, of a vibrating lever, a treadle and a shaft upon which the lever is operated, and a belt whereby motion is transmitted from the vibrating lever to spool or pulley and friction faces of coupling, substantially as set forth. 5th. The combination of a treadle, substantially as set forth, a lever or vibrating arm, a rock shaft upon which the vibrating arm or lever is suspended and rocks a belt operating in connection with the lever and a spool mechanism of pulley, whereby the spool is caused to act in either direction and through the concentric wedges operating the friction coupling cause the friction coupling to revolve or release the operating shaft, substantially as set forth. 6th. In combination with a treadle vibrating arm or lever, a rock shaft upon which the vibrating lever or arm is caused to operate or rock a double arm connection of said levers upon which sheaves for belting are fixed, a bolt communicating with and operating a spool or pulley, and a collar upon which the thrust of the spool or pulley is taken in its movement upon the concentric wedge



or wedges of the coupling, substantially as and for the purposes specified. 7th. In combination with a treadle vibrating arm or lever, a rock shaft upon which the vibrating arm or lever is caused to operate, a double arm connection of said lever upon which a rock is fixed or attached, a pinion operated by the attached rack and collar, upon which the thrust of the pinion or spool is taken in its movements upon the concentric wedges of the coupling, substantially as and for purposes specified. 8th. In combination with a shaft, upon which they operate the fixed portion of coupling H, the loose portion of coupling G having its concentric wedge or wedges projections, the spool or pulley F, to which are attached concentric wedge projections mating with and operating upon those of the intermediate loose portion G, the collar *d* fixed upon the shaft to take the thrust of spool or pulley against the wedges of the friction coupling, and a belt intermittently operated to and fro, substantially as set forth. 9th. The combination of the shaft D and pulley I, the portions H and G of a friction coupling, the spool or pulley F, the collar *d*, the operating belts M, the sheaves *a*, the forked lever A and the rock shaft or fulcrum B, substantially as set forth. 10th. The combination of two or more sets of the following details of mechanism: the fixed portion of a friction coupling H, the loose portion G having one or more concentric wedges *g, g*, thereto attached, the flanged spool or pulley F having one or more concentric wedges *f, f*, thereto attached, mating those of the loose portion of the fixed collar *d*, the shaft D, the bolt M and levers or arms A, whereby a steady revolution is effected, of the shaft D and its communicating pulley I through the alternate operation of the several bars or arms in the combination, substantially as set forth. 11th. In combination with a friction coupling, substantially as described, the lever A provided with an operating link upon which the shears *a* are carried, and the belts M, substantially as set forth. 12th. The combination with a friction coupling, substantially as set forth, lever A having the belt M moving directly from and attached to tooth arms of the lever and over and about the spool or pulley F, substantially as set forth. 13th. In combination with a shaft upon which they operate, the fixed portion of friction coupling H, the loose portion G having one or more concentric wedges mating with those of the gear wheel, or pinion F, and the radial rack M<sub>2</sub> operated to and fro, substantially as set forth. 14th. The combination of two or more sets of the following details or elements of mechanism, the fixed portion of friction coupling H, the loose portion G having one or more concentric wedges *f, f*, thereto attached, and mating those of loose portion G, the fixed collars *d*, the shaft D, the radial rack M<sub>3</sub> and the lever arms A<sub>3</sub>, whereby a steady and continuous revolution is effected, of the shaft D, through the alternate operation of the several levers or arms in combination, substantially as set forth.

#### No. 22,440. Combination Concave Knife.

(*Couteau Concave.*)

Ruel Nason, Bedford, Ont., 12th September, 1885; 5 years.

*Claim.*—The combination of the knife edge A, with the square toothed unset saw edge B, connected with the concave ground blade D, substantially as and for the purposes hereinbefore set forth.

#### No. 22,441. Roller Coasting Structures.

(*Glissoires à Roulettes.*)

LaMarcus A. Thompson, Philadelphia, Pa., U. S., 12th September, 1885; 5 years.

*Claim.*—1st. In a coasting structure, the combination with the tracks B, B', running parallel with each other and having the starting and terminal stations at the same elevation, of the switch tracks E, F, whereby the car reaching the terminus on the outgoing track is transferred to the return track and back again to the first track for another trip, substantially as described. 2nd. In a coasting structure, the combination with two parallel tracks or road-beds, having undulating grades or planes, of the wood or iron supporting trestle-work C, and the platform *d* and *d'* of the same height, substantially as described.

#### No. 22,442. Car-Coupling. (*Attelages des Chars.*)

James Horsley, Millerstown, Penn., U. S., and Samuel T. Jull, Cleveland, Ohio, U. S., 12th September, 1885; 5 years.

*Claim.*—The combination with the draw-head A, having the slotted openings *a* and *a'* of the block B, pivoted in the opening *a*, and the hooked lever C, fulcrumed in the slot *a'*, said part being constructed and operating substantially as and for the purpose specified.

#### No. 22,443. Covers for Fruit Jars.

(*Couverts de Pots à Fruit.*)

Thomas G. Otterson, Woodbury, N. J., and John H. Otterson, New York, N. Y., U. S., 12th September, 1885; 5 years.

*Claim.*—1st. The combination with a jar, of a bed having a screw-threaded stud located at its centre and formed integral therewith, a clamp pivoted on the stud, substantially as set forth. 2nd. The combination, with a jar having inclines formed on its neck, and strengthening beads or guides, and stops formed at the ends of the inclines, of a lid, and a clamp pivotally secured to the lid, the clamp being constructed to engage the said inclines, guides and stops, substantially as and for the purpose set forth. 3rd. As a new article of manufacture, a cover for jars or cans, consisting of a disk having a depressed central portion provided with a boss and threaded stud at its centre, a clamp pivoted on the stud and bearing on the boss, and a cap adapted to engage the threaded portion of the stud and secure the clamp thereon, substantially as set forth. 4th. The combination, with a jar having inclines on its neck, and a lid provided with a centrally located threaded stud formed integral therewith, of a clamp pivotally secured on said stud and adapted to take under the inclines, and a nut for holding the clamp in position. 5th. The combination, with a jar having an incline on its neck, of a lid having a depressed central portion, a stud formed integral with said lid at the centre of said depressed portion, the upper end of said stud being on a line with, or slightly below the upper surface of the clamp, and a

clamp pivoted on the stud and adapted to engage the incline on the jar, substantially as set forth. 6th. The combination, with a jar having inclines formed on its neck, and a lid provided with a central screw-threaded stud, of a clamp pivotally secured on the stud by a nut, and adapted to take under the inclines, the clamp having no bearing on the lid excepting at the central portion around the stud, substantially as set forth. 7th. The combination, with a jar, of a lid having a depressed central portion, a stud located at the centre of the boss, and provided with a smooth lower portion and a threaded upper portion, a clamp adapted to rotate on the smooth portion of the stud and lock the lid to the jar, and a nut for holding the clamp in position, substantially as set forth.

#### No. 22,444. Processes of Smelting Ores and Furnaces, Therefor. (*Procédés et Fourneaux à Fondre le Minéral.*)

Eugene H., and Alfred H. Cowles, Cleveland, Ohio, U. S., 12th September, 1885; 5 years.

*Claim.*—1st. The method of generating heat for metallurgical operations herein described, which consists in passing an electric current through a body of broken or pulverized resistance material that forms a continuous part of the electric circuit, the ore to be treated by the process being brought in contact with the broken or pulverized resistance material, whereby the heat is generated by the resistance of the broken or pulverized body throughout its mass, and the operation can be performed solely by means of electrical energy. 2nd. The method of smelting or reducing ores or metalliferous compounds herein described, which consists in subjecting the ore in the presence of carbon to the action of heat generated by passing an electric current through a body of broken or pulverized resistance material that forms a continuous part of the electric circuit, the one being in contact with the broken or pulverized resistance material, whereby the ore is reduced by the combined action of the carbon and the heat generated solely by the resistance of the broken or pulverized body throughout its mass. 3rd. The method of smelting or reducing ores or metalliferous compounds, herein described, which consists in pulverizing the ore and mixing with it pulverized or broken carbon, or like material, then introducing the mixed ore and carbon within an electric circuit of which it forms a continuous part, the said circuit being established through the carbon constituents of the mass, whereby the heat is generated by the electrical resistance of the carbon throughout the mass, and the operation can be performed entirely by means of the carbon re-agent and the electrical energy. 4th. The method of smelting or reducing ores or metalliferous compounds, herein described, which consists in subjecting the ore in the presence of a reducing agent to the action of heat generated by passing an electric current through a body of broken or pulverized resistance material that forms a continuous part of the electric circuit, the ore being in contact with the broken or pulverized resistance material, whereby the ore is reduced by the combined action of the reducing agent and of the heat generated solely by the resistance of the broken or pulverized body throughout its mass. 5th. In an electric smelting or reducing apparatus, a chamber or casing having its longest dimension in a horizontal direction, and adapted to contain a charge of ore and electrical resistance material, previously pulverized and mixed together, the oppositely located electrodes in conductive relation to the charge, but otherwise insulated from one another, and an exit for the escape of the gases and vapours evolved from the charge during the process of reduction, substantially as herein set forth. 6th. In an electric smelting or reducing apparatus, the smelting chamber formed of side and bottom walls of closely packed pulverized or granular material and the permeable top wall formed of a layer of granular non-heat-conducting material, and the electrodes oppositely located at the ends of the core or smelting chamber, substantially as herein set forth. 7th. In an electric smelting or reducing furnace, the combination of a chamber or casing, the side and bottom layers of closely packed pulverized or granular material, and the top covering of similar material, made permeable for the escape of gases and vapours, with the electrodes oppositely located at the ends of the chamber or casing and surrounded by the packing or filling which incloses a charge of carbon and ore, substantially as herein set forth. 8th. In an electric smelting or reducing apparatus, a smelting chamber formed of closely packed granular or pulverized material of a non-heat-conducting nature, and of lesser electrical conductivity than the charge to be smelted in the furnace, with two electrodes arranged at the opposite ends of said chamber, for conducting the electricity to the said charge, substantially as herein set forth. 9th. In an electric furnace, a body or core of pulverized granular or broken resistance material interposed between two electrode plates, substantially as described, having a greater number of points of contact in a cross section of the body taken close to the plates, than in a cross section of the same taken at intermediate parts thereof, whereby there is less resistance and consequently less heat at the ends of the core than at other parts thereof. 10th. In an electric furnace, a body or core of pulverized granular, or broken resistance material interposed between the electrode plates, substantially as described, with fine carbon filling the spaces between the particles of coarse carbon at the ends only of the core abutting against the plates, whereby there is less resistance, and consequently less heat at the ends of the core than at other parts thereof. 11th. In an electric smelting or reducing apparatus, a smelting chamber formed of closely packed pulverized material of non-heat-conducting nature and of lesser electrical conductivity than the charge to be smelted within it, a layer of similar material permeable for the escape of gas, for closing the said chamber, and two electrodes arranged at the opposite ends of the said chamber, for conducting electricity to the charge, substantially as set forth.

#### No. 22,445. Glass Can Caps.

(*Couverts de Pots en Verre.*)

Thomas G. Otterson and Cornelius C. Voorhies, Woodbury, N. J., U. S., 12th September, 1885; 5 years.

*Claim.*—1st. A can cover, or a cover for a fruit jar, formed entire and having a boss partially screw-threaded and located in a central

depression, substantially as set forth. 2nd. A can cover, or a cover for a fruit jar, formed entire and having a boss partially screw-threaded, and located in a central depression, with a plane portion  $\rho$ , at the base of the threaded portion, substantially as set forth. 3rd. A can cover, or a cover for a fruit jar, formed entire and having a boss partially screw-threaded and located in a central depression, with the plane portion,  $\rho$ , at the base of the threaded portion, and having a raised portion  $\rho$ , at the base of the boss, substantially as set forth. 4th. The combination with a lid or cover for jar, having an externally screw-threaded stud, the latter being provided with a longitudinal perforation, of a valve resting on and closing the perforation in said stud, and a screw-threaded cap for holding the valve in place, substantially as set forth. 5th. The combination, with the perforated stud and a yoke pivoted thereon, of a valve closing the perforation in the stud, and a cap fitting on the stud and performing the double function of protecting the valve and securing the yoke, substantially as set forth. 6th. The combination, with a lid or cover for jars, having an externally screw-threaded stud, the latter being provided with a longitudinal perforation, of a valve resting on and closing the perforation in said stud, a screw-threaded cap, and a cushion located within the cap and resting on the valve, substantially as set forth. 7th. The combination, with the lid provided with a depressed central portion and a threaded perforated stud located centrally therein, of the clamping yoke journaled on the stud, a valve closing the perforation in the stud, and a cap screwed on the stud and securing the valve and yoke in position, substantially as set forth.

### No. 22,446. Combined Sheet and Envelope.

(*Papier à Lettre et Enveloppe.*)

David B. Bates, N.Y., and Edward C. M. Bruce, Clifton, N.Y., U.S., 12th September, 1885; 5 years.

*Claim.*—1st. The combination of the sheet A, with the address flap B, adapted to be turned upon the face of the sheet for inscription, as specified, and which becomes the addressed outside face of the letter when sealed. 2nd. The combined sheet and envelope herein described, consisting of the sheet S, the unglued flap C, and the gummed addressed flap B.

### No. 22,447. Snow Plough. (*Charrue à Neige.*)

Julius Franz, Warsaw, Ill., U.S., 12th September, 1885; 5 years.

*Claim.*—1st. In a snow-plough, the middle runner B, the inclined piece C, secured thereto, and extended to form a handle D, the share E, secured in front of the middle runner, the wings J, hinged to the share on opposite sides of the runner, and braces K, hinged to the inner side of the wings and adjustably connected to the upper side of the middle runner B, thereby relieving the handle of strain, as set forth. 2nd. A snow-plough consisting of the middle runner B, having a clip N on its upper side provided with a screw M, the share F, the wings J hinged to the share on opposite sides of middle runner, and provided with flanges J<sub>1</sub>, projecting outward at an angle to said wings, the braces K hinged to the inner sides of the wings and having apertures for screw M to engage, and the inclined piece C, secured to the middle runner and extended rearward to form a handle D, substantially as set forth.

### No. 22,448. Post Hole Digger.

(*Machine à percer les trous des Pieux.*)

Isaac Harter, (Assignee of Frederick Emil Kohler,) Canton, Ohio, U.S., 14th September, 1885; 5 years.

*Claim.*—1st. In a post-hole digger, the combination of the opposing shovels, the metallic connecting arms A<sub>1</sub>, A<sub>2</sub>, curved inward from the shovels and provided with the stops or abutments a<sub>2</sub>, the pivot which directly joins the said metallic arms below the said stops, and the straight wooden handles secured to the outside of the metallic connecting pieces above the pivot, substantially as set forth. 2nd. In a post-hole digger, the combination of the shovels and the wooden handles, of the herein-described connecting devices, each having a projecting pivot ear, the upward projecting plate or arm A<sub>2</sub> above the pivot ear, the inward projecting stop a<sub>2</sub> above the pivot and the outward curved part A<sub>1</sub> for direct attachment to a shovel, substantially as set forth. 3rd. In a post-hole digger, the combination, with the shovels and the wooden handles swinging in the same transverse plane and having their lower ends situated on vertical lines between the vertical center of the whole device and the vertical lines of the shovels of the two connecting arms A<sub>1</sub>, one of them having two inward projecting pivot ears, and the other having a pivot ear adapted to be interposed between the two aforesaid pivot ears, and each connecting arm having a plate A<sub>2</sub> rising above its pivot ear and formed with an inward projecting stop, and a bar curved outward and downward and adapted to be rivetted directly to a shovel, substantially as set forth. 4th. In a post-hole digger, a connecting device, constructed substantially as described, with the inward curved part a, the inward projecting pivot ear, the plate A<sub>2</sub> rising above the pivot ear, the stop or abutment a<sub>2</sub> carried by said plate and constructed to interlock with an opposing handle, substantially as described.

### No. 22,449. Metallic Poles for Telegraph Lines and Other Purposes. (*Pôles Métriques pour Télégraph et autres usages.*)

Frederic N. Grisborne, Ottawa, Ont., 14th September, 1885; 5 years.

*Claim.*—1st. The use of the grip and bed plates  $\delta$  and  $\epsilon$ , substantially as set forth and explained. 2nd. The anti-corrosive sleeve  $d$ . 3rd. The cross-arm J of double angled iron, whereby the insulator pins are held in position, and the greatest strength with lightness is obtained. 4th. The spur staple K by which the cross-arm J is held in place, or a modification thereof, whereby the staple may be punctured to receive a fixed point or spud attached to the tube.

### No. 22,450. Kitchen Utensil.

(*Ustensile de Cuisine.*)

John Ward Cooney, Arnprior, Ont., 14th September, 1885; 5 years.

*Claim.*—1st. As a new article of manufacture, a utensil consisting of a handle A, ferrule B, soldered iron prongs C and clamp ring D. 2nd. As a new article of manufacture, a utensil consisting of a ferruled handle, holding two conveying flexible prongs, constructed of wire lying side by side, and soldered together, except at the free ends, which are curved inward to form a mouth opened and closed by a sliding clamp ring encircling the prongs.

### No. 22,451. Bottle. (*Bouteille.*)

Selden and Oscar Switchell, (Assignees of William L. Roorbach,) all of the City of Philadelphia, Pa., U.S., 15th September, 1885; 5 years.

*Claim.*—1st. A bottle having an internal packing for the neck thereof, consisting of an annular piece of rubber, or other suitable material constructed of greater diameter than the inner diameter of the neck, and having a rise on its inner periphery, substantially as and for the purpose set forth. 2nd. A bottle having two internal shoulders E, formed in its side near the bottom thereof, substantially as and for the purpose set forth. 3rd. A bottle having on its exterior near the bottom two depressions which extend towards each other, forming two internal shoulders E, which flare and produce rising walls for holding the released stopper when the bottle is tilted, substantially as and for the purpose set forth.

### No. 22,452. Steam Engine and Boiler.

(*Chaudière et Machine à Vapeur.*)

Isaac H. Culp and David J. Burkholder, (Assignees of Orson B. Kendall,) all of Hamilton, Ont., 15th September, 1885; 5 years.

*Claim.*—1st. In a steam boiler, the head H cast in the form of crosses, being hollow with opening on one side in the centre of each cross, for the purpose of admitting the open ends of the tubes I, one end of each tube being blank, substantially as and for the purpose hereinbefore set forth. 2nd. In a steam boiler, the combination of the two boiler heads H, H, with the tubes I, placed in the position as shown, substantially as and for the purpose hereinbefore set forth.

### No. 22,453. School Slate. (*Ardoise.*)

Thomas Heney, (Assignee of Robert Holbon,) both of Alphenia, Mich., U.S., 16th September, 1885; 5 years.

*Claim.*—1st. A school slate, having a frame notched near one corner and bored edgewise, and provided with a yielding pad F, to laterally press against the pencil, and hold it removably, as set forth. 2nd. The combination with the slate A, of the frame B, having a hole D, pin G, and flat spring cover G, having a stop projection a, to enter the hole, as set forth. 3rd. A school slate, having a frame provided with spring clips H, to hold a pencil against the slate temporarily use, as set forth.

### No. 22,454. Apparatus for Cancelling Stamps. (*Appareil à maculer les Timbres.*)

George Bancroft, John H. Horsefall and George S. Jones, Montreal, Que., 15th September, 1885; 5 years.

*Claim.*—1st. In an instrument for cancelling stamps, the combination with a cutting edge and defacing plate of means for adjusting the projections of the former and holding the parts rigidly in place. 2nd. In an instrument for cancelling stamps, the combination of a cutting edge, on the end of a tube, set in a metal cap and passing through a cancelling plate secured on a split cylinder screwed loosely on said metal cap and caused to grip the same by thumb-screws working in lugs on said cylinder, all as herein set forth. 3rd. In an instrument for cancelling stamps, the combination with the tube carrying the cutting edge, of a passage taken through metal cap in which tube is carried, and handle, as and for the purpose described.

### No. 22,455. Shingle Machine.

(*Machine à Bardeaux.*)

McFarlane, Thompson & Anderson, Fredericton, N.B., (Assignees of A. Dunbar, Woodstock, N.B.), 15th September, 1885; 5 years.

*Claim.*—1st. The recess formed through the saw and in the saw flange for the reception of the arbor nut, 1, substantially as and for the purpose set forth. 2nd. The adjustable lever caps 2 of the arbor boxes, provided with rubber cushion, as and for the purpose described. 3rd. The shingle bolt, carriage composed of the styles e, cap f, and sill g, the bush-blocks 4, sliding on the inclined rail 3, and secured to the sill g by bolts passing through slotted holes, the holding down wheel D, and the adjustable top slide rail 5 having slotted holes for its holding bolts, substantially as described. 4th. The standards N, carrying the feed roller j, the upper jaw plate Q, pivoted to the standards N, the jaw bracket R, pivoted to the jaw plate Q, and the feed rollers j and p, to which are attached the ratchet wheel 10 and 10<sub>1</sub>, as shown and described. 5th. The weighted lever S, springs P, P, the lever T, pivoted to the standard N, projecting into the bracket 7, which fixed adjustably to the frame A, and the pawls 11, jointed to lever T, to work the ratchet wheels 10 and 10<sub>1</sub>, substantially as and for the purpose set forth. 6th. The stud bracket 6 secured to the carriage sill g by bolts passing through slotted holes formed in it, and connected with adjustable wrist pin of the balance wheel 8, substantially as and for the purpose shown and described. 7th. The eccentric gears 9<sub>3</sub>, reducing gears 9<sub>2</sub>, friction wheels 9<sub>2</sub>, and cone pulleys 9, arranged as shown for imparting motion to the balance wheel 8, by which the bolting carriage is operated, substantially as and for the purpose herein shown and described. 8th. The handle a<sub>1</sub>, pedal  $\delta$ , jointed bar c<sub>1</sub>, and toggle jointed links d<sub>1</sub> for operating the

forked lever K, substantially as and for the purpose set forth. 9th. The shingle table O pivoted to the arbor brackets and having the arm el and the stud bolt f provided with a nut, and the spring g, substantially as shown and described. 10th. The jointer N, having the disk A, spindle i, knives j, and edging table k, arranged as shown and for the purpose specified.

### No. 22,456. Apparatus for the Manufacture of Flexible Roofing. (*Appareil à Fabriquer les Toitures Flexibles.*)

Longley L. Sagendorph, Cincinnati, O., U.S., 15th September, 1885; 5 years.

*Claim.*—1st. The tank A, provided with forward upper rounded edge b, the tank having its forward and rear sides inclining inward toward its bottom, and having near its bottom the stationary rubber E, and at or near its rear upper edge the scrapers F and G, between which the flexible material coming from the tank is passed, substantially as and for the purposes specified. 2nd. The tank A, provided with forward upper rounded edge b, the tank having its forward and rear sides inclining inward toward its bottom, and waste hole z, provided with device for controlling the discharge through said hole, substantially as and for the purposes specified. 3rd. The combination of the tank A, and the transverse rubber E, having its lower edges formed substantially as described, and located near the bottom of said tank, and the scrapers F and G, the scraper F being the lower and forward scraper, and having operating edge f, and the scraper G being the upper and rearward scraper, and having operating edge g lying above and projecting over the operating edge of scraper F, and inclined upward at an angle to the horizontal, substantially as and for the purpose specified. 4th. The combination of the tank for holding composition, and the rubber E located near the bottom thereof, and the adjustable scraper F and G, substantially as and for the purposes specified. 5th. The combination of the tank A, having near its bottom the transverse rubber E, having its lower edge formed substantially as described, and located near the bottom of said tank, and the scrapers F and G, the scraper F being the lower and forward scraper, and having operating edge f, and scraper G being the upper and rearward scraper, and having operating edge g lying above and projecting over the operating edge of scraper F, and inclined upward at an angle to the horizontal, one or both of the scrapers being provided with means, substantially as described, for enabling them to be adjusted transversely to their length, substantially as and for the purposes specified. 6th. The combination of the tank A, having near its bottom the transverse rubber E, having its lower edges formed, substantially as described, and located near the bottom of said tank, and the scrapers F and G, the scraper F being the lower and forward scraper, and having operating edge f, and the scraper G being the upper and rearward scraper, and having operating edge g lying above and projecting over the operating edge of scraper F, and inclined upward at an angle to the horizontal, one or both of the scrapers being provided with the slots g, substantially as and for the purposes specified. 7th. The movable adjustable drying rack, in combination with the standards and the stationary composition tank, substantially as and for the purposes specified. 8th. The movable adjustable drying rack, in combination with the vertical frames or standards, the end standards provided with the rabbets or recesses m, substantially as and for the purposes specified. 9th. The combination of the tank for holding composition, rack, standards, roller J and roller P and cable W, substantially as and for the purposes specified. 10th. The combination of the tank for holding composition, rack, standards, roller J and roller P, cable, rod R, and grippers, substantially as and for the purposes specified. 11th. The combination of the cable, rod R, cords or straps S, and the grippers, one member or jaw of each being provided with brad r, and the other member being provided with groove r, the brad and groove being arranged transversely to the length of the grippers, substantially as and for the purposes specified. 12th. The combination of the tank, scraping devices rack roller J, standards, uprights C, C, forming part of the supporting frame of the tank, and roller P, located in said uprights, substantially as and for the purposes specified. 13th. The combination of roller J, provided with recess 2, and stick or piece 3, substantially as and for the purposes specified. 14th. In an apparatus for making flexible coated roofing, the combination of the uprights C, C, roller P and roller J, the said uprights supporting said rollers, substantially as and for the purposes specified. 15th. In an apparatus for making flexible coated roofing, the combination of the uprights C, C, roller P and roller J, the said uprights supporting said rollers, and the removable adjustable rack, substantially as and for the purposes specified. 16th. In an apparatus for making flexible coated roofing, the combination of the uprights C, C, and roller P and roller J, the uprights forming a portion of the support of the tank for holding the composition and upholding said rollers and the rack, substantially as and for the purposes specified. 17th. The combination with the rack and roller J, the uprights provided with open journal-bearings having guideways 3, substantially as and for the purposes specified.

### No. 22,457. Bobbin for Sewing Machine Shuttles. (*Bobine de Machine à Coudre.*)

David W. Corey, Galena, Ill., U.S., 15th September, 1885; 5 years.

*Claim.*—1st. A bobbin for sewing machine shuttles, consisting of a bobbin proper having a hollow sleeve and end flanges, and a holder on which said bobbin proper is secured, having a central spindle fitting loosely in said sleeve, and heads secured to said spindle, substantially as hereinbefore set forth. 2nd. A bobbin for sewing machine shuttles, consisting of a bobbin proper having a hollow sleeve and end flanges, and a holder having a central spindle fitting loosely in said sleeve, and heads provided with annular lips projecting over the flanges of the bobbin proper, substantially as hereinbefore set forth. 3rd. A bobbin for sewing machine shuttles, having end heads of greater diameter than the flanges of the bobbin proper, the latter being adapted to rotate independently of said heads, and being prevented by the latter from coming in contact with the interior of the shuttle, substantially as hereinbefore set forth. 4th. A bobbin for sewing machine shuttles, having end heads of greater diameter than

the flanges of the bobbin proper, said heads and flanges having holes for the reception of the pin or stud on the rotary head of the bobbin-winder, substantially as hereinbefore set forth.

### No. 22,458. Manufacture of Paper and Paper Board. (*Fabrication du Papier et du Carton.*)

John M. Allen, New Bedford, Mass., U.S., 15th September, 1885; 5 years.

*Claim.*—1st. The herein-described process of mixing and rising the backs of the cedras, or either of them, or the inner backs of either of the other varieties of cone-bearing trees in pulp and paper, paper board of different kinds and leather-board, so called, by first furnishing the heating engine of a paper mill or paper-pulp mill, partially by the other stock or stocks to be used, and then completing the furnishing of the same by raw cedar back fragment, taken whole or entire, or without special separation of the outer from the inner parts, or completing the furnishing of the engine, as above, with the raw pieces of the inner back of either of the other varieties of the cone-bearing trees not specially prepared for the beaters after their separation from the outward parts, unless it be by cutting them into fragments, or soaking them, or both. 2nd. Paper or paper board (including leather board, so called,) made from the raw pieces of the inner back of either of the varieties of the cone-bearing trees, not specially prepared (after their separation from the outer parts) for the engine, unless by cutting or soaking, or both. 3rd. A combination of cedar back (used raw, or only treated by cold or tepid water) with other paper stock, especially satinets or woollen stock in paper or felting, and saturated with coal-tar, so called, or with pine-tar, so-called.

### No. 22,459. Process for Making Syrup and Beer. (*Procédé à Fabriquer le Sirop et la Bière.*)

Alfred E. Feroe, Poughkeepsie, N.Y., U.S., 15th September, 1885; 5 years.

*Claim.*—1st. The herein-described process for the manufacture of beer, wort and syrup from corn and malt, which consists in soaking the meal in water at a temperature a little below the point at which the albumenoids begin to coagulate, then adding a small percentage of malt, then raising the temperature slowly to the point at which starch dissolves, and keeping the mixture at this temperature for a sufficient time to render the constituents of the meal as soluble as possible by such treatment, then in a separable separator separating the soluble portions, fine albuminous matter, etc., from the insoluble portions, then washing with malt, as specified, then running the mash into a settling and conversion tub suitable for the purpose, keeping it at a substantially even temperature to facilitate conversion and settle the fine insoluble matter by rendering the top portions of the mash as warm as or a little warmer than the lower portions, then drawing off the clear wort, boiling the same until coagulation is completed, then running the wort into the settling tub, settling it as before, and drawing off the clear wort for further treatment, substantially as set forth. 2nd. The herein-described method of diminishing the quantity of fine insoluble matter in corn and malt mashes, which consists in granulating the corn, soaking it in water, then liquifying the starch by the action of malt and heat, then separating the liquified starch, etc., from the coarser insoluble matter, then converting it to saccharine extract by mashing it with granulated malt or malt wort, substantially as described. 3rd. The herein-described method of facilitating the settling of the fine insoluble matter of corn and malt mashes during and after conversion or after boiling, which consists in surrounding the vessel containing the mash or wort, on its entire sides and over the upper surface of the mash or wort, with a circulating conductor of heat of the same or a little higher temperature than that of the contents of the said vessel, substantially as shown and described, whereby the escape of heat from the sides and upper parts of the mash or wort, and the consequent circulation caused by unequal cooling is prevented, as set forth. 4th. The process herein described, of separating the fine cellulose and other insoluble impurities from corn and malt mash before passing a gas through it or before fermentation, any gelatinous substance, substantially as and for the purpose described. 5th. In the manufacture of beer wort and syrup, the herein-described method of treating the residue which remains in the settling tub after conversion and settling and after the clear wort, etc., has been drawn off, which consists in separating from the said residue in a suitable separating machine, the liquid portion thereof cooling the same to temperature of from 50° to 70° Fahrenheit, and adding thereto disk moss, gelatine, or other similar substance, as usually prepared for fining beer, thoroughly mixing the same, and in a suitable vessel passing a gas or atmospheric through it, and after the wort is cleared drawing it off and then treating the clear portion in the same manner as the wort first drawn from the mash, as set forth. 6th. The herein-described method of treating corn and malt mash, which consists in adding gelatinous matter to the boiling mash, then cooling the mash and then adding yeast to cause fermentation, substantially as specified. 7th. In the manufacture of beer wort or sirup, the herein described process of treating the whole of the liquid mash when malt wort or granulated malt has been used to make the conversion (going away with the need of a second separation of coarse material), which consists in passing a gas of any sort through the liquid, after the addition of any gelatinous substance for the purpose of carrying the fine insoluble matter to the surface at any stage of the process, as set forth. 8th. As a new article of manufacture, the product derived from the herein described process.

### No. 22,460. Fence. (*Clôture.*)

Henry Van Eps, Peoria, Ill., U.S., 16th September, 1885; 5 years.

*Claim.*—The combination, in a fence of the kind herein described, of the two horizontal rods D, D<sub>2</sub>, and the oblique metal rods A, straight throughout their entire lengths, except near their ends, where they are formed into the loops B, and at their ends c, which tightly clasp said rods D, D<sub>1</sub>, as and for the purpose set forth.

**No. 22,461. Apparatus for Facilitating the Multiplication of Numbers.** (*Multiplicateur.*)

John V. Carpentier, New Orleans, La., U.S., 16th September, 1885; 5 years.

*Claim.*—1st. A table for facilitating multiplication, composed of a series of movable independent sections inscribed with numerals, arranged as shown and described, the first or unit section having a line of figures representing units with their multiples arranged under them in regular numerical succession, as described, the second or tens section having a line of figures representing tens, and above them figures indicating units, and below them figures representing multiples of the said tens, plus the respective amounts carried in the multiplication of such units, the succeeding (hundreds, thousands, etc.), sections having figures arranged upon the solid principle, as set forth, substantially as and for the purpose hereinbefore set forth. 2nd. In an apparatus for facilitating multiplication, the combination with a box or case having a vertical row of multiplying numerals, from 1 to 9 inclusive, arranged upon its margin, of a table of figures formed in sections and arranged upon revolving rods or rollers within said box, said table having a multiplicand or registration line on which any numbers can be arranged for multiplication, figures arranged upon the several sections (with the exception of the first), above the multiplicand line, which figures represent the numbers registered on the preceding sections, and serve as guides in the registration of the multiplicand, and a series of rows of figures representing the result of the multiplication of any number registered, arranged opposite the respective multiplying numerals 2 to 9 on the margin of the box, substantially as shown and described.

**No. 22,462. Means for Rigidly Fastening the Fish Plates of Jointing Railway Rails.**

William S. Taylor, Huntingdon, Pa., U.S., 16th September, 1885; 5 years.

*Claim.*—1st. A new article of manufacture, consisting of the chair A, having the subjacent elastic projections *a, a*, the central hole *at*, the upperguide projections *a2, a2*, and the spring tongue *a3*, whereby it may be used, substantially as and for the purpose hereinbefore set forth. 2nd. The combination with a lock nut or slide bar of a supporting plate or chair, having the subjacent elastic projections *a, a*, arranged substantially as and for the purpose hereinbefore set forth. 3rd. The combination with a lock nut slide bar B, having the undercut edges *b1*, of a supporting chair, provided with a spring tongue *a3*, for the purpose specified, substantially as and for the purpose hereinbefore set forth.

**No. 22,463. Devices for Felling Trees.**

(*Appareil à abattre les Arbres.*)

Philip Miller, Norwich, Conn., U.S., 16th September, 1885; 5 years.

*Claim.*—The method herein described, for utilizing the momentum of a falling tree to partially or wholly saw an adjoining tree, which consists in holding the saw edge against the tree to be cut and connecting said saw by block and tackle, or other suitable means, to a falling tree, whereby the momentum of the falling tree will rapidly draw the saw edge into the tree against which it is held, substantially as described and for the purpose set forth.

**No. 22,464. Creamer.** (*Garde-Lait.*)

James M. Keen, H. W. and C. A. Dakin, all of Digby, N.S., 16th September, 1885; 5 years.

*Claim.*—1st. Combination of the convex bottom F. 2nd. The combination of a tube or cylinder G. 3rd. The combination of lever, ventilator and strainer B, substantially as and for the purpose hereinbefore set forth.

**No. 22,465. Furniture Drawers**

(*Tiroir de Meuble.*)

Edward C. Roberts, Brantford, Va., U.S., 16th September, 1885; 5 years.

*Claim.*—1st. The combination with the drawers B, and case A, of the jointed parallel moving arms E, E1, connecting the drawer B, to the case A, the upper and lower roller bearings *l, h*, at the sides F, of the drawer B, the rollers *e*, and the stops *t*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination with the case A, and drawer B, of the parallel moving arms E, E1, connecting the rear of the drawer B, to the inner wall of the case A, the horizontal bar Z, connecting the said arms E, E1, and the stop *t*, on the bottom of the drawer B, extending rearwardly to prevent the parallel arms E, E1, being crowded when the drawer B, is pushed substantially as and for the purpose hereinbefore set forth.

**No. 22,466. Gossamer Cloak.** (*Manteau.*)

Peter G. Getz, Philadelphia, Pa., U.S., 16th September, 1885; 5 years.

*Claim.*—1st. A gossamer having arm-holes B and sleeve-pieces C therefor, provided with patches D connected with the body and walls of the upper and lower terminations of the arm-holes and patches E, connected with the body and sleeve-pieces at places coincident with the corners of said pieces, substantially as and for the purpose set forth. 2nd. A gossamer having arm-holes B provided with patches D connected with the body and walls of the upper and lower terminations of said arm-holes, substantially as and for the purpose set forth.

**No. 22,467. Steam Boiler Jacket.**

(*Envelope de Cylindre.*)

Edward S. T. Kennedy, New York, N.Y., U.S., 16th September, 1885; 5 years.

*Claim.*—The combination with a boiler of vertical and horizontal ribs formed of double channel or T-irons secured on the outer surface of the shell plates secured to the outer edges of the ribs and of non-conducting material placed between the plates and the shell, substantially as herein shown and described.

**No. 22,468. Steam Boiler.** (*Chaudière à Vapeur.*)

Edward S. Y. Kennedy, New York, U.S., 16th September, 1885; 5 years.

*Claim.*—1st. A boiler adapted for marine purposes constructed and arranged, substantially as herein shown and described, consisting of an upright cylinder provided with series of radial tubes having an opening in the top of its steam space over which is fixed an upright cylinder closed at the top and extending up into the smoke pipe and a steam take-off pipe fixed within the upper cylinder with its vertical leg reaching nearly to the top thereof, and its horizontal leg projecting outward for the delivery of steam, as set forth. 2nd. A boiler constructed substantially as herein shown and described, with an upright cylinder provided with series or groups of tubes radiating therefrom in successive planes one above another, each of the lower series or groups of which is of greater diameter than the group next below so that the several lower groups may be enclosed in outlines representing an inverted frustum of a cone, as set forth. 3rd. The combination with the vertical boiler cylinder A adapted to be supported on the bottom of the ash pit, of the upper series or groups of radiating tubes *a* of equal length and lower tube, groups or series decreasing in diameter downward, substantially as described.

**No. 22,469. Movable Stove Pipe Stop Collar.** (*Douilles de Tuyau de Poêles.*)

Walter Ambrose, Hamilton, Ont., 16th September, 1885; 5 years.

*Claim.*—In a stove pipe stop consisting of the collar A, flange *b*, lugs *c, c*, nut *d*, washer *f*, thumb-screw *e*, all constructed substantially as and for the purpose specified.

**No. 22,470. Boiler - Cleaning Compound.** (*Composé pour Nettoyer les Chaudières à Vapeur.*)

Duncan H. Cameron and Peter H. Clark, both of Woodville, Ont., 17th September, 1885; 5 years.

*Claim.*—A compound composed of cedar, the leaves and bark,—of Tamarack, the leaves and bark,—of Oak, the leaves and bark,—of Sumach, the leaves and bark, substantially in the proportions and for the purpose set forth in the petition annexed.

**No. 22,471. Flour Bolt.** (*Bluteau.*)

The George T. Smith Middlings Purifier Co., Stratford, Ont., (Assignees of Noah W. Hott, Jackson, Mich., U.S.), 17th September, 1885; 5 years.

*Claim.*—1st. The combination in a flour bolt, with a reel having an outer finely-reticulated bolting-surface, and adapted to elevate material above its axis, of an interior drum rotating in the same direction with the reel, and adapted to receive material elevated by the outer bolting-surface and deliver it to the downward moving portion of the bolting-surface, substantially as set forth. 2nd. The combination, in a flour bolt, of a reel having an outer finely-reticulated bolting surface, and adapted to elevate material above its axis, and many-sided interior drum rotating in the same direction with the reel, having a substantially imperforate surface, and adapted to receive material elevated by the outer bolting surface and deliver it to the downward moving portion of the bolting surface, substantially as set forth. 3rd. In a flour bolt, the combination of an outer bolting reel having a finely-reticulated surface and provided at the receiving end with a closed head having a feed opening, a central shaft, an inner rotating drum adapted to receive material elevated by one side of the reel and deliver it to the opposite side of the reel, and ribs supported by the drum and projecting beyond the head of the drum, and connected with one end of the bolting reel, substantially as set forth. 4th. In a flour bolt, the combination of an outer reel having a finely-reticulated surface and provided at one end with a closed head having a feed opening, a central shaft, and an inner rotating drum, shorter than the bolting reel, and adapted to receive material elevated by one side of the reel and to deliver it to the opposite side of the reel, and provided at one end with a closed head arranged at a short distance from the receiving end of the bolting reel, whereby there is formed a vertical passage through which material can fall from the feed opening upon the bolt cloth, substantially as set forth. 5th. In a flour bolt, the combination, with an outer bolting reel having a finely-reticulated surface, of a central shaft, an inner rotating drum, which is shorter than the bolting reel, and is adapted to receive material elevated by one side of the reel, and deliver it to the opposite side of the reel, and ribs attached to the drum and projecting horizontally therefrom, and connecting at their ends to the bolting reel, substantially as set forth. 6th. In a flour bolt, the combination of an outer bolting reel having a finely-reticulated surface, a central shaft, an inner rotating drum, adapted to receive material elevated by one side of the reel, and deliver it to the opposite side of the reel, and braces projecting from the outer surface of the drum and adapted to support the bolt cloth between the ends of the bolting surface, substantially as set forth. 7th. The combination of an outer bolting reel having a finely-reticulated surface, a central shaft, an

inner rotating drum, adapted to receive material elevated by one side of the reel, the drum having a closed head arranged at a short distance from the discharging end of the reel, and means adapted to lift unbolted material and discharge it between the closed head at the tail end of the drum and the adjacent reel head at the tail end of the reel, substantially as set forth.

### No. 22,472. Vehicle Springs.

(*Ressorts de Voitures.*)

Rosina L. Moyre, (Assignee of Hollis W. Moore,) Olean, N.Y., U.S., 17th September, 1885; 5 years.

*Claim.*—1st. A wagon coiled spring, the free or outer end of which crosses the upper or inner end at or nearly at right angles thereto, substantially as set forth. 2nd. The combination, with a side bar and body frame, of a coil-spring, the outer end of which crosses the inner end at or nearly at right angles, the said upper end being rigidly secured to the body, and the opposite end yieldingly secured to the side bar, substantially as set forth. 3rd. The combination, with a side bar, a socketed plate secured to said bar, and provided with a slot in one face thereof, and a vehicle-body, of the spring, bent substantially as described, and secured at one end to the body, and provided at its opposite end with an enlarged head, which latter with the socket in the plate, substantially as set forth. 4th. The combination, with a side bar and body frame, of a coil-spring, one end of which is adapted to be rigidly secured to the body, and the opposite end bent around in curved form, crossing the side end portion at or nearly at right angles thereto, and extending outwardly a short distance therefrom, substantially as set forth. 5th. The combination, with a side bar and body-frame, of a coil-spring, one end of which is adapted to be rigidly secured to the body, and the opposite end yieldingly secured to a socket plate, and rubber cushions located above and below the said end in the hollow plate, substantially as set forth. 6th. A wagon spring one end of which is L-shaped, for attaching it securely to the body, and the opposite end provided with an eye for attaching it to the side bar by means of a bolt, pin or stirrup, the shape of the spring being such as to form a loop, the side bar end crossing the body end below and at or nearly at right angles thereto, substantially as set forth.

### No. 22,473. Pump. (*Pompe.*)

Elijah Neff and Christopher C. Wolf, Rochester, Ind., U.S., 17th September, 1885; 5 years.

*Claim.*—1st. The combination with the water pipe of a pump, and a piston rod having a pinion secured to its upper end, of a collar supported on the extended end of the water pipe and forming a bearing for the piston rod, the cog segment to which is secured the pump handle, and the bracket forming a bearing for the said segment, substantially as and for the purpose set forth. 2nd. The combination with the suspended cylinder, having a valved inlet entering from below and an outlet coincidentally from above, and the piston contained in said cylinder, of the bracket provided with two compartments, one having inlet valves and communicating with the outlet pipe, and the other having orifices and communicating with the valved inlet, over which it is placed, substantially as and for the purpose specified. 3rd. The combination with the operating mechanism and the pipe C, of the plug B, and fender T, as and for the purposes described. 4th. The combination with the pipe I, the perforated section Y, and the air pipe S<sub>1</sub>, of the short section U, having a plug V and valve X located therein, as and for the purposes herein described. 5th. The combination with the cylinder of the partitioned segmental bracket, the said partition being provided with an internally screw-threaded boss for receiving the securing screw passing through the cylinder wall, substantially as and for the purpose specified. 6th. The combination with the water pipe, the collar surrounding the same, and having projecting from it a spout and also an elbow supporting and connecting with the said pipe an air chamber, and for the purpose specified. 7th. In combination with a pump cylinder, a pipe leading from thence into a well or fluid receptacle, and provided at its lower end with a valve and a perforated extension, and also an upwardly-extending air pipe communicating with said extension.

### No. 22,474. Fluid Meter. (*Hydromètre.*)

Charles H. Hersey and Francis C. Hersey, (Assignees of Joseph Addison Sheldon,) Hyde Park, Mass., U.S., 17th September 1885; 5 years.

*Claim.*—1st. In water meters, pumps and motors, a chamber having spaces or recesses, each of which has an inlet and exhaust port, with a piston having lobes or projections which enter said recesses or spaces and caused to have a continuous movement therein, all substantially as described. 2nd. In a water meter, pump or motor, the chamber having the recesses or spaces opening therefrom, and a piston having lobes or projections which enter said spaces, and which by a continuous movement of each lobe or projection in its own path divides the chamber by successive contact with its walls into discharging and receiving spaces, substantially as described. 3rd. In a water meter, pump or motor, the chamber having spaces or recesses forming a part thereof, the inlet ports, the exhaust ports, and a piston having lobes or projections which describe separate paths and control separate exhaust passages, substantially as described. 4th. In a meter, motor or pump, the chamber having recesses or spaces, each of which has one or more exhaust ports, and a passage connecting said parts successively with the outlet, substantially as described. 5th. In a meter, motor or pump, a chamber having spaces or recesses forming a part thereof, a piston having projections or lobes which describe continuously in said spaces or recesses a continuous movement with a register, and a connecting device actuated by the motion of the piston, all substantially as and for the purposes described. 6th. In a meter, motor or pump, a distributing chamber connected with the measuring chamber by uncontrolled inlet ports, the measuring chamber having recesses or spaces, and a piston having projections

or lobes which enter the spaces or recesses, and have continuous motion therein, substantially as and for the purposes described. 7th. In a meter, motor or pump, the combination of the inlet *a*<sub>1</sub>, distributing chamber *a*<sub>2</sub>, measuring chamber D, having recesses or spaces *d*, inlet ports E, piston F, and escape ports and outlets *a*<sub>3</sub>, all substantially as and for the purposes described. 8th. A meter, motor or pump, having the section containing the inlet and outlet passages and the distributing chamber *a*, the section containing the measuring chamber D, and piston F, fastened together by bolts, all substantially as described. 9th. The combination of the section, having the distributing chamber *a*<sub>2</sub>, and the removable port plate B<sub>2</sub>, all substantially as and for the purposes described. 10th. In a meter, motor or pump, the combination of the section, having the distributing chamber *a*<sub>2</sub>, the section containing the measuring chamber, the port plate B<sub>2</sub>, and the packing ring B<sub>3</sub>, all substantially as and for the purposes described. 11th. In a water meter, as a means for communicating the motion of the piston to the registering mechanism described, comprising the stationary gear *g*<sub>6</sub>, the revolving gears *g*<sub>7</sub>, *g*<sub>8</sub>, adapted to be revolved around the stationary gear by the piston, and the gear *g*<sub>9</sub>, upon the connecting spindle, substantially as and for the purposes described. 12th. The combination in a water meter, of the measuring chamber, the piston, and a device for reducing the motion of the piston contained within the measuring chamber, substantially as and for the purposes described. 13th. The combination of the piston F, the disc G, the drum or frame *g*<sub>2</sub>, pivoted as described, to be revolved, and the differential gears enclosed within said drum or case, all substantially as and for the purposes described. 14th. A water meter, motor or pump, having a removable measuring chamber wall, all substantially as and for the purposes described. 15th. A water meter, motor or pump, having the removable port slates, all substantially as and for the purposes described. 16th. The combination of the casing, the removable measuring chamber wall, and a locking device for securing the wall to the casing, all substantially as and for the purposes described. 17th. In a water meter, motor or pump, a piston chamber having measuring spaces or recesses, and a loosely fitted piston having lobes or projections extending into said spaces or recesses, to form by contact with the walls thereof successive discharge spaces, the said walls being shaped to provide the surface of the piston within the contacting lines of the discharge spaces, with less area than the remainder of the piston subjected to the direct action of the pressure from behind, whereby the piston or valve may be loosely fitted in the piston chamber, and by the excess of pressure caused by the difference in area is brought in contact with the walls of the measuring spaces or recesses, maintained in contact therewith, and operated substantially as described.

### No. 22,475. Telephone Circuit.

(*Circuit Téléphonique.*)

The Bell Telephone of Canada, Montreal, Que., (Assignees of Ezra T. Gilliland, Boston, Mass., U.S.,) 17th September, 1885; 5 years.

*Claim.*—1st. The combination of two or more separate telephone exchange systems, each consisting of a series of stations, a series of main lines entering all of the said stations, and telephonic apparatus at each station capable of being connected in circuit at will with any of the said main lines with one or more trunk or extension lines, the said trunk lines extending between the said exchange systems and to each of the stations thereof, substantially as described. 2nd. In the system of telephonic intercommunication, a series of subscribers' stations, a series of main lines extending between, and entering, all of the said stations, a telephonic apparatus at each station capable of being connected in circuit at will with any of the said main lines, and an extension or trunk line looping into all of the said stations, and having the telephonic apparatus of one of the said stations normally in circuit therewith, the said trunk line extending outward from the said system to a distant system for the purpose of electrically connecting the two systems, substantially as described.

### No. 22,476. Paint. (*Peinture.*)

Elon A. Horton and Clarence G. Thomas, Sandy Creek, N.Y. U.S., 17th September, 1885; 5 years.

*Claim.*—A paint composition, consisting of coal tar, resin, sulphur, ochre, iron ore, and rubber, with or without asbestos, compounded, as described, in about the proportionate quantities, set forth.

### No. 22,477. Lamp. (*Lampe.*)

Ferdinand Goldsmith, Saginaw, Mich., U.S., 17th September, 1885; 5 years.

*Claim.*—1st. The base provided with the slotted standards and pins and the shade having depending arms provided with slotted and forked ends to engage said pins, and provided with the thumb-screws passing through said slots, as and for the purpose set forth. 2nd. The attachment described for lamps, consisting of the shade B, having the central opening *a*<sub>2</sub> and cover *b*<sub>2</sub>, and provided with the bearing *j*, the standards having the spring-arms to engage said bearings, and provided with the slot *d*<sub>2</sub> and forked-end *e*<sub>2</sub>, the base A, provided with the slotted arm *c* and lug *g*, and the thumb screws C, substantially as and for the purpose set forth.

### No. 22,478. Machine for Making Barrel Heads. (*Machine à fabriquer les fonds de Barils.*)

John J. Lloyd, Waterville, N.S., 17th September, 1885; 5 years.

*Claim.*—1st. The pawl and ratchet wheel *a*, *c*, for adjusting barrel heading machines to heading of different thickness. 2nd. The slotted device for elevating and lowering the bow *f* of barrel-heading machines, so as to adjust them for making heads of different diameter. 3rd. The combination in machines for making barrel heads of the circular saw A, concave saw B, arbor C, all substantially as and for the purposes hereinbefore set forth.

**No. 22,479. Apparatus for Preserving Wood.** (*Appareil à conserver le Bois.*)

Ludwig Hansen and Andrew Smith, Wilmington, North Carolina, U.S., 17th September, 1885; 5 years.

*Claim.*—1st. The improvement herein described, in preserving timber which consists in first charring its surface and then saturating it with wood creosote-oil. 2nd. The improvement herein described, in preserving timber which consists in first charring its surface then expelling its moisture and finally impregnating it with wood creosote-oil as preserving liquid. 3rd. The combination of one or more charring or carbonizing cylinders, a creosating boiler B and tracks *a, c, b*, substantially as described, for conveying the timber from the one to the other for the purpose specified. 4th. The combination of the charring cylinder A, having interior track *a*, and the creosating boiler B, having interior track *e* with the tracks *a, b*, in line with the said tracks *a, c*, respectively and the cross track C, substantially as and for the purpose set forth. 5th. In combination with the charring cylinder K, creosating boiler B, the respective parallel tracks *a, b* connected to the same, and the cross track C, the tracks *c, d*, having their tops or saddles for the reception of the log swivelled up and the truck frame for the purpose set forth. 6th. In combination with the charring cylinder A, the furnace and its flue O arranged beneath the same, said flue having its top set beneath said cylinder at a varying distance from the same, substantially as and for the purposes specified. 7th. The charring cylinder provided with annular sectional stoppers constructed to open laterally and approximately fitting the log *b* charred substantially as set forth. 8th. In combination with the furnace A, the charring cylinder K provided interiorly with an inclined track *a* for the purpose specified. 9th. The combination with the charring cylinder K, having track *a*, of the trucks D adapted to receive one log at a time for the purpose specified. 10th. In combination with the charring cylinder K, having tracks *a*, the truck D provided with log-retaining projections *d*, substantially as specified. 11th. In combination with the charring cylinder K, having track *a*, the truck D provided with projections *d* and tilting stop *d*, substantially as and for the purpose set forth. 12th. In combination with the charring cylinder K, the end-cover a central opening and made in two parts R, R' hinged together and adapted to be clamped around a log and to the end of the said cylinder, for the purpose set forth. 13th. The combination of the charring cylinder K, the log-enclosing end cover made in two parts R, R' hinged together and provided with the slotted projection S, and the pivoted clamping lever U having tire *u* and set-screw V, substantially as and for the purpose set forth. 14th. The combination of the charring cylinder K, the log-enclosing end-cover made in two parts R, R', provided with the ribs or ridges *v*, and the pivoted clamping lever U, having set-screw V and notched toe *u*, substantially as and for the purpose set forth. 15th. The combination of the inclined charring cylinder K, having gas-discharge pipe *k*, with the furnace A having the fire-place *u*, flue O with end openings *o*, flue P with end openings *p* and flue *j* with end chimneys *q*, the said flues P and *j* being separated by partitions Q along opposite sides of the cylinder, all arranged substantially as and for the purpose set forth. 16th. The combination of the open-ended charring cylinder K enclosed in, and extending from, one end of the furnace to the other and over a flue O, starting from a fire chamber at one end of said furnace and communicating with the space P surrounding said cylinder at the other, the partition Q dividing the space P and the stack *q* arranged over the passages between the flue O and the space P, substantially as described. 17th. The creosating tank B having interiorly a track *e* and steam coil F, in combination with the truck E, the exhaust pump G, the tank H and fore pump I, all substantially as and for the purpose set forth. 18th. The combination with the tank B, and curved way *e*, of the hinged head *e*, provided with supporting wheel *e*, substantially as described. 19th. The combination with the tank B, of the bar *e* carrying the transverse bar *e*, and screws *e* for operating the same, substantially as described.

**No. 22,480. Pulley.** (*Poulie.*)

Phillip Werum, Toledo, Ohio, U.S., 17th September, 1885; 5 years.

*Claim.*—1st. In a pulley, the combination of a sheave and two cheek-plates pivoted to the axis of the pulley, and provided with flanges and hooks cast integral therewith, the hooks being arranged in the plane of their movement when opened and closed, substantially as described. 2nd. As a new article of manufacture, a pulley, consisting of the following elements, in combination, to wit: a sheave, two cheek-plates, having flanges *c, c*, and hooks *d, d*, cast in one piece therewith, the hooks *d* being arranged in the plane of their movement and made tapering on their meeting adjacent surfaces and pivotal bolt or pin, as set forth.

**No. 22,481. Medical Instrument to be used in Womb and Vaginal Complaints.** (*Instrument Médical pour le Traitement du Vagin et de la Matrice.*)

James W. Ward and G. P. Sylvester, Galt, Ont., 17th September, 1885; 5 years.

*Claim.*—1st. An injecting tube, encircled by a flexible bag arranged to be inflated or collapsed, substantially as and for the purpose specified. 2nd. The combination of a cylinder A, surrounded by a flexible bag B, and having passage-ways *a* and *p* made in it, substantially as and for the purpose specified. 3rd. A passage-way or tube *a*, surrounded by a flexible inflatable bag B, a tube C to connect the passage-way or tube *a*, with an injector, in combination with a series of perforations *e* extending from the passage-way or tube *a* at its end, opposite to that in which the tube C is connected. 4th. A passage or tube *a* surrounded by a flexible inflatable bag B, a tube C to connect the passage-way or tube *a* with an injector, in combination with a series of perforations *e*, extending from the passage-way or tube *a* at its end opposite to that in which the tube C is connected, the passage-way or tube *p* leading from a point between the perforations *e* and flexible bag B to the tube D, provided substantially as and for the purpose specified.

**No. 22,482. Treadle for Pedomotive Vehicles and Machines.** (*Marche de Machine et de Pédometre.*)

George J. Taylor, Salt Lake, Utah, U.S., 17th September, 1885; 5 years.

*Claim.*—The combination with the driving-wheel A, main frame C, axle and driving-crank of a bicycle or other pedomotive vehicle, of a seat D supported in rear of the main frame, the levers F attached between the ends to the crank-pins and projecting forward of the crank-pins, swinging links or rods G extending from the upper part of the said frame downward and rearward and jointed to the rear ends of the levers F and pedals *f* attached to the forward ends of the said levers forward of the crank pins, substantially as herein described.

**No. 22,483. Sash Fastener.** (*Arrêté-Croisé.*)

Thomas S. Smith, New Haven, Conn., U.S., 18th September, 1888; 5 years.

*Claim.*—1st. The base plate A, having the central perforation *p*, and either one or two circular slots *c*, opening into the straight slots *x*, and X<sub>2</sub>, and concentric with the central perforation, the straight slots extending in radial and opposite directions from the circular slots, as described. 2nd. The base plate A, latch D, knob *h*, and bolt *m*, all the said parts constructed and combined as described.

**No. 22,484. Sash Fastener.** (*Arrêté Croisé.*)

Thomas S. Smith, New Haven, Conn., U.S., 18th September, 1885; 5 years.

*Claim.*—1st. The raised plate K, having the recess F, in which are the circular sides *m* and *n*, having a common centre, also having the radial grooves *e* and *c* opening into the recess, and also having the circular rim *l*, having a circular recess to receive a spring, as shown and described. 2nd. The raised plate K, having the recess F, in which are the circular sides *m* and *n*, in combination with the latch, having the piece E, as described. 3rd. The raised plate K, having the recess F, and the radial grooves *e* and *c* opening into the recess, in combination with the latch having an oblong slot, and the piece E, as described. 4th. The raised plate K, having the recess F, and the radial grooves *e* and *c* opening into the recess, in combination with the latch having an oblong slot E, and recess D, and with the lever L, having the cam B, as described.

**No. 22,485. Bridge.** (*Pont.*)

Stephen Hall, Washington, Ont., 18th September, 1885; 5 years.

*Claim.*—1st. The combination of the brace seat C and the coupling bars F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the brace rods K and the adjusting screws M, substantially as and for the purpose hereinbefore set forth.

**No. 22,486. Picket for Wire Fences.**(*Pieu de Clôture en Fil de Fer.*)

William McKay, Woodstock, Ont., 18th September, 1885; 5 years.

*Claim.*—The construction of the said picket and the placing the same alternately in the said fence.

**No. 22,487. Harness Strap.** (*Courroie de Harnais.*)

Theodore S. Very, Boston, Mass., U.S., 18th September, 1885; 5 years.

*Claim.*—1st. The improved harness strap attachment, or connecting device, composed of a plate *a*, having an eye or eyes *o* to receive the straps *c, c*, and provided at its rear side with means, substantially as described, whereby it may be secured to the front or outer side of a strap *b*, the plate and its eye or eyes *o* being outside of the strap *b*, whereby said strap is prevented from projecting at its lower end outside of the plate *a*, and straps *c, c*, as set forth. 2nd. The plate *a*, having a strap receiving eye or eyes *o* at its lower end, and at its rear side the strap-holding socket, and the pivoted plate 3 having a stud 5 adapted to engage with the strap in said socket, as set forth.

**No. 22,488. Water Meter.** (*Hydro mètre.*)

John Rowbotham, Philadelphia, Pa., U.S., 18th September, 5 years.

*Claim.*—1st. The herein described drum for a water meter, said drum being slotted and made in two parts, detachably secured to each other and having vanes adapted to slide in the slots, substantially as set forth. 2nd. The herein-described drum for a water meter, said drum being made in two parts, detachably secured to each other and each part having four sections united by a central hub, and vanes adapted to the slots between the sections, substantially as described. 3rd. The combination of the meter casing, indicator gearing, bearings for the journals of the drum, and a rotary drum provided with journals, one of which has a threaded end no larger than its bearing to engage with said gearing, substantially as set forth. 4th. The combination of the casing and rotary drum, of a water meter with transverse rigid vanes carried by the drum and shorter in length than the diameter of the chamber in which they move, substantially as set forth. 5th. The combination of the casing and rotary drum, of a water meter with transverse rigid vanes carried by said drum, the said vanes crossing each other and having notches considerably greater in width than the extent of motion of the vanes, substantially as set forth. 6th. A water meter, consisting of a casing, the working chamber of which is provided with two concentric surfaces, of different radii, and with intermediate eccentric surfaces, and the measuring surface of which is at the bottom, and a rotary drum carrying rigid vanes shorter than the diameter of said working chamber, substantially as and for the purpose set forth. 7th. The combination in a water meter, of a rotary drum having transverse sliding vanes, with a casing having an upper bearing surface, a lower measuring surface

concentric therewith, but of greater radius, and intermediate eccentric surfaces or cam ways, both of which are provided with recesses, at least co-extensive with their length, substantially as described. 8th. The combination in a water meter, of a rotary drum having sliding vanes, with a casing having an upper segmental bearing surface, a lower segmental measuring surface concentric therewith, but of greater radius, and intermediate eccentric surfaces or cam-ways, both of which are provided with recesses, at least co-extensive with their length, and provided with ports opening into or communicating with said recesses, substantially as set forth. 9th. A casing for a vane provided drum of a water meter, the working chamber of which is provided with an upper segmental surface, being a bearing, for the peripheral face of the drum, with a lower segmental measuring surface concentric with said upper surface, but of greater radius, and with two intermediate eccentric surfaces, or cam-ways, each provided with a recess at least co-extensive with its length, and likewise provided with horizontally-disposed opposite parts opening into said recesses, substantially as and for the purposes set forth. 10th. In a water meter, the combination of a drum having sliding vanes, and capable of rotation in either direction with a casing, the working chamber of which is provided with an upper segmental surface, being a bearing for the peripheral face of said drum, with a lower segmental measuring surface, concentric with said upper surface, but of greater radius, and with two intermediate eccentric surfaces or cam-ways, each provided with a recess at least co-extensive with its length, and likewise provided with opposite ports (preferably horizontally disposed) opening into said recesses, the arrangement being such that while the water enters and leaves the meter upon opposite sides and passes through it in a short segmental course, so as not to be retarded, the vanes during their passage over the cam-ways are under the equilibrated pressure of water in the recesses, substantially as and for the purposes set forth.

### No. 22,489. Sleigh. (*Traineau*.)

William Longworth, Chatham, Ont., 18th September, 1885; 5 years.

*Claim.*—1st. The combination in a sleigh, of the wide runners A and the usual narrow runners B, substantially as and for the purposes hereinbefore set forth. 2nd. In combination with a timber sleigh, of the wide runner A and the lower narrow runner B secured thereto by the bolts G, substantially as and for the purposes hereinbefore set forth. 3rd. The combination in a sleigh, of the runner A, the double row of pins G and the runner B, substantially as and for the purposes hereinbefore set forth. 4th. The combination in a sleigh, of the runner A, the runner B, the bolts G and the shoes H and H', substantially as and for the purposes hereinbefore set forth.

### No. 22,490. Seeding Machine. (*Semoir*.)

John Larsen, Oshawa, Ont., 18th September, 1885; 5 years.

*Claim.*—1st. In a seeding machine, a metal hopper end A, having an extension-piece B extending from a point inside the outer surface of the end A, so that the gearing carried by the extension-piece shall not project beyond the outer surface of the hopper end A. 2nd. In a seeding machine, having a hopper provided with a metal end A, with an extension piece B, formed substantially as specified, the combination of a cap or cover C detachably connected to the extension piece B, substantially as and for the purpose specified. 3rd. In a seeding machine having a hopper provided with a metal end A, with an extension piece B formed substantially as specified, the combination of a cap or cover C, formed substantially the shape of the extension piece B, and having a curved pin *a* at one corner, arranged to fit into a hole made in the flange *b*, and a slot *d* at the opposite corner designed to receive a bolt *e*, substantially as and for the purpose specified. 4th. In a seeding machine, having a hopper, provided with a metal end A, with an extension-piece B formed substantially as specified, a cap or cover C formed substantially the shape of the extension-piece B and having a curved pin *a* at one corner arranged to fit into a hole made in the flange *b*, and a slot *d* at the opposite corner, in combination with the bolt *e* passing through a slot *f* formed in the extension-piece B, and arranged substantially as and for the purpose specified. 5th. In a seeding-machine having a hopper provided with a metal end A with an extension-piece B formed substantially as specified, and having an outwardly-projecting flange *b* extending round and forming a shield for the cam D, and gearing carried on the extension-piece B, substantially as shown and specified. 6th. In a seeding-machine having a hopper provided with a metal end A with an extension-piece B, formed substantially as specified, and having an outwardly-projecting flange *b* extending round and forming a shield for the cam D, in combination with the flanged shield E arranged to extend over the spur-wheel F and clutch *h*, formed on the said spur-wheel F, substantially as and for the purpose specified. 7th. In a seeding-machine, provided with a stationary axle H, a saucer-shaped washer G journalled on the said axle and designed to receive the hub formed on the inside of the spur-wheel F which has a hole through it sufficiently large to receive the tapered hub I of the main wheel, in combination with the flanged shield E shaped to fit round the clutch *h* formed on the outside of the spur-wheel F, substantially as and for the purpose specified. 8th. In a seeding-machine, provided with a roller K arranged to raise the hoes of the machine, a bolt J arranged to extend through the pivot-pin, of the roller K and cam D, one or more projections K formed on the pivot-pin of the roller K, in combination with the cam D having a slot *e* formed on its inside face so as to engage with the projection K, substantially as and for the purpose specified. 9th. In a seeding-machine a two-armed lever L pivoted on the hub *m*, through which the distributor rod passes, one arm of the said lever P projecting within a convenient distance of the cam D towards which it is held by the action of a suitably-arranged spring, in combination with the cam D, substantially as and for the purpose specified. 10th. In a seeding-machine, a two-armed lever L, pivoted on the hub *m*, through which the distributor rod passes, one arm of the said lever L projecting within a convenient distance of the cam D, a spur-wheel M journalled on a hub *n* formed on the lever L and arranged to engage with the spur-wheel N on the distributor rod, in combination with the lever O, pivoted the lever L and actuated by a spring P, machine, a lever O pivoted on the lever L, in combination with a spring P, arranged substantially as and for the purposes specified. 12th. In a seeding-machine, a lever O pivoted on the lever L and having formed on its back an inclined projection *o* with a notch *p* formed at the bottom of said projection, in combination with the spring P connected at one end to the extension-piece B and having its other end bent so as to engage with the notch *p*, substantially as and for the purpose specified. 13th. In a seeding-machine, having a lever arranged to carry gearing which operates the gearing of the distributors, the combination with a lug or projection *q* so located as to arrest the movement of the lever L, substantially as and for the purpose specified. 14th. In a seeding-machine constructed substantially as described, the lever O pivoted to the lever L by a pivot-pin arranged to pass through a slot *r* made in the extension-piece B so that the lever L may be on the outside, and the lever O on the inside of the extension-piece B without the said extension-piece interfering with the free movement of the lever L, substantially as and for the purpose specified. 15th. In a seeding-machine, having a grass-seed hopper near the main seed hopper of the machine, a spur-wheel R arranged to engage with the spur-wheel attached to the distributor rod of the grass-seed hopper, in combination with an arm S pivoted on the same centre as the distributor rod and supporting the spur-wheel R, so that the said wheel R may be thrown in or out of connection with the spur-wheel N without disturbing the connection between the said wheel R and the spur-wheel on the distributing rod of the grass-seed hopper. 16th. In a seeding-machine, having a grass-seed hopper near the main seed hopper of the machine, a spur-wheel R arranged to engage with the spur-wheel attached to the distributor rod of the grass-seed hopper, an arm S pivoted on the same centre as the distributor rod and supporting the spur-wheel R so that the said wheel R may be thrown in or out of connection between the said wheel R, and the spur-wheel or the distributor rod of the grass-seed hopper, in combination with the eccentric cam T connected to the arm S and arranged to engage with the flange *s* formed on the plate or piece extending from the hopper-end Q, substantially as and for the purpose specified. 17th. In a seeding-machine, a rod U arranged to pass through the pivot of the adjustable gates V, in combination with a dog W connected to the rod U and actuated by the spring X, arranged substantially as and for the purpose specified. 18th. In a seeding-machine, in which the adjustable gates V of the distributors are connected together and operated by the rod U, the combination of a dog W fixed to the rod U and having a recess formed in it to receive the spring X. 19th. In a seeding-machine, a series of scatterers Z, having the front portion *t* of their hopper so formed that when placed in position they shall extend above the mouth of the discharge spout *v*, of the distributors W. 20th. In a seeding-machine, a scatterer Z having its hopper sufficiently large to extend between and receive the contents of two discharge spouts *b*, substantially as and for the purpose specified. 21st. In a seeding-machine, the hopper ends Q having grooves *e* formed in each, as specified, in combination with the end-pieces *z* attached to the cover of the hopper and having projection Y formed on them to fit into the grooves X, substantially as and for the purpose specified.

*Claim.*—1st. A multiple circuit changer or looping device, comprising a series of normally closed main line loops and a normally open loop including signalling and communicating instruments, and provided with a series of pairs of normally open terminals equal in number to the said pairs of terminals with its corresponding main line loop, and a stop mechanism, whereby the instrument loop may be retained in circuit with any main loop, as long as may be desired, and may be automatically withdrawn therefrom upon the conclusion of a communication, substantially as described. 2nd. The combination, in a multiple circuit changer, of a series of normally closed loop terminals, each adapted for connection with a separate circuit, a series of pairs of normally open loop terminals all of which are connected with the same instruments, a spindle for each of the said pairs, whereby any pair may be introduced into its corresponding closed loop, a telephone support, a retaining device controlled by said support for each spindle engaging therewith when the telephone is not in place, but releasing the said spindle upon the replacement of the telephone, and a switching device also controlled by said telephone support, and operating to change the loop circuit from a generator to a telephone, or *vice versa*, and simultaneously to close or open the local circuit of a transmitter, substantially as described. 3rd. The combination, substantially as hereinbefore described, in a multiple circuit changer, adapted to introduce an instrument loop into any one of a number of main line loops, of the spindles *r*, each carrying the circuit closing plate *h*, and the loop terminals *i*, the said spindles being provided with handles and with the collars K, with the telephone support and cross-bar *a* the said cross-bar being furnished with a series of projecting pins *j* equal in number to the spindle collars K, and adapted to engage the collar of any spindle when pushed in, for the purpose specified. 4th. The combination in a compound circuit changing switch, of one or more pairs of contact springs, each pair forming, or adapted to form, a loop of an electric

### No. 22,491. Metallic Circuit Telephone System. (*Système de Circuit Metallique pour Téléphone*.)

The Bell Telephone Co., Montreal, Que., (Assignees of Ezra T. Gilliland, Boston, Mass., U.S.) 19th September, 1885; 5 years.

*Claim.*—The combination of two telephone-exchange systems, each comprising a series of telephone stations, a series of telephone stations, a series of metallic circuits extending between and looping in all of the said telephone stations, and telephone apparatus at each station capable of being included in any of the said circuits, with a metallic or double conductor circuit extending between the said two systems, and to each of the stations in the two systems, for the purpose specified.

### No. 22,492. Multiple Circuit Changer.

(*Changeur de Circuits Multiples*.)

The Bell Telephone Co., Montreal, Que., (Assignees of Ezra T. Gilliland, Boston, Mass., U.S.) 19th September, 1885; 5 years.

*Claim.*—1st. A multiple circuit changer or looping device, comprising a series of normally closed main line loops and a normally open loop including signalling and communicating instruments, and provided with a series of pairs of normally open terminals equal in number to the said pairs of terminals with its corresponding main line loop, and a stop mechanism, whereby the instrument loop may be retained in circuit with any main loop, as long as may be desired, and may be automatically withdrawn therefrom upon the conclusion of a communication, substantially as described. 2nd. The combination, in a multiple circuit changer, of a series of normally closed loop terminals, each adapted for connection with a separate circuit, a series of pairs of normally open loop terminals all of which are connected with the same instruments, a spindle for each of the said pairs, whereby any pair may be introduced into its corresponding closed loop, a telephone support, a retaining device controlled by said support for each spindle engaging therewith when the telephone is not in place, but releasing the said spindle upon the replacement of the telephone, and a switching device also controlled by said telephone support, and operating to change the loop circuit from a generator to a telephone, or *vice versa*, and simultaneously to close or open the local circuit of a transmitter, substantially as described. 3rd. The combination, substantially as hereinbefore described, in a multiple circuit changer, adapted to introduce an instrument loop into any one of a number of main line loops, of the spindles *r*, each carrying the circuit closing plate *h*, and the loop terminals *i*, the said spindles being provided with handles and with the collars K, with the telephone support and cross-bar *a* the said cross-bar being furnished with a series of projecting pins *j* equal in number to the spindle collars K, and adapted to engage the collar of any spindle when pushed in, for the purpose specified. 4th. The combination in a compound circuit changing switch, of one or more pairs of contact springs, each pair forming, or adapted to form, a loop of an electric

circuit, a series of spindles capable of sliding longitudinally in guides, and of assuming two positions, each spindle carrying a short circuiting contact plate normally connecting the said two contact-springs, and a pair of contact plates constituting the normally open terminals of an incomplete circuit, including an electric generator and one or more telephones, and adapted to be manually actuated, so as to substitute the said contact-plates for the short circuiting plate, whereby the said telephones and generator may be brought into any given electric circuit, a rocking-bar adapted to serve as a telephone support, pivoted transversely to the said spindles, and furnished with projecting arms adapted to engage a lug on each spindle for the purpose of holding said spindles when pushed in while the telephone is not in place, but to release the same when the telephone is replaced, a circuit-changing switch controlled by said telephone-supporting bar, to change the circuit from the generator to the telephone, or vice versa, and a local circuit closer, controlled by the said support, to close the transmitter circuit when the telephone is removed from its normal position, substantially as specified. 5th. The combination substantially as hereinbefore specified, of one or more longitudinally sliding spindles, each constituting a looping-in mechanism whereby telephones and signalling apparatus may be introduced into the circuit of a main line, with a rocking-bar serving as a telephone holder, and actuated by the removal or replacement of the telephone to retain the said spindles in position, and the telephones in circuit, or to release the same, and withdraw the telephones from the circuit, for the purposes described.

### No. 22,493. Monument. (*Monument*.)

The Monumental Bronze Co., (Assignees of Archibald McKeller,) all of Bridgeport, Conn., U.S., 19th September, 1885; 5 years.

*Claim.*—As a new article of manufacture, a metallic monument consisting of White bronze, and having a portion of its surface configured in imitation of rough hewn stone, whereby an imitation of granite is produced, substantially as set forth.

### No. 22,494. Permutation Padlock.

(*Cadenas à Combinaison.*)

Henry Salmon (Assignee of Ira W. Moore), both of New York, N. Y., U.S., 19th September, 1885; 5 years.

*Claim.*—1st. The improved permutation lock, consisting of a case of two parts, *a, b*, each having an arm *c*, and being fastened together by a pivot bolt on which they may turn with relation to each other, and two or more locking studs *g*, turning in one of the parts, and arranged with relation to sockets and grooves and guides in the other part of the case for fastening and unfastening the lock, substantially as described. 2nd. The combination in a lock of two parts *a* and *b*, forming a case, each having an arm *c*, forming a hasp, and both being equal in size and form, also circular, and also being pivoted together at the centre to turn on each other for opening and closing the hasp, and provided with fastening devices to secure the hasp in the closed position, substantially as described. 3rd. The combination in a permutation lock, of the case and hasp, consisting of the parts *a* and *b*, each having an arm *c*, and one having stud pin holes and dials *h*, and the other sockets *i*, and grooves or guides *j*, the pivot bolt *d*, connecting said parts, and the locking studs *g*, substantially as described. 4th. The locking studs *g*, having flattened bit *K*, in combination with the case *a, b*, pivoted together, and having holes in one part for the locking studs, and sockets and grooves or guides in the other part for the bits of the locking studs, substantially as described. 5th. The locking studs *g*, having adjustable flattened bits *K*, in combination with the case *a, b*, pivoted together and having holes in one part for the locking studs, and sockets and grooves or guides in the other part for the bits of the locking studs, substantially as described. 6th. The locking studs *g*, in combination with the case consisting of parts *a* and *b*, pivoted together and provided with holes, sockets and grooves or guides, as described, the said studs having collar *V*, and being fastened inside of the case by flange *m*, or equivalent devices, as set forth. 7th. The improved permutation lock, consisting of a case of two parts, *a, b*, each having an arm *c*, and being fastened together by a pivot bolt, and a bayonet catch device on which they may turn with relation to each other, and two or more locking studs *g*, turning in one of the parts and arranged with relation to the sockets and grooves or guides in the other part of the case for fastening and unfastening the lock, the bayonet catch device being arranged to connect and disconnect only when the lock is open, substantially as described.

### No. 22,495. Lock Hasp and Hook.

(*Serrure à Moraillon et Crochet.*)

F. J. Lengford and G. W. Lengford (Assignees of Frank N. Mihills, Beckmantown, N. Y., U.S., 19th September, 1885; 5 years.

*Claim.*—1st. In a hasp-lock, a hasp provided with a lock, in combination with a hook pivoted thereto, and provided at its free end with an elongated head *D*, having a recess in the outer face thereof, said recess adapted to engage the lock-bolt, when the parts are in a locked position. 2nd. In a hasp-lock, a hasp formed with an elongated slot, for the reception of a staple near its free end, and a hole for pivotally connecting it to a door or casing, and provided with a lock, one side of the housing of which is extended to form a guard in combination with a hook pivoted to said hasp, and provided with an elongated head, the recess in the outer face of which is adapted to engage the lock-bolt, substantially as set forth. 3rd. In a hasp lock, the combination of a hasp formed with holes for the reception of a staple to secure the rear end, or the end opposite the end upon which the lock is secured, and also for the reception of a staple which supports the free end of the hasp, while in a fastened position, with the hook provided with a notch in its free end, and a lock in the free end of the hasp, said hook being pivoted at its rear, substantially as described.

### No. 22,496. Machine for Beating out Welts in Boots and Shoes. (*Machine à Etendre les Trépointes des Chaussures.*)

The Goodyear Shoe Sewing Machine Association, Montreal, Que. (Assignees of Augustus F. Littlefield, Lynn, Mass., U. S., 19th September, 1885; 5 years.

*Claim.*—1st. In a machine for beating out welts attached to the uppers and soles of boots and shoes, the welt support shaped to enter the space between the upper and its attached welt, combined with the hammer to hammer the said welt, substantially as described. 2nd. The shaft *Az*, the clutch pulley *B, B'*, the rod, sleeve *D*, connecting devices between them, and the spring and collars *a, b*, and hammer combined with the welt support, having a thin or *V*-shaped edge to enter between the welt and upper, substantially as described. 3rd. The hammer carrying bar, provided with the two collars or shoulders *a, b*, and the sleeve, and means, substantially as described, to move it, combined with the spring *c* and with the support *G*, to operate as set forth.

### No. 22,497. Hitching Post. (*Enrénnoire.*)

Walter J. Couch and John S. Clark, Toronto, Ont., 19th September, 1885; 5 years.

*Claim.*—1st. A wrought-iron hitching-post *A* provided with a coiled base *B*, substantially as and for the purpose specified. 2nd. A hollow post *A*, having a roller *E* located within it, as specified, in combination with a hitching-chain *D* having a weight *F* attached to it, substantially as and for the purpose specified. 3rd. A hollow post *A*, having the rollers *E* and *G* located within it, as specified, in combination with a hitching-chain *D*, having a weight *F* attached to it, and a spring *H*, substantially as and for the purpose specified.

### No. 22,498. Axe. (*Cognée.*)

Frank Schneiderlochner (Assignee of Victor Halter), both of Pittsburgh, Penn., U.S., 19th September, 1885; 5 years.

*Claim.*—1st. In the manufacture of axes, the method of producing a solid steel axe, which consists in reducing an ingot bar or billet to the form of a blank of approximately Y-shape in cross section by rolling, separating the bar into axe lengths and then welding the separated wings or webs together to form the head and eye, substantially as described. 2nd. In the manufacture of axes of steel, the method herein described, which consists in rolling an ingot bar or billet to an approximately Y-shape, then severing the blank into axe-lengths and then welding the separated wings or webs together. 3rd. As a new article of manufacture, an axe, composed of a solid piece of steel formed by rolling an ingot bar or billet to an approximately Y-shape, then severing the blank into lengths, and then welding the separated wings or webs together to form the completed axe.

### No. 22,499. Automatic Dump Bucket.

(*Godet Automatique.*)

Alexander E. Brown, Cleveland, Ohio, U.S., 19th September, 1885; 5 years.

*Claim.*—1st. A bucket for hoisting and conveying machine, composed of two vertical sides *a*, portions *A, A*, and a single plate-like portion *B*, the contour or shape of the bucket in side view being such as described, as to present from its upper front edge to a point slightly in rear of the lowermost part of the bottom, a substantially parabolic curve, and from thence rearwardly and upwardly to the back edge, a substantially circular curve, as and for the purposes set forth. 2nd. In a bucket for hoisting and conveying machines, the top opening of which is substantially rectangular in plan or top view and which has substantially straight front and rear top edges, the formation of the edges of the two sides *A, A*, in arcs of circles, such as hereinbefore specified, as will substantially conform to the natural curvature of a load of fine material, or small anthracite coal. 3rd. A hoist bucket, composed of two parallel side pieces, the lowermost edge of each of which lie in a continuous curve, and both of which have their said curved edges turned inwardly at angles of ninety degrees to the planes of said side pieces, and a third plate-like piece *B* bent to conform to the curves of said inwardly bent portions of the side pieces, and secured thereto, all substantially as set forth. 4th. In combination with the bucket composed of side portions *A, A*, and a front, rear and bottom portion *B*, the wheels *b, b*, and centrally-arranged wheel *a*, the combination being such as described, that the three wheels *b, b*, and *a* will support the bucket when resting on a level surface, in substantially the position which the bucket assumes when suspended by its bail or handle. 5th. In combination with the bucket or receptacle proper, a set of wheels *b, b*, journaled in and turning within the housings *h, h*, that one securely rivetted to and turning within the housings, all substantially in the manner and for the purposes described. 6th. In combination with the bucket proper, wrought-metal stands *ca*, made with wide side stiffening flanges, and the hind wheel or caster *c* mounted between said stands, as specified, the whole arranged and operating in the manner and for the purposes set forth. 7th. In combination with a pumping bucket stops *i*, formed with float surfaces adapted for contact with the back side of the handle or bail of the bucket, and with an inclined or tapering surface adapted to sheer or glance off from any obstruction during the descent of the bucket, substantially as hereinbefore set forth. 8th. In combination with the cast metal housing *k*, which projects or protrudes inwardly into the load space of the bucket or receptacle ribs *l, l, l*, or strengthening projections adapted to receive the shocks and blows of the material shovelled into the bucket and prevent any injurious effect which might otherwise be produced upon the exposed surface of said housing.

### No. 22,500. Railway Snow Plough.

(*Charrue à Neige de Chemin de Fer.*)

George E. Sherry, Rochester, N. Y., U. S., 21st September, 1885; 5 years.



*Claim.*—1st. The combination, with a snow plough, of an elevating screw arranged to revolve within a suitable casing, and driven by a steam engine located beneath the lower end of the screw, substantially as described. 2nd. The combination, with the inclined plane L, of the elevating screw A, attached to crank-shaft E, having a steam engine connected thereto, substantially as described. 3rd. The combination, in a snow plough, of an elevating screw arranged to revolve within a suitable casing, and driven by a steam engine located beneath the lower end of the screw, and an inclined plane adapted to raise the snow to the lower end of the elevating screw, substantially as and for the purposes set forth. 4th. The combination, with the elevating screw A, having a steam engine connected thereto at its base, of the deflector R, substantially as described. 5th. The combination, with the inclined plane L, of the elevating screw A, casing J, wings K, K', and deflector R, substantially as described. 6th. In a railway snow plough, a vertical revolving snow-elevating screw, having a diameter greater than the width of the rails, arranged within a suitable casing adapted to confine the snow at its bottom, rear and sides, but open at the top of the screw, and on the front side for the whole height thereof, in combination with the wings K, K', having offsets *u, u'*, and the inclined plane L bent upward at *s, s'*, substantially as and for the purposes set forth. 7th. In a railway snow plough, a vertical revolving snow-elevating screw having a diameter greater than the width of the rails, arranged within a suitable casing adapted to confine the snow at its bottom, rear and sides, but open at the top of the screw, and on the front side for the whole height thereof, in combination with an inclined plane L, for raising the snow to the elevating screw, bent upward at *s, s'*, and the frames I, I', substantially as and for the purposes set forth. 8th. In a railway snow plough, a vertical revolving elevating screw, having a diameter greater than the width of the rails, arranged within a suitable casing adapted to confine the snow at its bottom, rear and sides, but open at the top of the screw and on the front side, the whole height thereof, in combination with an inclined deflector above the screw, operating to deflect the snow laterally, substantially as and for the purposes set forth. 9th. The combination, with an angle elevating screw, of dimensions sufficient to clear the whole width of the track, of a movable snow deflector arranged above the screw and operating to deflect the snow thrown against it by the screw, to either side, substantially as described. 10th. The combination, with the elevating screw A, of the inclined plane L, having the upwardly bent offsets *s, s'*, substantially as described. 11th. The combination with the inclined plane L, provided with recesses Y, Y', for the truck-wheels of the elevating screw A, substantially as described. 12th. The combination in an organized structure adapted for the removal of snow from railways, provided with swivelling trucks, of the elevating screw A, inclined plane L, and a steam engine connected with the screw at its base, substantially as described. 13th. The combination with the elevating screw A, of the deflector R, arranged to revolve in suitable guides or ways G, G', substantially as described. 14th. The combination, with the elevating screw A, of the deflector R, guides or ways G, G', and suitable mechanism for shifting the deflector from one side to the other, substantially as described. 15th. The combination with the inclined plane L, of the elevating screw A, arranged to be driven by a steam engine at its base, and the swivelling trucks H, H', substantially as described. 16th. The combination with the hollow centre or cone B, provided with spiral flange C, of the crank shaft E and wheel N, substantially as described. 17th. The combination with the elevating screw A, of the crank-shaft E, steam engines G, G', connected together by the divided frame-work forming a bearing for the crank-shaft, substantially as described. 18th. The combination with the elevating screw A, consisting of a hollow centre provided with spiral flange, of the wheel N, shaft E, and bearing Q, within the lower part of the hollow centre, substantially as described. 19th. The combination, with the elevating screw A, consisting of a hollow centre provided with a spiral flange and supported on the shaft E in a bearing within the cone, of one or more friction rollers, substantially as described. 20th. The combination with the elevating screw A, operated by a steam engine located at its base, of the inclined plane L, side frames I, I', cross-guides *m, m'*, and swivelling trucks H, H', substantially as described. 21st. The combination with the elevating screw A, operated by a steam engine located at its base, of the inclined plane L, side frame I, I', cross-guides *m, m'*, swivelling trucks H, H', truck frames *l, l'*, and bolts *c, c'*, substantially as described. 22nd. The combination with the elevating screw A, of the casing J, inclined plane L, and inclined wings K, K', bent upward at *u, u'*, substantially as and for the purposes set forth. 23rd. The combination with a snow-plough, consisting of the inclined plane L, elevating screw A, casing J, and wings K, K', of the draw-bar *t*, whereby the plough may be coupled to a train at its forward end, substantially as described. 24th. The combination and arrangement, in a single structure adapted to travel on railways, of an elevating screw having a steam engine connected thereto at its base, an inclined plane for raising the snow to the elevating screw, and a steam generator supplying steam to the engine, substantially as and for the purposes set forth. 25th. The combination and arrangement, in a single structure adapted to travel on railways, of an elevating screw having a steam engine connected thereto at its base, an inclined plane for raising the snow to the elevating screw, a deflector above the screw for delivering the snow laterally, and a steam generator for supplying steam to the engine, substantially as and for the purposes set forth. 26th. The combination, with the elevating screw A, having a steam engine directly connected thereto at its base, of the removable plate P, at the bottom of the screw-enclosing casing, substantially as described. 27th. The combination with the elevating screw A, supported on crank-shaft E, of the angularly-arranged steam cylinders G, G', and suitable connections with the crank F, and valve-operating mechanism, substantially as described. 28th. The combination, with a snow-plough, of the elevating-screw A, consisting of tapering centre or cone B, smallest at its upper end having the spiral flange G, and arranged to rotate within a suitable casing, substantially as and for the purposes set forth. 29th. The combination in a railway snow plough, of the elevating screw A, having a steam engine directly connected thereto at its base, the inclined plane L, the swivelling trucks H, H', and side frames I, I', arranged outside of the truck-frames, and extending forward to support the inclined plane, substantially as and for the purposes set forth. 30th.

The combination in a railway snow-plough, of the inclined plane L, the elevating-screw A, supported on a suitable crank-shaft, and a steam engine connected to the said crank-shaft provided with bearings therefor, above and below the crank, substantially as and for the purposes set forth. 31st. The combination, in a railway snow plough, of the elevating screw A, inclined plane L, the snow-deflector R, and a bearing for the screw-shaft, located above the deflector, substantially as and for the purposes described. 32nd. The elevating screw A, consisting of a hollow centre B, provided with spiral flange C, supported by the angular braces V, V', substantially as described. 33rd. The combination, in a railway snow plough, of the elevating screw A, having a steam engine directly connected thereto at its base, the side frames I, I', suitable cross-guides *m, m'*, swivelling trucks H, H', and the engine frame attached to the cross-guides and arranged to permit the swivelling movement of the trucks, substantially as described.

### No. 22,501. Paint. (*Peinture.*)

James P. Perkins, Pullman, Ill., U.S., 21st September, 1885; 5 years.

*Claim.*—A paint composed of silicate slag, ground in oil, as set forth.

### No. 22,502. Sewing Machine. (*Machine à Coudre.*)

D'Arcy Porter, Cleveland, Ohio, U.S., 21st September, 1885; 5 years.

*Claim.*—1st. The combination with a sewing machine table, of a drawer support consisting of metal plates connected together by means of bolts and secured to the under side of the table, substantially as and for the purposes shown and described. 2nd. In a sewing machine table, a drawer-support suspended from the under side of the table, consisting of the metal plates B provided with a guide-flange B, said plates connected together and supported together by bolts, substantially as shown and specified. 3rd. In a sewing machine table, a drawer support suspended from the under side of the table and consisting of metal plates connected together by bolts and the tubular rods D surrounding the bolts and separating the plates, substantially as shown and described.

### No. 22,503. Radiator. (*Calorifere.*)

Thomas H. Williams and Samuel D. Tomkins, Jersey City, N. Y., and J. N. Mattock, Brooklyn, N. Y., U. S., 21st September, 1885; 5 years.

*Claim.*—1st. The pin-loop radiator, substantially as before set forth, consisting of a loop-pipe having the edges of the loop studded with pins, in one piece with the pipe. 2nd. The combination, substantially as before set forth, of rows of pin-loop radiators, with a hollow stepped base plate.

### No. 22,504. Show Case for Spectacles and Eye-Glasses. (*Vitrine pour Lunettes*)

Andrew L. Smith, Geneva, N. Y., U. S., 21st September, 1885; 5 years.

*Claim.*—1st. A show case for holding spectacles and eye-glasses, provided with hooks B, B, and slotted bars D, D, for respectively holding the spectacles and eye-glasses, with characters to denote the focal numbers of the glasses, arranged in connection therewith, as herein described. 2nd. In a show case for holding spectacles and eye-glasses, the hooks B, B, made of thin material attached to the back of the case standing outward and forward, and presenting the thin edge in a vertical line for the attachment of the spectacles thereto, being used in connection with characters to denote the focal numbers of the spectacles hung thereon, as herein set forth. 3rd. In a show case for spectacles and eye-glasses, the bars D, D, provided with slots *a, a*, for the attachment of eye-glasses, being used in connection with characters for denoting the focal numbers of the eye-glasses arranged on the bars, as herein shown and described.

### No. 22,505. Brake Head and Brake Shoe.

(*Sabot de Frein.*)

John J. Lappin, Toronto, Ont., 21st September, 1885; 5 years.

*Claim.*—1st. A brake head having its bearing parts cast upon a chill, and thereby hardening the same, for the purpose of preventing the bearing parts from wear, so that they will remain uniform, and grooved to span an enlarged rib on the back of a brake shoe to prevent the shoe having any lateral motion on the brake head, and to relieve the key of any more than a nominal strain thereon, substantially as set forth.

### No. 22,506. Fire-Escape. (*Sauveteur d'Incendie.*)

Arthur W. Cowell, Lombardy, Ont., 21st September, 1885; 5 years.

*Claim.*—1st. An iron ladder, constructed of sectional sides A, rungs B, nuts B<sub>1</sub>, B<sub>2</sub>, and legs C, each side intervening two of the nuts, as set forth. 2nd. In combination with the rungs B, of a sectional ladder having legs C, the spikes D hooked to the rungs and pointed to drive into a building to hold fast the ladder, as set forth. 3rd. The combination with a ladder of a lower section jointed thereto, to fold, and a hook E, attached to the lower rung to engage with a rung of the upper section, as set forth for the purpose described. 4th. The landings E, having a rail on three sides and open at one end, hold-fasts F<sub>2</sub> attached to said rail, and bracket bars F<sub>3</sub> to hold the landing under a window, the open end communicating with a ladder provided with legs C, and placed aside the windows, as set forth. 5th. The combination of a ladder, having legs C, and sides hooked at one end to the apex of a roof, and platforms H hooked to said apex, and in communication with the ladder, as set forth. 6th. The roof platforms H, constructed of two L-shaped side rails, the longer leg having a hook termination and connected by transverse bars to form a floor and hand rail, as set forth.

**No. 22,507. Headed Tube.***(Tube à Bout Fermé.)*

Edward S. T. Kennedy, New York, N.Y., U.S., 21st September, 1885; 5 years.

*Claim.*—A headed tube, substantially as herein shown and described, with its extremity tapered, or reduced in exterior and interior diameter, just beyond the head, as and for the purposes set forth.

**No. 22,508. Door Guard. (Garde Porte.)**

Hiram Hearne and H. J. Hearne, Ingersoll, Ont., (Assignees of Joseph P. Ellacott, Chicago, Ill., U.S.) 21st September, 1885; 5 years.

*Claim.*—The combination of the grooved bar A, arranged to engage with the hooked end of the plate C, of a pin D, connected to the bar A, having holes F and G, substantially as and for the purpose specified.

**No. 22,509. Fire Escape. (Sauveteur à Incendie.)**

Ferdinand W. Hofele, New York, U.S., 21st September, 1885; 5 years.

*Claim.*—1st. In a folding fire-escape ladder, the combination of a vertical fire-escape ladder, folding platforms connecting the ladder with the building, counterbalancing springs that are attached at their lower ends to the building, and chains that are attached to the upper ends of the springs and passed over guide-pulleys to the side posts of the ladder, substantially as set forth. 2nd. In a folding fire-escape ladder, the combination of a vertical ladder and folding platforms hinged to eye-bolts of the building, said eye-bolts being anchored to the building and braced by front plates having eyes for attaching the counterbalancing chains and pulleys, substantially as set forth. 3rd. In a folding fire-escape ladder, the combination of a vertical ladder, folding platforms connecting the ladder with the building, and counterbalancing springs connected at their lower ends to the buildings, and at their upper ends to chains which pass over pulleys to the side posts of the ladder, said springs being inclosed in tubular casings, substantially as set forth. 4th. In a folding fire-escape ladder, the combination of the vertical ladder and folding platforms, with counterbalancing springs, connected at the lower ends with cup-shaped sockets to the wall of the building and at the upper ends by sockets to connecting chains, said springs being inclosed in tubular casings which are closed by said sockets, substantially as set forth. 5th. In a folding fire-escape ladder, the combination of the ladder and folding platforms with counterbalancing springs, cup-shaped sockets having eye-bolts to which the springs are attached, balancing chains, and tubular casing fitted into annular recesses of the sockets, substantially as set forth. 6th. In a folding fire-escape ladder, the combination of a vertical ladder A, folding platforms D, connecting the ladder to the building, folding guard railings composed of uprights and side rails, the uprights being provided with inwardly projecting stops e, substantially as set forth. 7th. In a folding fire-escape ladder, the combination of a vertical ladder, folding platforms connecting the ladder with the building, counterbalancing springs and chains, a locking hook, and chains passing from said locking hook over guide pulleys above the windows of the uppermost storey and downward through guide-eyes, and in front of the windows at both sides of the ladder to the lower part of the building, substantially as set forth. 8th. In a folding fire-escape ladder, the combination of the vertical ladder with an exterior cover or shell having side flanges attached to the side-posts of the ladder, substantially as set forth.

**No. 22,510. Button Hole Cutting Attachment for Sewing Machines. (Appareil à couper les Boutonnières pour Moulins à Coudre.)**

Edward B. Moore, Westchester, and George Reh fuss, Philadelphia, Pa., U.S., 21st September, 1885; 5 years.

*Claim.*—1st. In button-hole appliances for sewing machines, the combination of a feed plate carrying a rotary disc, and having a sectional rack on its under side, engaging with a pinion, through which motion is conveyed from the main shaft, and said plate caused to travel outwardly on a line with a needle arm or towards the front of the machine, and the disc caused to revolve, of a button-hole cutter and an anvil or die, said anvil or die and cutter being located between the throat and the standard supporting the needle arm, and said disc and feed slide being formed with communicating slots whereby a shifting movement of the slide is permitted, to allow the anvil and cutter play through the same, substantially as described. 2nd. In button-hole appliances for sewing machines, the combination of the following elements, viz.: a feed-plate carrying a rotary disc, and having a sectional rack mounted on its under side, a rock-shaft having a crank arm on one end, coupled to the main shaft and receiving motion therefrom, a pinion, ratchet-wheel and pawl and lever mounted on the bed of the machine, and a link connecting the lever with the crank-arm, substantially as described. 3rd. In button-hole appliances for sewing machines, the combination with the feed-plate having the slot extension *b* and carrying the rotary disc B, formed with the elongated slot B<sub>1</sub>, of a button-hole cutter and an anvil or die, said slots being adapted to coincide when the disc is in a normal position, and the feed-plate being capable of sliding back, so that part of the slot B<sub>1</sub> may be brought back of the line of the needle for cutting purposes, substantially as described. 4th. In a button-hole sewing machine, the combination of an anvil or die and a button-hole cutter, with the feed plate and a rotary disc mounted thereon, said plate having a slot extension *b*, and said disc having the elongated slot B<sub>1</sub>, said slot or slots and extension being adapted to coincide when the disc is in its normal position, and said feed-plate being capable of a reverse movement, so that part of the slot may be brought back of the line of the needle, substantially as shown and described. 5th. In a button-hole cutting attachment for sewing machines, the combination with a swiveled punch-holder, carrying an independently movable punch, of a sliding shoe connected with and operated through the medium of said punch-holder, and a hinged

shoe carrying an anvil or die upon which the punch cuts, said shoes being beveled on their contiguous faces for conjoint action, substantially as shown and described.

**No. 22,511. Open Link. (Mailion de Chaîne.)**

Thomas Barnes, Philadelphia, Pa., U. S., 21st September, 1885; 5 years.

*Claim.*—1st. A link formed of sections, shaped substantially as described, having central pivoted bearings, the latter being recessed and containing a spring, the ends of which are connected with the two sections, substantially as described. 2nd. An open link, consisting of sections shaped substantially as described, centrally pivoted together, having their bearings recessed with a spring therein, and lugs and recesses on the inner faces of the sections, abutting against each other when the link is closed, substantially as described. 3rd. An open link formed of two sections, having a central bearing B, each section having at each end thereof the projection D and recess E adapted to interlock when the link is closed, substantially as described.

**No. 22,512. Feeding Device for Mill Rolls.***(Trémie de Moulin à Moudre.)*

John W. Craig, Detroit, Mich., U.S., 22nd September, 1885; 5 years.

*Claim.*—1st. In a feeding device, a hopper arranged to vibrate at right angles to a feed roller, substantially as described. 2nd. In a feeding device, a hopper arranged to vibrate automatically at right angles to a feed roller by the weight of the stock in the hopper, substantially as described. 3rd. In a feeding device, the combination of a hopper and a feed roll, said hopper constructed and arranged to swing automatically by the weight of the stock therein to widen the throat of the hopper, substantially as described. 4th. In a feeding device, the combination of a hopper and a feeding roller, mechanism for adjusting the throat of the hopper, said hopper arranged to swing forward by the weight of the stock therein to open the throat of the hopper, substantially as described. 5th. In a feeding device, a hopper axially suspended, substantially as described. 6th. In a feeding device, a hopper axially suspended and counterbalanced, the construction being such that the hopper may swing forward automatically by the weight of the stock therein to open the throat of the hopper and to swing back into desired position, substantially as described. 7th. In a feeding device, a hopper axially suspended and provided with an adjustable counterbalance, the construction being such that the throat of the hopper may be adjusted, opened automatically by the weight of the stock in the hopper and return to its adjusted position, substantially as described. 8th. In a feeding device, a hopper arranged to swing at right angles to the feeding roll, adjusting mechanism to regulate the throat of the hopper, the construction being such that the hopper may swing forward automatically by the weight of the stock therein to open the throat of the hopper and swing back automatically to its adjusted position, substantially as described.

**No. 22,513. Railway Fish Joint.***(Eclisse pour Joint de Rail.)*

Horace Edward Shutts and Allen Bagley, both of Ypsilanti, Mich., U.S., 22nd September, 1885; 5 years.

*Claim.*—1st. The combination with railway rails, of the fish-plates B and B<sub>1</sub>, provided with a wedge-shaped groove *b*, extending from the extremities toward the middle of the plates, and having the upper and lower spaces of said groove bevelled, substantially as set forth, and the clamps C and C<sub>1</sub>, the construction being such that said plates may be held firmly in place by driving said clamps towards the middle of said plates, substantially as described. 2nd. The combination with railway rails, of the fish plates B and B<sub>1</sub>, provided with a wedge-shaped groove *b*, extending from the extremities toward the middle of the plates, and having the upper and lower faces bevelled, substantially as set forth, and the clamps C and C<sub>2</sub>, formed with notches to receive spikes, substantially as described.

**No. 22,514. Machine for Folding Sheet Metal. (Machine à plier les lames de métal.)**

William J. Bayrer, (The Peck, Stow &amp; Wilcox Co., assignees) all of Southington, Conn., U.S., 22nd September, 1885; 5 years.

*Claim.*—1st. In a machine for folding sheet metal, the combination of the gauge D, the gauge-adjusting mechanism for moving said gauge, and means, in addition to the adjusting mechanism, for locking said gauge against movement in either direction, substantially as described, and for the purpose specified. 2nd. In a machine for folding sheet metal, the combination of the frame, the gauge D, mounted thereon, and having the oblique slots, the gauge slide *f*, having the studs which enter said oblique slots, and move longitudinally within a groove in the frame, the gauge-adjusting screw E, and the nut *h*, formed separately from the frame E, substantially as described, and for the purpose specified.

**No. 22,515. Art of Building Fire, Water, and Damp-Proof Structures.***(Art de construire des bâtisses à l'épreuve du feu, de l'eau et de l'Humidité.)*

Samuel C. Burris and William H. L. de la Penotière, Victoria, B.C., 23rd September, 1885; 5 years.

*Claim.*—1st. In the construction of fire and water-proof buildings grooved and tongued lumber for building purposes, substantially as and for the purpose set forth. 2nd. In the construction of fire and water-proof buildings, a fire-proof wall, composed of two edge grooved and tongued lumber, laid one on the other, and spiked together, and coated with cement or lime mortar on the exterior and round openings, and coated with lime mortar on the inside and round

openings, meeting and joining the mortar from the exterior, covering all the woodwork, making a solid fire-proof wall, substantially as and for the purpose set forth. 3rd. In the construction of fire and water-proof buildings, a fire-proof partition, composed of two edge grooved and tongued lumber, laid one on the other and spiked together, and coated on both sides and round all openings with mortar, substantially as and for the purpose set forth. 4th. In the construction of fire and water-proof buildings, a fire and water-proof roof and gutter, composed of one side grooved and tongued lumber coated with cement mortar to form a water-tight and fire-proof surface, substantially as and for the purpose set forth. 5th. In the construction of fire and water-proof buildings, a bracket coigne, pilaster, column, stairs, ceilings, composed of one side grooved and tongued lumber, and coated with mortar, making them fire-proof, substantially as and for the purpose set forth. 6th. In the construction of fire and water-proof buildings, a fire and water-proof flooring, composed of cement encased between lumber, with cement extending up walls, substantially as and for the purposes set forth. 7th. In the construction of fire and water-proof buildings, the combination of fire and water-proof flooring, composed of cement incased with lumber, with cement extending up walls, with fire-proof ceiling composed of one side grooved lumber coated with mortar, and solid bridging between joists dividing the long air spaces into short compartments, substantially as and for the purposes set forth. 8th. In construction of fire and water-proof buildings, a principal timber, encased with one side grooved lumber and coated with mortar, substantially as and for the purposes set forth. 9th. In the construction of fire and water-proof buildings, the combination of a fire and water-proof flooring and ceiling composed of one side grooved and tongued lumber, coated with mortar on the lower or tongued and grooved side, and covered with cement extending up walls, substantially as and for the purposes set forth.

**No. 22,516. Vessel for Transporting Liquid Cargoes in Bulk.** (*Vaisseau pour transporter des cargaisons de liquides en Grenier.*)

Louis S. Sone, New York, N. Y., U.S. 23rd September, 1885; 15 years.

*Claim.*—1st. In combination with the hull of a vessel, a series of separate and independent storage tanks, and a supply pipe connected to each tank. 2nd. In combination with the hull of a vessel, a series of independent storage tanks enclosed therein, separate pipes communicating with said tanks, and an open frame-work supporting the tanks, substantially as described. 3rd. In combination with the hull of a vessel, a series of separate and independent tanks arranged therein, a supply-pipe for each tank, and a pump located near said pipes, and constructed for convenient connection with any of the supply-pipes. 4th. In combination with the hull of a vessel, a series of separate and independent tanks contained therein, and a stand pipe connected to each tank. 5th. In combination with the hull of a vessel, a series of independent tanks therein, a stand pipe connected with each tank, and a pressure reservoir common to a number of such pressure pipes. 6th. In combination with the hull of a vessel, a series of independent main tanks, an auxiliary tank or tanks, and pipe connections to the auxiliary tank or tanks. 7th. In combination with a series of main storage tank, arranged within the hull of the vessel, a pressure tank located above the level of the main tanks, and provided with pipe connections for discharging the contents into the main tanks. 8th. In combination with the hull of a vessel, a series of main storage tanks, an overflow tank above the level thereof, with pipe connections leading from such overflow tank to the main tanks and to an auxiliary tank. 9th. In combination with the hull of a vessel, a series of main storage tanks, a pressure tank above the level thereof, pipe connections provided with stop cocks leading from the pressure tanks to the main tanks, and an indicator connected with the pressure tanks. 10th. In combination with a series of independent storage tanks in the hull of a vessel, pipes leading from a number of said tanks to a common radiating center, and an exhaust and force pump at such center adapted for connection with any two of the pipes. 11th. In combination with the hull of a ship, a series of independent cylindrical tanks, a frame-work supporting said tanks in horizontal position, fixed chocks on the frame-work bearing against the tanks, and a movable chock interposed between said fixed chocks. 12th. In combination with the hull of a ship, a series of tanks therein, a frame-work by which the tanks are held out of contact with each other, a pipe leading to each tank, and an offset elbow to each pipe, (to give slight flexibility to said pipe,) substantially as described.

**No. 22,517. Cramping Machine.** (*Serre-Joint.*)

Mark Amos, Westbury-on-Tyne, Gloucester, Eng., 23rd September, 1885; 5 years.

*Claim.*—1st. Apparatus for cramping or compressing (applicable also for other purposes as set forth), comprising two bars with connecting guides and means for moving one longitudinally in relation to the other, and for retaining it in the longitudinal position to which it is so moved, until released, substantially as described. 2nd. In apparatus for cramping or compressing (applicable also for other purposes as set forth), the combination of a bar A having perforations or their equivalents, and sockets or eyes *a*, a bar B, with sockets or eyes *b*, and means for moving one bar in relation to the other, substantially as described. 3rd. In apparatus for cramping or compressing, (applicable also for other purposes as set forth), the combination of a bar A, having perforations or their equivalents, and sockets or eyes *a*, a bar B, with sockets or eyes *b*, link or shackle *d*, lever *f*, hook or connection *e*, spring pin *h*, and spring pawl or catch *k*, all constructed, arranged and operated substantially as herein described. 4th. In apparatus for cramping or compressing (applicable also for other purposes as set forth), the combination with a chamber or receptacle for material to be compressed, of bars A, having perforations or their equivalents, said bars being anchored at one end or part to the chamber or receptacle, a bar B, carried by the cover platform of the chamber or receptacle, link or shackle *d*, lever *f*, hook or

connection *e*, spring pin *h* and spring pawl or catch *k*, all constructed, arranged and operating, substantially as herein described.

**No. 22,518. Methods of Manufacturing Alloys and Bronzes.** (*Art de fabriquer les alliages et les bronzes.*)

Eugene H. and A. H. Cowles, Cleveland, Ohio, U.S., 23rd September, 1885; 5 years.

*Claim.*—1st. The process of reducing alloys which consists in passing an electric current through a mixture of broken resistance material ore to be reduced and pieces of the base metal of the alloy so that said mixture is rendered incandescent and the alloy formed substantially as hereinbefore described and set forth. 2nd. The process of producing alloys which consists in passing an electric current through a mixture of broken resistance material and ore to be reduced into which wires or rods of the base metal of the alloy have been inserted transversely to the path of the current, substantially as and for the purpose set forth. 3rd. The process of producing alloys hereinbefore described which consists in mixing together ore of one of the metals of the alloys, broken or pulverized carbon, inserting wires or rods of the other metal of the alloy into the said mixture and then passing an electric current through the mixture in a transverse direction to the wires or rods so that the said mixture is rendered incandescent and an alloy formed substantially as set forth.

**No. 22,519. Screening Machine for Paper Pulp, etc.** (*Tamis pour Pâte à papier, etc.*)

Frank H. Black, Hamilton, O., U.S., 23rd September, 1885; 5 years.

*Claim.*—1st. The combination of the vat A, the screening vat B, yokes C, shaft D, eccentrics E and eccentric rods F, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the vat A, screening vat B, yokes C, shaft D, eccentrics E, eccentric rods F and oil-guards G, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the vat A, screening vat B, yokes C, shaft D, adjustable eccentrics E and eccentric rods F, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the vat A, screening vat B, yokes C, shaft D, eccentrics E, eccentric rods F, cores I, and core-shifter H, substantially as and for the purpose hereinbefore set forth.

**No. 22,520. Button Hole Sewing Mechanism for Sewing Machines.** (*Machine à coudre faisant les boutonnières.*)

Daniel Mills, Philadelphia, Pa., U.S., 23rd September, 1885; 15 years.

*Claim.*—1st. The combination of the primary and secondary slides of a button hole sewing mechanism and cloth clamps carried thereby, and means substantially as described, for limiting the movement of the primary slide with a lever D and a friction plate D<sup>r</sup> carried thereby to impart motion to the slide, a tappet F, carried by said lever D, and a vibrating lever C carrying a pin *c*, and fingers for reversing the tappet. 2nd. The combination of the primary and secondary slides of a button hole sewing mechanism, cloth clamps carried thereby, and a feed cam operating the said slides with a vibrating lever D having a pin *d*<sub>3</sub>, a ratchet feed wheel H, controlling the cam, a pawl and a vibrating pawl carrier having jaws *g*<sub>1</sub>, *g*<sub>2</sub>, one of which is adjustable, substantially as described. 3rd. The combination of the primary and secondary slides of a button hole sewing mechanism, cloth clamps carried thereby, and an operating lever D with a friction plate D<sup>r</sup> pivoted to the said lever, and having a slot for the reception of a projection on the primary slide and pattern wheels for limiting the vibrating motion of the primary slide, substantially as described. 4th. The combination of the primary and secondary slides of a button hole sewing mechanism, cloth clamps carried thereby, and an operating lever D and friction plate D<sup>r</sup> with an adjustable arm T carried by the slide and having a projection adapted to a slot in the friction plate and means substantially as set forth for limiting the movement of the primary slide. 5th. The combination of the primary slide of a button hole sewing mechanism and an operating lever for vibrating the said slide with two rotary pattern wheels and a bent lever for each wheel, arms on the two bent levers forming a pair of jaws, between which is adapted a projection on the said slide, substantially as set forth. 6th. The combination of the primary slide of a button hole sewing mechanism, an operating lever therefor, two pattern wheels and means for intermittently rotating the same, and two corresponding bent levers forming a pair of jaws with an arm adjustable on the said slide and having a projection entering between said jaws, as and for the purpose set forth. 7th. The combination of the primary slide of a button hole sewing mechanism and an operating lever therefor, with two pattern wheels having alternate faces *i*, *i*<sup>r</sup>, and intermediate notches *u*, and bent levers controlled by said wheels and forming jaws between which is adapted a projection on the said slide. 8th. The combination of the primary and secondary slides of a button hole sewing mechanism, cloth clamps carried thereby, and devices, substantially as described, for vibrating the said slide, with a heart-shaped rotary cam, a lever M controlling the secondary slide, a radius rod O, and connecting link O. 9th. The combination of the clamp slide of a button hole sewing mechanism, and a feed cam for imparting intermittent feed motion thereto, with levers for transmitting motion from the cam to the slide, and an adjustable connecting pin therefor, the said levers having coinciding slots when the slide is at the limits of its outward movement, substantially as set forth. 10th. The combination of the clamp slide of a button hole sewing mechanism having a guide *w* and a cam for imparting intermittent feed motion to the slide with levers for transmitting motion from the cam to the slide and an adjustable connecting pin therefor, the said levers having coinciding slots when the slide is at the limit of its outward movement, substantially as set forth. 11th. A cloth clamp having slotted jaws, one of said jaws being provided with smooth flanges to enter the slot of the other jaw and also serrated flanges or teeth along its outer edges, substantially as set forth.

**No. 22,521. Fishing Reel.***(Dévidoir pour canne de pêche.)*

James Calder, Dundee, Scotland, 23rd September, 1885; 5 years.

*Claim.*—1st. In fishing reels, the mechanism consisting of a ratchet arm or lever, or ratchet arm or levers actuated by a spring or springs, and in combination with a pinion fixed upon the winding drum or the mechanical equivalents of the said parts for imparting a motion, or motions of rapid rotation to the said drum, as hereinbefore described, with reference to Figs. 1, 2 and 3 of the accompanying drawings. 2nd. In combination with the toothed gearing, the employment of a brake, or brakes *f, g* for arresting or retarding the motion or motions of the winding drum, as hereinbefore described, with reference to Fig. 4 of the accompanying drawings.

**No. 22,522. Letter Sheet.** *(Feuille à lettre.)*

Alexander C. Campbell, Toronto, Ont., 23rd September, 1885; 5 years.

*Claim.*—1st. A sheet of paper, or other suitable material, having gummed margins *A*, separated from the main sheet by perforations *d*, substantially as and for the purpose specified. 2nd. A sheet of paper or, other suitable material, having gummed margins *A*, separated from the main sheet by perforations *d*, and the perforations *e*, separating the flap from the main body of the sheet, substantially as and for the purpose specified.

**No. 22,523. Stave Machine.** *(Machine à douves.)*

Edward M. Jewett, Buffalo, N.Y., U.S., 23rd September, 1885; 5 years.

*Claim.*—1st. The combination with a pair of rollers, of a table at one side arranged to guide staves between the rolls, and a shoe having a transverse and a longitudinal bend at the opposite side arranged to elevate the end of the stave passing from the rolls to impart a longitudinal bend thereto, substantially as set forth. 2nd. The combination in a stave-forming machine, of a pair of rolls, one concave and the other convex, a table at one side of the rolls, and a shoe at the opposite side, curved longitudinally and transversely upon the carrying and guiding face and arranged to bend the staves upward as they pass from the rolls, substantially as set forth. 3rd. The combination with the rolls of a stave-forming machine, of a table at one side and a shoe at the opposite side vertically adjustable, substantially as described. 4th. The combination of the rolls, table, shoe and guard arranged to guide above the shoe, substantially as set forth. 5th. The combination of the rolls, table and shoe, consisting of two sections, substantially as set forth. 6th. The combination of the side frames having slotted flanging rolls carried by the frames, and table and shoe on opposite sides of the forming rolls, each in two sections, each section being secured to one of the flanges by a bolt passing through the slot of the flanges, substantially as described. 7th. In a machine for bending and compressing staves both longitudinally and transversely, the combination of the concave and convex rolls and an adjustable shoe curved longitudinally and transversely upon its carrying and guiding face, substantially as and for the purposes described.

**No. 22,524. Harvester.** *(Moissonneuse.)*

William P. Hale, Brockport, N.Y., U.S., 23rd September, 1885; 5 years.

*Claim.*—1st. The combination, substantially as hereinbefore set forth, of the main frame supported upon two wheels, the frame-bracket at or near the inner rear corner of the main frame, the grain platform, the platform bracket having pivotal connection with the frame bracket, the finger beam and means by which the heel end of the finger-beam and the grain-platform at front have adjustable jointed connection with the main frame for the purposes described. 2nd. The combination of the main frame, its supporting wheels, the grain platform, the frame bracket with which the inner rear end of the grain platform has jointed connection, the finger-beam and the shoe and guideway bracket by which the heel end of the finger beam and grain platform at front have adjustable connection with the main frame, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the main frame, the grain platform having adjustable jointed connection therewith at front, the frame bracket secured to the main frame at or near the rear inner corner thereof, the platform bracket provided with the tubular boss by which the grain platform has pivotal supporting connection with the frame bracket, the bolt by which said boss is secured in its bearing in the frame bracket and the pinion pivotally supported on this bolt, substantially as and for the purpose hereinbefore set forth. 4th. The combination, substantially as hereinbefore set forth, of the main frame, the grain platform having jointed connection at its rear inner end with the main frame, the finger beam, the guideway bracket secured to the inner front corner of the main frame, and the shoe formed with branches and secured to the finger beam and passing by one of its branches through the guideway bracket, whereby the platform and cutting apparatus are adapted to be folded up and to be rocked, as described. 5th. The combination of the main frame, the rigidly-joined grain platform and finger beam, the guideway bracket secured to the main frame, the shoe adjustably engaging with the guideway bracket, the jointed connection between the grain platform and main frame in rear of the shoe, the platform rocking-lever, its detent devices and the link-rod having jointed connection with the shoe and platform rocking-lever, substantially as and for the purpose hereinbefore set forth. 6th. The combination of the main frame, its supporting wheels, the rigidly-mounted grain platform and finger beam having jointed connection with the main frame, the grain wheel having its axle in line with the axes of the supporting wheels of the main frame, the tongue having jointed connection at its heel with the main frame, the main frame rocking-lever, its detent devices and the link-rod connecting with this lever and the tongue, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the main frame, the grain platform having jointed connection therewith, the endless carrier, the driving roller thereof, its attached pinion and the carrier actuating-pinion mounted to rotate

about an axis coincident with that about which the grain platform plays as it vibrates about its jointed connection with the main frame, substantially as and for the purpose hereinbefore set forth. 8th. The combination of the main frame, its supporting wheels, the grain platform having adjustable jointed connection at front and jointed connection at the rear with the main frame, the endless-carrier, the driving roller thereof, its attached pinion, the carrier-actuating pinion mounted to rotate about the pivot of the rear jointed connection, of the grain platform with the main frame, the sprocket pulley attached to the carrier-actuating pinion and the driving-chain, substantially as and for the purpose hereinbefore set forth. 9th. The combination of the main frame, the driven shaft *C*, the pulley thereon, the driving-chain, the idle-pulley, the grain-platform having jointed connection with the main frame, the carrier-actuating-pinion, its attached pulley, the reel-operating shaft and the pulley thereon, substantially as and for the purpose hereinbefore set forth. 10th. The combination of the reel-operating shaft *Q*, its attached bevel pinion, the bevel gear meshing with said pinion, the upright shaft mounted in fixed bearings and to which said gear is attached, the pinion rotating with and sliding on said shaft, the reel-shaft, its attached bevel gear meshing with the sliding-pinion on the upright shaft, and the vertically-adjustable bearing bracket for the reel-shaft having engagement with said sliding pinion, substantially as and for the purpose hereinbefore set forth. 11th. The combination of the reel, the reel-shaft, the bearing bracket for the reel-shaft, the fixed guide-rods up and down with the bearing bracket slides the gear on the reel-shaft, the pinion meshing therewith and with which the bearing-bracket has engagement, the rotating upright shaft with which said pinion turns and up and down which it slides with the movements of the bearing bracket, the reel adjusting lever, its detent devices and the chain connected with this lever and the bearing bracket, substantially as and for the purpose hereinbefore set forth. 12th. The combination of the main frame, the grain platform and finger beam having jointed connection with the main frame, the vertically-adjustable reel, means for supporting and adjusting it, the shoe, the platform rocking-lever and the link-rod connecting the shoe and lever and by means of which the reel is prevented from descending too low, substantially as and for the purpose hereinbefore set forth. 13th. The combination of the main frame, the grain platform and finger beam having jointed connection with the main frame, the grain wheel, means for rocking the main frame and the grain platform, and finger beam about the axes of the supporting and grain wheels, the shoe and the lever having connection with the shoe and by which the platform and finger-beam may be rocked independently of the main frame, substantially as and for the purpose hereinbefore set forth.

**No. 22,525. Device to Facilitate the Transport of Lumber in a Saw Mill Yard.** *(Appareil à transporter le bois dans les Cours des scieries.)*

William Way, Wilfred, Ont., 23rd September, 1885; 5 years.

*Claim.*—1st. The pivoted uprights *C*, located as described, in combination with the bolsters *F*, arranged substantially as and for the purpose specified. 2nd. The uprights *C* connected together in pairs by the rods *D* which form pivot supports for them, the rod *E* for connecting the pairs of upright together, in combination with the bolsters *F*, arranged substantially as and for the purpose specified. 3rd. The pivoted arm *G* having a notched slot *b* formed in its end, in combination with a pin *d* fixed to one of the uprights *C*, substantially as and for the purposes specified. 4th. The arm *G* pivoted to the post, *H* and having lips *f* formed on its end to lap over the said post, and a notched slot *b* in its other end, in combination with the pin *d*, substantially as and for the purpose specified. 5th. The pivoted arm *G* having a notched slot *b* to fit over the pin *d*, in combination with a pin *e* arranged to act on the arm *G*, substantially as and for the purpose specified. 6th. The pivoted uprights *C*, connected together and located as described, the pivoted arm *G* having a notched slot *b* in its end to engage with the pin *d*, in combination with the truck *B* having a pin *e* to engage with the arm *G*, the incline *I* formed on the track *A*, substantially as and for the purpose specified.

**No. 22,526. Locomotive and Car Adapted for Travelling on Ice.** *(Char et locomotive pour voyager sur la glace.)*

Thomas Mullrey, New York, N.Y., U.S., 23rd September, 1885; 5 years.

*Claim.*—1st. In a locomotive designed for travelling over ice or snow, the combination of runners for supporting it, wheels upon an independent shaft serving to propel it, vertically elongated bearings therefor, a car, and means for connecting the car to the axle of the propelling wheels, substantially as and for the purpose specified. 2nd. The combination of the axle *B*, saddle or wearing piece *a*, bar *A*, and king bolt passing through them, substantially as specified. 3rd. In a locomotive, the combination of an axle *B*, bar *A*, journalled to the boiler or a pillow-block thereon, and the rope or cable *A*, substantially as specified. 4th. In a locomotive, the combination of an axle *B*, the bars *A*, pivotally connected to the boiler or the fire-box thereof, and the rope or cable *A*, substantially as specified. 5th. The combination with a locomotive and car designed to travel over ice or snow, of the tongue *F*, and the rope or cable *D*, substantially as specified. 6th. The runner consisting of main section *c*, attached to the vehicle for which it is a support, and the auxiliary section *c*, pivoted to the main section *c*, and otherwise unconnected with the vehicle, substantially as specified. 7th. The runner consisting of a main section *c*, auxiliary section *c*, rod *e*, and spring *b*, substantially as specified. 8th. The combination with axles *B*, *B*, provided with runners of the rods *B*, *B*, extending between the said axles, and secured thereto, substantially as specified. 9th. The combination with a suspended vehicle body and an axle therefor, of ropes or cables *G*, substantially as specified. 10th. The combination with a vehicle and an axle for the same, of the pillars *G*, connecting pieces *G*, and rope or cable *G*, substantially as specified.

**No. 22,527. Sash Fastener.** (*Arrête-croisée.*)

William J. Smith, Charlottesville, Va., U.S., 23rd September, 1885; 5 years.

*Claim.*—A sash-fastener consisting of the shell made in two semi-cylindrical parts, one part thereof formed with the slots *b*, *bi*, and having the heads *a*, *ai*, and the collar *c*, and the other part adapted to fit said first part, forming thereby a complete cylinder, the bolt having pin *cl* and moving through head *a*, and collar *c*, and spring *d*, held on the bolt between said head and collar, the whole adapted to be operated by a removable key, substantially as and for the purpose described.

**No. 22,528. Lubricator.** (*Graisneur.*)

John C. Nichol, Montreal, Que., 23rd September, 1885; 5 years.

*Claim.*—1st. The combination, with an axle, of an arm or lever with paddles or spoons attached, and attached to the said axle. 2nd. The combination with the arm or lever *D*, and the axle *A*, of a frame *E*, with slots *Er*, *Et*, through which the arm or lever passes, and a finger *Ez*, all substantially as and for the purposes set forth.

**No. 22,529. Process of Reducing Aluminum Ores.** (*Procédé pour réduire les minerais alumineux.*)

E. H. and A. H. Cowles, and F. Mabery, Cleveland, O., U.S., 24th September, 1885; 5 years.

*Claim.*—1st. The method of producing aluminum which consists in reducing an ore or compound of aluminum in company with an amalgamating metal, by means of electricity and in the presence of carbon, substantially as described, and then separating the two metals of alloy by amalgamation. 2nd. The method of producing aluminum which consists of mixing the aluminum ore with carbon, and with a metal, reducing the said ore by means of electricity, so that the aluminum forms an alloy with the said metal, and finally separating the two metals of the alloy, substantially as set forth. 3rd. The method of producing aluminum, which consists of mixing the aluminum ore with broken carbon and with a metal, reducing the said ore by means of electricity so that the aluminum forms an alloy with the metal, and finally separating the aluminum from the alloy by amalgamating the said metal, substantially as set forth.

**No. 22,530. Horse Collar Pad.** (*Collier de cheval.*)

Edwin L. McClain, Greenfield, Ohio, U.S., 24th September, 1885; 5 years.

*Claim.*—The combination with a collar pad, of the flexible binding strip *1*, spring *3*, having curved portions *r*, *c*, *s*, and adapting it to the exterior contour of the collar, and to be pressed into the depression at the juncture of the fore roll with the body of the same, and to be clamped between the hame and the collar, whereby it is made to tighten the binding strip *5* which it is attached to the collar, and hence to firmly secure the pad to the collar.

**No. 22,531. Tanning Wheel.** (*Roue de Tannerie.*)

Elias S. Ward, Newark, N.J., U.S., 24th September, 1885; 5 years.

*Claim.*—1st. In combination, a vat, a drum having solid sides, perforated strips connecting said sides and perforated partitions dividing the interior of said drum and mechanism, substantially as described, whereby the motion of said drum may be reversed, at intervals, as set forth. 2nd. The process of tanning hides herein described, to wit: of subjecting the said hides to a rotary motion causing the same to be completely immersed in the tanning liquor, and then lifted entirely out of said liquor, whereby they are drained and aerated, and of reversing the rotary motion of the hides at intervals, thereby untwisting the said hides, and exposing every part thereof to the action of the liquor.

**No. 22,532. Apparatus for Checking and Recording Cash.** (*Compteur-Contrôleur de monnaie.*)

Sidney Firth, Leeds, England, 28th September, 1885; 5 years.

*Claim.*—1st. The method of indicating the sums received or other matters to be recorded, by means of bars *p1*, *p2*, *p3*, *p4* and *p5*, such bars having suitable numbers engraved thereon, and being connected by racks, or equivalent devices, with suitable printing type for printing tickets, operating substantially as described and shown on the drawings. 2nd. The method of mounting the roll of paper *r*, or other suitable material, and of unrolling, printing, and storing the same, operating substantially as described and shown in the drawings. 3rd. The general arrangement, construction and combination of the several and respective parts together, forming my improved apparatus for checking and recording the amount of cash or other matters received, taken or recorded, substantially as hereinbefore described and shown on the drawings.

**No. 22,533. Signal Buoy.** (*Bouée de Signal.*)

Edgar E. Mann, Lawrence, Mass., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. The combination of the hood or cover *B*, forming the upper outer casing with the shell *A*, and perforated ring or plate *a*, as shown for the purposes as described. 2nd. The combination of the hood *B*, shell *A*, perforated ring or plate *a*, and pipes *b*, as shown and described. 3rd. The four-way joint *C*, water pipes *D*, *D*, pipes *F* and *G*, connecting with valve chamber *H*, in combination with the shell *A*, as described and shown. 4th. The shell *A*, and water pipes *D*, *D*, in combination with the deck *E*, for supporting said pipes *D*, *D*, as shown and described. 5th. The four-way valve chamber *H*, provided with induction valves *I*, *I*, and ejection valves *J*, *J*, substantially as shown and described. 6th. In combination with the shell *A*, and hood *B*, the water pipes *D*, *D*, pipes *E* and *G*, valve

chamber *H*, reed chamber *K*, and horn *L*, substantially as described and shown. 7th. In combination with the horn *L*, the cap *P*, reed body *p*, tongue *pt*, adjustable plate *p111*, and band *p12*, provided with a thumb screw *p1111*, for securing the band on any part of reed body for regulating the note or tone, substantially as shown and described. 8th. In combination with the shell *A*, the ball and socket joint *Y*, *W*, chains *Z*, and eyes *Y*, substantially as shown and for the purposes specified. 9th. A floating buoy provided with pipes containing water or other liquid, which when the buoy is rocked compresses air and forces it out through a horn or whistle, and at the same time creates a vacuum for drawing in a fresh supply of air, substantially as shown and described. 10th. A shell having a saucer-shaped bottom whose diameter greatly exceeds its height, and the upper portion being conically shaped, thereby precluding the possibility of its upsetting, and enabling it to be moored in very shallow water, rendering it available for the purposes specified.

**No. 22,534. Flour Bolt.** (*Bluteau.*)

George T. Smith, Jackson, Mich., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. In a flour bolt, the combination of a reel frame, and an elevator arranged within the reel and adapted to be tilted into different positions relative to the bolt cloth as the reel rotates, substantially as set forth. 2nd. In a flour bolt, the combination of a reel frame, and an elevator arranged within the reel and adapted to be automatically tilted into different positions relative to the bolt cloth as the reel rotates, substantially as set forth. 3rd. In a flour bolt, the combination of a reel frame, and a tilting elevator arranged within the reel, and in close proximity to the bolting cloth, and adapted to be moved into different positions by gravity, as the reel rotates, substantially as described. 4th. In a flour bolt the combination of the reel heads, the longitudinal bars connecting the reel heads, and an elevator pivoted upon one of the longitudinal bars and having one edge swinging towards and from the axis of the reel, and a stop to limit the inward movement of the edge of the elevator, substantially as set forth. 5th. In a flour bolt, the combination of the reel heads, the longitudinal bars connecting the reel heads, an elevator pivoted upon a longitudinal bar and having one edge swinging towards and from the axis of the reel, a stop to limit the movement of the edge towards the axis of the reel, and a stop which limits the movement of the edge from the axis of the reel, substantially as set forth. 6th. In a flour bolt, the combination of a reel frame, a tilting elevator arranged within the reel and supported upon pivots between the heads of the reel, substantially as set forth. 7th. In a flour bolt, the combination of the reel heads, the longitudinal bars connecting the reel heads and arranged within the peripheries of the reel heads, a bolt cloth surrounding the longitudinal bars and at a distance therefrom, a tilting elevator adapted to have one edge move into close proximity to the bolt cloth and lift material which collects between the longitudinal bars and the bolt cloth, substantially as set forth. 8th. In a flour bolt, the combination of the reel heads, the longitudinal bars, the bearers, the cloth rings, an elevator pivoted upon a longitudinal bar, and stops to limit the swinging movement of the elevator, substantially as set forth. 9th. In a flour bolt, the combination of the reel heads, the longitudinal bars, the bearers, the cloth ring, and an elevator mounted upon a longitudinal bar, and provided with a stop adapted to engage with one of the bearers, substantially as set forth.

**No. 22,535. Ankle-Supporting Shoe.**

(*Chaussure avec support de cou de-pied.*)

Louis Smadback and Benjamin Nathan, New York, N.Y., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. A shoe provided with a series of flexible supporting ribs *E*, arranged in both sides of the upper *A*, and over the ankle portion thereof, and having a facing *G*, covering the upper ends of said ribs, substantially as specified. 2nd. The combination of the upper *A*, linings *B*, *B*, having pockets *D*, therein, for the reception of flexible supports *E*, with the interior lining *F*, and flap *G*, substantially as shown and described.

**No. 22,536. Summer Cooking Stove.**

(*Fourneau de cuisine d'été.*)

Edward F. Gordon and Horatio Hobbs, Concord, N.H., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. A cooking stove having unpacked top, and griddle holes in its top, and the remainder of its body packed to resist radiation, by a filling of mineral wool, or other non-conducting material, between two metallic sheels, as set forth. 2nd. A packed cooking-stove having an enclosed fire-pot near one end with an ash door in said end, an interior oven with its door at the opposite end of the stove body, and an annular space for the caloric current between the oven and the packed outer wall, as set forth. 3rd. A stove having a substantially cylindrical body with a flat top, a fire pot at one end, an interior oven and a flue leading from the fire-pot entirely around the oven to the funnel, so as to give a generally spiral movement to the caloric current, from front to rear of the stove, substantially as set forth. 4th. A stove having a substantially cylindrical body with a flat top, a fire-pot at one end, and an interior oven, a flue leading from the fire-pot entirely around the oven to the funnel, and a covered opening from said flue through the partition which separates it from the ash-pit, to provide for cleaning said flue, substantially as set forth.

**No. 22,537. Metallic Fencing**

(*Cloture métallique.*)

John J. Brinkerhoff, Auburn, N.Y., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. The combination, with a flat metal strip and a wire twisted together, of a suitable body or device coiled around or mounted upon the wire or the strip, whereby the wire and strip are separated at such point or points. 2nd. The combination, with a flat

metal strip and a wire twisted together, of a suitable body or device coiled around or mounted upon the latter, where the wire and strip are separated at such point or points. 3rd. The combination, with a flat metal strip and a wire twisted together, of a wire looped or coiled around the latter, and having its ends extending outward cross-wise of the strip, and bearing upon it near its edges only. 4th. The combination with a flat metal strip and a wire twisted together, of a suitable body or device interposed between the two, and a staple driven down upon the raised wire and into the post. 5th. The combination with a flat metal strip and a wire twisted together, of bodies or devices interposed between the two at intervals, raising the wire off the strip at intervals, forming projecting portions in the wire and causing it to deviate from a regular spiral course.

### No. 22,538. Fire Escape. (*Sauveteur d'Incendie.*)

John E. Sandberg and Mangus Akesson, Butte City, Mon., U. S., 28th September, 1885; 5 years.

*Claim.*—1st. A fire escape, consisting essentially in a truck having a body A, a base C, swiveled thereon, and having sides C<sub>1</sub> and ends C<sub>2</sub>, a series of telescopic sections D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>, D<sub>4</sub>, D<sub>5</sub>, D<sub>6</sub>, the lower end of which is hinged at one edge to the side of the swiveled base C, the drum F, journaled in the sides C<sub>2</sub>, the pulley K on the upper end of the bottom section D<sub>1</sub>, the cable J passed from the drum over pulley K to the lower end of the section D<sub>2</sub>, the cables J<sub>1</sub>, J<sub>2</sub>, J<sub>3</sub>, J<sub>4</sub> connecting the remaining sections in the manner set forth, the top piece D<sub>7</sub> and its cable J<sub>5</sub>, the pulley M on the top piece, the drum P on the bottom section D<sub>1</sub>, the cable N passed from the drum P over the pulley M, and having the basket O, the cable Q, secured at both ends to the lower telescopic section D<sub>1</sub>, the drums Q<sub>1</sub>, Q<sub>2</sub>, around which said cable is wound between its ends, and the operating shaft R<sub>2</sub>, substantially as set forth. 2nd. In a fire escape, the combination with the base and the hinged section D<sub>1</sub> secured thereto, of the cable Q secured at its opposite ends to the upper and lower ends of said section, the drums Q<sub>1</sub>, Q<sub>2</sub>, around which said cable is wound between its ends and the operating shaft and gear, substantially as set forth.

### No. 22,539. Process and Compound for Purifying Iron and Steel. (*Procédé et Composition pour Affiner le Fer et l'Acier.*)

William H. Purdy, New York, U. S., 28th September, 1885; 5 years.

*Claim.*—1st. The process herein described for purifying iron and steel, said process consisting in melting such metal in intimate contact with a compound consisting of red lead or minium and cinnabar mingled with moulding sand and water in substantially the proportions named. 2nd. The process herein described for purifying iron and steel, said process consisting in melting such metals in a ladle, crucible or other vessel, lined with a compound of red lead or minium and cinnabar, mingled with moulding sand and water in substantially the proportions named. 3rd. A compound for the elimination of impurities from iron and steel, consisting of minium or red lead and cinnabar, with moulding sand and water in substantially the proportions named. 4th. A compound for eliminating the impurities from iron and steel, consisting of minium or red lead, litharge and cinnabar, mingled with moulding sand and water in substantially the proportions specified.

### No. 22,540. Button Hole Sewing Machine.

(*Machine à Coudre les Boutonnères.*)

Charles M. Banks, Philadelphia, Pa., U. S., 28th September, 1885; 5 years.

*Claim.*—1st. The combination with the sliding feed-plate A, of flexible or yielding bearings which permit it to be moved laterally, substantially as and for the purpose set forth. 2nd. The combination with the sliding feed-plate A, having a guide pin e, of guide plate F, having a cam slot f, which produces a lateral movement of said feed plate, substantially as shown and described. 3rd. The combination of cloth plate C, and feed plate A, having flexible or yielding bearings B, B<sub>1</sub>, guide pin e, and screw and washer G, g, with guide plate F, having slots f, f<sub>1</sub>, said feed plates being secured in a sliding position in said cloth plate by means of said yielding bearings and being guided in and held to said guide plate by means of said pin, screw and washer, substantially as shown and described. 4th. The combination in a button hole sewing machine, of a feed plate carrying a rotary or swivelled disc, said plate having a straight rack whereby it is moved in a straight line, and said disc having an annular or segmental rack whereby it is rotated, while the cloth plate is at rest, with a guide plate having a cam slot which receives a guide pin or roller attached to said feed plate, whereby the latter is caused to move laterally at the beginning and ending of the button-hole eye, or just before and after said disc makes its half rotation, substantially as shown and described. 5th. The combination with swiveled disc H, of friction spring or brake H<sub>1</sub>, substantially as shown and described. 6th. The clamp arm N, formed of a tempered bar or plate having a longitudinal slit or kerf, and a lever P, for separating its jaws to spread a button hole, substantially as shown and described. 7th. The combination with the clamp arm N, of the centrally pivoted rocker shoes R, substantially as shown and described.

### No. 22,541. Combined Belt Buckle and Cup.

(*Boucle de Ceinture et Tasse combinées.*)

Walter R. Johnston, Sherbrooke, Que., 28th September, 1885; 5 years.

*Claim.*—1st. The cup A, provided at the back with the metallic loop B, to receive one end of the belt C, and also with the hook D, to receive the plate E of the belt, substantially as described. 2nd. The cup A, having the loop B, and hook D, in combination with the inner box F, having side opening and door F<sub>1</sub>, F<sub>2</sub>, substantially as and for the purposes set forth. 3rd. The cup A, having loop B, and hook D, and packing a at its upper edge, in combination with the inner box

F, having flange f, and side opening and door F<sub>1</sub>, F<sub>2</sub>, substantially as and for the purposes set forth.

### No. 22,542. Cover for Tubs and Boxes and Apparatus for Manufacturing the Same. (*Couvercle de Boîtes et de Cuvettes et Appareil pour sa Fabrication.*)

William Fuller (Assignee of H. N. Woods), Bolton Centre, Que., 28th September, 1885; 5 years.

*Claim.*—1st. A cover for tubs and boxes made up of a body of board, and a rim of veneer attached thereto in a dry condition, substantially as and for the purpose specified. 2nd. The machine herein described, for applying rims to tub or box covers, consisting essentially of two shafts capable of rotation, and carrying each a head or disc between which the cover is held, and means for holding and guiding the rim during process of nailing, one or both of said shafts and heads being arranged to be moved horizontally to release the cover when complete, substantially as and for the purpose described. 3rd. In a machine for applying rims to tub or box covers, the combination with shafts C, C<sub>1</sub>, having heads or discs F, G, of ratchet D, and lever E having a pawl, lever H and weighted lever K, all substantially as and for the purpose specified. 4th. The combination with the heads F and G of the rod L, having finger l, and means for retaining and releasing same, substantially as described.

### No. 22,543. Rein Holder. (*Porte Guides.*)

Thomas Milburn (Assignee of W. H. Hiller), Toronto, Ont., 28th September, 1885; 5 years.

*Claim.*—1st. The combination of the clamps or holders A, A, the pins B, B, the coil wire springs C, C, the flanges or knobs G, G, the raise or projection S, with the frame D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the clamps or holders A, A, the pins B, B, the coil wire springs C, C, the flanges or knobs G, G, the raise or projection S and the frame D, with the loose fastener F, bolt E, and nut or thumb-screw K, substantially as and for the purpose hereinbefore set forth.

### No. 22,544. Surgical Device for Hemorrhoids. (*Instrument de Chirurgie pour les Hémorroïdes.*)

Lewis Chamberlain, Farborough, N.C., U.S., 28th September, 1885; 5 years.

*Claim.*—The surgical device for the relief of hemorrhoids and like affections, consisting of a seat formed with an ovoid concave and central aperture, adapted to operate in the manner specified.

### No. 22,545. Friction Clutch Pulley.

(*Poulie d'Embrayage à Friction.*)

Harry W. Hill, Beloit, Wis., U.S., 28th September, 1885; 5 years.

*Claim.*—1st. In combination with a pulley mounted loosely upon its shaft and provided with a concave and convex frictional rim A<sub>3</sub>, the hub D secured upon said shaft, and provided with angular levers and radial arms, the inner member provided with convex frictional blocks, and the outer member provided with concave frictional blocks, each series of blocks being adapted to simultaneously advance to and recede from said frictional rim, substantially as and for the purpose described. 2nd. In combination with a pulley and its rim A<sub>3</sub>, having concave and convex frictional surfaces, the hub D secured upon its shaft and provided with radial arms, the angle levers G, pivoted thereto, and clutch members E and F, pivoted to the latter, and provided with concave and convex frictional surfaces, substantially as and for the purpose described. 3rd. In combination with a pulley loose upon a shaft, the hub D, secured upon said shaft and provided with radial arms and lateral flanges, and between said flanges clutch members provided with concave and convex frictional blocks, substantially as and for the purpose described. 4th. In combination with a pulley and conical clutch sleeve loose upon a shaft, the hub D secured upon said shaft and provided with radial arms, the bell-crank, levers H and angle levers G, pivoted upon said arms, and clutch members pivoted upon the levers G, to simultaneously advance with the lever G, toward the frictional rim of the pulley, substantially as described. 5th. In combination with the hub D, and its arms D<sub>2</sub>, the angle levers G, their adjustable blocks G<sub>1</sub>, and bell-crank levers bearing against the latter, substantially as and for the purpose described. 6th. The combination of the hub D, having arms D<sub>2</sub>, the angle levers G, pivoted to the latter, and clutch members E and F, with bolt G<sub>2</sub>, and spring thereon, substantially as and for the purpose described.

### No. 22,546. Shingle Binding Tool.

(*Outil à Lier le Bardeau.*)

Hiram E. Brackett and Fred. L. Sawyer, Hampden, Me., U. S., 28th September, 1885; 5 years.

*Claim.*—1st. The herein described shingle binding tool, consisting of the lever A, B, curved upwardly towards its point, and rounded or convexed upon the upper surface of its curve. 2nd. The herein described shingle binding tool, consisting of the lever A, B, curved upwardly toward its point, rounded or convexed upon the upper surface of its curve, and finished with the spur b upon its under side, all as shown and described and substantially as and for the purpose specified.

### No. 22,547. Photographic Sheet.

(*Papier Photographique.*)

Orrin L. Hulbert, St. Louis, Mo., U.S., 29th September, 1885; 5 years.

*Claim.*—A sheet containing a number of photographic pictures,

which are separated by intervening rows of perforations, substantially as set forth.

**No. 22,548. Baby Carriage.** (*Voiture d'Enfant.*)

James F. Colby, New York, U.S., 30th September, 1885; 5 years.

*Claim*—A baby carriage, having one of the axles supported upon springs connected to the vertically-pivoted rod, located in advance of the axle in combination with the running gear and pushing bars of a baby carriage, whereby the carriage may be easily guided in either direction by the pushing bars, substantially as described.

**No. 22,549. Gate Hinge.** (*Penture de Barrière.*)

Walter S. Marlatt, Beamsville, Ont., 30th September, 1885; 5 years.

*Claim*—The combination and arrangement of the several parts in a hinge for gates, namely: the lever bar D, eye-bolts I<sup>1</sup> and I<sup>2</sup>, and

K, arm E, socket G and lever H, in connection with the trip rods L and M, and the throw cranks N<sup>1</sup>, N<sup>2</sup> and O<sup>1</sup> and O<sup>2</sup>, substantially as and for the purposes herein set forth.

**No. 22,550. Belt Clamp.** (*Mordache à Courroie.*)

Eleazer Ainsworth, Wilmington, Del., U. S., 30th September, 1885; 5 years.

*Claim*.—1st. A belt clamp, having the inner surfaces of the clamp bars made convex in the direction of their length, substantially as herein shown and described. 2nd. In a belt clamp, the combination with two clamp bars having their inner and adjacent faces made convex longitudinally, of screws for pressing the two bars together, substantially as herein shown and described. 3rd. In a belt clamp, the combination, with the screw rods, of the clamp bars A, having grooves in the ends, the depths of the grooves increasing from the outer to the inner edges of the bars, substantially as hereinbefore shown and described and for the purposes set forth.

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

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| <p>452. J. WEBSTER, 2nd 5 years of No. 11,727, from the 8th day of September, 1885. Improvements on Flour Bolt and Bran Duster Combined, 2nd September, 1885.</p> <p>453. THE HAWLEY STEAM SNOW EXCAVATOR Company, (Assignee,) 2nd 5 years of No. 11,707, from the 3rd September, 1885. Improvements in Snow Ploughs, 3rd September, 1885.</p> <p>454. R. J. DOYLE, 2nd 5 years of No. 11,791, from the 27th September, 1885. Improvements in Fruit Packages, 5th September, 1885.</p> <p>455. F. M. CAMPBELL and A. C. DUNBERY, 2nd 5 years of No. 11,716, from the 6th day of September, 1885. Improvement on Skylights, 5th September, 1885.</p> <p>456. M. J. WOODWARD, 2nd 5 years of No. 11,726, from the 8th day of September, 1885. Process of Deodorizing Petroleum Tar and Crude Petroleum, 7th September, 1885.</p> <p>457. C. A. CLARK and A. A. LOCKERBY, 2nd 5 years of No. 11,724, from the 8th day of September, 1885. Combined Freezer and Refrigerator, 7th September, 1885.</p> <p>458. R. G. McLELLAN, 2nd 5 years of No. 11,756, from the 15th day of September, 1885. Improvements in Tailor's Measures, 8th September, 1885.</p> <p>459. W. D. EWART, 3rd 5 years of No. 5,168, from the 10th September, 1885. Improvements in Drive Chains, 8th September, 1885.</p> <p>460. J. H. PADDOCK, 2nd 5 years of No. 11,742, from the 11th day of September, 1885. Improvements on a Machine for Separating Ores, 9th September, 1885.</p> <p>461. J. McMURCHY, 2nd 5 years of No. 11,771, from the 15th day of September, 1885. Improvements on Ferrules of Metal for Hay Forks, Straw Forks, Barley Forks, Spading Forks, Manure Forks, Field and Garden Hoes, or any Hand Tool on which a Ferrule is Used, 11th September, 1885.</p> | <p>462. J. A. GOUDRON, 2nd 5 years of No. 11,747, from the 11th day of September, 1885. Improvements on Beer Pumps, 11th September, 1885.</p> <p>463. W. F. COOK, 2nd 5 years of No. 11,754, from the 15th day of September, 1885. Improvements on Electric Telephones, 14th September, 1885.</p> <p>464. G. W. PRESSY, 2nd 5 years of No. 11,755, from the 15th September, 1885. Improvements on Scythe and other Blade Fastening, 14th September, 1885.</p> <p>465. D. MAXWELL, 2nd 5 years of No. 11,787, from the 20th September, 1885. Improvements on Friction Dumps for Horse Rakes, 14th September, 1885.</p> <p>466. E. N. HENEY (Assignee), 2nd 5 years of No. 12,566, from the 21st day of March, 1886. Improvements in Vehicle Springs, 16th September, 1885.</p> <p>467. J. A. BONSACK, 2nd 5 years of No. 11,812, from the 23rd day of September, 1885. Improvements in Cigarette Machines, 16th September, 1885.</p> <p>468. J. W. McKENNA and R. A. HITHCOCK, 2nd 5 years of No. 11,877, from the 15th day of October, 1885. Improvements on a Child's Chair and Carriage, 16th September, 1885.</p> <p>469. F. R. DUBUC and M. PATENAUDE, 2nd 5 years of No. 11,781, from the 17th day of September, 1885. Improvements in the method of Upsetting Metals, by means of Machines, 16th September, 1885.</p> <p>470. P. H. McINTOSH, 2nd 5 years of No. 11,839, from the 30th September, 1885. Improvements on Milk Creamers, 18th September, 1885.</p> <p>471. A. McDONALD, 2nd 5 years of No. 11,874, from the 15th day of October, 1885. Improvements on Finger Nail Cutters, 24th September, 1885.</p> <p>472. J. A. BONSACK, 2nd 5 years of No. 13,104, from the 16th day of July, 1886. Improvements on Cigarette Machines, 24th September, 1885.</p> <p>473. J. G. YEMEN, 2nd 5 years of No. 12,065, from the 1st December, 1885. Improvements in a Machine called a Dental Plate, 24th September, 1885.</p> <p>474. F. B. HOWARD, 2nd 5 years of No. 11,813, from the 27th day of September, 1885. Improvements on Wash Boards, 26th September, 1885.</p> |
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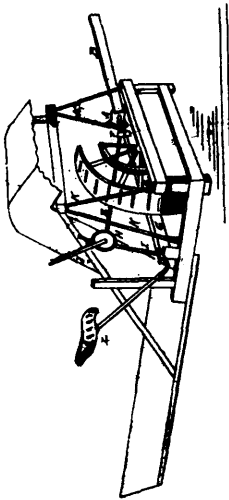
THE  
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

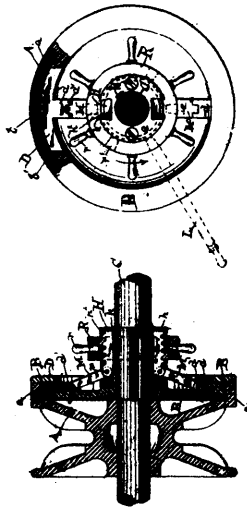
Vol. XIII.

OCTOBER, 1885.

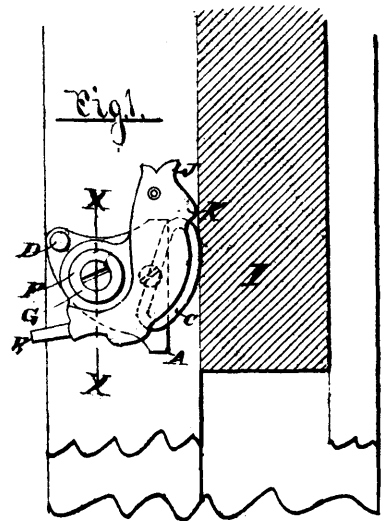
No. 10.



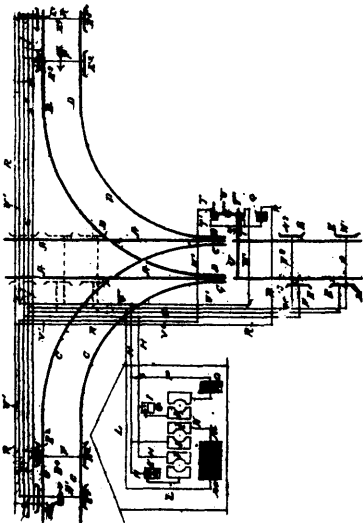
22326 McLachlan's Self-Binding Harvester.



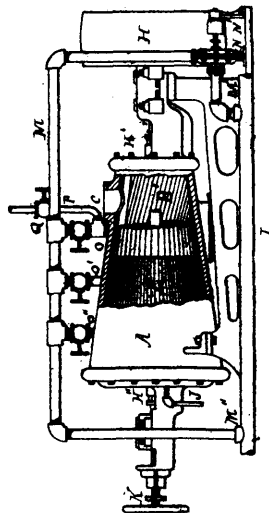
22327 Grater's Gear for Windlasses.



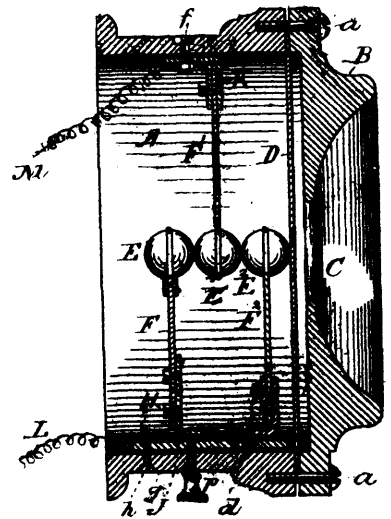
22328 Liesche's Burglar Proof Sash Lock.



22329 Vogel's Electric Railway Signal.

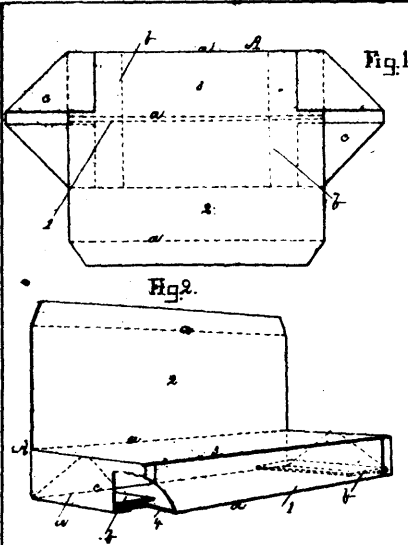


22330 Jordan's Apparatus for Beating and Manipulating Paper pulp.

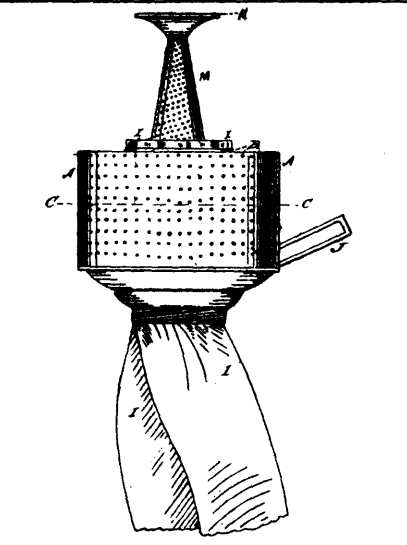


22331 Fairbank's Telephone.

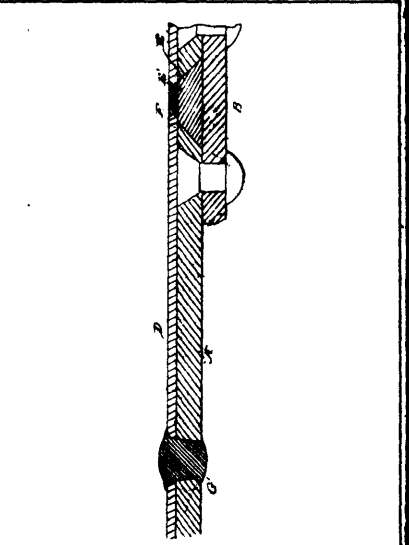




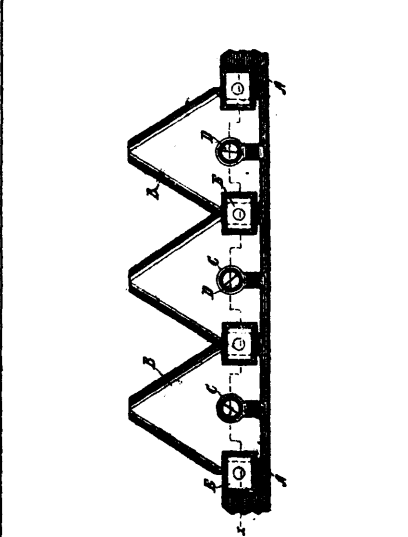
22332 Elliott's Folding Paper Box.



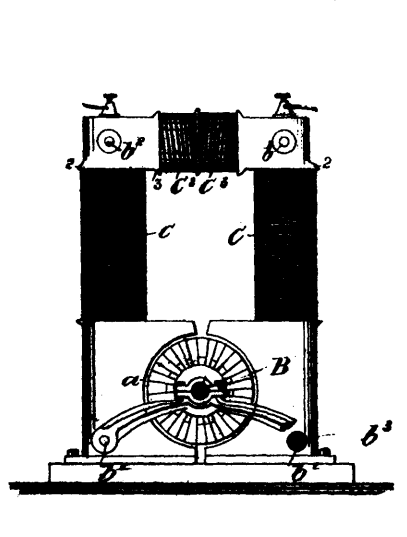
22333 Duffield's Oil Lamp Burner.



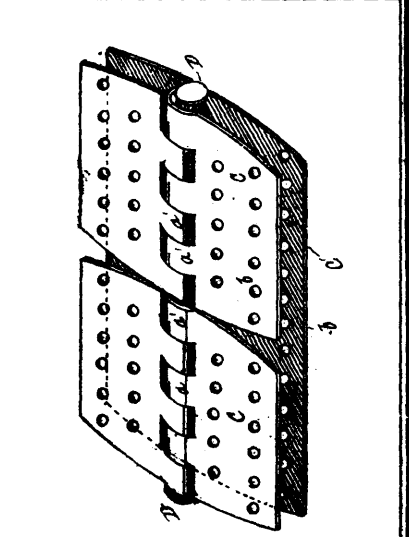
22334 Ritter and Kellener's Lead-Lined Boiler.



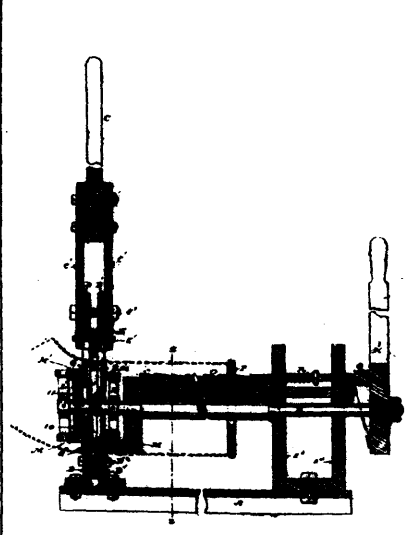
22336 Vansickle and Turnbull's Adjustable Resaper and Mower Knife.



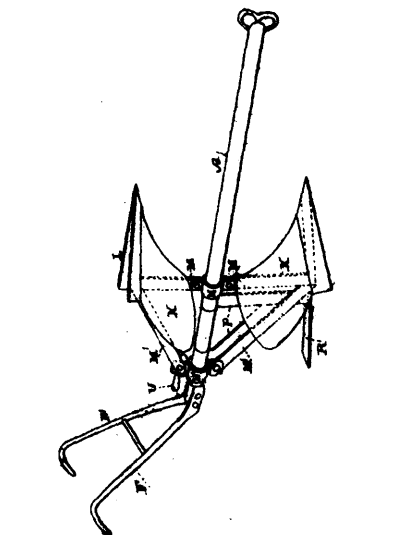
22337 Whitney's Dynamo-Electric Machine.



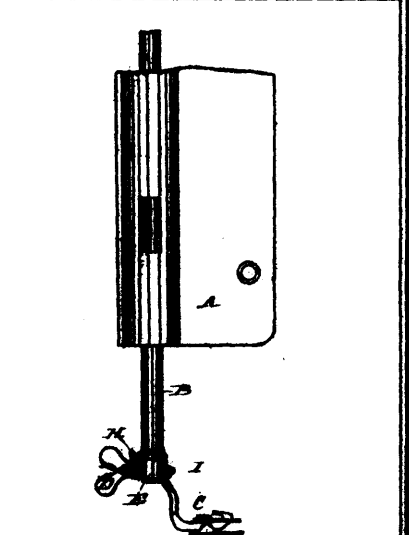
22338 Smith's Belt Fastening.



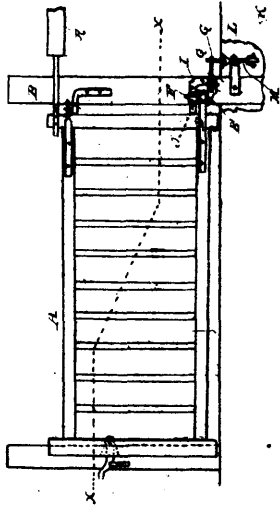
22339 Evans and Bissett's Machine for Making Crimped Stove Pipe Elbows.



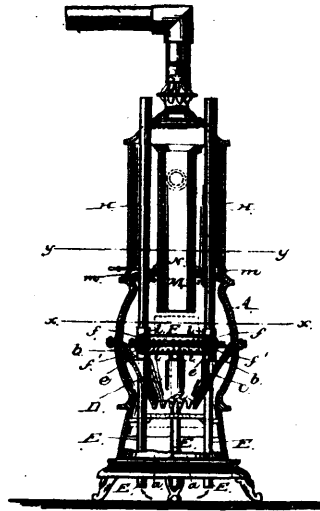
22340 Fitch's Flough.



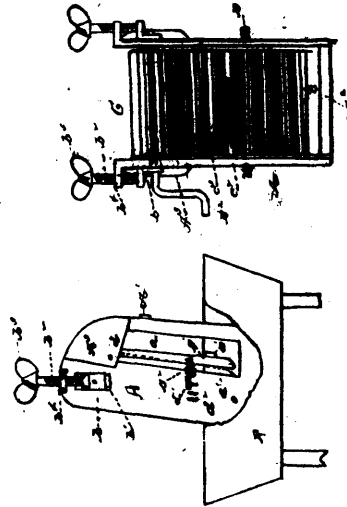
22342 Lens's Sewing Machine.



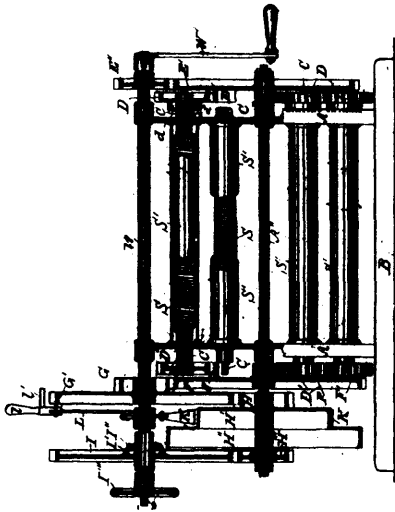
22343 Johnston's Farm Gate.



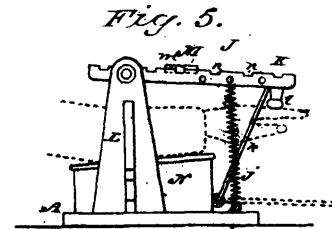
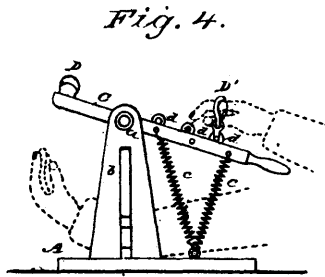
22344 Pederson's Stove.



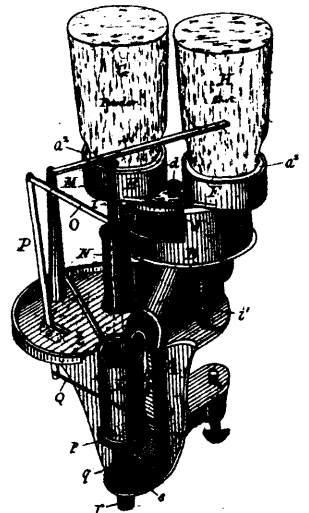
22345 Peimulder's Washing Machine.



22346 Fournier's Spring Motor.



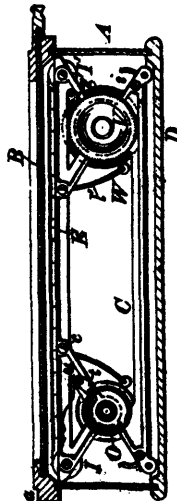
22347 Brotherhood's Apparatus for Exercising Wrist and Hand.



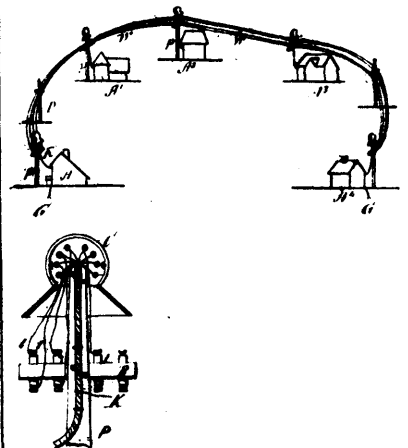
22349 Belcher's Machine for Loading Cartridge Shells.



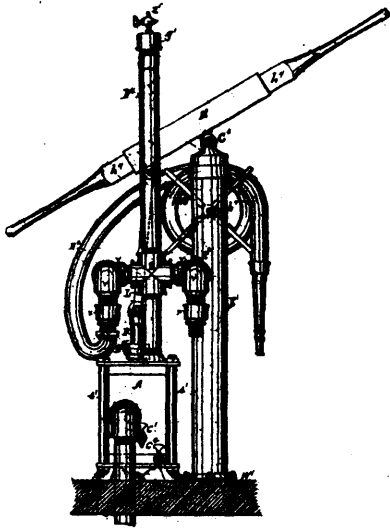
22350 Mitchell's Nut Lock.



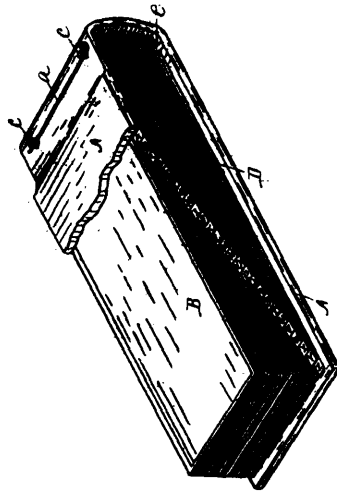
22351 Eastman and Walker's Roll-Holder for Photographic Films.



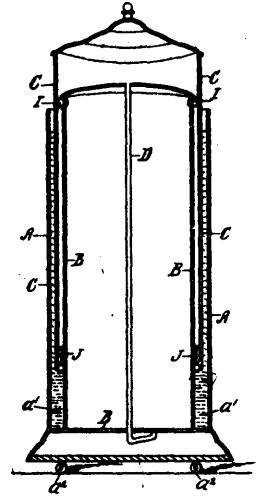
22352 Gilliland's Telephone Circuit and Apparatus.



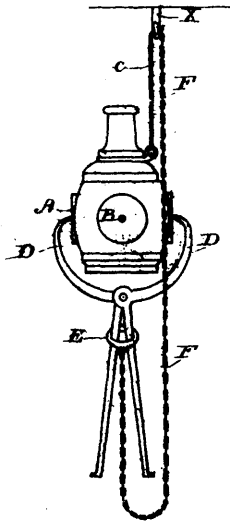
22353 Cloud's Double Acting Pump.



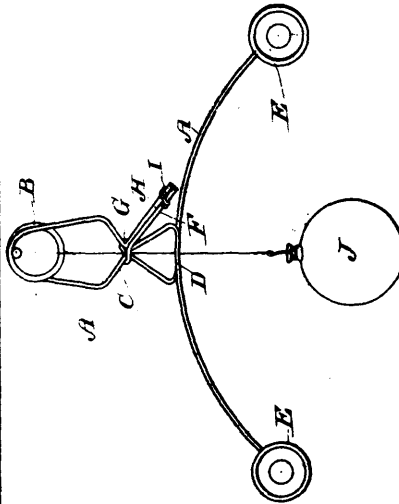
22354 Appleby's Temporary Binders for holding Blank Leaves.



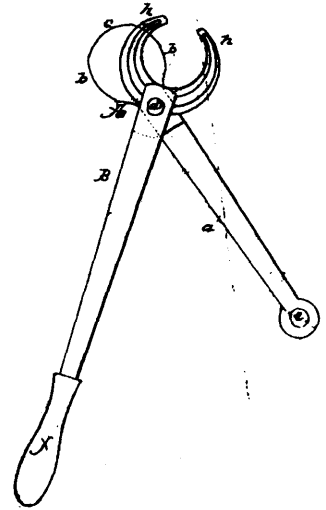
22355 McLaren's Gasometer.



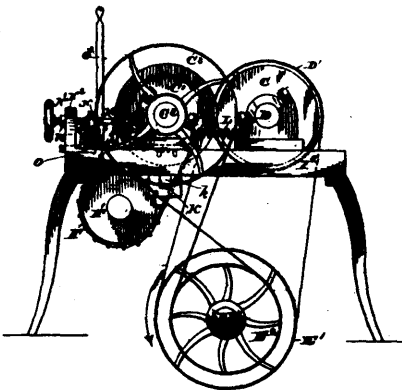
22356 House's Device for suspending Fire Grenades.



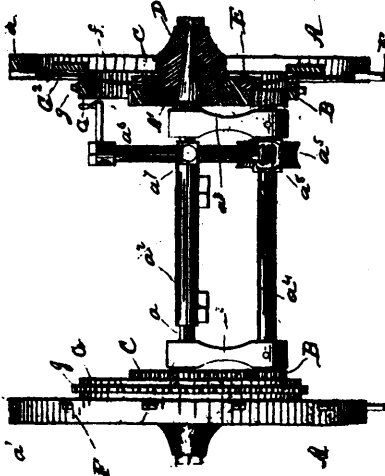
22357 House and Dimond's Fire Extinguisher.



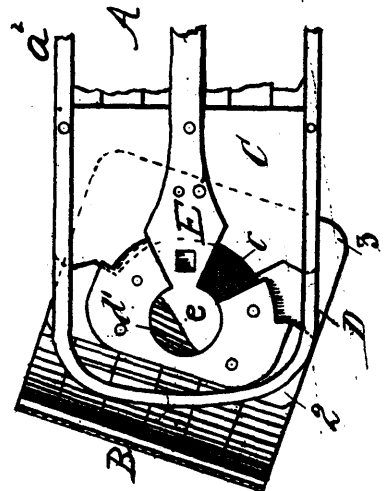
22358 Case's Pruning Implement.



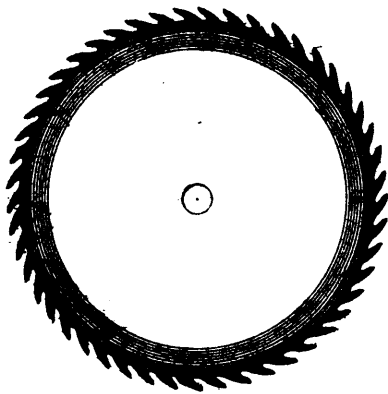
22359 Wakeford's Roller Grinding Mill.



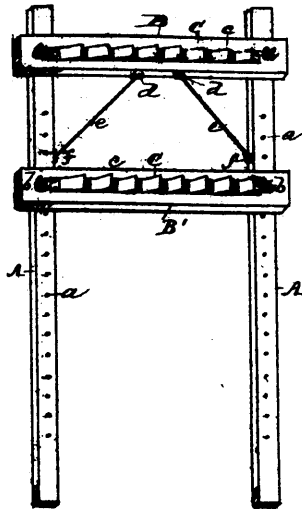
22360 Reindorf's Traction Wheel.



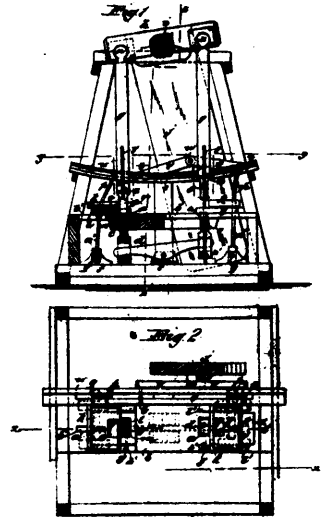
22361 Goold's Toboggan.



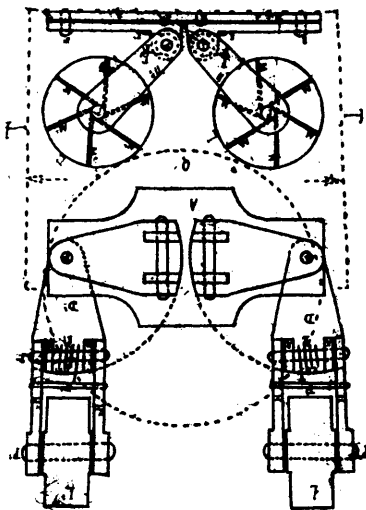
22362 Shoemaker's Saw.



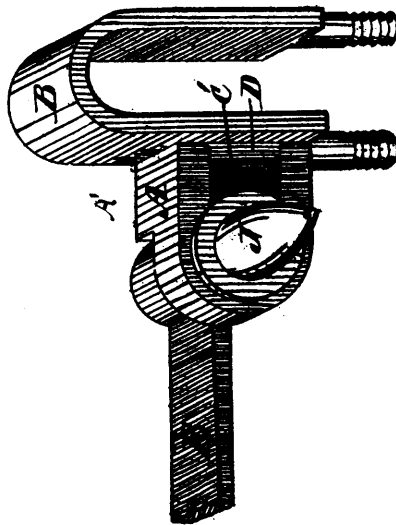
22363 Raney's Plating Apparatus.



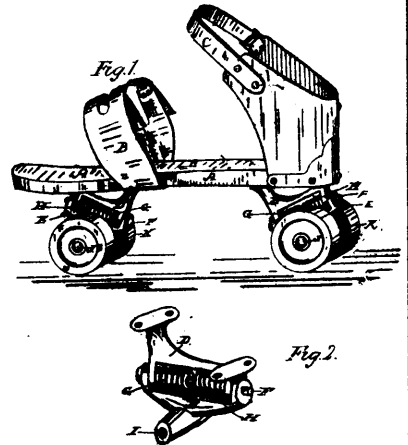
22364 Lusher's Brick Press.



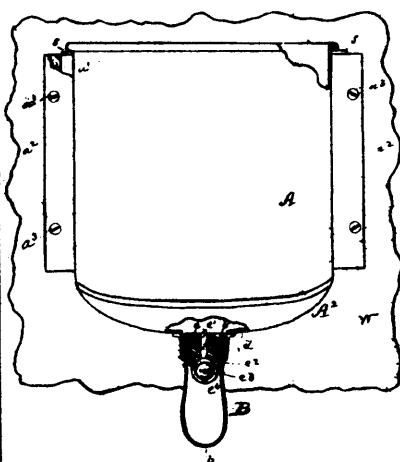
22365 Morison and Bertrand's Lubricator.



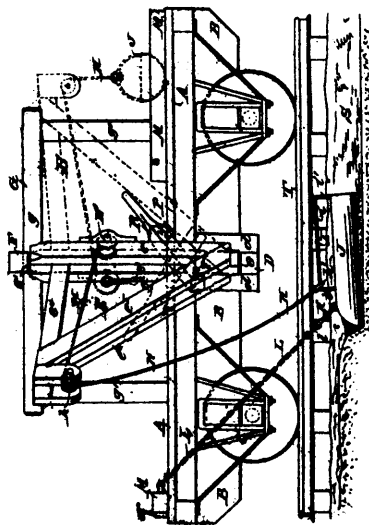
22366 Van Laven and Folger's Thill Couplings.



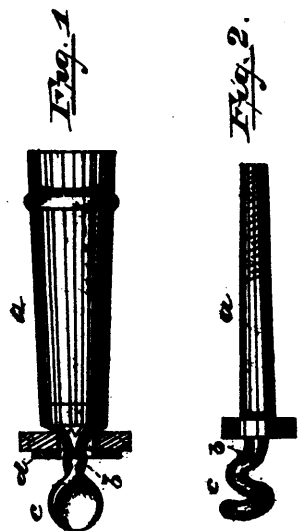
22368 Mallory's Roller Skate.



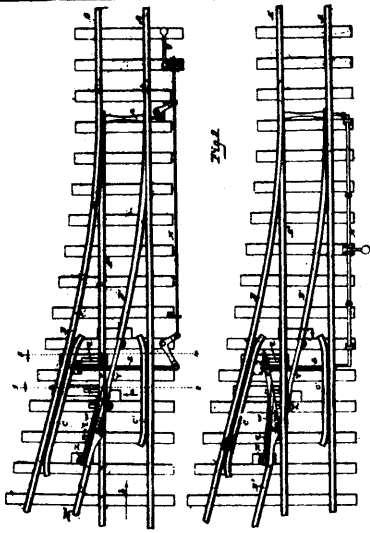
22369 Small's Calf Feeder.



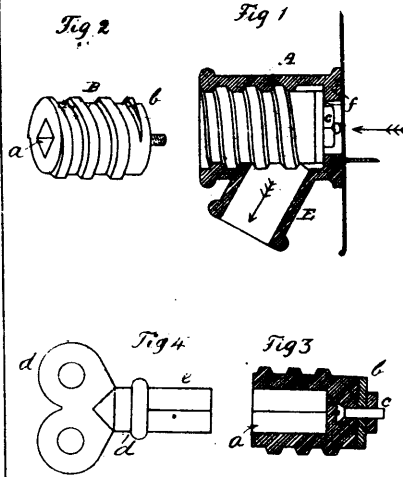
22370 McGrew's Railroad Ditching Machine.



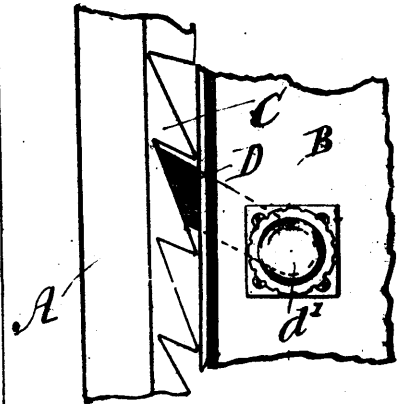
22371 Bellamy's Trace-Fastener.



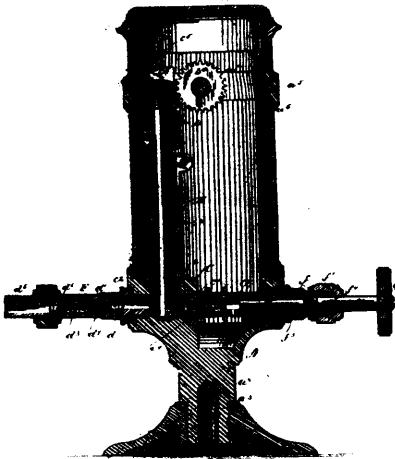
22372 Price's Railway Frog and Switch.



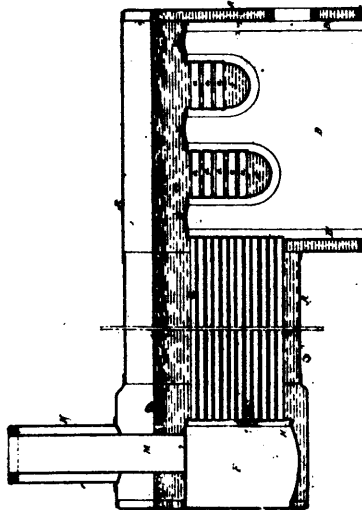
22373 McShane's Faucet.



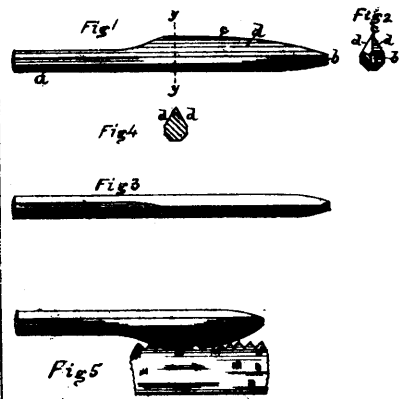
22374 Norris' Window Adjuster or Holder.



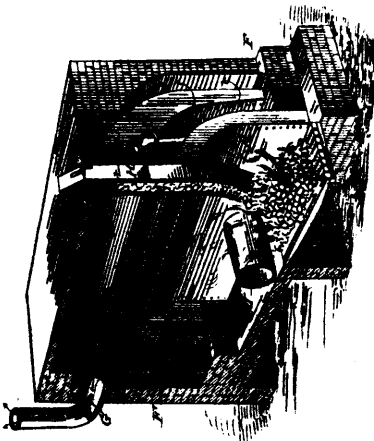
22375 Harlow's Lubricator.



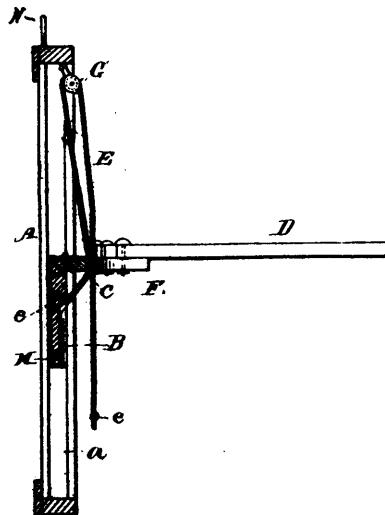
22376 Malam's Steam Boiler.



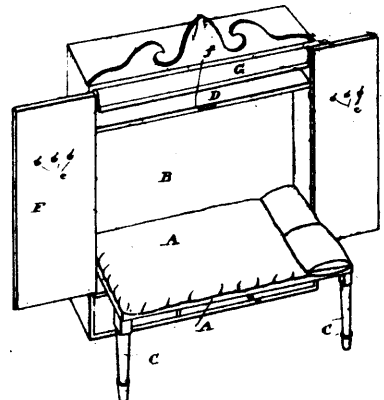
22377 Peelman's Saw Set and Nail Punch.



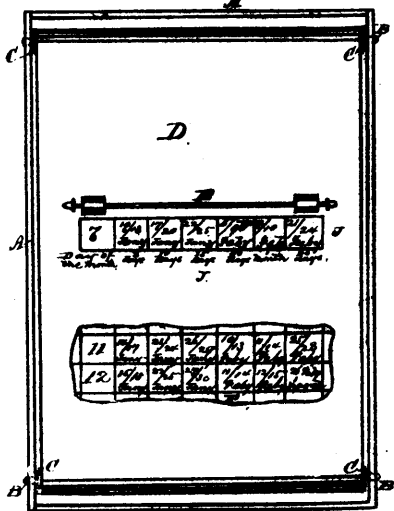
22378 Herbert's Base Burning Steam Boiler.



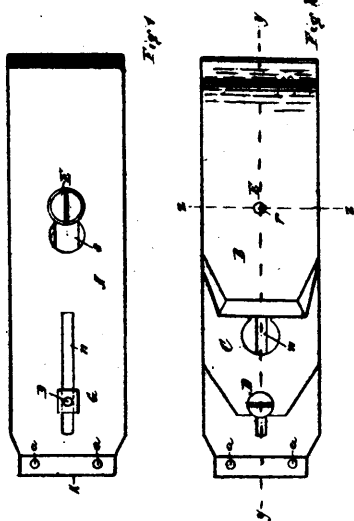
22379 Blisel's Clothes Dryer.



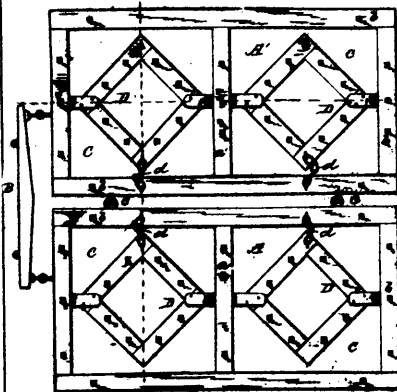
22380 Arndt's Combined Bedstead and Wardrobe.



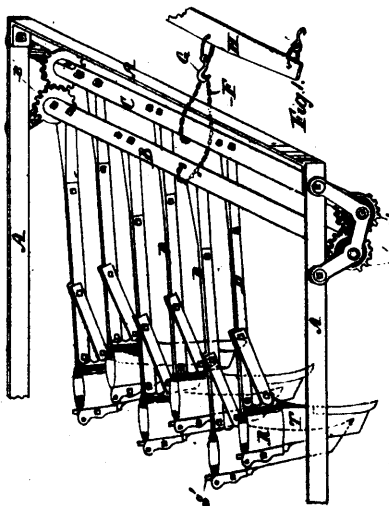
22381 Charpentier's Calculator.



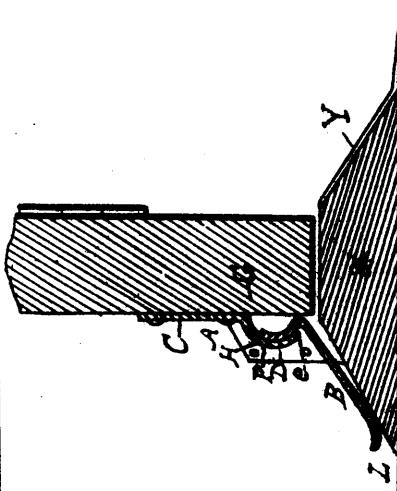
22382 Kellet's Plane Bit.



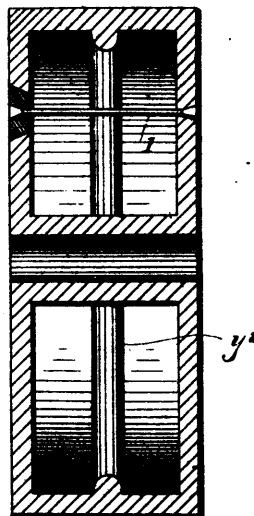
22383 Deloria's Harrow.



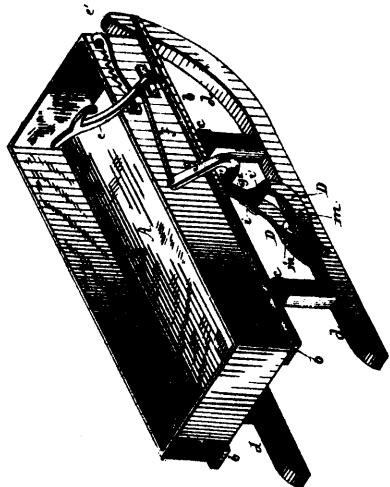
22384 Billings' Seeding Machine.



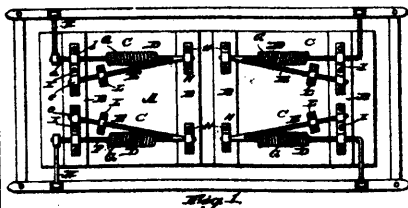
22385 Mayfield's Weather Strip.



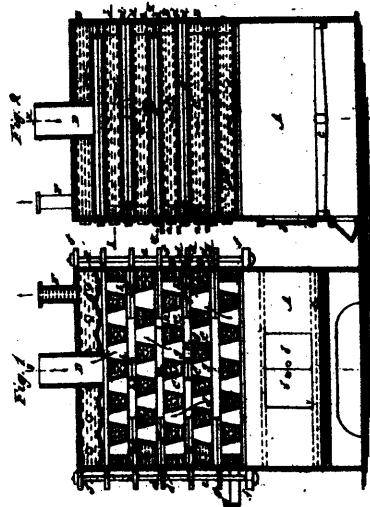
22386 Brown's Castor Wheel for Hoisting Buckets.



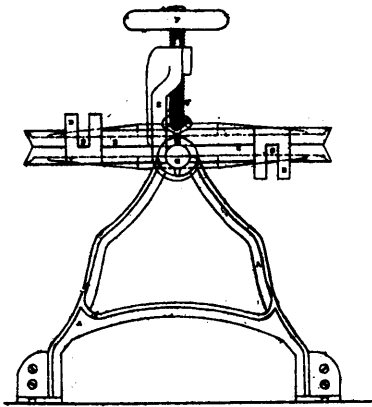
22387 Pott's Sleigh Brake.



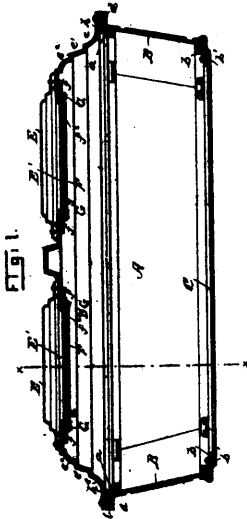
22388 Kern's Vehicle Spring.



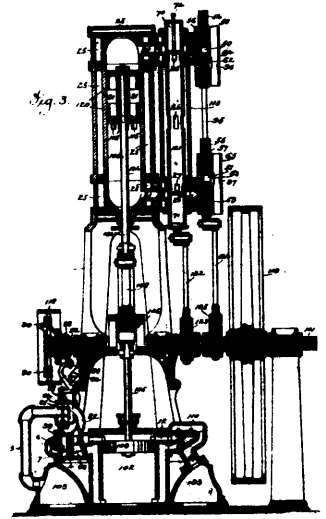
22389 Byram's Boiler.



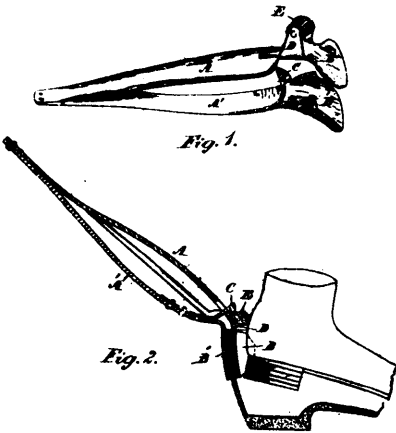
22380 Cameron's Stereotyping Machine.



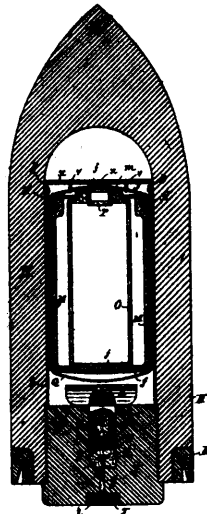
22391 Baker's Metallic Casket.



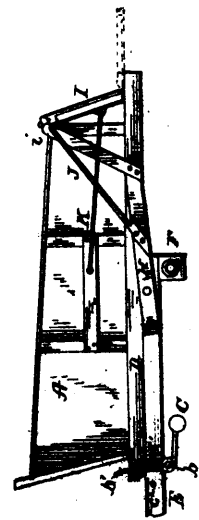
22392 Murray's Gas Engine.



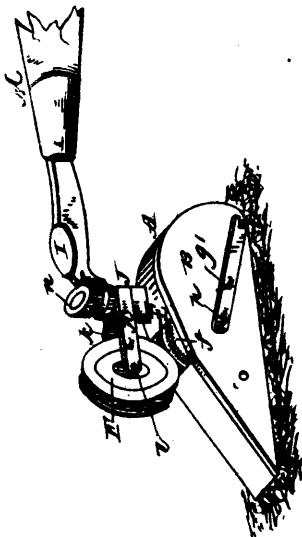
22393 Blenkhorn's Overshoe Lift.



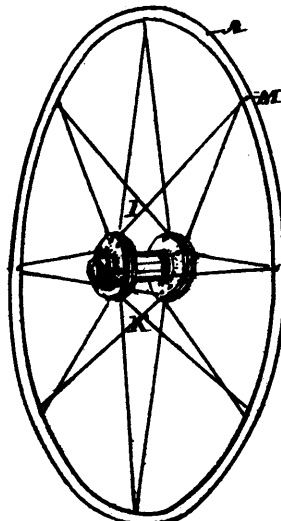
22394 Fannon's Nitro-Glycerine Shell.



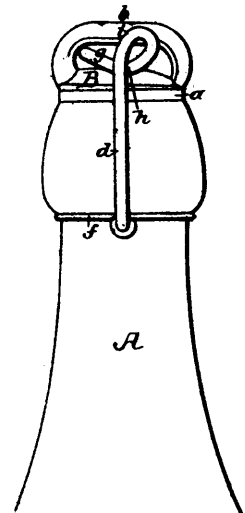
22395 Stewart's Dumping Waggon.



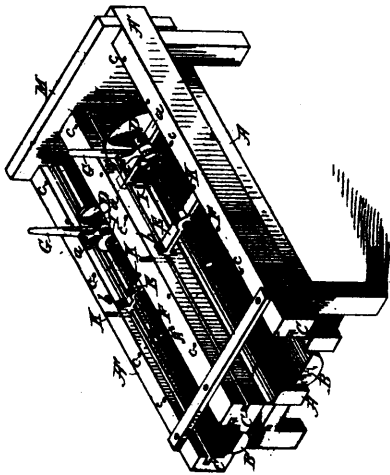
22396 Monday's Scissors and Shears.



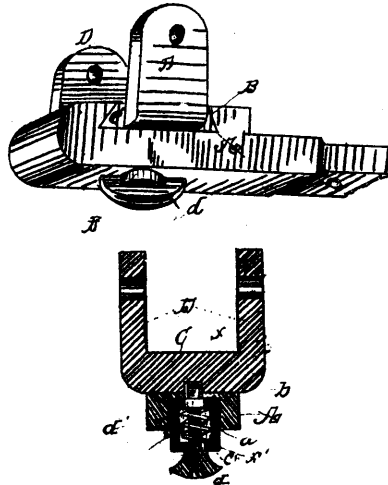
22397 Gallup and Hanks' Suspension Wheel for Cars or Bicycles.



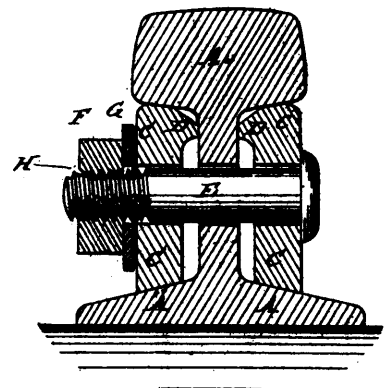
22398 Lloyd's Bottle Stopper.



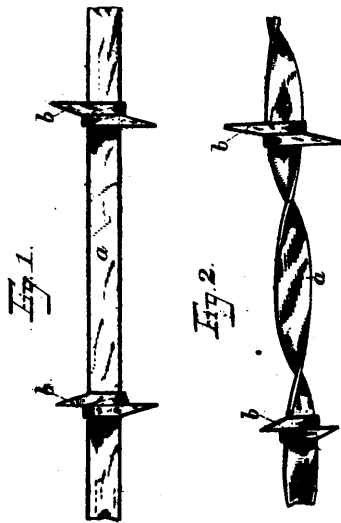
22399 Jacob's Gang Cheese Presses.



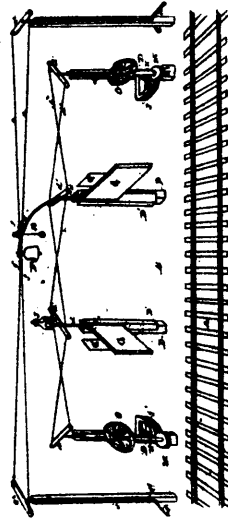
22400 Randall's Thill-Coupling.



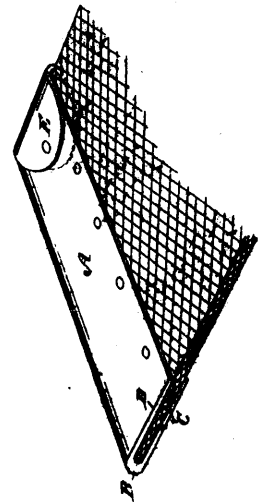
22401 Davis' Fish-Plate.



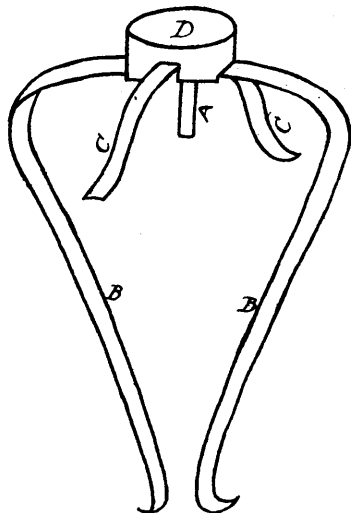
22402 Olivier's Metallic Fencing.



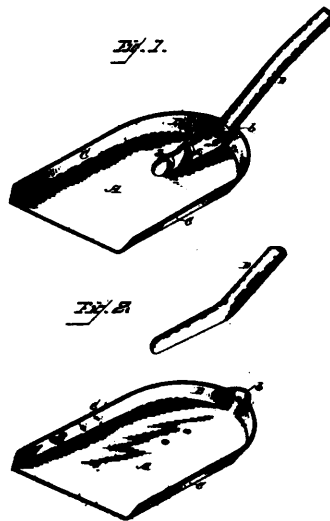
22403 Nelson's Railway Signals.



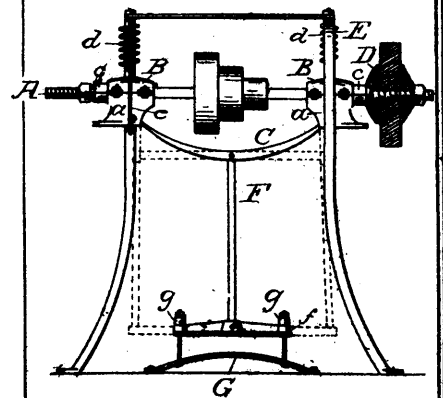
22404 Knapp's Binding for Carpets.



22405 Stringer's Animal Slaughtering Instrument.

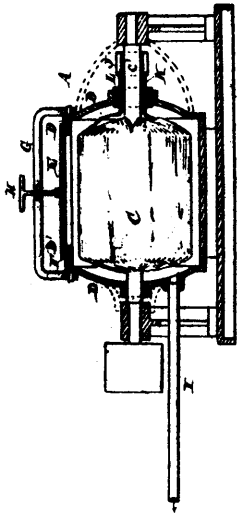


22406 Whitney's Shovel.

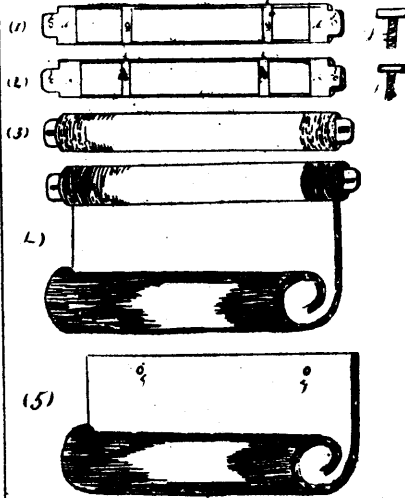


22407 Huntington's Device for Suspending Machinery.

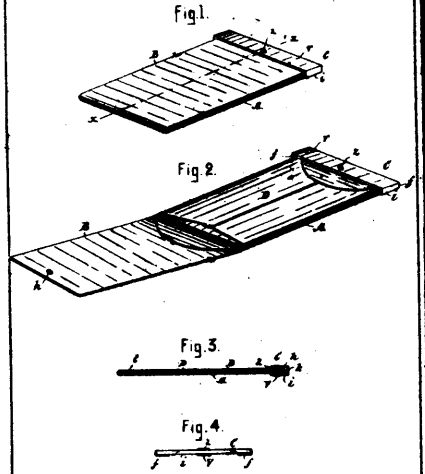




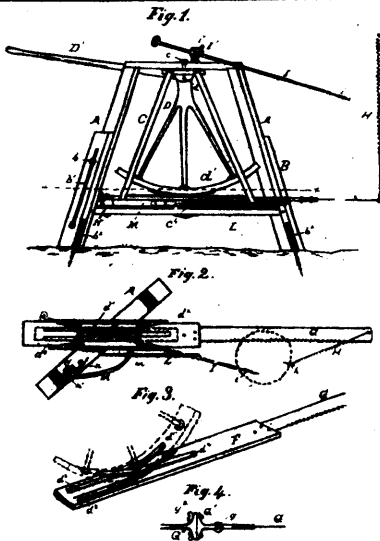
22408 DuBois's Dynamo-Electric Machine.



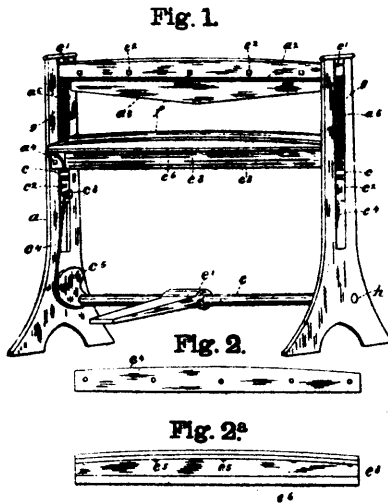
22409 MacGregor and Greig's Letter Press and Book.



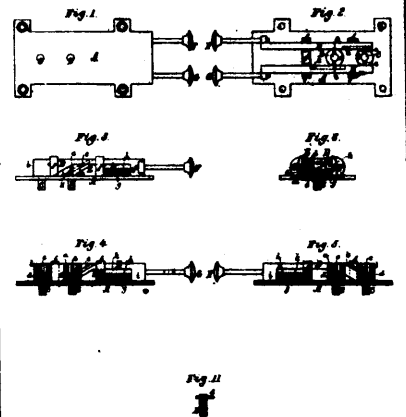
22410 Webster's Tag.



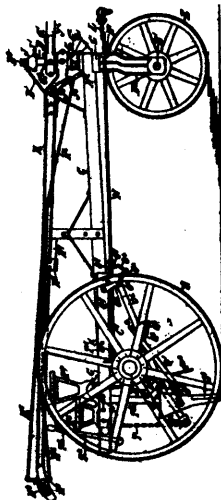
22411 Parker's Drag Saw.



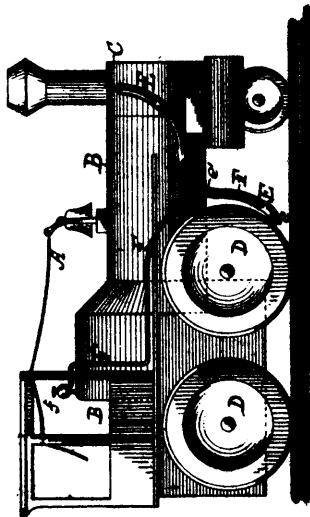
22412 Jewett's Machine for Jointing Compressed Bent Staves.



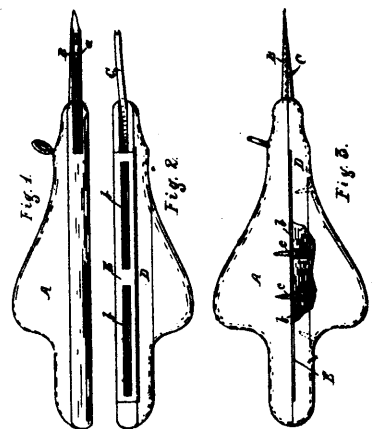
22413 Nichol's Window Sash Lock.



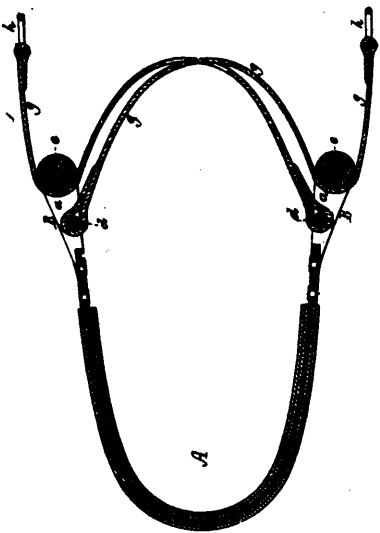
22414 Roger's Drill Seeder and Cultivator.



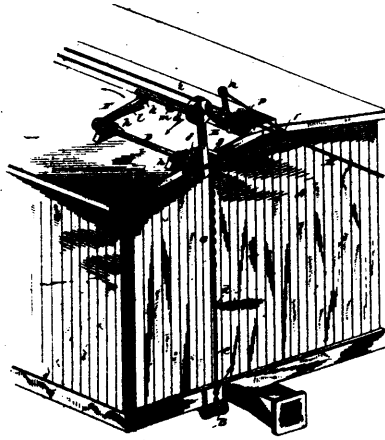
22416 Johnson's Locomotive Engine.



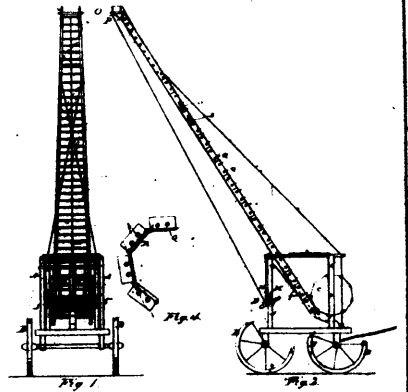
22417 Whittle's Embroidering Machine.



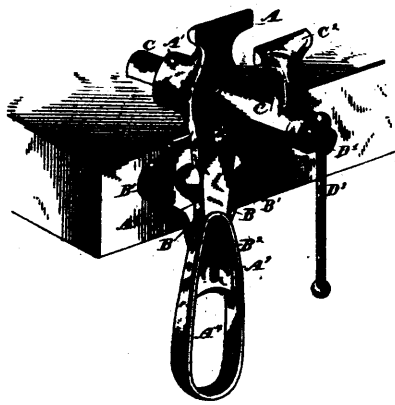
22418 Metcalf's Driving Check for Horses.



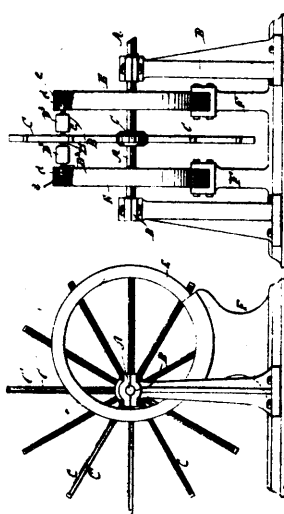
22419 Marsh's Car Brake.



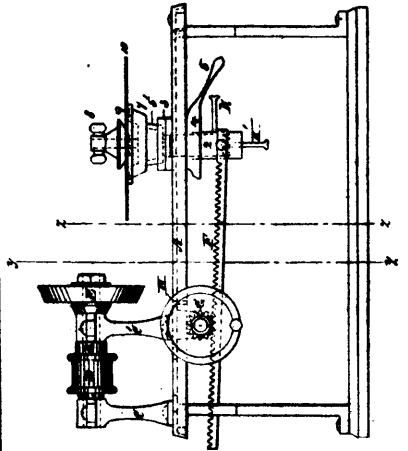
22420 Sees' Fire Escape.



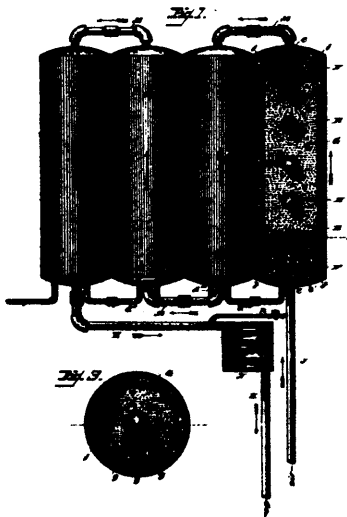
22421 Colton's Vice.



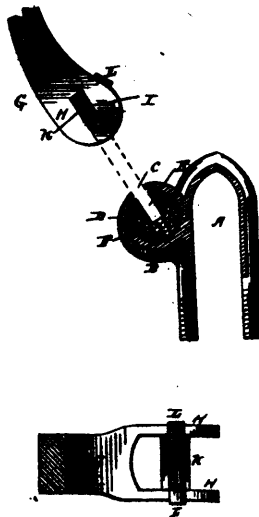
22422 Duperrousel's Mechanical Motor.



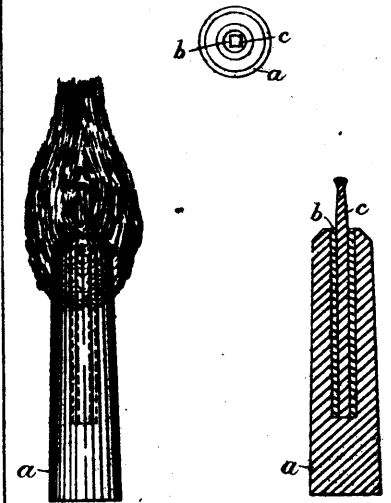
22423 Gaskin's Machine for Rounding Circular Saws.



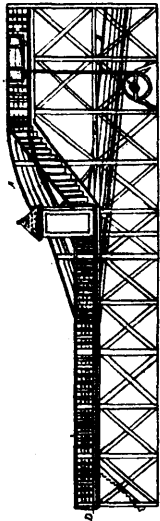
22424 Singer's Carburetters.



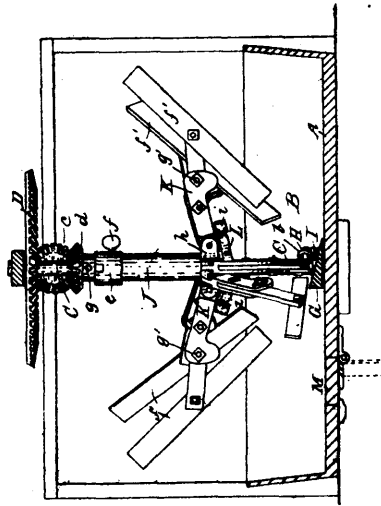
22425 Shanahan's Thill-Coupling.



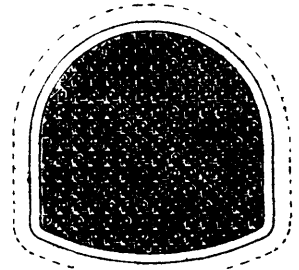
22426 Mitchell's Light.



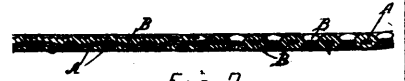
22427 Yearick's Gravity Railway.



22428 Loyer's Kiln for Drying Grain.

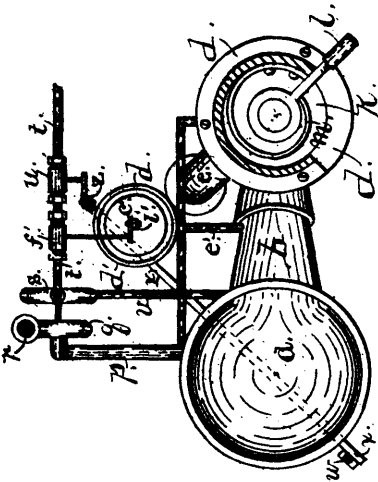


- Fig. 1 -

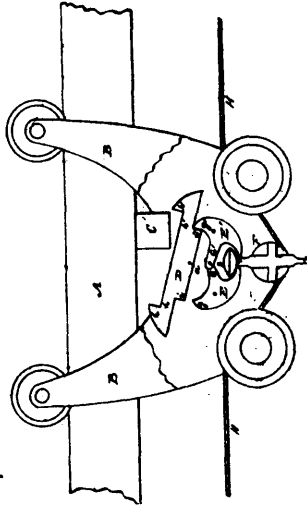


- Fig. 2 -

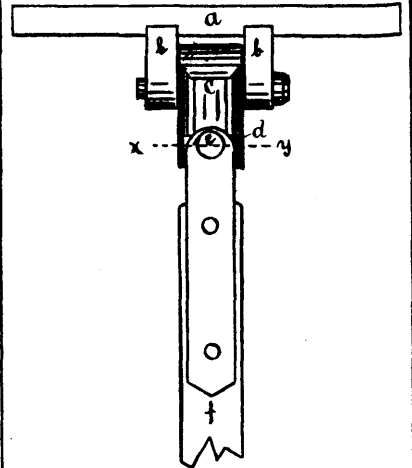
22429 Latulip's Seat and Back for Chairs, etc.



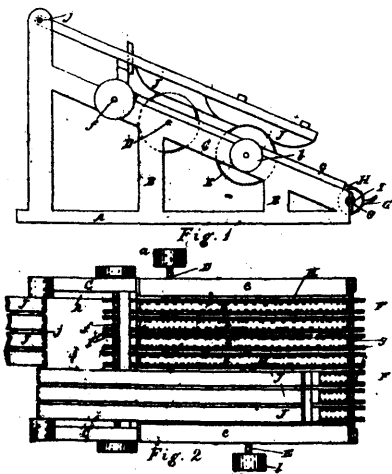
22431 Stimms' Water Closet.



22432 Drader's Hay Car.



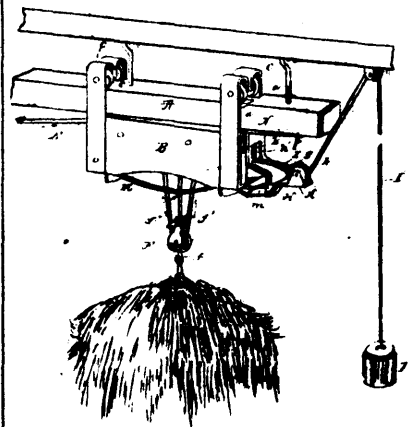
22433 Humpheries' Sleigh Coupling.



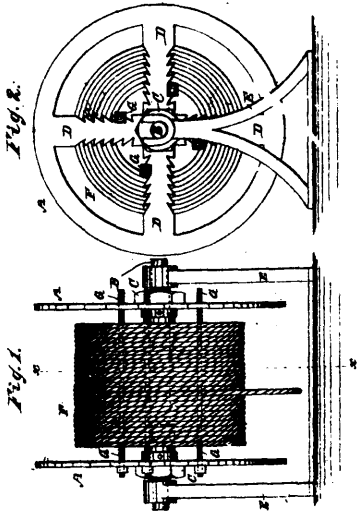
22434 Winnett's Machine for Cutting Paving Blocks.



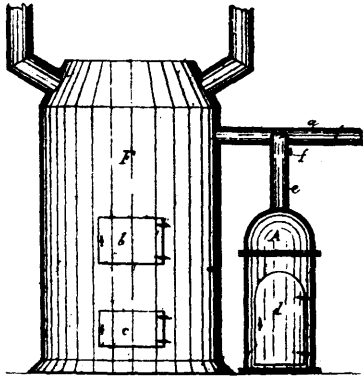
22435 Stewart's Bob Sleigh.



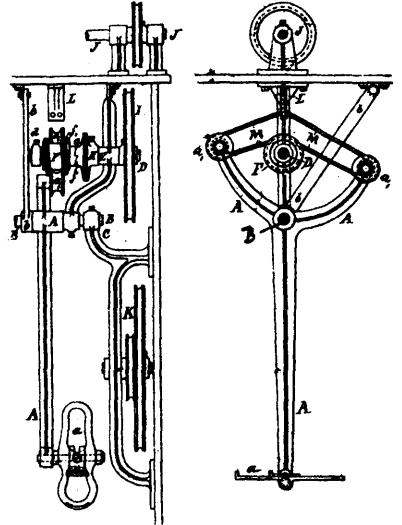
22436 McCowen's Hay Elevator



22437 Bishop's Rope Reel.



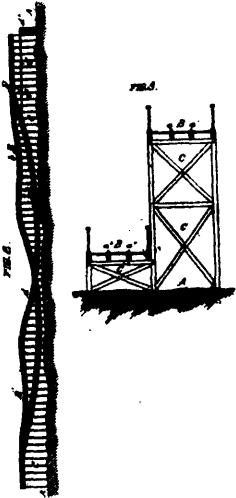
22438 Vigier's Ash Receptacle.



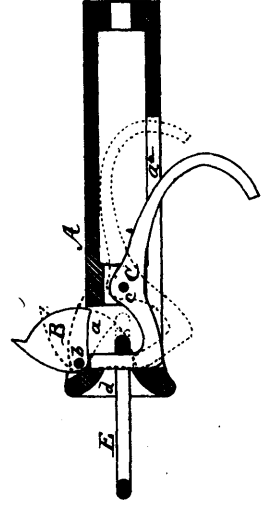
22439 Winan's Power Transmitting Machinery.



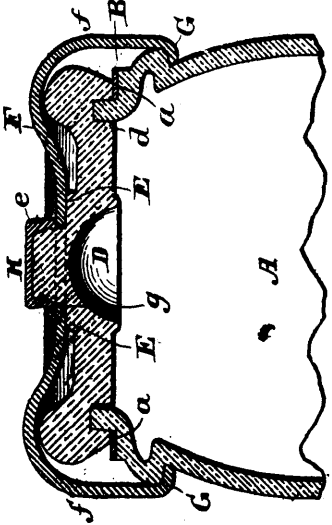
22440 Nason's Concave Knife.



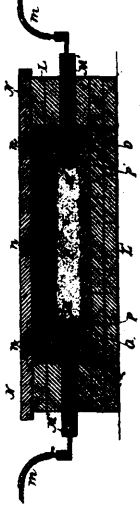
22441 Thompson's Roller Coasting Structure.



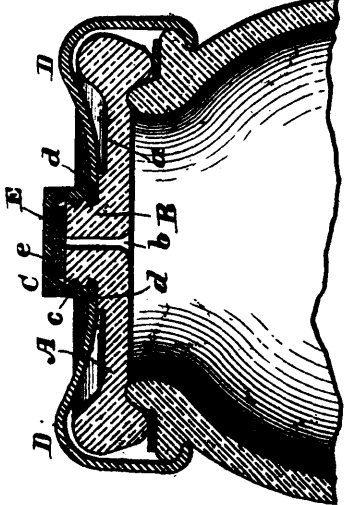
22442 Horsley and Jull's Car-Coupling.



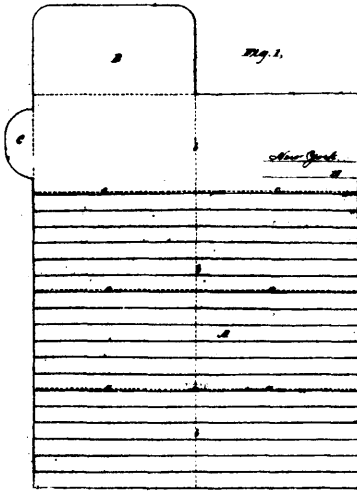
22443 Otterson's Cover for Fruit Jar.



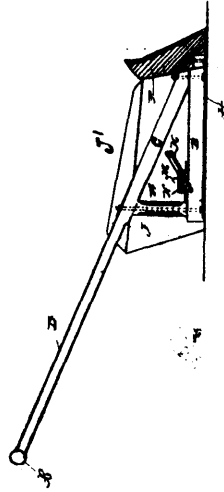
22444 Cowles' Furnace for Smelting Ores.



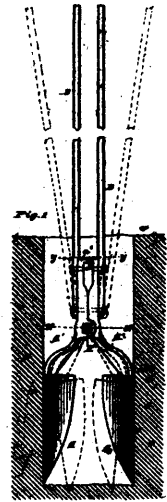
22445 Otterson and Voorhies' Glass Can Cap.



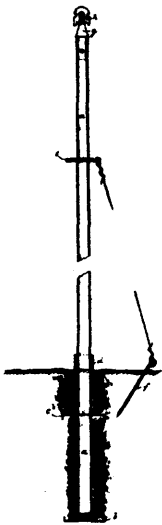
22446 Bates and Bruce's Combined Sheet and Envelope.



22447 Franz's Snow Plough.



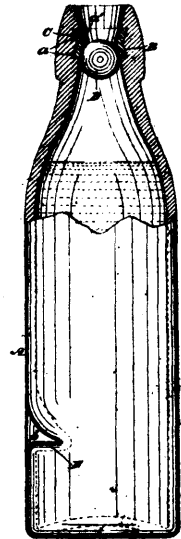
22448 Kohler's Post Hole Digger.



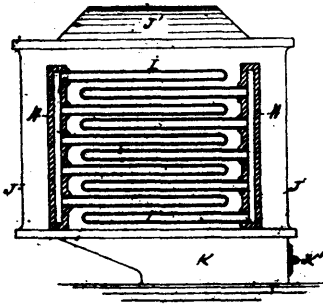
22449 Gishorne's Metallic Telegraph Post.



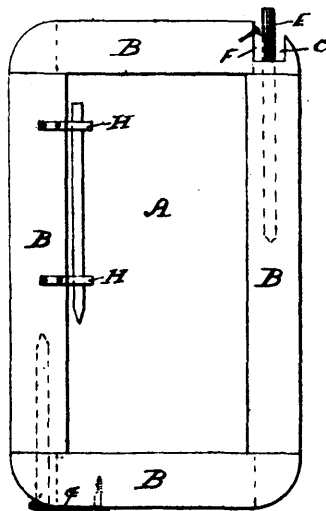
22450 Cooney's Kitchen Utensil.



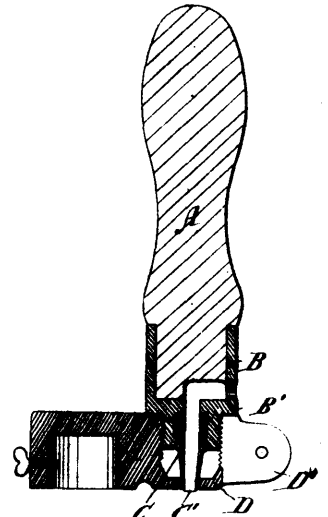
22451 Eoorbach's Bottle.



22452 Kendall's Steam Engine and Boiler.

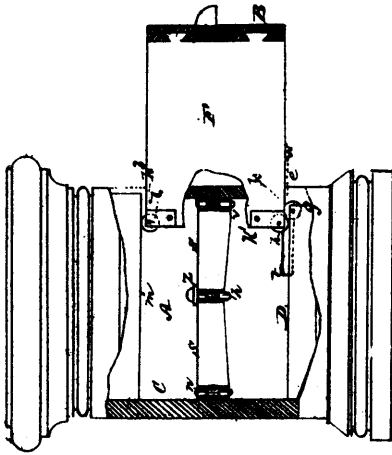


22453 Holbon's School Slate.

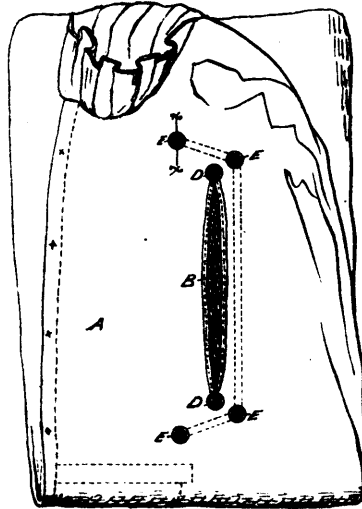


22454 Bancroft and Horsfall's Apparatus for Cancelling Stamps.

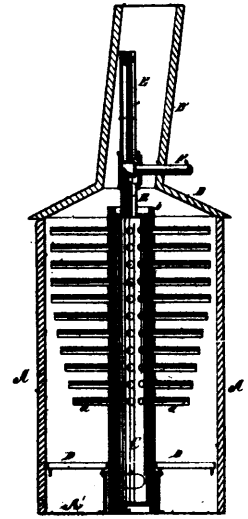




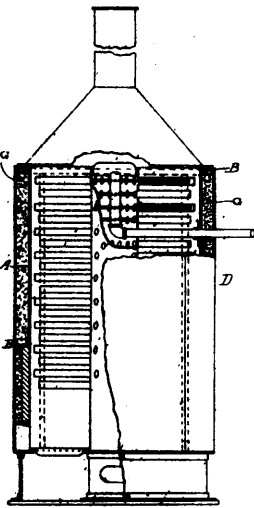
22466 Robert's Furniture Drawer.



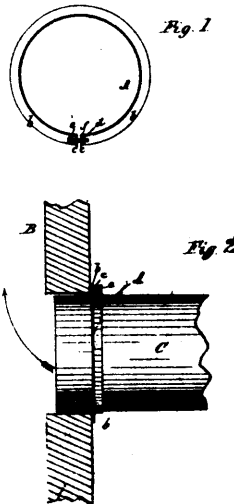
22468 Gets's Gossamer's Cloak.



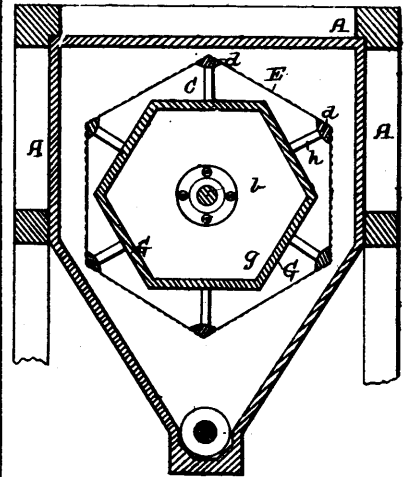
22467 Kennedy's Steam Boiler Jacket.



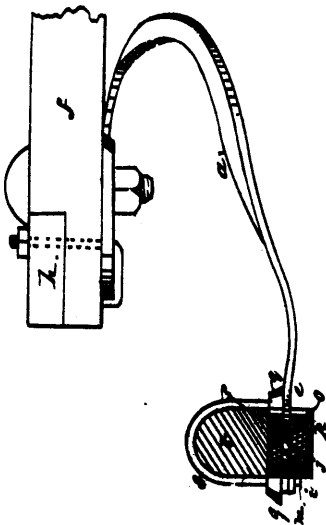
22468 Kennedy's Steam Boiler Jacket.



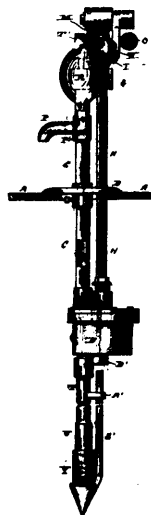
22469 Ambrose's Stove Pipe Stop Collar.



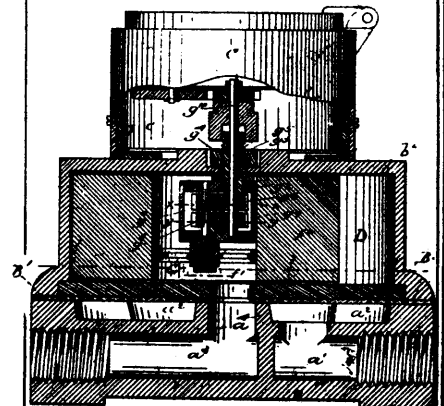
22471 Holt's Flour-Bolt.



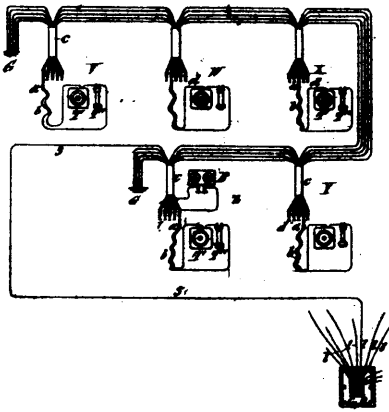
22472 Moore's Vehicle Spring.



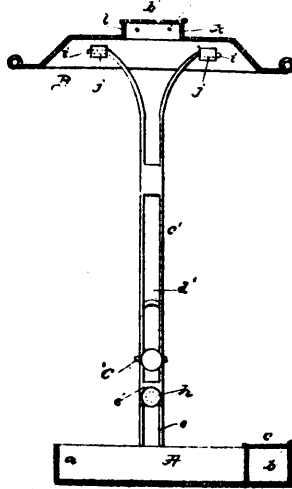
22473 Nef's Pump.



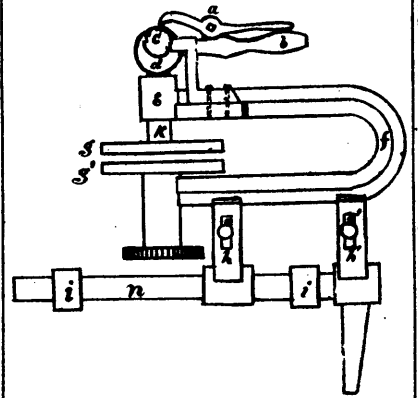
22474 Shelden's Fluid Meter.



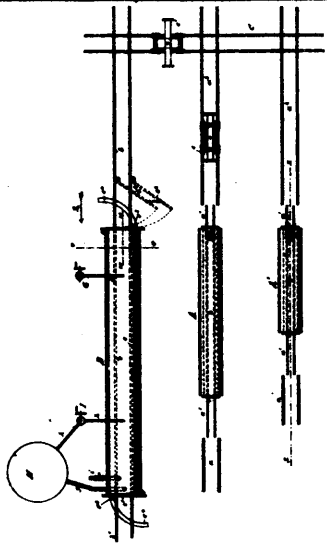
22475 Gilliland's Telephone Circuit.



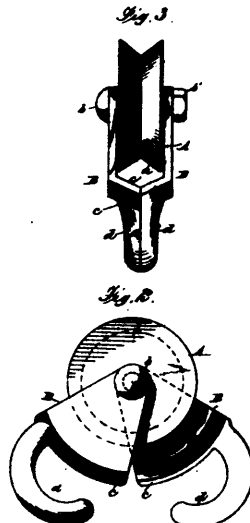
22477 Goldsmith's Attachments for Lamps.



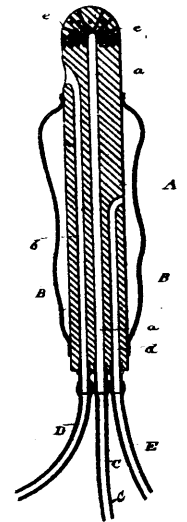
22478 Loyd's Machine for Making Barrel Heads.



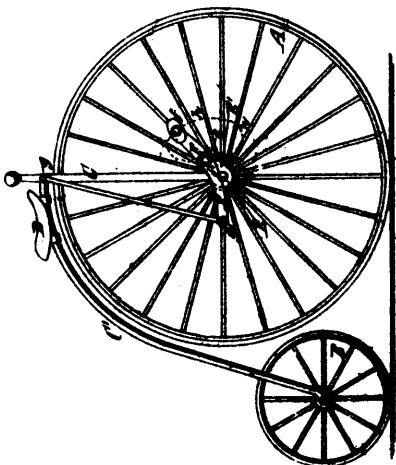
22479 Hansen and Smith's Apparatus for Preserving Wood.



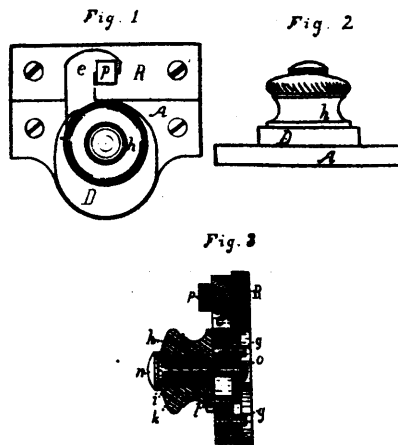
22480 Werum's Pulley.



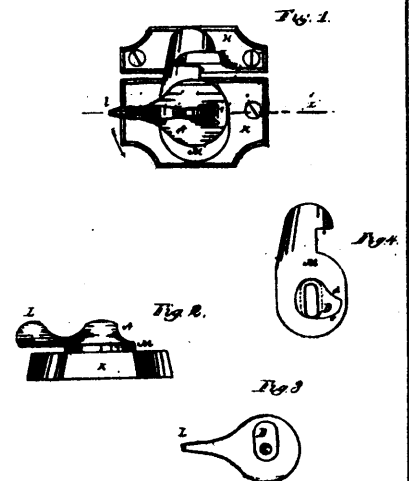
22481 Ward and Sylvester's Instrument for Womb and Vaginal Complaints.



22482 Taylor's Treadle for Pedomotive Vehicles and Machines.

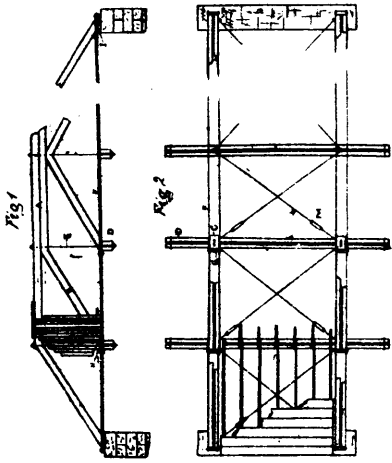


22483 Smith's Sash Fastener.

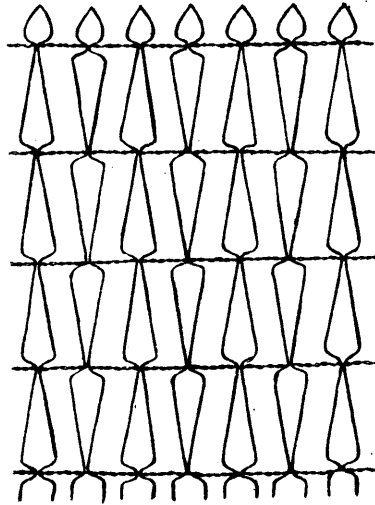


22484 Smith's Sash Fastener.

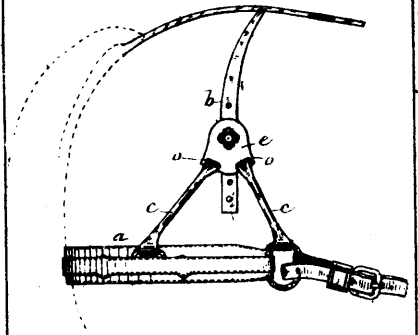




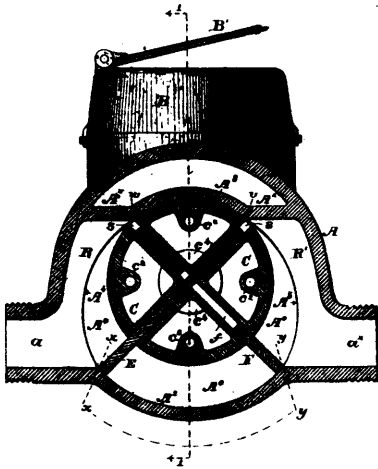
22485 Hall's Bridge.



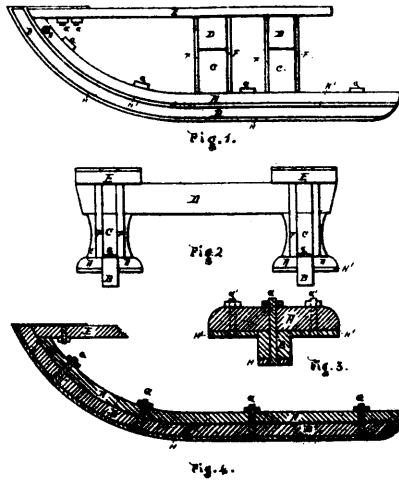
22486 McKay's Picket for Woven Wire Fences.



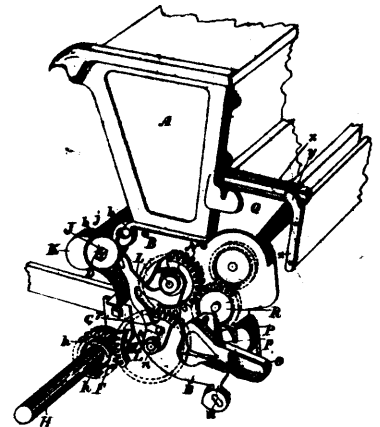
22487 Very's Harness Strap Attachment.



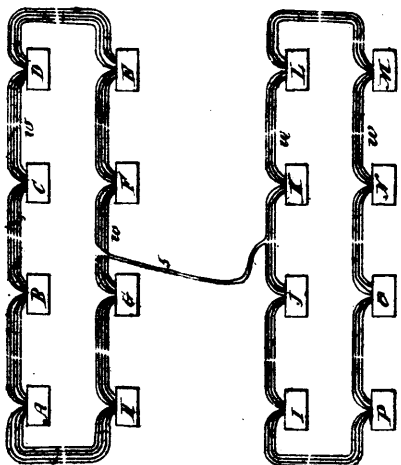
22488 Bowbotham's Water Meter.



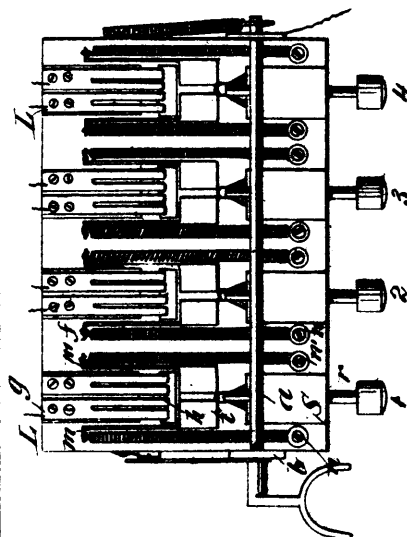
22489 Longworth's Sleigh.



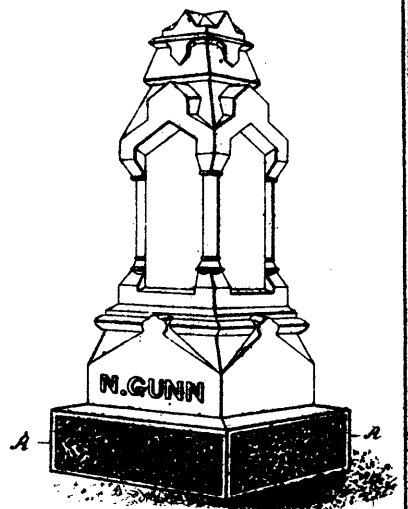
22490 Larsen's Seeding Machine.



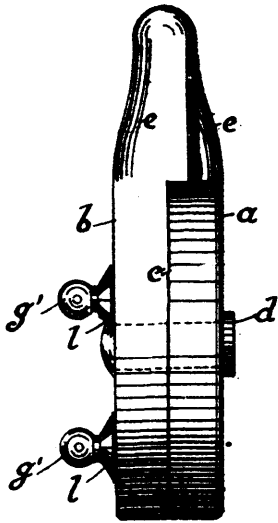
22491 Gilliland's Metallic Circuit Telephone Systems.



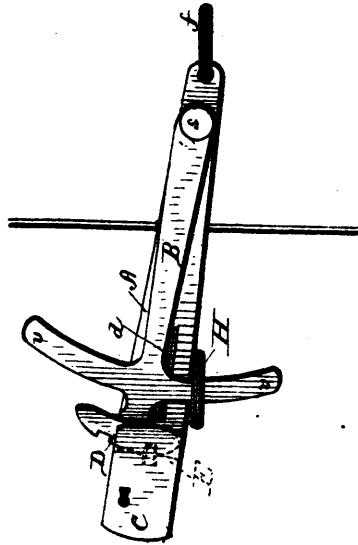
22492 Gilliland's Multiple Circuit Changer.



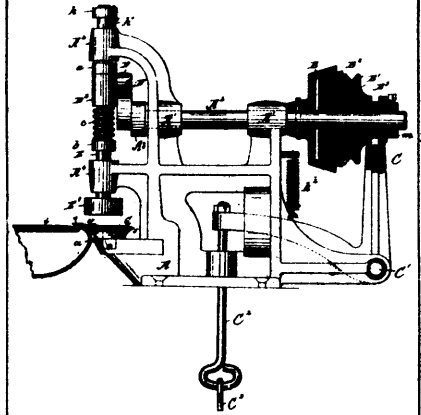
22493 McKeller's Monument.



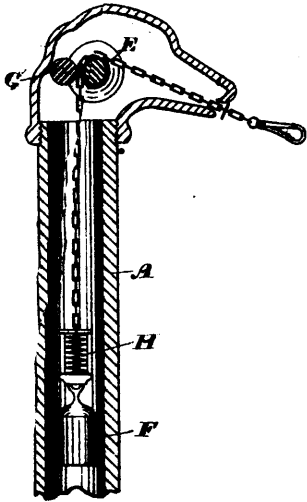
22494 Moore's Permutation Padlock.



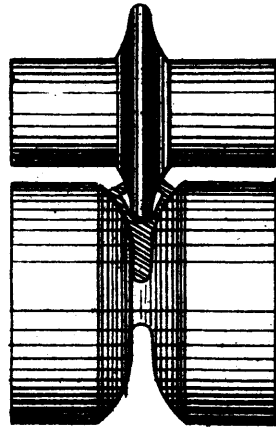
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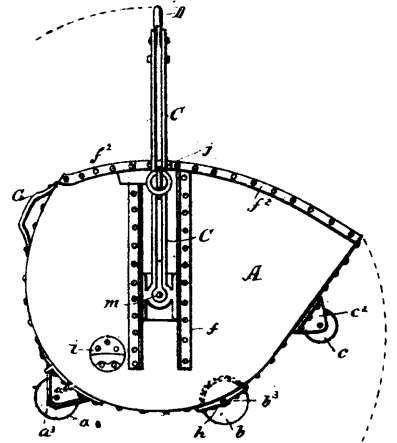
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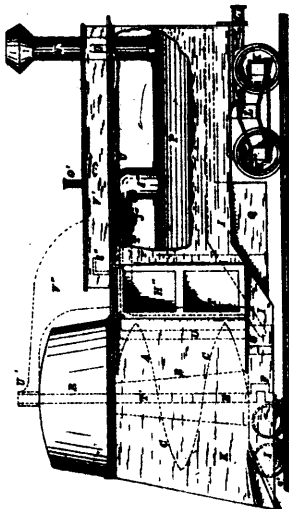
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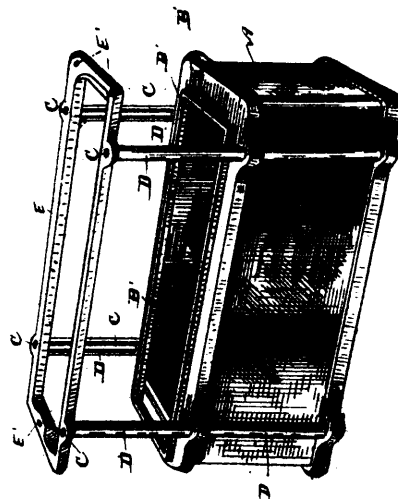
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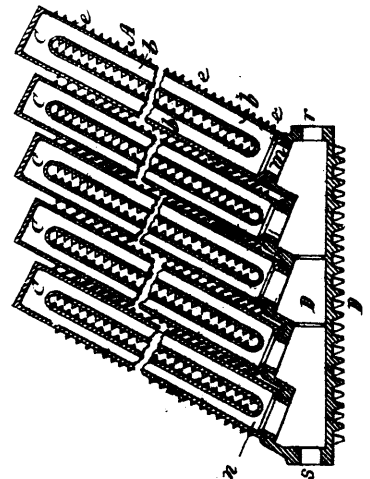
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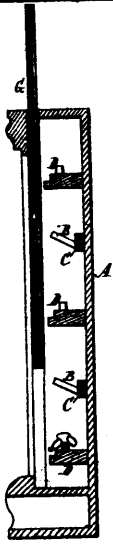
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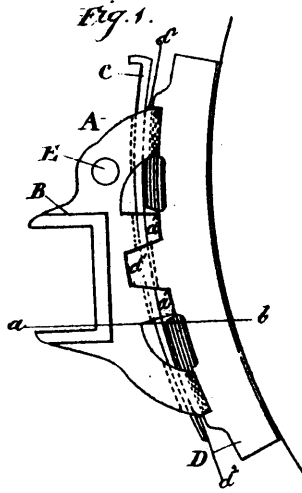
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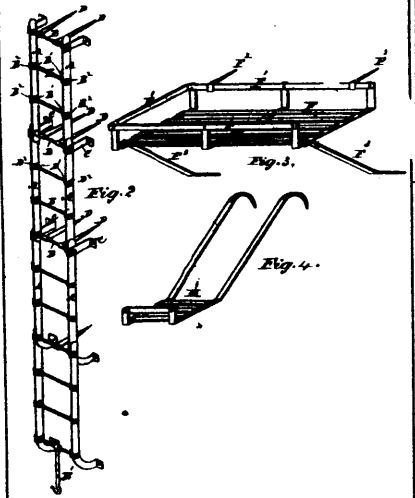
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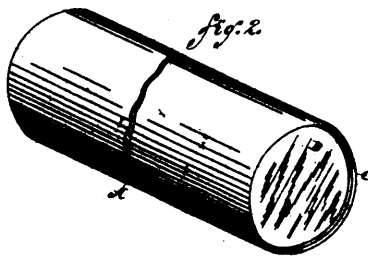
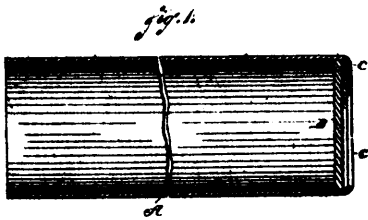
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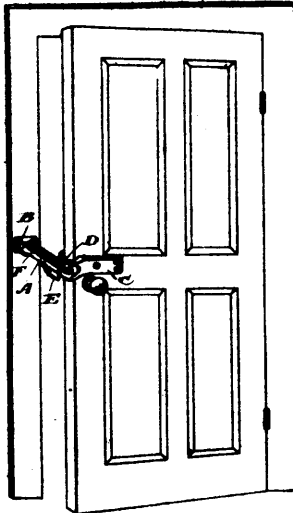
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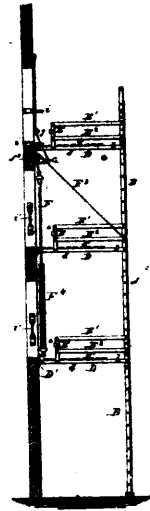
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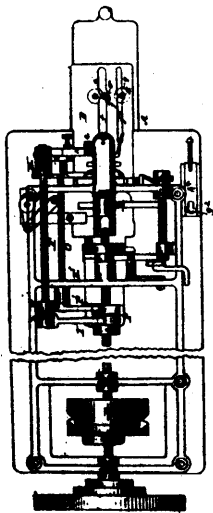
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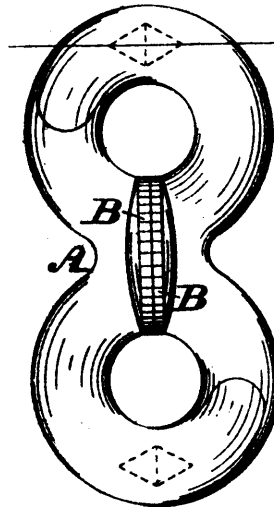
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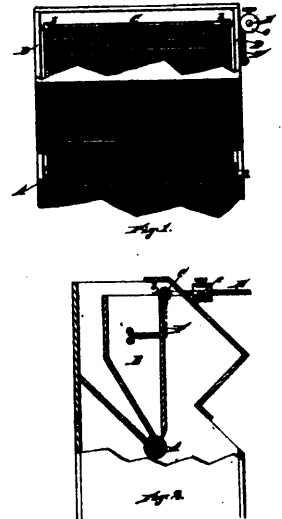
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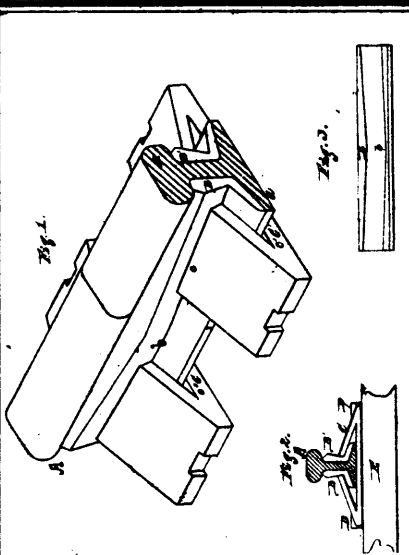
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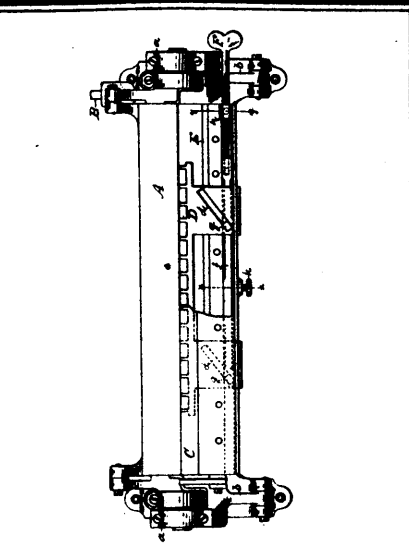
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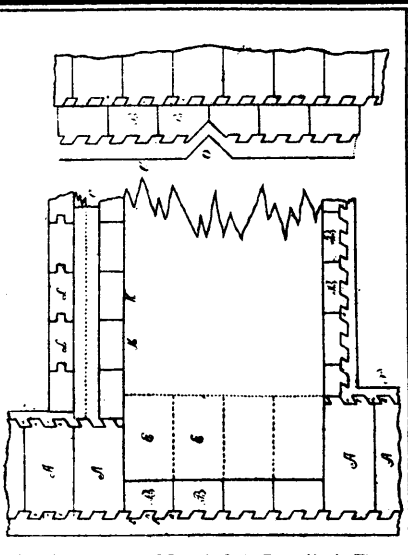
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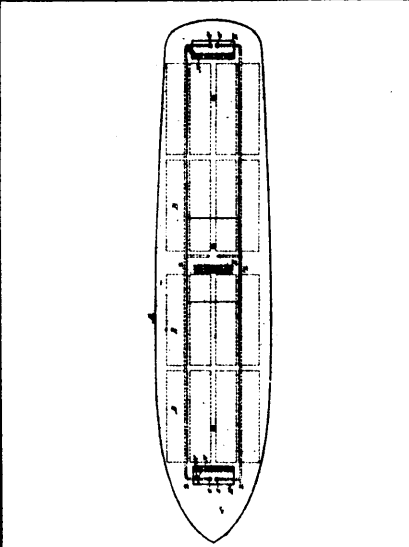
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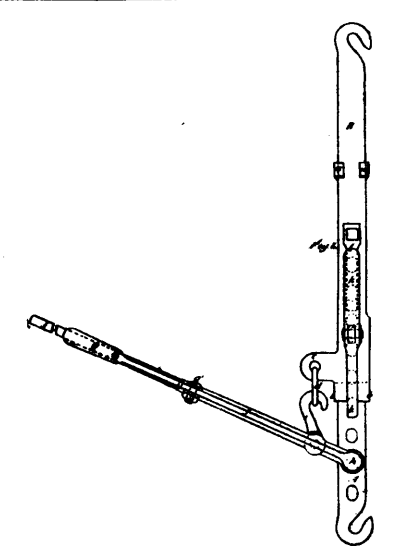
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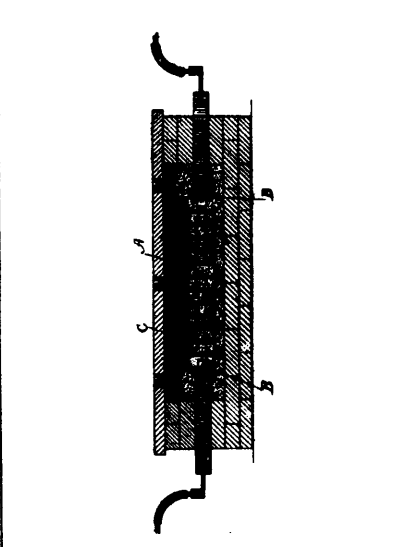
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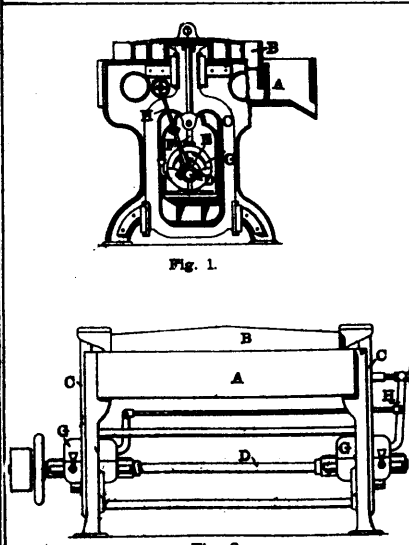
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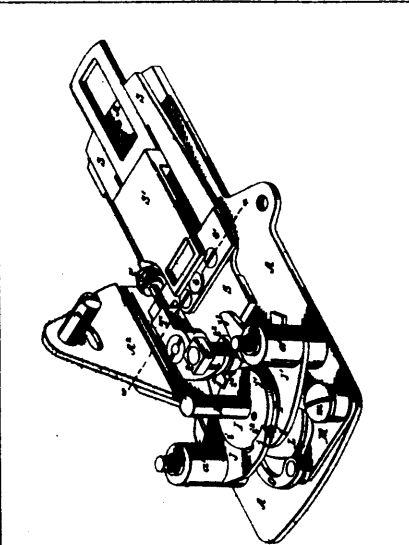
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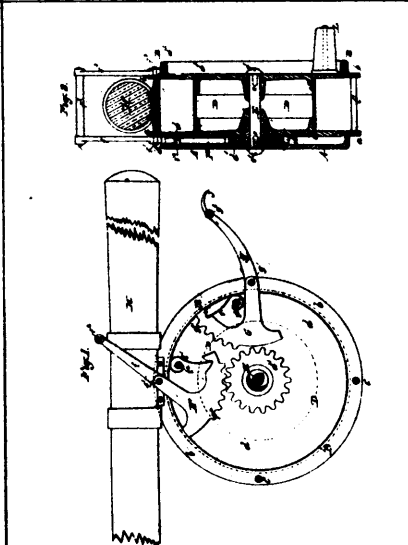
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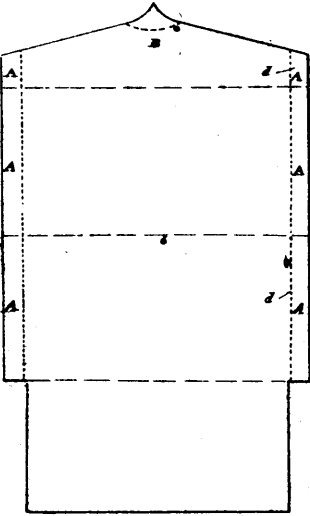
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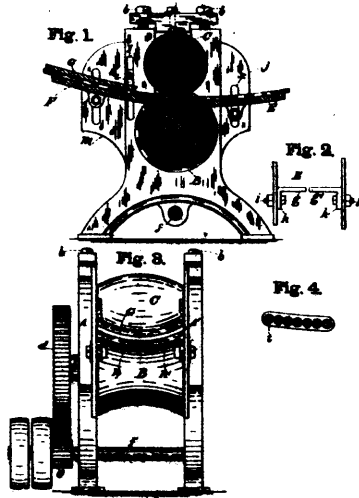
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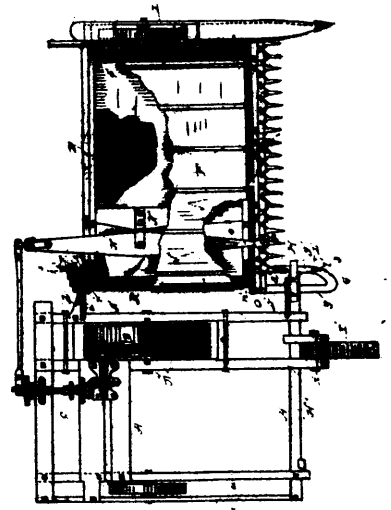
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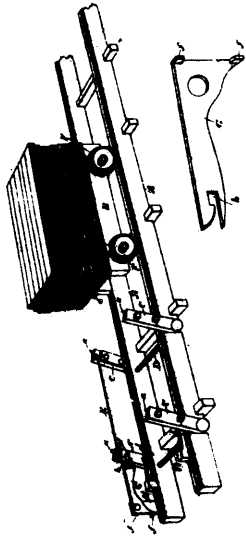
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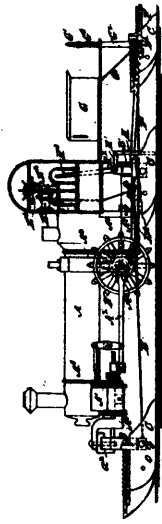
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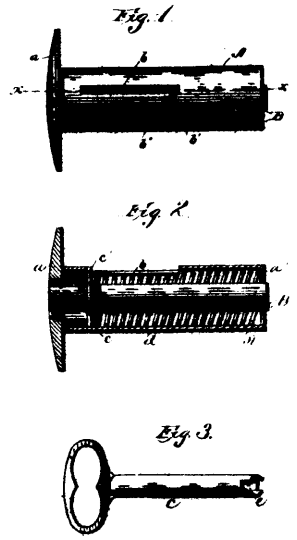
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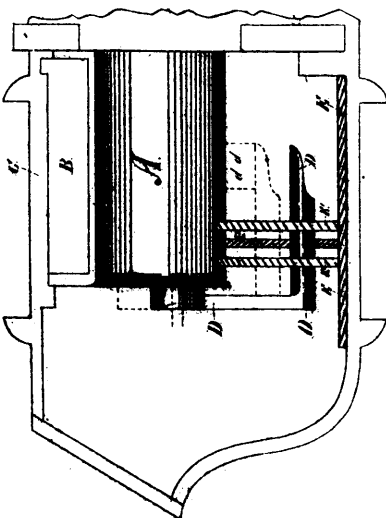
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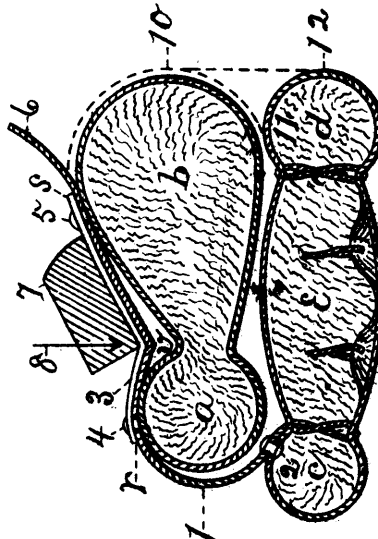
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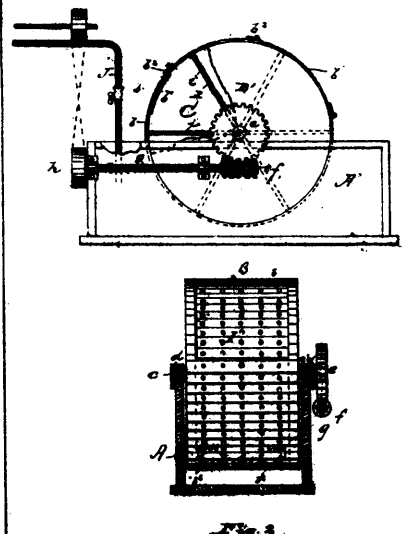
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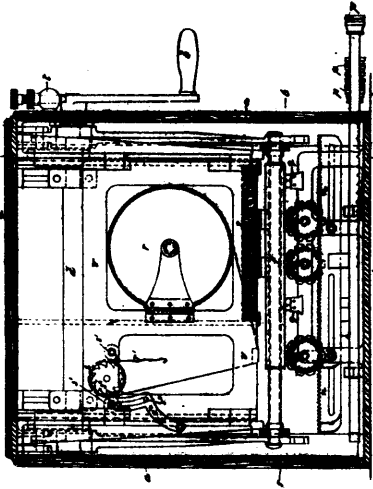
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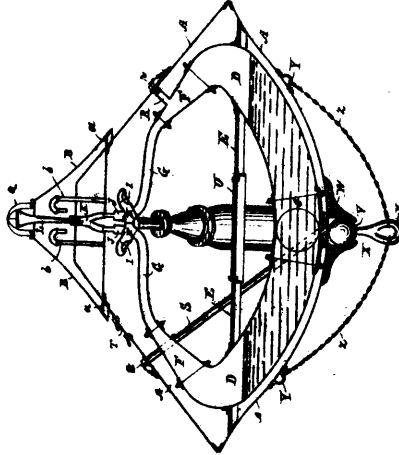
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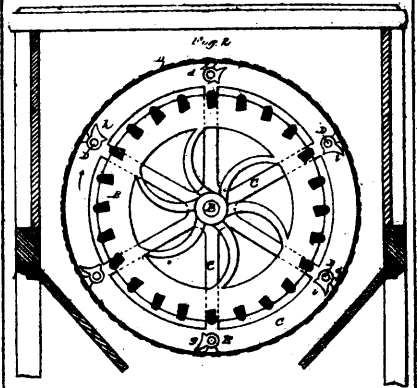
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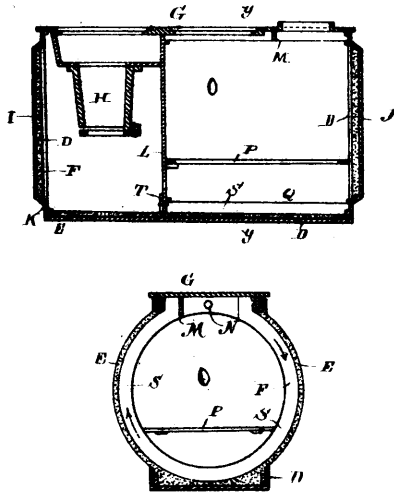
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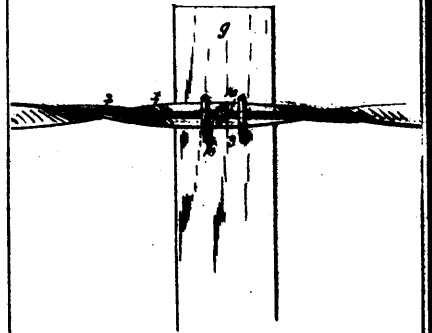
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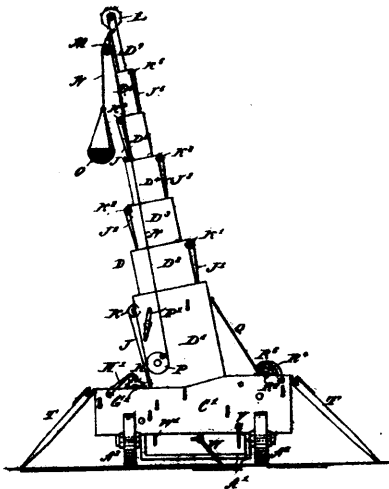
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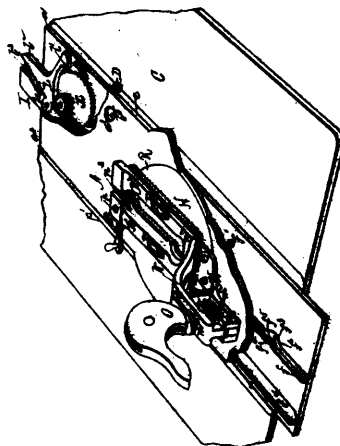
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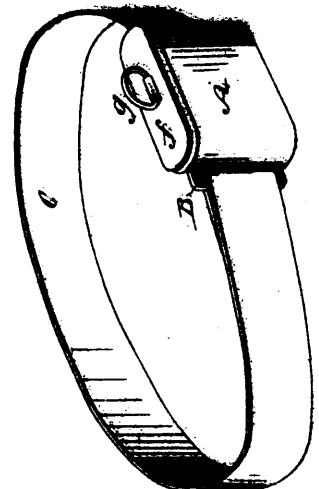
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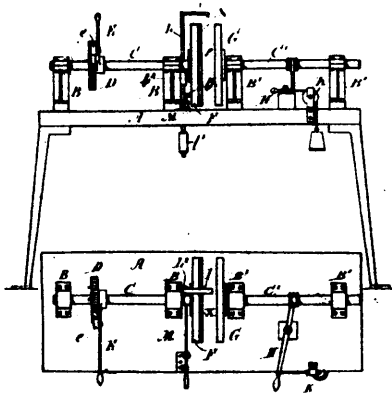
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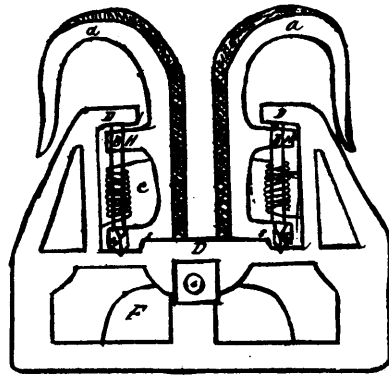
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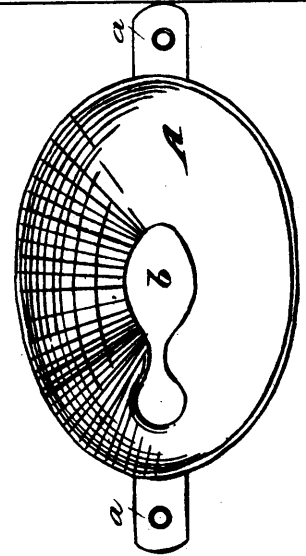
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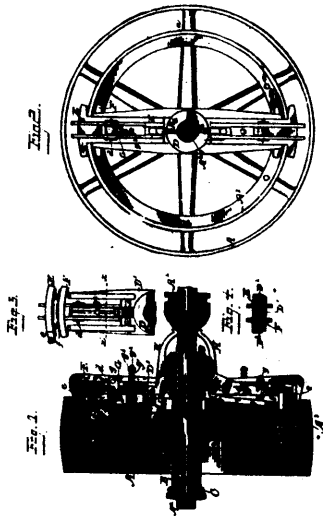
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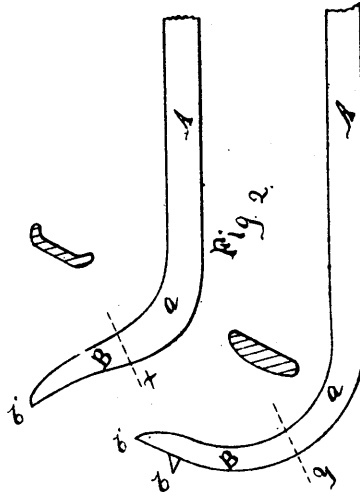
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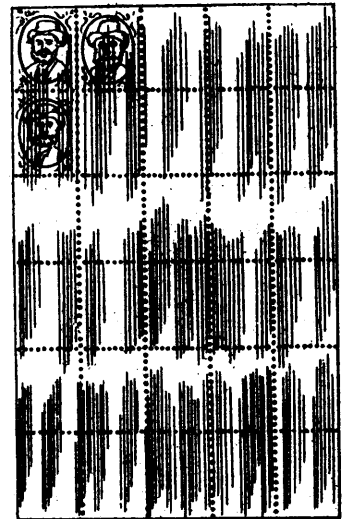
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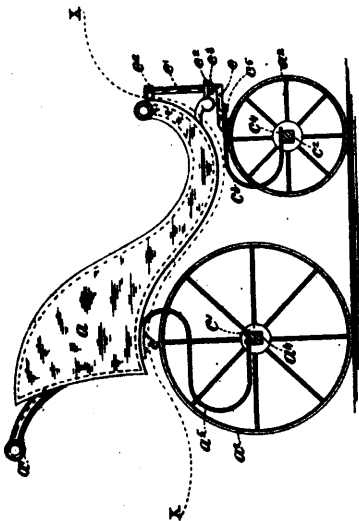
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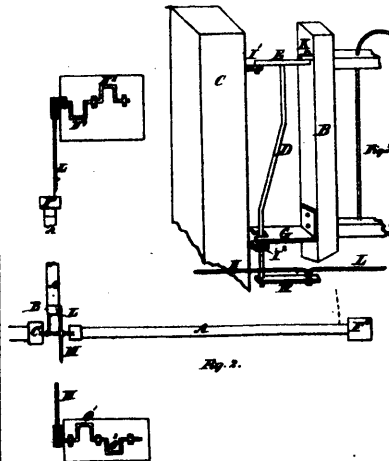
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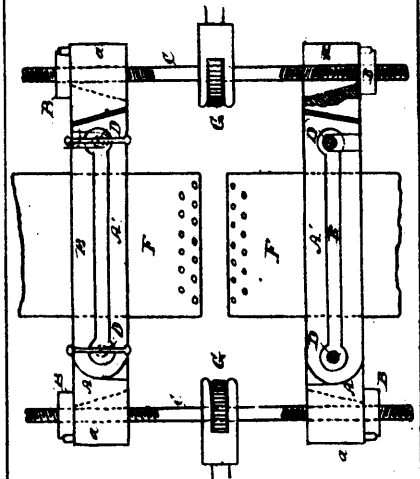
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