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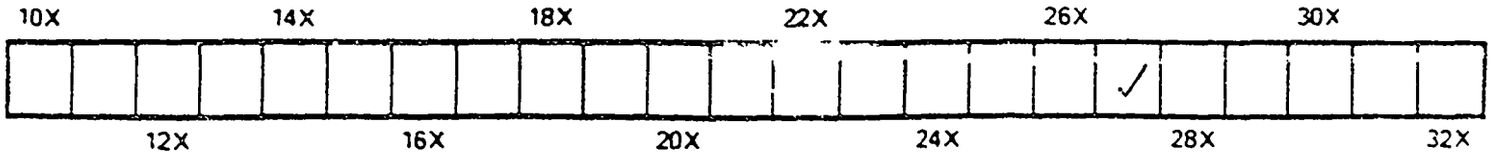

The Canadian Patent Office Record

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INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fee has been paid, is given after the date of the patent.

No. 29,929. Package for Containing and Displaying Merchandise. (*Boîte pour contenir et exhiber les marchandises.*)

John E. Cowles, New York, N. Y., U. S., 28th September, 1883; 5 years.

Claim.—The combination of a series of superposed boxes or trays, with their corresponding sides in the same plane, and each connected at its opposite ends to the next above it by a lever, having its extremities pivoted to each, two levers pivoted to the rear ends of the lower box and the forward ends of the upper box of the series, and a supporting bar rigidly secured to and in the same plane of the rear face of the upper box, and extending to the bottom of the lower box, substantially as described.

No. 29,930. Machine for Seaming Tin Boxes. (*Machine pour faire les ágrafes des boîtes en fer blanc.*)

H. P. F. Ewers, Lubeck, German Empire, 1st October, 1883; 5 years.

Claim.—1st. A machine for rebating tin objects of any desirable shape, characterised by the combination of two brace cheeks, similar in fundamental shape to the shape of the tin object, and holding it between them, the driving gear of the under brace-cheek, and the compulsory guidance of the under brace-cheek by means of the rail m and the guide-roller n, and the combination of the carriage d, which can be adjusted vertically and horizontally to the tin object with the rotating disk a for the tool or tools, substantially as described. 2nd. In a machine for rebating tin objects of any desirable shape, as already described, the hollow brace-cheeks k, k^1, which hold the object to be bordered or rotated, and are guided by the rollers n, n^1 journalled on the plate p, and the table B so as to rotate, and of which the under brace-cheek has outer cogs l, and presses against the guide-rail m, and receives from a cog-wheel u such a motion that it is led along the rail m, substantially as described. 3rd. In a machine for rebating tin objects of any desirable shape, as already described, the contrivance for holding fast the object to be rebated between the brace-cheeks k, k^1, and consisting in the table B on the frame of the machine for supporting the under brace-cheek in the plate p parallel to the table B for the upper brace-cheek, and in the shaft v, which can be adjusted up and down by the rack v^1 and cogs w, and held fast by the ratchets p^1, p^2, and can be lifted by pedal z^3 by means of the bar z^6 for guiding the plate p vertically, substantially as described. 4th. In a machine for edging and rebating tin objects of any desirable fundamental shape, as already described, the lower brace-cheek k^2 made to rotate round the pivot k^3 in the place of the roller n, and rail m for rebating round objects, substantially as described.

No. 29,931. Tub Hoop. (*Cercle de cuve.*)

Herbert M. Lourie, Keokuk, Iowa, U. S., 1st October, 1883; 5 years.

Claim.—1st. The combination, in a tub hoop, of a hoop body provided with a head at one end, a screw and a nut therefor at the other end, and the double lug described, comprising two end lugs joined by two side bars, all in one piece, one of the lugs being slotted in its back, and provided with shelves at the sides of the slot, and the other lug having a longitudinal aperture in it, substantially as shown and described. 2nd. The double lug for hoops described, comprising the two end lugs 6 and 7, joined by the side bars 16 and the shelves 15, each of the end lugs having a longitudinal aperture, one of them having a slot at its back, substantially as shown and described.

No. 29,932. Trolley Tracks. (*Voie-trôlle.*)

Lemuel Coburn, Holyoke, Mass., U.S., 1st October, 1883; 5 years.

Claim.—1st. A trolley-track, consisting of a tube of substantially rectangular cross-section at its upper portion, and having the lower edges curved in toward the median line and then turned upward, so that the bottom of the tube has a rounded trough at each side of a longitudinal central opening, substantially as described. 2nd. The combination, with a trolley-track, having a round-bottomed trough at each side of a central opening, of a carrier, consisting essentially of two rollers rounded on their peripheries to fit the rounded troughs, and a hanger suspended from an axle uniting said rollers.

No. 29,933. Curtain Fixture. (*Gousset porte-rideau.*)

George R. G. Jones, Louisville, Kentucky, U. S., 1st October, 1883; 5 years.

Claim.—1st. The combination of a shade roll, having a spool or drum at one end thereof, a band or ribbon coiled around said spool, a fixed support below the roll and in which the band is guided, and a spring connected to said support and pressing constantly against said band or ribbon to prevent the latter from slipping, substantially as and for the purpose described. 2nd. In a curtain fixture, the combination of a rotatory shade roll, having a spool or drum at one end thereof, a band or ribbon coiled around said spool in the reverse direction to the shade around said roll, and having a transverse bridge, and a curved spring connected centrally to the bridge to be held thereby against endwise displacement, and having its free ends pressing against the band or ribbon, substantially as and for the purpose described. 3rd. A support F, having the raised sides and an intermediate bridge, combined with a curved spring, provided with the raised shoulders adapted to fit against opposite sides of the bridge, whereby said spring is held against endwise displacement in the holder, and the ends thereof are free to impinge against a band or ribbon, substantially as and for the purpose described. 4th. A support F, having a transverse bridge elevated above the base thereof, combined with a longitudinally curved spring connected centrally to said bridge, and having its free ends resting on the base of said support, substantially as and for the purpose described. 5th. The combination of a holder F, having parallel sides and a bridge, a curved spring arranged between said sides of the holder, and provided with the transverse spaced shoulders normally held against the bridge, and a band or ribbon passing between the unconfined ends of the spring and the base of the support, substantially as and for the purpose described.

No. 29,934. Kitchen Ventilator. (*Ventilateur de cuisine.*)

William Welsh, Exeter, Ont., 1st October, 1883; 5 years.

Claim—1st. A funnel or cone F, and discharge pipe P having perforations or openings o formed therein, in combination with the hood H, water shed S, base B and damper D formed with openings o^1 and d^1 respectively, as and for the purpose set forth. 2nd. The combination of the funnel or cone F, discharge pipe P having perforations or openings o formed therein, hood H, water shed S and base B formed with openings o^1 and flange a, in combination with the damper D formed with openings d^1 and angular braces e, as and for the purpose set forth.

No. 29,935. Call Bell. (*Sonnette d'appelle.*)

Russell Mason, New Castle, Ont., 1st October, 1883; 5 years.

Claim—1st. A call bell and means for operating same, consisting of a gong, spring clock work, a striker for such gong connected with and operated by such spring clock work, when spring of same is wound, and a pull line for winding such spring. 2nd. A call bell, and means for operating same, consisting of gong D, spring clock work C, the striker for such gong connected with and operated by such spring clock work C, when spring G of same is wound, a pull line for winding such spring G and push button A acting as the hand device for operating said pull line, all substantially as shown and described.

No. 29,936. Car Coupling. (*Attelage de chars.*)

John Clarridge, Senr., Libertyville, Iowa, U. S., 1st October, 1888; 5 years.

Claim.—1st. The combination, with the draw-bar A, of the spring pressed follower G, adapted to support the coupling pin I, and having a transverse link slot *e*, and a second coupling pin at the rear end of the draw-head recess, substantially as specified. 2nd. In a car coupling, the combination, with the draw-bar A provided with the chamber B and shoulders *a*, *b*, of the follower G adapted to support the coupling pin I, and having a transverse link opening *e*, the spring D arranged to press the said follower forward against the shoulders *b*, and the link extending through the slot and the spring, and connected with the draw-head at the rear of the spring, substantially as shown and described. 3rd. In a car coupling, the combination, with the draw bar A, provided with the chamber B, shoulders *a*, *b* and holes *f*, *h*, of the follower G, provided with the aperture *e*, and received in the chamber B, the spring D adapted to press the said follower forward, the link C extending through the aperture *e*, and the pin H passing through the link C, and the pin I arranged to be supported and released by the follower, substantially as described. 4th. The combination, with the pin I, of the roller J, the chain *k* and spring K, substantially as specified.

No. 29,937. Manufacture of Boots and Shoes. (*Fabrication des chaussures.*)

Luke E. Scafe, Leeds, Eng., 1st October, 1888; 5 years.

Claim.—1st. The india rubber plate or middle sole *e*, and heel lift *g* having projecting studs, respectively *c* and *i* thereon, as described. 2nd. The outsole *b*, or clump and top heel piece *h*, with perforations or holes respectively *d* and *f* through the same, for receiving the studs, respectively *c* and *i*, as described. 3rd. The combination of outsole *b* and clump india rubber plate or middle sole *e*, with its studs or projecting pieces *c*, arranged and applied to the soles of boots and shoes. 4th. The combination of top piece *h* and india rubber heel lift G, with its studs or projecting pieces *i*, arranged and applied to the heels of boots and shoes, as set forth.

No. 29,938. Straw Burning Attachment for Boilers. (*Foyer à consumer la paille pour chauffer les chaudières.*)

The Waterous Engine Works Co. (assignee of Charles H. Waterous, Jr.), Brantford, Ont., 2nd October, 1888; 5 years.

Claim.—1st. The combination, with a steam boiler, of an auxiliary combustion chamber, having the end by which it is attached to said boiler entirely open, substantially as and for the purposes set forth. 2nd. The combination, with a steam boiler, of an auxiliary combustion chamber attached thereto and opening into its fire-box, and a funnel-shaped feeding chute attached to said auxiliary combustion chamber, and opening into the upper part thereof, substantially as and for the purposes set forth. 3rd. The combination, with a steam boiler, of a combustion chamber having corrugated walls attached thereto, and opening into the fire-box of said boiler, and a feeding chute opening in the outer end of said combustion chamber, substantially as and for the purposes set forth. 4th. The combination, with a steam boiler, of the chamber B attached to said boiler, and open at the end adjacent thereto into the same, and the perforated frame and shield D, substantially as and for the purposes set forth. 5th. The combination, with a steam boiler, of the chamber B attached to said boiler, and opening into the same at the end adjacent thereto, feeding chute C and plate G, substantially as and for the purposes set forth. 6th. The combination, with the steam boiler, of the chamber B attached to said boiler, and open into the same at the end adjacent thereto, feeding chute C and plate I, substantially as and for the purposes set forth.

No. 29,939. Fire Alarm Box.

(*Boîte d'avertisseur d'incendie.*)

The Northern Auxiliary Fire Alarm Co., Portland, Maine (assignee of Brown S. Flanders, Boston, Mass.), U. S., 2nd October, 1888, 5 years.

Claim.—1st. In a fire alarm signal box, a signal transmitting mechanism and motor therefor, an actuating lever for said motor, an auxiliary motor for moving the said actuating lever, and a releasing device for the auxiliary motor, combined with a device as a bar controlled by an electric magnet for setting the said releasing lever free, to permit the auxiliary motor to operate, and with locking devices for engaging the releasing lever after it has been set free. 2nd. In a fire alarm signal box, a signal transmitting mechanism and starting lever for operating it by hand, combined with an auxiliary motor operatively connected with the signal transmitting mechanism, and releasing lever for the auxiliary motor, a bar controlled by an electro-magnet for setting the releasing lever free to start the auxiliary motor, said bar and releasing lever being so constructed that each shall lock the other when the releasing lever is set free, substantially as described. 3rd. In a fire alarm signal box, a signal transmitting mechanism and starting lever for operating it by hand, combined with an auxiliary motor operatively connected with the signal transmitting mechanism, a releasing lever for the auxiliary motor, a bar controlled by an electro-magnet for setting the releasing lever free to start the auxiliary motor, a locking device for locking the releasing lever out of the limit of movement of the bar employed to set it free, and means for moving said releasing lever into engagement with the said locking device, substantially as described. 4th. In a fire alarm signal box, a signal transmitting mechanism and starting lever for operating it by hand, combined with an auxiliary motor operatively connected with the signal transmitting mechanism, a releasing lever for the auxiliary motor, a bar controlled by an electro-magnet for setting the releasing lever free to start the auxiliary motor, said bar and releasing lever being so constructed that each shall lock the other when the releasing lever is set free, and a pivoted latch *n*, and means for moving the releasing lever into position to be engaged by the latch, substantially as described.

No. 29,940. Door Check. (*Arrête porte.*)

William F. Lewis (assignee of Fred W. Fobey, Waterbury, Conn., U.S.), 2nd October, 1888; 5 years.

Claim.—1st. A door closer and buffer, consisting essentially of a closing arm pivoted to the jamb, and connected to the door and provided with lugs 19 and 20, a buffer and a slide upon the jamb, and a pivoted dog upon the slide. 2nd. The base plate, having extension 10, the closing lever pivoted thereto and having lugs 19 and 20, and a closing spring, in combination with the buffer, a slide engaging said buffer and carrying a pivoted dog, having an enlargement which engages the edge of the extension, and a head which is engaged by said lugs, as and for the purpose set forth. 3rd. The base plate, having ways 5, the buffer secured to the waist plate and the slide moving in said ways and having a plate 8 adapted to engage the buffer in combination with the pivoted dog carried by the slide and having a head 12, the closing lever having lugs 19 and 20, and a closing spring, substantially as described.

No. 29,941. Wooden Shovel. (*Pelle de Bois.*)

Xavier Filion and Alphonse Valiquette, Montreal, Que., 2nd October, 1888; 5 years.

Résumé.—Comme nouvel article de manufacture, une pelle en bois dont le manche est séparé et ajusté sur un épeson T, formant corps avec la pelle A, tel que decrit et indiqué.

No. 29,942. Car Windows.

(*Croisées des voitures de chemins de fer.*)

William H. Dawson, Lawrence, Mass., U. S., 3rd October, 1888, 5 years.

Claim.—A window sash, having flexible strips *c* projecting from its edges, combined with a casing having grooves of less depth than the width of the projecting portions of the strips, and provided with narrow bottom or seats 2 of the same width as the outer edges of the strips, and with inclined sides which converge from the outer ends or mouths of the grooves to the seats 2, said sides guiding the outer edges of the strips *c* to the seats 2, and keeping said edges in close contact with said seats, as set forth.

No. 29,943. Earth Auger. (*Sonde à tarrière.*)

Thomas W. Glenny, Stevensville, Ont., 3rd October, 1888, 5 years.

Claim.—The combination, with the tubular shaft A having a handle and hole J at one end, and a cross-bar D provided with blades *b*, E1 at the other end, of the rod F having a head G fitting into the tube of said shaft, and provided with a point I, having a shoulder H closing against the end of the shaft, said rod passing lengthwise through the shaft and provided with a handle extending beyond the handle of the shaft, substantially as set forth.

No. 29,944. Tension Device for Making Picket Fences. (*Machine à tendre le fil de fer pour clôture de pals.*)

Charles E. Wintrode, Huntington, Ind., U.S., 3rd October, 1888, 5 years.

Claim.—1st. The combination of the plate provided with the bent end C, a pivoted lever connected thereto, and provided with a flange to bear against the wire and a regulating-screw, substantially as shown. 2nd. The combination of the plate A having the bent ends B, C, the lever pivoted upon the end C, and provided with a flange to bear against the wire, and having a slot through its free end, the screw-rod and the thumb-nut, substantially as described.

No. 29,945. Dish Washer. (*Laveuse de vaisselle.*)

William D. Miller, Florence, Mass., U.S., 3rd October, 1888; 5 years.

Claim.—1st. A dish-washer consisting of a series of metallic chains and a handle, to one end of which said chains are secured by their ends, substantially as set forth. 2nd. A handle A having arms a attached to a ring B, in combination with short iron chains C1 attached to the ring, substantially as described.

No. 29,946. Thill Coupling. (*Armon de limonière.*)

Samuel Mirfield, Hastings, Ont., 3rd October, 1888; 5 years.

Claim—1st. A thill coupling consisting of the body B having jaws C, C1, provided with screw-threaded holes in alignment, a thill iron D having conical indentations, and the screws E, E1 fitting into the screw-threaded holes in the jaws, and having a conical point to impinge the conical indentation in the thill iron, as set forth. 2nd. In a thill coupling, the combination of the body B having jaws C, C1, provided with screw threaded holes in alignment, the thill iron D and screws E, E1, impinging the thill iron with or without jam nuts G, as set forth.

No. 29,947. Air-Feeding Device.

(*Fourneau fumivore.*)

Frederick Leadbeater, Detroit, Mich., U.S., 3rd October, 1888, 5 years.

Claim—1st. The combination, with a furnace having an aperture with parallel sides leading into the ash-pit of the plurality, of vertical division strips dividing said apertures into separate passageways, a corresponding series of vertical perforated tubes arranged outside said apertures, one opposite the space between each two strips, and a cross-head communicating with all of said tubes and connected

with a suitable source of steam, substantially as described. 2nd. In a steam and air feeding device for smoke consumers, the combination of the apertures D formed in the side wall of the ash pit, the partitions E, inlets F, perforated tubes G, drip-cocks I, one for each tube G, cross-head H, supply pipe J, and valve K in such supply pipe, the parts being arranged and constructed to operate substantially as described.

No. 29,948. Nut Lock. (*Arrête-écrou.*)

William Sleicher, Jr., Troy, N. Y., U. S, 3rd October, 1888; 5 years.

Claim—1st. As an improved article of manufacture, a nut-locking washer made of a single piece of flexible metal consisting of a plate provided with a central bolt-hole, and means for preventing the washer from turning on the bolt, and having a peripheral lug projecting from the nut side of the washer, and on the same side a boss around the bolt-hole raised above the base of the lug, substantially as described. 2nd. A nut-locking washer composed of an integral malleable casting having a central bolt-hole, and means for preventing the washer from turning on the bolt, and provided with a peripheral lug projecting from the nut side of the washer, and having the end of the lug thicker than the body part, and inclined outward from the centre of the washer, substantially as described.

No. 29,949. Spring Clip Holder for a Pencil, Penholder, etc. (*Serre-joint à ressort pour crayon, porte plume, etc*)

William J. Downes, London, Eng., 3rd October, 1888; 5 years.

Claim.—An improved spring clip holder for a pencil, penholder, or other similar article, such clip holder being made of spring steel, or any other suitable metal, and consisting of a central socket *a*, furnished at the top with two lips *b* which form a clip, and at the bottom with a base plate *c* having perforations *d* therein, through which it is rivetted or otherwise fastened to the back of a pocket book, note book, memorandum book, or purse, or to a blotting or writing case, pen, or pencil rack, or other article, all substantially in the manner and for the purposes hereinbefore described and shown.

No. 29,950. Bustle. (*Tournure.*)

Amos H. Jackson, Fremont, Ohio, U. S., 3rd October, 1888; 5 years.

Claim—1st. As an improvement in bustles having a vertical frame, and a series of outward downwardly curved coil springs, the separate coil-supporting springs disposed within a bag or covering and adjustably secured under said outer springs in an approximately vertical position, substantially as shown and described. 2nd. The herein described improved bustle comprising the vertical frame, the series of outer curved coil springs connected thereto, the bag or covering therefor, the separate coil-supporting springs disposed in an approximately vertical position, together with their bag or covering, and the adjusting or holding tapes for securing said supporting springs to said frame beneath said outer springs, substantially as shown and described.

No. 29,951. Safety Shoe for Car Trucks.

(*Sabot de sûreté pour les châssis de char.*)

Abram M. Woodruff, Superior, Neb., U.S., 3rd October, 1888; 5 years.

Claim.—The combination, with the central transverse timbers B, and the longitudinal brace D of a truck, of the head blocks E secured to said timbers and brace, and the shoes F bolted to the said head blocks, timbers, and brace, the said shoes being provided with downwardly extending longitudinal flanges *a*, and having a central and horizontal flat bearing surface *a*¹ and inclined flaring under surfaces *b*, *b*¹ between the said flanges, substantially as shown and described.

No. 29,952. Piston Rod Packing.

(*Garniture pour tiges du pistons.*)

Chauncey W. Mills, Rochester, N.Y., U.S., 3rd October, 1888, 5 years.

Claim.—1st. The combination of the piston rod stuffing box and the gland bushing, with the sleeve on said rod, the head F conically recessed on its front face and radially slotted through the walls of such recessed portion to permit the expanding thereof, and the interposed packing between said head and bushing, all constructed and arranged substantially in the manner and for the purpose described. 2nd. The herein described annular head *f* having a conical central opening, and a series of longitudinal slots in its outer face, for the purpose and constructed substantially as described. 3rd. The combination of the piston rod stuffing box, and gland plate or bushing having an outwardly inclined inner face, substantially as described, with the slotted head F, spring and packing, all constructed and arranged substantially as described. 4th. In a piston rod packing, the combination, of the gland bushing, stuffing box and piston rod, with the spring controlled conically recessed and slotted head F, the sleeve E and packing I, all constructed and arranged substantially in the manner and for the purpose specified. 5th. The combination of head A, box B, rod C, and the gland bushing, substantially as described, with the sleeve E projecting into the cylinder, the slotted expansive head F conically recessed in its front face and united to said sleeve, the spring G and packing I, all constructed and arranged to operate substantially in the manner and for the purpose described.

No. 29,953. Reed Organ. (*Orgue harmonium.*)

George W. Scribner, Chatham, Ont., 4th October, 1888; 5 years.

Claim.—1st. In combination with a reed organ having the usual reeds, keys and bellows, the socket board G placed back of the keys D and over the wind chest F, containing two alternating rows of reed cells H^1, H^2 under the alternate openings H, at about double the usual distance apart in the row, substantially as and for the purposes hereinbefore set forth. 2nd. In combination with the socket-board G containing the alternating reed-cells H^1, H^2, and openings H, a set or series of reeds or vibrators placed alternately in the chromatic scale in the reed-cells H^1, H^2, under the openings H, and over the valves that operate them, as and for the purposes specified. 3rd. In combination with the socket-board G, and the alternating reeds of the chromatic scale placed in the reed-cells or sockets H^1, H^2, set or series of resonant pipes or chambers I of suitable dimensions, form and material, the mouths J being placed over the openings H, substantially as and for the purposes hereinbefore described.

No. 29,954. Machine for Chipping Ice.

(*Machine à casser la glace.*)

Joseph McClure, Winnipeg, Man., 5th October, 1888; 5 years.

Claim.—An ice chipper composed of handle A, sole leather or spike holder B, and spikes C, all formed and combined substantially as and for the purpose hereinbefore set forth.

No. 29,955. Washing Machine.

(*Machine à blanchir.*)

Louis Ducharme and Gilbert Erard, Woonsocket, R.I., U.S., 5th October, 1888; 5 years.

Claim.—1st. The combination, with a boiler or suds-case, of a rotative cylinder therein, buckets arranged transversely on the periphery of the cylinder, and tubes connected with the opposite ends of the buckets alternately and leading to the interior of the cylinder, substantially as specified. 2nd. A rotative cylinder having spray chambers in its side walls, divided partitions, and tubes leading from the respective compartments of the said chambers, and connected with buckets secured to the periphery of the cylinder, substantially as specified.

No. 29,956. Butter and Cake Print.

(*Moule à beurre et à gâteau.*)

Stephen B. Smith, St. John, N.B., and Andrew T. Porter, Montreal, Que., 5th October, 1888; 5 years.

Claim.—As a new article of manufacture, butter and cake prints composed of glass, substantially as and for the purpose hereinbefore set forth.

No. 29,957. Condensing Duplex Heater.

(*Réchauffeur d'eau*)

Alvin L. Draper, Ellsworth, Es., U. S., 5th October, 1888; 5 years.

Claim.—1st. In a condenser, the combination, of water receiver B, outer jacket A, and cold-air pipes O, substantially as set forth. 2nd. In a condenser, the combination, of the tanks C and B, outer jacket A, and cold-air pipes O, substantially as set forth. 3rd. In a feed water heater, the combination of the outer jacket A, upper tank B, lower tank C, cold-water pipe W, winding shelf D located in the lower tank C, and exhaust-steam pipe I discharging into the lower tank C, substantially as set forth. 4th. In a feed water heater the combination, of case A, receiver B, a lower tank C, wind-shelf D, a valve G, and a steam pipe I, substantially as and for the purpose set forth. 5th. In a feed-water heater, the combination, with a receiver B, and a pipe W, of a winding-shelf D, substantially as and for the purpose set forth. 6th. In a feed-water heater, the combination, with receiver B, and tank C, of a valve G, a winding shelf D, in the lower tank C and a steam pipe I, substantially as and for the purpose set forth. 7th. In combination with an outer jacket A, an upper tank B, and lower tank C, a pipe I, a cold-water pipe W, and a spray-nozzle W^1, substantially as set forth. 8th. In a feed-water heater, the combination, with tank B for containing the heated water, of the water chamber X^1, the pipe R leading therefrom, the screen X placed over said water-chamber, and the man-hole Y, all constructed and arranged substantially as set forth.

No. 29,958. Lock for Twisting Tackle.

(*Serrure pour poulie d'ascenseur.*)

Alexander M. Kerr and The Fulton Iron and Engine Works, Detroit, Mich., U.S., 6th October, 1888; 5 years.

Claim.—1st. The combination, with a pulley block having two sheaves arranged one behind the other to turn in opposite directions, of a vertically movable wedge suspended between the two sheaves, and adapted to wedge between the opposite portions of a rope passing around the respective sheaves, substantially as described. 2nd. The combination, with a pulley block having two sheaves arranged one behind the other to turn in opposite directions, of a vertically movable wedge suspended between the two sheaves, and adapted to wedge between the opposite portions of a rope passing around the respective sheaves, a rocking shaft journalled on the sheave frame, and having a cam engaging the wedge, and a lever D for rocking the cam shaft, substantially as described.

No. 29,959. Asphaltic Pavement.

(*Pavage en asphalte.*)

Thomas Bryce, Toronto, Ont., 8th October, 1888; 5 years.

Claim.—The herein described pavement consisting of asphaltum made from petroleum, gas, tar, cement-gypsum and gravel, in substantially the proportions specified.

No. 29,960. Manufacture of Merchantable Articles from the Refuse of Petroleum Gas. (*Fabrication d'articles de commerce, des rebuts du gaz de pétrole.*)

John M. Sparrow and Joseph H Farr, Toronto, Ont., 9th October, 1888; 5 years.

Claim.—The within described process for producing a merchantable article from the refuse of the petroleum used in the production of illuminating gas, the said process consisting in passing superheated steam through the petroleum refuse, substantially in the manner and for the purpose specified.

No. 29,961. Vehicle Running Gear.

(*Train de voiture.*)

John J. Black, Cleveland, Ohio, U S., 10th October, 1888: 5 years.

Claim.—1st. The springs D, D, having their rear ends joined together by cross-bar F forming a continuous support, substantially as described. 2nd In running gear for vehicles, the combination, with axle A and body B, of the springs E, D, joined by cross-bar F, and connected to body B by king-bolt H, substantially as described. 3rd. In combination, axle A having shafts C, C rigidly attached, and the springs D, D pivotally attached, substantially as described.

No. 29,962. Lamps. (*Lampe.*)

Thomas Walsh, Montreal, Que., 17th October, 1888; 5 years.

Claim.—1st. The combination in a coal oil lamp of the chamber *d*, pipe *i* having perforations *l*, cup or jacket *e* having perforations *f*, tube *o* forming space *r*, nozzle *b*1 having openings *e*1 formed in it, and the tube *o*, and having passages *k*1, chamber *n*1, ferrule *f*1, flange *a*1 and burner *q*, the whole constructed and arranged substantially as and for the purposes set forth. 2nd. The combination in a coal-oil lamp of the chamber *d*, pipe *i* having perforations *l*, pipe *a*2 provided with a stop-valve, as described, cup or jacket *e* having perforations *f*, tube *o*, forming space *r*, nozzle *b*1 having openings *e*1 formed in it, and extending through the tube *o*, also having passages *k*1, chamber *n*1, ferrule *f*1, flange *a*1, and burner *q*, the whole constructed, arranged and operating substantially as described. 3rd. The combination in a coal-oil lamp of the pipe *i* having vent at its upper end, chamber *d*1, openings *e*1, nozzle *b*1 having passages *k*1, tube *o*1 forming space *r*, and having openings *e*1 continued through it, ferrule *f*1, flange *a*1, and burner *q*, the whole constructed and arranged substantially as described.

No. 29,963. Wearing Apparel.

(*Support de jupon.*)

Fannie St. Clair, New York, N. Y., U. S., 10th October, 1888; 5 years.

Claim.—The combined skirt and protector consisting of a skirt or supporting bands A, having means by which it is supported from the waist, and the protector forming an extension to the skirt or bands, having means by which its lower edge is supported on the shirt or bands, and the sliding cord or buttons by which the protector is supported.

No. 29,964. Waggon Spring. (*Ressort de wagon.*)

Charles A. Howard, Pontiac, Mich., U. S., 10th October, 1888; 5 years.

Claim.—1st. In a vehicle bolster spring mechanism, the combination, with the bed plate or plates adapted to rest on the bolster, and the cross-bar adapted to receive the weight of the load, of spiral springs extending between said bed plates and cross-bar at their extremities, and a semi-elliptic spring adapted to be swung either on or off the bolster at will, substantially as described. 2nd. In a vehicle bolster spring mechanism, the combination, with the bed plates, and the cross-bar and spiral springs extending between the ends of the same, of a semi-elliptic spring pivoted with its convex face to the cross-bar, and adapted to be either swung off from the bolster and thus add to the support of the load, or swung off from the bolster and thus support none of the load, substantially as described. 3rd. In a vehicle bolster spring mechanism, the combination, with the bed plates, the cross-bar, and a semi-elliptic spring, pivoted to the said cross-bar, and adapted to be swung either on or off the bolster, of spiral springs extending between the said bed-plates *e* on the cross-bar and held in place by the bolts *e*2, substantially as described. 4th. In a vehicle bolster spring mechanism, the combination, with the bed plates, the cross-bar, the spiral springs and the semi-elliptic spring pivoted on the cross-bar, and adapted to be swung either on or off the bolster, of means for locking the semi-elliptic spring in a position either on or off the bolster, substantially as described.

No. 29,965. Baling of Hay, Straw, etc. (*Presse d'emballage pour le foin, la paille, etc.*)

John H. and James H. Howard and Edward T. Bonsfield, Bedford, Eng., 10th October, 1888 · 5 years.

Claim.—1st. An apparatus for baling hay, straw and other materials, wherein two endless platens *a*, *a* are employed, substantially in the manner hereinbefore described. 2nd. In apparatus for baling hay, straw and other materials, the combination, with two endless platens *a*, *a*, arranged to converge towards each other and to gradually compress the material between them, of a conveyor or moving platform *h* for transporting the materials to the platens, substantially as described. 3rd. In apparatus for baling hay, straw and other materials, the employment of a table *i*, substantially as hereinbefore described, for receiving the compressed material and supporting the same during the application of bands thereto. 4th. The employment of the retaining clamps *j*, substantially as and for the purpose described.

No. 29,966. Cooking Vessel.

(*Ustensile de cuisine.*)

Robert U. Irwin, Meadowvale, and William L. Hardy, Toronto, Ont., 17th October, 1888; 5 years.

Claim.—1st. A cooking vessel having a hinged bottom in two sections attached to a central cross-piece, each bottom section having a catch combined with a partition crossing the vessel in the line of the cross-piece, whereby either compartment of the vessel may be opened without disturbing the contents of the other compartment, substantially as described. 2nd The combination, with a cooking vessel having hinged bottom sections, and catches therefor, and a removable partition, of an insertible vessel to fit in and fill the first mentioned vessel above the partition, the construction and arrangement being substantially as described. 3rd. The combination, with a cylindrical cooking vessel having holes in its sides, of a collar adjusted to slide over the sides, and a flange on said collar, the parts being and operating, substantially as described.

No 29,967. Wire Lathing. (*Lattis en fil de fer.*)

Thomas Cockburn, Hamilton, Ont., 10th October, 1888; 5 years.

Claim.—1st The combination of flat wire, woven to form square, diamond or oblong spaces *a*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of flat wire, woven to form square, diamond or oblong spaces *a*, with projections B at certain distances, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the attachable projections B1, with wire lathing, substantially as and for the purpose hereinbefore set forth.

No. 29,968. Telephone Address Index and Advertizing Device. (*Index d'adresse téléphonique et appareil de publicité.*)

John F. O'Brien, Quebec, Que., 10th October, 1888; 5 years.

Claim.—1st. The combination of the board A, the alphabetical index book C secured thereto briefwise, and the springs E to hold up the leaves of said index when making reference, substantially as set forth. 2nd. The combination, with the board A having springs E, of the index book C secured briefwise thereto, said book having a stub back D, and leaves F alphabetically arranged and attached removably to said back, substantially as set forth.

No. 29,969. Combined Door Lock and Latch.

(*Serrure et loquet de porte combinés*)

Theodore Martin, Wallaceburg, Ont., 10th October, 1888; 5 years.

Claim.—1st. In a combination latch and lock, the combination of the latch provided with the shoulder *a*, and the interior key bolt F having the foot G adapted to engage with the shoulder *a* on the latch, substantially as described. 2nd. In a combined lock and latch, the combination of latch, the shoulder *a* formed thereon, the latch spring J operating against the shoulder *a* and secured in vertical position on the face of the case, and the interior key bolt F provided with the foot G, all combined to operate substantially as described. 3rd. In a combined lock and latch, the combination, of the latch T provided with the shoulders and *c*, the interior key bolt F provided with the foot G adapted to engage with the shoulder *a*, and the night latch provided with the wing N, adapted to engage with the shoulder O, all combined to operate substantially as described.

No. 29,970. Car Brake. (*Frein de char.*)

Jacob S. Sterrett, Philadelphia, Penn., U.S., 10th October, 1888; 5 years.

Claim.—1st. In an automatic brake mechanism, the combination, of a shifting buffer, springs F and F1, draw-bars D and D1, frame E, sliding link G pinned to the rod D1 and pivotally connected with rods H and H1, lever I loosely mounted on a pin J, lugs K and K1 adapted to be moved by the lever I to cause the pin J and levers M and *o* to be actuated for applying the brakes, substantially as described. 2nd In an automatic brake mechanism, the combination, of a sliding link G pivotally connected with a rod D1, a shifting buffer A, connected with said rod, bars H and H1, lever I, lugs K and K1, and a pin J for causing the brakes to be applied by either an inward push or forward thrust of the buffer, substantially as and for the purpose described. 3rd. In an automatic brake mechanism, the combination, of the movable buffer A, draw-bar D, cross-head C and supports F2 attached to the bottom of the car, and provided with a tongue C1 adapted to receive a pin normally held in rear of the cross-head C for checking inward thrust of the buffer, substantially as and for the purposes described. 4th. In an automatic impact brake mechanism, the combination of a cylinder provided with a piston adapted to be actuated pneumatically, to shift the parts of a brake mechanism whereby said mechanism may be controlled from the engine to cause the brakes to be applied either by a pull on or a push against the buffer, substantially as described. 5th. In an automatic impact brake mechanism, the combination, of a cylinder provided with a piston capable of actuation by compressed air, a brake mechanism actuated thereby to shift the parts thereof, and a spring bearing against said piston to drive it back to its place when the air pressure is released, substantially as and for the purposes described. 6th. In an automatic impact brake mechanism, the combination, of the buffer A, draw-bars D and D1, frame E, sliding link or guide G pinned to the rod D1, arms H and H1, lever I, lugs K and K1, pin J, span or bridge V attached to the link G, air cylinder Q, piston R with a stem R1 pinned at one end to the span or bridge V, and air pipes U, all arranged substantially as and for the purposes described. 7th. In an automatic impact brake mechanism, the combination, of the arms H and H1, lever I, guide G, cylinders Q, piston R with its stem, the slotted head R2, the span or bridge V and the spring T operating to cause said piston to be returned to place when the pressure of the air is removed, substantially as described.

No. 29,971. Crutch Attachment.

(*Tampon pour béquille.*)

William J. Donald, Tunnel, Wis., U.S., 10th October, 1888; 5 years.

Claim.—1st. An attachment for crutches consisting of a piece to be attached to the lower end of a crutch, formed with a screw-threaded projection having a pointed end, an elastic buffer having a perforation through which the screw-threaded projection extends, and a screw-threaded connection by means of which the buffer is vertically adjustable on the screw-threaded projection, substantially as shown and described. 2nd. An attachment for crutches consisting of an attaching piece formed with a screw threaded projection having a pointed end, and a polygonal elastic buffer screwing onto the screw-threaded projection extending through the buffer, and vertically adjustable over its point, substantially as shown and described. 3rd. An attachment for crutches consisting of the aportured polygonal elastic buffer 8, provided with plate 12 having threaded hole 10, substantially as shown and described. 4th. The combination, with the threaded end of a crutch having spur 7, of the aportured polygonal elastic buffer 8, provided with plate 12 having threaded hole 10, substantially as shown and described.

No. 29,972. Hinge. (*Penture.*)

Ernest Bourne, London, Ont., 10th October, 1888; 5 years.

Claim.—1st. As a new article of manufacture, a hinge formed with one or more braces B, substantially as and for the purpose set forth. 2nd One or more braces B, in combination with the traps S, S, knuckle K, and pin P, substantially as and for the purpose set forth.

No. 29,973. Whiffletree. (*Palonnier.*)

Stephen Baltzly, Livingston, Cal., U.S., 10th October, 1888; 5 years.

Claim—1st. In a whiffletree, the combination, with a whiffletree-bar composed of tubular metal and having open ends, of a brace-rod having its ends bent inwardly toward each other, substantially as described, the said bent ends being secured within the opening of the said whiffletree-bar, and draft rings embracing the ends of the brace-rod and bar and secured to said parts, substantially as set forth. 2nd. In a whiffletree, the combination, with a tubular whiffletree-bar having open ends, of a bow-shaped brace or bracing-truss having a portion of its ends bent inwardly to enter the open ends of the said bar, a brace-collar encircling the whiffletree-bar, and bracing-truss and draft-rings secured on the outer ends of the brace and bar, substantially as set forth. 3rd A whiffletree composed entirely of metal and consisting of a bar and brace, the whiffletree-bar being of tubular metal open at both ends to permit of the introduction of the inwardly-bent portion of the bracing-strip, the ends of the bar and brace being secured together by welding, and draft-rings secured on the outer ends of the bar and brace by welding, substantially as set forth.

No. 29,974. Movable Horse Shoe Calkin.

(*Crampon mobile de fer à cheval.*)

Maximilian Von Maltstein, Breslau, Prussia, German Empire, 12th October, 1888; 5 years.

Claim.—The mode of securing movable calkins in horse-shoes, by cans of providing a groove in one of the side faces of the calkin, and a corresponding groove on or in the legs of the horse-shoe, a nail forced into said grooves when in line serving to firmly hold the calkin within the shoe, substantially as and for the purpose set forth.

No. 29,975. Carriage Axle. (*Essieu de voiture.*)

Florian Lebel, Levis, Que., 12th October, 1888; 5 years

Claim.—1st. The combination in a carriage axle, of the rod J playing loosely in the opening *g*, with the spiral spring *l* holding said rod against the end of a chamber in the cap H substantially as shown and specified. 2nd. The combination of the axle C, with the cap H secured to the box A, having the interior of its end wall indented, or otherwise uneven, substantially as specified and for the purpose set forth. 3rd. The combination of the chambered cap H having an indented interior surface, and an opening fitted with a screw plug i with the rod J lying loosely in the opening *g* in the axle, and held against the uneven wall of the cap H by the spiral spring *l*, as shown and described.

No. 29,976. Machine for Making Cigars.

(*Machine pour faire les cigares*)

Conrad L. Driefer and Charles D. Shaw, London, Ont., 12th October, 1888; 5 years.

Claim—1st. In a machine for making cigars, the intermittent gear wheels G having only part G1 of their circumference provided with cogs, and shaft D1, in combination with the frame H, and toothed racks H1, substantially as shown and described and for the purpose specified. 2nd. In a machine for making cigars, a table K shaped on its face approximately to the form of the cigar, a reciprocating frame or table H carrying a roller M, and an apron L, in combination with the racks H1, intermittent gear wheels G having only part G1 of their circumference provided with cogs, and shaft D1, for the purposes set forth. 3rd In a machine for making cigars, the combination of the frame or table K, reciprocating table H, and the knives B2, B1, mounted respectively on said fixed frame and reciprocating table, and serving to shear off the surplus tobacco, substantially as explained. 4th. In a machine for making cigars, a table K shaped on its face approximately to the form of the cigar, in combination with a reciprocating frame or table H carrying a roller M, and an apron L substantially as and for the purposes set forth 5th. In a machine for making cigars, the table K, apron L and frame H, in combination with roller M, and shaft D2, substantially as shown and described and for the purpose specified. 6th. In a machine for making cigars, the frame H, table K, apron L and roller M, in combination with shaft D2, ratchet R, and dog Q, substantially as shown and described and for the purpose specified. 7th. In a machine for making cigars, the lever T, treadle T1 connected thereto, the shaft D1 carrying toothed wheel E, the toothed wheel E1, the shaft D3 carrying the pulley U, belt T2 and pulley U1, in combination with the rollers W, W1, W2, elastic bands X3, and frame X1, substantially as and for the purposes set forth. 8th. In a machine for making cigars, the frame X1 formed with elongated concentric slots X2, levers X4 and tension bands X3, in combination with the concaved rollers W, W1, W2, substantially as shown and described and for the purpose specified. 9th. In a machine for making cigars, the concaved rollers W, W1, W2, in combination with the tension bands X3, substantially as shown and *described and for the purpose set forth. 10th. In a machine for* making cigars, the concaved rollers W, W1, W2, in combination with the frame X1 formed with elongated concentric slots X2, a retreating lever X4, anti-friction roller X7 and elastic bands X3, substantially as and for the purposes set forth. 11th. In a machine for making cigars, the rollers W, W1, W2, in combination with the table X, and frame X1, substantially as and for the purposes set forth. 12th. In a machine for making cigars, the thimble A formed with a concave A, in combination with an upright A2 and held in place by said upright, and a set screw or other suitable securing or supporting devices, substantially as shown and described for the purpose specified. 13th. In combination with the rollers W, W1, W2, the thimble A formed with a semicircular concavity A1 permitting the cigar point to enter it laterally, as explained 14th. The reversible concave rollers W, W1, W2, and the tip forming thimble A mounted in a suitable standard A2, and reversible in position so as to adapt the machine to work with right or left wrappers, as explained. 15th. In a machine for making cigars, the combination, of the frame *a*5, tube *a*1 provided with a funnel *a*2, the spring *a*6, and the roller *a*4, substantially as and for the purposes set forth. 16th. In a machine for making cigars, the combination of the frame X1, provided with the concentric slots X2 with two sets of flexible rollers W, W1, W2, each set having bearings in said concentric slots, substantially as and for the purpose set forth. 17th. In a machine for making cigars, the combination, with the frame X1, of two sets of hollow rollers W, W1, W2, one set being situated on each side of said frame, and said rollers having a pliable elastic or flexible covering *d*8, substantially as and for the purpose set forth. 18th. In a machine for making cigars, the combination, with the frame X1, of two sets of hollow rollers having parts *d* mounted in said frame, and formed with grooves at each side of said frame to receive the elastic bands X3, and having screw-threaded sockets *d*3 and *d*4 at each end, in which the tube *c* and screw bar *c*1 are secured with bearing *d*7 and nuts *d*5 and *d*6, and flexible coverings *d*8 on said rollers adapted to be clamped at the inner ends between said nuts *d*5 and *d*6 to secure the flexible covering, substantially as and for the purpose set forth.

No. 29,977. Steam Engine. (*Machine à vapeur.*)

Anselme H. Larochelle, Levis, Que., 12th October, 1888; 5 years.

Résumé.—1o La combinaison de la roue alluchonnée M, la commande inte de la couronne alluchonnée N, la commandée de l'e staille K, de la clef d'arrê D, du couvert S et du moyen J, tel que ci-dessus decrit et pour les fi is indiquées. 2o. La combinaison de la roue friction E, la commandante de la roue friction F, la commandée de la rainure T, du levier a la main R, de la clef longue O, tel que ci-dessus decrit et pour les fins indiquées. 3o La combinaison de l'arbre porte excentriques H, de la roue à la main L, des excentriques a, b, c, de la roue alluchonnée la commandée et la roue friction F, tel que ci-dessus decrit et pour les fins indiquées.

No. 29,978. Brick Machine.

(*Machine à Brique.*)

Daniel Woodbury, Minneapolis, Minn., U. S., 12th October, 1888; 5 years.

Claim—1st. In a brick machine, in combination for tempering the clay and assisting in feeding the same to the presses, the clay receptacle D, the rack E consisting of the pair of central vertical side bars *e*, tied together by suitable cross-rods and pivoted within the clay receptacle on the shaft *e*111, said bars *e* extending from above top of receptacle D to near the bottom of the same, the pairs of side bars *e*1 and *e*11 attached to the central bars at or near the pivotal point of connection with shafts *e*111, and diverging and extending upwardly to a level with tops of bars *e* and connected by suitable cross-rods, the three bars *e*, *e*1 and *e*11 being connected by longitudinal ties at the top, and suitable means, substantially as described, for imparting a rocking motion to said rack 2nd. As a forced feed for brick machines, the combination of a rocking tempering rack pivoted within the clay receptacle, and a vertical cross-plate secured to the lower extension of said rack on a line with the mouths of the press-boxes, substantially as described. 3rd. In a brick machine, the combination of the rack E pivoted within the clay receptacle, as at *e*111, and provided with extensions of its vertical side bars *e* below the pivoted shaft *e*111, the vertical cross plate F pivoted between and to said bars *e*, and suitable stops, as *f*, *f*, *f*1, *f*1, for limiting movement of plate F, substantially as described. 4th. In a brick machine, in combination, the rocking rack E, the vertically adjustable fulcrum O, P, *p*, *p*1, as described, the lever bar L pivoted to said fulcrum attached at one end to the rack E, and provided at the other end with a vertical slot, the lever L1 rigid with shaft W, provided with a pin on its upper extremity working in the slot of lever L, the crank-shaft W, the crank-bar *w* and the mould driving roller *w*1, all arranged substantially as described for the purpose set forth. 5th. In a brick machine, the vertically adjustable fulcrum described, consisting of horizontal bars O, P, bolts and blocks *p*, *p*1, vertical bars N, N1, provided with vertical slots, and screw-bolts passing through the slots and the bars O, P, substantially as described. 6th. The toggle levers I, I1, *i*, *i*1, in combination with the rack E and shafts J, J1, substantially as described. 7th. The toggle levers I, I1, *i*, *i*1, the rack E, the shaft J, J1, the cranks K, K1, the plunger rods R, R1, *r*, *r*1, and the plungers T, T1, in combination, substantially as described for the purpose set forth. 8th. In a brick machine, provided with a double set of presses, as described, the roller-frame B provided with

a set of rollers at each end, parallel with the press boxes, and a set of rollers in the centre at right angles to the end rollers, in combination with the mould driver *w*, crank-arm *w*, shaft W, lever L¹ and lever L, substantially as described, whereby empty moulds are supplied alternately by the one mould-driver to the opposite presses, and the full molds are delivered alternately from the opposite ends of the mould frame. 9th. In combination, for making common brick, a double set of presses, a rocking tempering rack and forced feed within said receptacle, and means for operating the same, substantially as described for the purposes set forth. 10th. In a brick machine, the combination of two sets of presses, a clay receptacle between the presses, a rocking tempering rack and forced feed within said receptacle, and a set of toggle levers connected at their point of union to the tempering rack, and at their opposite ends rigidly attached to plunger-operating shafts, substantially as described. 11th. In a brick machine, in combination, presses T, T¹, clay receptacles D between the presses, rocking tempering rack and forced feed E, *e*, *e*¹¹, F, the toggle levers I, I¹, *i*, *i*¹, shafts J, J¹, cranks K, K¹ and plunger rods R, *r*, and R¹, *r*¹, substantially as described. 12th. In a brick machine, in combination, presses T, T¹, press boxes V, V¹, dies *v*, *v*¹, clay receptacle D between the presses, rocking tempering rack and forced feed E, *e*, *e*¹¹, F, toggle levers I, I¹, *i*, *i*¹, shafts J, J¹, cranks K, K¹, and plunger rods R, *r*, R¹, *r*¹, substantially as described. 13th. In a brick machine, in combination, a double set of presses, a clay receptacle between the two sets of presses, a rocking tempering rack and forced feed within said clay receptacle, means for supplying empty moulds and removing the full moulds to and from the presses, and means for operating the same, substantially as described for the purpose set forth. 14th. In a brick machine, in combination, the presses T, T¹, frame B, provided with rollers *b* and *b*¹¹, mould driving roller *w*¹, cranks *w*, *w*, rock-shaft W, lever bar L¹, provided with pin *l*, lever bar L provided with slot in lower extremity and rocking rack R, substantially as described. 15th. In combination, the following elements constituting the operative brick machine described, viz: the frame A, crank H, connecting rod G, tempering rack and forced feed E, *e*, *e*¹¹, toggle levers I, I¹, *i*, *i*¹, shafts J, J¹, cranks K, K¹, plunger rods R, *r*, R¹, *r*¹, presses T, T¹, provided with air valves *t*, *t*¹, press boxes V, V¹, dies *v*, *v*¹, striker wire Y, lever L, with slot lever L¹, with pin *l*, shaft W, cranks *w*, *w*, roller *w*¹¹, adjustable frame B provided with rollers *b* and *b*¹ and moulds C, substantially as described for the purpose set forth.

No. 29,979. Peat Fuel. (*Tourbe combustible.*)

David Aikman, Montreal, Que., 12th October, 1888; 5 years.

Claim.—As a new article of manufacture, a pressed fuel block composed of peat carbonized by heat, and condensed by pressure to such an extent that the constituent tarry matter is thoroughly intermixed with the carbonized matter, and a black external tarry glaze is formed on the surface of the block, substantially as and for the purpose described.

No. 29,980. Sleigh Runner Attachment for Wheeled Vehicles. (*Appareil de patin de traineau pour voitures à roues.*)

David G. Wyeth, Newark, Ohio, U.S., 12th October, 1888; 5 years.

Claim—1st. The combination in a sleigh runner attachment for wheeled vehicles, of the thimble *s*, having the wings *w*, *w*, and the lugs *l* integral therewith, and having the grooves *g*, *g*, the packing *n*, *n*, the two side plates *p*, *p*, one on either side of the sleigh runner, with flanges *f*, *f*, *f*, *f* and the braces *b*, all substantially as set forth. 2nd. The combination in a sleigh runner attachment for wheeled vehicles, of the thimble *s*¹ having the wings *w*, *w*, and lugs *l* integral therewith, the braces *b*, the two side plates p, p, having each flanges *f*, *f*, *f*, *f*, and the rave *r* and knees *k*, *k*, all substantially as set forth. 3rd. The thimble *s*, having wings *w*, *w* and lugs *l* integral therewith, and having the grooves *g*, *g*, to receive a packing, substantially as set forth for the purpose specified. 4th. The thimble *s*¹, having wings *w*, *w*, and lugs *l* integral therewith, substantially as set forth, for the purpose specified. 5th. The side-plate p, having flanges *f*, *f*, *f*, *f*, substantially as shown for the purpose specified. 6th The combination in a sleigh runner attachment for wheeled vehicles, of two side plates *p*, *p*, each having four flanges *f*, *f*, *f*, *f*, with unmortised and untenoned knees and rave *k*, *k* and *r*, substantially as set forth. 7th The combination in a sleigh-runner attachment for wheeled vehicles, of the thimble *s*¹, having wings *w*, *w*, and lugs *l* integral therewith and the braces *b*, substantially as set forth. 8th. The combination in a sleigh runner attachment for wheeled vehicles, of the thimble *s*¹, having wings *w*, *w*, and lugs *l* integral therewith, the braces *b* and a side plate *p*, all substantially as set forth.

No. 29,981. Horse-Shoe. (*Fer à cheval.*)

Jacob Russell, Brooklyn, N.Y., U.S., 12th October, 1888; 5 years.

Claim.—1st. A horse-shoe, having five or more calks, some of which are intermediate between the toe and heel calks, and having the normal fullering, that is to say, having the nail-creases and nail-holes, arranged in the normal and approved manner, as set forth. 2nd. A horse-shoe, having frog supports formed by extending the web of the shoe at each side back beyond the heel-calks, and bending down these extensions, substantially as herein set forth.

No, 29,982. Bridle Bit. (*Mors de bride.*)

Hardy W. Campbell, Columbia, Dakota, U. S., 12th October, 1888; 5 years.

Claim.—1st. In a bridle bit, the combination of the curved bars A and A¹, the bar A having the rings B and C, and the bar A¹ having the rings B¹ and C, the rings B and B¹ being formed with the cross-bars *b* and *b*¹, and the loop-holes *b*², *b*³, *b*⁴, *b*⁵ and the guards or projections *b*⁶, the bars A and A¹, having their alternate ends protruding through the rings B and B¹, and the rings B, B and C pivoted to the ends of said bars, all substantially as described and set forth. 2nd. In a bridle bit, the combination of the curved bars A and A¹, the bar A having the rings B and C, and the bars A¹ having the rings B¹ and C, the rings B and B¹, having the cross-bars *b* and *b*¹, and the guard or projection *b*⁶, the bars A and A¹ having their alternate ends protruding through the rings B and B¹, and the rings B, B¹ and C pivoted to the ends of said bars, substantially as described and set forth. 3rd. The combination of the curved bars A and A¹, the bar A having the rings B, C, and the bar A¹ having the rings B¹ C, the bars A, A¹, having their alternate ends protruding through the rings B and B¹, the rings B, B¹ and C pivoted to the ends of curved bars, substantially as described and for the purpose set forth.

No. 29,983. Machine for Soldering Caps on Fruit Cans. (*Machine à souder les couverts des pots à fruit.*)

Egerton DeCew and Albert E. Carpenter, Hamilton, Ont., 12th October, 1888; 5 years.

Claim.—1st. A row of revolving soldering irons, operating in a frame, and having attached hollow spindles, each spindle containing a movable rod (operated by mechanism) for holding the caps while the revolving irons are soldering the caps, substantially as and for the purpose specified. 2nd. A series of weighted levers pivoted to a frame, and having the spindles of the soldering irons passing through them, and a series of lifting arms operating under the levers, substantially as and for the purpose specified. 3rd. The combination of the fire-box B, soldering irons C, spindles D, rods E, with devices for operating them, substantially as and for the purposes specified. 4th. In combination with the soldering irons C and their spindles D, of a series of weighted levers G, and a series of lifting arms I on the shaft J, and collars F on the spindles D, substantially as and for the purpose specified. 5th In combination with the spindles D, soldering irons C and rods E, the slightly movable frame F, springs *a* and collars *b*, substantially as and for the purpose specified. 6th. In combination with the soldering irons C and spindles D, of the pinions *l* with collars, combined intermediate pinions and bevel gears *g*, *k* and bevel gears *h*, *i* on the shaft N, substantially as and for the purpose specified. 7th. The combination of the slotted arms R, frame F, rods E, connecting rod S and lever U, substantially as and for the purpose specified. 8th The combination of the shaft J, arm M, connecting lever L and foot lever K, arms I and shaft J, substantially as and for the purpose specified. 9th. The combination, with a series of revolving soldering irons, of the spindle E, frame F, arms R, connecting rod S and lever U, substantially as and for the purpose specified. 10th The spindles E, having feathers *e*, in combination with the slotted pinions *l*, substantially as and for the purpose specified.

No. 29,984. Automatic Waggon Brake.

(*Frein automatique pour wagon.*)

John Fraser, Woodhouse, and G. A Upper, Simcoe, Ont., 13th October, 1888; 5 years.

Claim. The combination of tongue yoke A and holder B, rods E and G, levers F and H, shaft I and brake J, doubletree K and chain L, with the bars M and N, substantially as and for the purpose hereinbefore set forth.

No. 29,985. Bob Sleigh. (*Traineau-Jumeau.*)

Ezra H. Stafford (assignee) John Mack, Grand Rapids, Mich., U S., 13th October, 1888; 5 years.

Claim.—In combination with the runners, a pair of knees bent to form crowns, a bench support and a bench having a groove or grooves in which the crowns are fitted, said knees being set in an inclined position and fixed in the grooves, all substantially as described.

No. 29,986 Sheet Metal Hinge.

(*Penture de métal en Feuille.*)

The Stanley Works (assignee of William H. Hart and Thomas Corscaden), New Britain, Conn., U S., 13th October, 1888; 5 years.

Claim.—1st. In a hinge, the sheet metal leaf or leaves having a swaged or struck-up strengthening bead at the joint end, said bead extending transversely to the axis of the pintle, substantially as described and for the purpose specified. 2nd. In a sheet metal hinge, the leaf or leaves having a bead extending around the pintle-sleeve and over a portion of the leaf, and another bead on the body of the leaf extending toward the pintle sleeve to a point where a transverse section through the leaf will extend through both beads, substantially as described and for the purpose specified. 3rd. In a sheet metal hinge, the angular leaf having strengthening beads at the joint end, and a bead extending from said end around the first angle of the leaf, substantially as described and for the purpose specified.

No. 29,987. Dumping Cart or Waggon.

(*Tombereau.*)

Caleb H. Coggshall, Brooklyn, N.Y (assignee of Thomas Hill, Jersey City, N.J.), U.S., 12th October, 1888; 5 years.

Claim.—1st. The combination, with the axle, of the vehicle and its side uprights forming bearings for the body of the vehicle, of the shafts H, H constructed at the rear ends to butt or bear against said uprights, and the scrap screw-bolts I, I secured on and along the shafts H, H arranged to pass through apertures in the axle uprights, and further secured to said uprights in their rear, essentially as shown and described. 2nd. In a dumping cart or vehicle, the combination, with the tilting body, its frame or support and handle a¹ on said body, of the pulley *b*¹ and the chain *c*² adapted to control the manipulation of the body, substantially as specified. 3rd. In a holding down fastening for the tilting body of dumping carts or vehicles, the fixed plate L having overturned ends *l*¹, *l*², in combination with the lever K carried by said plate, substantially as shown and described. 4th In a dumping cart or vehicle, having side pivots on its body to provide for the tilting of the latter, an elastic rubber pedestal for said pivots, composed of an upright body part

and an extended yielding base or foot flange, substantially as specified 5th. In a dumping cart or vehicle, the elastic rubber pedestal N having an extended base or foot flange b^3, in combination with the metal bearing a^3, having a socketed fit within said pedestal, essentially as described. 6th. In pivot supports for dumping carts or vehicles, the metal box or upright O, constructed with a hollow body part having a vertical slot c^3 in its inner face or side, an extended base and a mud guard d^3 upon its outer face or side, essentially as described. 7th. In pivot supports for dumping carts or vehicles, the combination of the elastic rubber pedestal N, having a base flange b^3, the socketed metal bearing a^3 and the metal box or upright O adapted to enclose said pedestal and bearing, and provided with a vertical slot c^3 in its inner face or side, substantially as specified.

No. 29,988. Hot Water Attachment for Stoves. (*Appareil à eau chaude pour poêles.*)

Gilbert T. Brewer, Hoboken, New Jersey, and Francis J. Homan, New York, N.Y., U.S., 13th October, 1888; 5 years.

Claim—1st. The combination, with a cylinder or barrel stove, of the hot water attachment, consisting of a tank seated on the top of the stove, the boiler supported on a level with and extended in contact with the shell of the fire-pot, and the circulating pipes connecting the tank with the boiler. 2nd. The combination, with a stove, having the interior recess *f* in the fire-box, of the hot water attachment, consisting of a tank *a* seated on the top of the stove boiler *c*, located in the recess *f* in the shell of the fire pot, and the circulating pipes *d*, *e*, connecting the tank and the boiler, substantially as described. 3rd. The combination, with a stove, having the interior recess *f* in the fire-box, of the hot water attachment, consisting of tank *a* seated on the top of the stove boiler *c*, located in the recess *f* in the shell of the fire-pot, and the circulating pipes *d*, *e*, connecting the tank and the boiler, said boiler and tank having other circulating pipes, as *d*^{1}, *e*^{1}, for heating purposes, substantially as described.

No. 29,989. Seat for Bath Tubs.

(*Siége pour baignoire.*)

George B. Sloat, Philadelphia, Penn., U. S., 15th October, 1888; 5 years.

Claim.—1st. In a seat for bath-tubs, the combination, with the seat proper A, of the attached upturned arms or hangers B, B, adjustable in and out relatively to the length of the seat, and provided with upper sliding supports or projections *f*, *f*, essentially as shown and described. 2nd. As an improved article of manufacture, a bath-tub seat, consisting in the seat proper A, having longitudinal grooves in its under side, the oppositely-arranged Z-shaped hangers B, the lower horizontal members of which are longitudinally slotted and enter the grooves from opposite ends of the seat, and the set screws extending through said slots for holding the hangers in any desired position, substantially as set forth.

No. 29,990. Breasting Attachment for Boot and Shoe Heeling Machines. (*Appareil pour façonner les talons de chaussures.*)

Martin C. McGenness and John Tweedie, Jefferson Miss., U. S., 15th October, 1888; 5 years.

Claim.—1st. In a breasting attachment for heeling machines, the combination herein described, with a block, of a knife held to slide vertically in one end of the said block, a nut held on the said knife, and a screw-rod engaging the said nut and adapted for raising and lowering the said knife, substantially as shown and described. 2nd. In a breasting attachment for heeling machines, the combination herein described, with a block, of a knife having a dovetailed plate held to slide in one end of the said block, a nut secured in a recess of the said plate, a screw-rod screwing on the said nut, and a disk formed on the said screw-rod, and resting on a support formed on the said block, substantially as shown and described. 3rd. In a breasting attachment for heeling machines, the combination herein described, with a block, of a knife provided with a plate held to slide vertically at one end of the said block, a nut held in the said plate, a screw-rod screwing in the said nut, a notched disk formed at one end of the said screw-rod and resting on a support of the said block, and spring-pin adapted to engage the notches of the said disk, substantially as shown and described. 4th. In a breasting attachment for heeling machines, the combination, herein described, with a block A and top plate J, of gripping fingers held to slide on the bottom of the said block, substantially as shown and described. 5th. In a breasting attachment for heeling machines, the combination, herein described, with a block, of a knife held vertically adjustable at one end of the said block, and gripping fingers held to slide on the bottom of the said block, substantially as shown and described. 6th. In a breasting attachment for heeling machines, the combination herein described, with a block, of gripping fingers held to slide on the bottom of the said block and adapted to engage the top plate of the heel, lugs formed on the said gripping fingers, and held to slide transversely on the said block, and a right and left-handed screw-rod engaging the lugs on the gripping fingers, substantially as shown and described. 7th. In a breasting attachment for heeling machines, the combination herein described, with a block, of gripping fingers held to slide on the bottom of the said block, and adapted to engage the top plate of the heel lugs formed on the said gripping fingers, and held to slide transversely on the said block, a right and left-handed screw-rod engaging the said lugs on the gripping fingers and springs secured to the said gripping fingers and adapted to engage the rim of the top plate of the heel, substantially as shown and described. 8th. In a breasting attachment for heeling machines, the combination herein described, with a block of a knife held to slide vertically at one end of the said block, a screw-rod engaging a nut on the said knife for adjusting the latter vertically, gripping fingers held on the bottom of the said block, and provided with threaded lugs, and a right and left-handed screw-rod screwing in the said lugs for adjusting the said gripping fingers, substantially as shown and described.

No. 29,991. Stanchion for Securing Cattle within the Stables. (*Stalle de Bétail.*)

Henry C. Miner, Stafford, New York, N. Y., U. S., 15th October, 1888; 5 years.

Claim.—1st. The combination, with the supporting frame, having the upper beams C and lower beam D, of the swinging stanchion E, the locking bail G, having the offsets *g*, inclined shoe H and downward spring-supporting lever, the spiral spring A, the spring retaining pin h^1 and the staples *g*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the supporting frame provided with the upper beam, of the swinging stanchion, the inclined bail notch in the same, and the hinged locking bail having the uprising operating handle, substantially as and for the purpose hereinbefore set forth. 3rd The combination, with the supporting frame, having the upper and lower beams, and the swinging stanchion, of the stop block F between the upper beams and the spring *f* within said block for opening said stanchion, substantially as and for the purpose hereinbefore set forth.

No. 29,992. Bench Plane. (*Rabot.*)

Philippe Nicol, Ste. Pudentienne, Que., 16th October, 1888; 5 years.

Claim.—1st. The combination of the wedge and plane iron holder *c*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the plane block A, which is reduced to half the ordinary thickness, and iron holder C, substantially as and for the purpose hereinbefore set forth.

No. 29,993. Combined Punching and Shearing Machine. (*Cisailles et poinçon combinés.*)

Evangéliste Guertin, Sherrington, Que., 17th October, 1888; 5 years.

Reclame.—Une cisaille et poinçon combinés, composés des branches C et E^1, articulés en *a*, *b*, *c*, *d*, *e*, *f*, munies des plaques D et H, des guides F, F^1 et P, des bras M, M^1, M^2, et J, J^1, avec les pièces annexes N, G^1, H^1, et, du poinçon K, K^1, L, I^1, I, le tout tel que ci-dessus décrit et combiné de la manière sus indiquée pour en arriver aux fins sus-mentionnées.

No. 29,994. Improvements on Machines for Making Picket Fences. (*Perfectionnements aux machines à clôtures métalliques.*)

Lyman T. Curtis and Theodore J. George, Flint, Mich., U. S., 17th October, 1888; 5 years.

Claim.—1st. In a machine for making picket fences, the combination of the twisters H, each composed of two frames which are secured to the end of the operating shaft, and each frame provided with two holes through which the wire passes, with a reel I which is journalled in each frame, and which reels are carried around with the twisters, substantially as shown and described. 2nd. The combination of the shaft R, provived with the pulleys U, Q, the chains for connection with the sliding table and with the treadle and the discs W upon the ends of the shaft, the discs being made of greater diameter than the pulleys, so as to prevent the pickets coming in contact with the pulleys, substantially as set forth. 3rd. In a machine for making picket fences, the combination of the wire twisters, the sliding table provided with devices for holding the pickets, guides or ways L, provided with stop-pins, the counter-weight connected to one end of the table, the operating shaft provided with pulleys U, chains by which the shaft is connected to the table, and the treadle connected to the shaft, substantially as specified. 4th. In a fence making machine, the combination of the main frame, the wire twisters, the shaft X having an operating wheel at one end, and the series of hooks A^1 swivelled in said shaft, as and for the purposes specified.

No. 29,995. Apparatus for Supplying Combustible Fluid to Oil or Gas Motor Engines. (*Appareil pour alimenter au moyen de fluide combustible les machines à huile ou à gaz.*)

The Petroleum Power Co., London, Eng. (assignee of Gaston Bagot, Brussels, Belgium), 17th October, 1888; 5 years.

Claim—1st. The construction and use of apparatus for supplying combustible fluid to an oil or gas motor engine, such apparatus consisting of a vessel B heated by products of combustion discharged from the cylinder, and provided with an injector M, E, so arranged that a regulated quantity or air drawn in during the charging stroke causes oil or hydro-carbon to flow in regulated quantity into the vessel in finely subdivided condition, and to impinge on the heated material of the vessel B, whereby it is converted into vapor or gas, which, mixed with air, constitutes the combustible charge, substantially as described. 2nd. For starting vaporizing apparatus, such as is referred to in the preceding claim, the construction and use of a lamp, consisting of the oil vessel P, containing a wire wick Q, having above it an orifice R and chimney S, substantially as described.

No. 29,996. Manufacture of Illuminating Gas. (*Fabrication du gaz d'éclairage.*)

The Animal Carbon Patent Gas Co. (assignee of Joseph E. Wren), Sydney, New South Wales, 17th October, 1888; 5 years.

Claim.—1st The manufacture of illuminating gas from animal fat alone by melting, and then feeding such melted material to a retort, sufficiently heated to convert such melted material into a gas, substantially as herein described and explained. 2nd. The contrivance for feeding the melted fat to the retort, such contrivance having a chamber in it to trap the lower end of the supply pipe, and thus pro-

vent the outflow of the gas generated in the retort, substantially as herein described and explained. 3rd. The retorts inclining downwards from their feed end, and combined with some suitable feed contrivance (preferably that described in the preceding claim) and also combined with some suitable means for conveying away the gas thus produced, substantially as herein described and explained.

No. 29,997. Conversion of Crude or Pig Iron into Malleable Iron or Steel and Apparatus Therefor. (*Conversion de la fonte en gueuse, en barres de fer ou d'acier malléables, et appareil pour cet objet.*)

Gustave L. Robert, Stenay, France, 18th October, 1888; 5 years.

Claim.—1st. In the conversion of crude or pig iron into malleable iron or steel, introducing the blast in such a manner as to cause it to impinge upon the surface of the liquid metal, so that the reactions take place at or near the said surface, substantially as and for the purpose hereinbefore described. 2nd. In the conversion of crude or pig iron into malleable iron or steel, introducing the blast in such a manner as to cause it to impinge upon the surface of the liquid metal in a tangential direction, so as to impart a regular circular or gyratory motion to the said metal, substantially as and for the purpose hereinbefore described. 3rd. In combination with a vessel for the conversion of crude or pig iron into malleable iron or steel, the employment of tuyeres arranged to cause the blast to act on the surface of the metal, and means for regulating the height of the liquid metal relatively to the said tuyeres, as and for the purpose substantially as hereinbefore described. 4th. In a vessel for the conversion of crude or pig iron into malleable iron or steel, the arrangement of the flat side or surface P, with a series of tuyeres arranged in the same plane and directing the blast on to the surface of the metal, substantially as hereinbefore described and illustrated in the accompanying drawings. 5th. The combination of a converting vessel, having a flat side P, provided with tuyeres arranged at different angles with the said side, and receiving air under pressure from a common supply box C, and means for regulating the level of the liquid metal relatively to the mouths of the tuyeres by tilting or swinging the vessel on a horizontal axis, so as to cause the blast to act on the surface of the said metal, substantially as hereinbefore described, with reference to the accompanying drawings.

No. 29,998. Urinal. (*Urinal.*)

James A. Wills, Philadelphia, Penn., U. S., 18th October, 1888; 5 years.

Claim.—1st. A urinal, consisting of a trough A, having its rear upper wall perforated, in combination with an air chamber over the same, and one or more vent pipes I connecting said air chamber with a draft flue D, said parts being constructed and arranged to operate substantially as shown and described. 2nd. In combination with a trough or urinal, the perforated partition below the same, with one or more vent pipes arranged to draw the air and odors from underneath the urinal into the air space in rear of said partition, and from thence into a draft flue D, substantially as described 3rd. The combination in an urinal, of a trough A, having its rear upwardly extending wall perforated, an air chamber arranged to receive the air and odors drawn through said perforations, and one or more pipes connecting said air chamber to a draft flue, the area or capacity of said pipe or pipes being equal to or greater than the combined area of said perforations, for the purpose of securing a uniform current of air to intercept and convey away the odors through the entire extent of said trough.

No. 29,999. Folding Lobster Trap for Catching Lobsters. (*Trappe pliante pour prendre le homard.*)

Andrew Flick, Halifax, Nova Scotia, 18th October, 1888; 5 years.

Claim.—"Flick's improved folding lobster trap," to be used for lobster or other fishing, having a base strip B, on the opposite sides of which are hinged the net supporting frames A, A, the combination therewith of a centrally located post D, end looped arms *d*, *d* extending inwardly from said frames A, A, and connected therewith to a clevis E, arms extend outwards on opposite sides of clevis E and carries levers *e*, *e*, which pivot on said arms, enabling said levers to move in a lateral direction, the lower end of clevis E being of tubular form and fitted to receive upper end of central post D, openings being made in sides of clevis E, to allow lower ends of levers *e*, *e*, to move freely, a spring *a* fitted on clevis E, keeps levers *e*, *e*, extended and locks them in position, whereby through the rods *d*, *d*, the frames A, A, are distended, and to be unlocked therefrom by the opening of said levers *e*, *e*, when the clevis E is drawn upon, substantially as and for the purpose as hereinbefore set forth.

No. 30,000. Lock Stitch Sewing Machine. (*Machine à coudre à point d'arrêt.*)

John Jackson, Gravelly Hill, and Patrick A. Martin, Birmingham, Warwick, Eng., 18th October, 1888; 5 years.

Claim.—1st. The method of forming the lock stitch by means of the vibrating and reciprocating needle driven by a crank, and so arranged as to sweep the contact surface of the shuttle or spool and case and thereby form a loop, which engages the lower thread issuing from the shuttle, substantially as hereinbefore described and shown on the drawings. 2nd. In combination with sewing machines of the description aforesaid, the method of supporting the material to be sewn against the presser foot *k*, by means of the spring plate *l*, substantially as hereinbefore described and shown on the drawings. 3rd. In combination with sewing machines, as aforesaid, the novel form of shuttle, consisting of the spool and spool case held in position, by means of a plate and spring, substantially as hereinbefore described and shown on the drawings. 4th. The method of refilling the spool by mounting the same upon the arm *xx* of the spring *x*, and rotating the same by contact with the rubber tire fitted to the wheel *t*, substantially as hereinbefore described and shown on the drawings. 5th. The general construction, combination and arrangement of the several and respective parts, together forming our improvements in lock stitch sewing machines, substantially as hereinbefore described and shown on the drawings.

No. 30,001. Construction of Gas Holders. (*Construction des gazomètres.*)

William Gadd, Manchester, Eng., 18th October, 1888; 5 years.

Claim.—1st. The construction of tanks or wells for gas holders, or the outer lift or lifts of such holders when telescopic, or both, with helical, spiral, or inclined rails, grooves, or recesses, built into or attached to the wall or face thereof, with the object of carrying the holder or one or more lifts thereof, as the case may be, by means of tangential rollers, sliding pieces, or mechanical equivalents attached to the lower rim or curb, or other convenient part of such holder lift, or lifts, for the purpose and in manner substantially as shown and described. 2nd. The construction of gas holders, single or telescopic, with tangential or angle radial rollers or both, or sliding pieces, or mechanical equivalents attached to the bottom curb or ring of such holder, or one or more lifts thereof, or both, as the case may be, with the object of causing the same to ride and rise and fall upon or within helical spiral or inclined rails, recesses or grooves, built into, forming part of, or attached to the wall of the tank or well, or outer lift, or both, for the purpose and in manner substantially as herein shown and described. 3rd. The construction and employment for gas storing or holding purposes, of holders and tanks or walls of the special character, substantially as herein shown and described.

No. 30,002. Vessel for Transporting Breakable Goods. (*Boîte pour transporter les objets fragiles.*)

Lina Sloan, Wausau, Wis., U.S., 18th October, 1888; 5 years.

Claim.—A transporting vessel, comprising a casing, a bail to said casing, a support for the casing, including a base of greater diameter than the casing and standards, and an interior vessel moving loosely within the casing mounted on springs, resting on the base, with its bottom normally below the bottom edge of the casing, and said interior vessel provided with apertures at top and bottom for tying cords, all substantially as shown and described and for the purpose specified.

No. 30,003. Internal Combustion Thermo-Dynamic Motor. (*Moteur thermo-dynamique à combustion intérieure.*)

James Hargreaves, Farnworth, Eng., 18th October, 1888; 5 years.

Claim.—1st. In internal combustion thermo-dynamic motors, the combination of a combustion chamber, provided with water jacket, a working cylinder extending from such chamber, a regenerator chamber provided with water jacket and a hearth arranged between such chamber and said combustion chamber, a superheating chamber and a saturating chamber communicating with each other, ways provided with valves connecting said superheating chamber with said regenerating chamber, and thereby all the aforesaid chambers in sequence, air pump operated from piston in said working cylinder and pipe connection between such pump and said saturating chamber valves connected with said air pump, steam generator and valve and air pump, with engine for operating it, water and fuel pumps, with pipe connections to sources of supply, injectors, with pipe connections between the aforesaid water jackets and aforesaid steam generator, pipe connections between said water jackets and piston of aforesaid working cylinder, and connection between rod of such piston and driving mechanism of motor, all substantially as shown and described. 2nd. In internal combustion thermo-dynamic motors, the combination of a combustion chamber, a regenerator chamber, superheating and saturating chambers arranged and connected in sequence, substantially as and for the purposes described. 3rd. In internal combustion thermo dynamic motors, the combination, with the combustion chamber and regenerator chamber, of water jacket surrounding such chambers. 4th. In internal combustion thermo-dynamic motors, having combustion regenerator, superheating and saturating chambers arranged and connected in sequence, a steam generator and air pump, with engine for operating same, connected with and arranged to supply air and steam to said saturating and superheating chambers, for the purposes described.

No. 30,004. Astronomical Apparatus. (*Appareil astronomique.*)

Earle L. Rugg, San Francisco, Cal., U.S., 18th October, 1888; 5 years.

Claim.—1st. In an apparatus illustrating the phenomena of day and night, the oval box *k*, having a cover *f*, which is divided and marked to represent and illustrate the zodiac, the ball *d* representing the sun, the envelope of light *g*, having the rod *h* and guides *j*, said rod passing through the centre of the ball *d*, in combination with the ball *a* representing the earth, and revolving freely upon the inclined spindle attached to the pedestal *c*, substantially as and for the purpose set forth. 2nd. The combination, in a teaching apparatus, of the oval box having a projecting top and bottom, the ball *d*, the envelope of light *g*, having the rod *h*, the globe *a*, the pedestal *c* having an inclined spindle *b*, substantially as and for the purpose described.

No. 30,005. Furnace for Burning Hydro-Carbon Fuels, and Steam Generator Therefor. (*Foyer à hydro-carbures et générateur de vapeur pour cet objet.*)

James H. Bullard, Springfield, Mass., U. S., 18th October, 1888; 5 years.

Claim.—1st. In a combination, a steam boiler, an air compressor,

a liquid fuel tank connected to said compressor, a steam pipe connecting the boiler with said compressor, and a valve, substantially such as described, controlling the passage in said pipe, said valve being operatively connected with the steam boiler, whereby the rise of steam pressure in the boiler tends to close said valve and thus cut off steam from the compressor, substantially as set forth. 2nd. Means for generating steam by the consumption of liquid or hydro-carbon fuel, consisting of a boiler and its fire chamber, substantially as described, a power actuated air pump, connected with said boiler by a suitable steam pipe, a valve 73 connected in said steam pipe to automatically close the steam passage in the latter, a liquid fuel tank in proximity to said furnace, connected with said air pump by a suitable pipe, and a series of fuel injectors and atomizers, substantially as set forth. 3rd. Means for generating steam by the consumption of liquid fuel, consisting of a water tube, steam boiler and enclosing casing, a liquid fuel tank below and connected to said casing, said tank having perforated diaphragms therein, as described a series of fuel-injectors and atomizers connected with said fuel-tank and extending into the casing under the boiler, and an air pump for developing air pressure in the fuel tank, all in combination, substantially as described 4th. Means for generating steam by the consumption of liquid or hydro-carbon fuel, consisting of a boiler and a furnace, substantially as described, an air pump connected by a steam pipe with said boiler, a valve 73 connected in said steam pipe to automatically close and open the steam passage in the latter, a liquid fuel tank in proximity to said furnace, connected with said pump by a suitable pipe, through which air is forced to said tank, a valve, substantially as described, connected in the air pipe between the air-pump and fuel tank and actuated by the air pressure in the latter, having its end entering transversely the passage in said steam pipe to restrict said passage, and a series of injectors and atomizers, substantially as described, attached to said tank and injecting liquid fuel into said furnace, substantially as set forth 5th Means for generating steam by the consumption of liquid or hydro-carbon fuel, consisting of a boiler and a furnace, substantially as described, a power-actuated air pump connected with said boiler, a liquid fuel tank in proximity to said furnace and connected to said air pump by a suitable pipe, a valve and connections, substantially as described, whereby the air-pressure is reduced and supply of fuel stopped when the steam pressure reaches a predetermined maximum, a fuel-lighting lamp supplying a flame within said furnace, and a series of fuel injectors and atomizers, substantially as described, attached to said tank and injecting said fuel through the walls of said furnace substantially as set forth. 6th. In combination, a furnace and boiler, substantially as described, the fuel tank 13 located under the boiler, a bed plate 30 interposed between the boiler and fuel tank, and having a filling of non-conducting material, and a series of burners having pipes 12 connected to the fuel tank and passing round the outer edge of the bed plate 30, so that the latter may serve as a complete fire shield or screen for the fuel tank, substantially as described. 7th. In combination, a furnace and a boiler, substantially as described, the liquid fuel tank 13 located under the latter, having a series of injectors and atomizing tubes connected therewith to inject liquid fuel into said furnace, and having its central portion between its ends of less thickness than the latter, a bed 30 containing a material which is a non-conductor of heat interposed between the boiler and fuel tank, and a power-actuated air pump connected with the latter and with said boiler, substantially as set forth 8th. Means for regulating the combustion of liquid fuel, consisting of a boiler, a fuel tank connected thereto, a steam-driven air pump communicating pressure to said tank, and a valve controlling the steam passage to the air pump, said valve being actuated to close said passage by an excess of air pressure in the tank, all combined substantially as described. 9th. Means for mingling atomized liquid fuel and air, and for injecting the same into a boiler furnace for generating steam under the control automatically of varying steam pressure in the boiler, and varying air-pressure in the fuel tank, consisting of the combination with a steam boiler, of an air pump having a steam connection with the latter, in which steam connection is a valve which is normally open, but capable of being closed by an excessive steam pressure, a liquid fuel tank in proximity to said boiler, having normally an air chamber therein, above the level of its fluid contents, an air pipe connecting said pump and air chamber, a valve connected in said air pipe and controlled by the air pressure therein having connection with the said air pump, steam pipe, to restrict the passage therethrough, and a series of atomizers, substantially as described, attached to said tank, which communicate with the fluid contents of said tank and with the air chamber therein, substantially as set forth. 10th. A liquid fuel tank, having normally an air chamber above the level of its liquid contents, fuel atomizers attached thereto, communicating with the air chamber of the tank, and also with the part of the tank devoted to liquid fuel, a reservoir adapted to contain compressed air, and having pipe connection with the air chamber of the tank, and a valve controlling the aperture in said pipe, and itself controlled by a passage or pipe leading from the air chamber in the tank, all in combination substantially as stated. 11th. A boiler and furnace, substantially as described, a liquid-fuel tank having normally an air chamber therein above the level of its fluid contents, and fuel-atomizers, substantially as described, communicating with said fuel and with said air-chamber, combined with a reservoir adapted to contain compressed air, a conducting pipe connecting said reservoir with said air-chamber having therein a valve-box, substantially as described, an air cylinder connected with said fuel-tank chamber, a valve spindle having one end connected to a piston head in said cylinder, and its opposite end entering said valve-box, and a spring between said piston head and one end of said cylinder, substantially as set forth. 12th. In combination, the fuel-tank 13 having the air-chamber 104, the air-reservoir 82, a pipe connecting the latter and said chamber, the cylinder 103 connected by an air-pipe with the chamber 104, the valve-box 95 connected in said pipe between the reservoir and the air-chamber, the valve-spindle 98 having one end connected to a head in said cylinder, and its opposite end entering said valve-box, and a spring on said spindle within the cylinder 103, substantially as set forth. 13th. A liquid-fuel tank, substantially as described, having normally an air-chamber therein above the level of its fluid contents, and fuel-atomizers attached thereto communicating with said fluid contents, and with said air-chamber, combined with an air-pump having a pipe connecting with said air-chamber, and a valve, substantially as described, controlled by the air-passage in said chamber to vary the area of the air-passage in said pipe connection between said pump and fuel tank, substantially as set forth. 14th. A boiler and furnace, substantially as described, a liquid fuel tank having normally an air-chamber therein above the level of its fluid contents, and fuel-atomizers, substantially as described, communicating with said liquid-fuel and with said air-chamber, combined with an air-pump, a conducting pipe connecting said pump with said air-chamber having therein a valve-box, substantially as described, an air-cylinder connected with said fuel-tank chamber, a valve spindle having one end connected to a piston-head in said cylinder, and its opposite end entering said valve box, and a spring between said piston-head and one end of said cylinder, substantiall as set forth. 15th In combination, the fuel tank 13 having the air chamber 104, the air-pump 88, a pipe connecting the latter and said chamber, the cylinder 103 connected by an air pipe with the chamber 104, the valve-box 95 connected in said pipe between the pump and the air-chamber, the valve spindle 98 having one end connected to a head in said cylinder and its opposite end entering said valve-box, and a spring on said spindle within the cylinder 103, substantially as set forth.

No. 30,006. Triturator. (*Broyeur.*)

Lewis Sherman, Milwaukee, Wis., U. S., 18th October, 1888; 5 years.

Claim.—1st. The combination, in a triturating machine, of a revolving mortar, a spider, a series of stationary division-plates suspended therefrom within the mortar, a series of independent stemless pestles and a series of stationary separating plates adjacent to the inner side surface of the mortar, and extending only part way across the space between each two of the described stationary division plates. 2nd. The combination, in a triturating machine, of a revolving mortar, a housing surrounding the same, a spider above the mortar and secured to the upper platform of the housing, a series of stationary division-plates secured to, and dependent from, the spider within the mortar and meeting at the centre thereof, a series of independent stemless pestles located within the spaces between the said division-plates, a series of arms hinged to the housing platform and projecting over the mortar, and a series of stationary separating plates secured to said arms, and suspended within the mortar adjacent to its inner side surface. 3rd. The combination, with a revolving mortar, of a series of triturating-disks or stemless pestles, flattened at the bottom, loosely resting therein, 4th The combination, in a triturating machine, of a revolving mortar, a series of stationary division-plates suspended within the same free from contact with said mortar or its shaft, and a series of flattened circular triturating-disks loosely resting in said mortar.

No. 30,007. Permutation Lock.

(*Serrure à combinaison.*)

John H. Morris and Thomas D. Morris Seward, Neb., U. S., 18th October, 1888; 5 years.

Claim.—An improved permutation lock consisting of the combination of a face-plate D having countersunk portions, the dials seated in said counter-sinks and having spindles projecting through said face-plate, loose washers F surrounding said spindles, and the slotted tumblers fixed to the latter, a sliding plate H having a slotted rear guided upon a pin projecting from the back of the face-plate, projections *c* and *d* on its front end adapted to engage the slotted disks, projection *e* also at the front end, and in the centre of said plate, a headed bolt passing from said plate through a slot in the door, and a curved spring S engaged at its centre by a pin on the sliding plate, and having its free ends bearing against the loose washers, all constructed and arranged to operate as herein described.

No. 30,008. Burnishing Attachment for Phonographs. (*Appareil à brunisser pour phonographes.*)

Thomas A. Edison, Llewellen Park, New Jersey, U.S., 19th October, 1888; 5 years

Claim—1st. In a phonograph, the combination, with the phonogram-blank carrier adapted to carry a wax-surfaced blank, of a burnishing tool mounted upon the machine in position to act on the wax surface of the blank, substantially as set forth. 2nd. In a phonograph, the combination, with the phonogram blank carrier adapted to carrier a wax-surfaced blank, of a heated burnishing tool mounted upon the machine in position to act on the wax surface of the blank, substantially as set forth. 3rd. In a phonograph, the combination, with the phonogram blank carrier adapted to carry a wax-surfaced blank, of a cutting tool, and a burnishing tool mounted upon the machine in position to act in succession on the wax surface of the blank, substantially as set forth. 4th. In a phonograph, the combination, with the revolving phonogram cylinder and the travelling holding arm, of the cutting tool and the heated burnishing tool moving with such travelling holding arm, substantially as set forth. 5th. In a phonograph, the combination, with the phonogram blank carrier adapted to carry a wax-surfaced blank, of a burnishing tool mounted upon the machine in position to act on the wax surface, and electric circuit connections for heating the tool by an electric current, substantially as set forth.

No. 30,009. Feed and Return Mechanism for Phonographs. (*Mécanisme de transmission et de renvoi pour phonographes.*)

Thomas A. Edison, Llewellyn Park, New Jersey, N. J., U. S., 19th October, 1888; 5 years.

Claim.—1st. In a phonograph, the combination, with the rocking holding-arm carrying the reproducer, of a revolving screw-shaft, and an arm connected with the rocking holding-arm and engaging this screw-shaft when the rocking holding-arm is rocked to lift the re-

producer from the phonogram, whereby the reproducer is retracted or set back, substantially as set forth. 2nd. In a phonograph, the combination, with the phonogram-cylinder, the lead-screw and holding and guide arms, of a revolving screw-shaft having a screw of greater pitch than the lead-screw, and an arm engaging the screw-shaft when the guide-arm is raised from the lead screw, substantially as set forth. 3rd. In a phonograph, the combination, with the phonogram-cylinder, the lead-screw and holding and guide-arms, of a revolving screw-shaft having a screw composed of a number of threads of greater pitch than the lead-screw, and an arm engaging this screw-shaft when the guide-arm is raised from the lead-screw, substantially as set forth. 4th. In a phonograph, the combination, with the phonogram-cylinder, the lead-screw, the guide sleeve and the holding and guide arms, of the retracting screw shaft, and the arm engaging therewith fixed adjustably upon the guide sleeve, substantially as set forth 5th. In a phonograph, the combination, with the phonogram-cylinder, the lead screw, the guide sleeve and the holding and guide arms, of the retracting screw-shaft driven by a belt from the cylinder shaft, and the arm engaging therewith fixed adjustably upon the guide-sleeve, substantially as set forth. 6th. In a phonograph, the combination, with the rocking holding-arm, the lead and retracting screws, and the arms engaging such screws alternately, of a lever connected by an elastic lifting cord with such rocking holding-arm to rock and set back the holding-arm, substantially as set forth 7th. In a phonograph, the combination, with the rocking holding-arm carrying the reproducer or recorder, of an electro-magnet and armature acting to lift such arm and disengage the reproducer or recorder from the phonogram-surface, substantially as set forth. 8th. In a phonograph, the combination, with the rocking holding arm carrying the reproducer or recorder, and the lead-screw, of an electro-magnet and armature acting to lift such arm disengaging it from the phonogram and from the lead-screw, substantially as set forth. 9th. In a phonograph, the combination, with rocking holding-arm carrying the reproducer or recorder, and the lead and retracting screws, of an electro-magnet and armature acting to lift such arm disengaging it from the lead-screw and connecting it with the retracting-screw, substantially as set forth.

No. 30,010. Process of Making Phonogram Blanks. (*Procédé pour faire les blancs de phonogrammes*)

Thomas A. Edison, Llewellyn Park, New Jersey, U.S., 19th October, 1888; 5 years.

Claim.—1st. The process of making wax phonogram-blanks, consisting in first moulding the blank from melted wax, and then pressing the blank in a polished die, substantially as set forth. 2nd. The process of making cylindrical wax phonogram-blanks, consisting in first moulding the cylindrical blank from melted wax, and then pressing the blank both externally and internally in a polished die, substantially as set forth.

No. 30,011. Phonogram Blank.

(*Blanc de phonogrammes.*)

Thomas A. Edison, Llewellyn Park, New Jersey, U.S., 19th October, 1888; 5 years.

Claim.—1st. In a phonogram-blank, or phonogram, having a bore tapered throughout its length, substantially as set forth. 2nd. A phonogram blank or phonogram having a cylindrical recording-surface and a tapering bore, substantially as set forth. 3rd. A phonogram blank or phonogram having a cylindrical recording-surface of wax, or wax-like material, and provided with a tapering bore, substantially as set forth.

No. 30,012. Process of Duplicating Phonograms. (*Procédé pour l'impression des phonogrammes en double*)

Thomas A. Edison, Llewellyn Park, New Jersey, U.S., 19th October, 1888, 5 years.

Claim.—1st. The process of duplicating phonograms, consisting in forming a knurl having the original record in relief, by depositing metal upon the original record, removing the original phonogram, and opening the metallic coating, and then impressing duplicate phonogram blanks with the original record by means of such knurl, substantially as set forth. 2nd. The process of duplicating phonograms, consisting in depositing a flexible metallic coating upon an original cylindrical phonogram, removing the original phonogram from the inclosing coating, splitting the inclosing-coating longitudinally, bending the same to form a knurl, and then impressing the duplicate phonogram blanks with the original record by means of this knurl, substantially as set forth.

No. 30,0' . Phonogram Blank.

(*Blanc de phonogramme.*)

Thomas A. Edison, Llewellyn Park, New Jersey, U.S., 19th October, 1888, 5 years.

Claim.—1st. A phonogram-blank or phonogram, constructed wholly of wax, or wax like materials, and having the same co-efficient of expansion throughout its mass, substantially as set forth. 2nd. A phonogram-blank or phonogram, constructed as a hollow cylinder wholly of wax, or wax-like materials, and having the same co-efficient of expansion throughout its mass, substantially as set forth. 3rd. A phonogram-blank or phonogram, constructed as a hollow cylinder with a tapering bore wholly of wax, or wax-like materials, and having the same co-efficient of expansion throughout its mass, substantially as set forth.

No. 30,014. Phonograph. (*Phonographe*)

Thomas A. Edison, Llewellyn Park, New Jersey, U.S., 19th October, 1888, 5 years.

Claim.—1st. In a phonograph, the combination, with the revolving phonogram-carrying shaft, and phonogram-cylinder adapted to carry a removable phonogram-blank, of an electric motor having a heavy fly-wheel, armatures carried by such fly-wheel, electro-magnets attracting such armatures, and commutator, substantially as set forth 2nd. In a phonograph, the combination, with the horizontal shaft carrying the phonogram, of a vertical shaft, an electro-magnetic motor mounted upon such vertical shaft, and a bevelled friction-gearing transmitting the motion from the vertical shaft to the horizontal shaft, substantially as set forth. 3rd. In a phonograph, the combination, with the vertical shaft carrying the balance-wheel, electro-magnetic motor and stepped in a jewel bearing, of the horizontal phonogram-carrying shaft and the bevelled friction-gearing having one wheel of soft material, substantially as set forth. 4th. On a phonograph, the combination of the electro-magnetic motor consisting of a heavy fly-wheel carrying armatures on its periphery, magnets attracting such armatures, and a commutator with a centrifugal governor controlling the electric circuit of the motor, and maintaining a uniform speed of such motor, and a phonogram-carrying shaft connected with the motor by friction gearing, substantially as set forth 5th. The combination, with the vertical motor shaft, of the horizontal phonogram-shaft carrying a bevelled friction wheel, and a bevelled friction-pinion of soft material mounted on the motor-shaft and pressed against the wheel on the phonogram-shaft by a spring, substantially as set forth 6th. In a phonograph, the combination, with a phonogram-cylinder and advancing screw-thread, of a swinging frame carrying together the separate recorder and reproducer, and adapted to bring either into position for operation by the swinging of the frame, substantially as set forth. 7th. In a phonograph, the combination, with the revolving recording-surface, of a swinging spectacle-frame carrying the recorder and reproducer, and adapted to be swung so as to bring either into operative relation with the surface, substantially as set forth 8th. In a phonograph, the combination, with a revolving recording-surface, of a swinging frame carrying the recorder and reproducer, and a stationary plate carrying the single speaking or listening tube, the swinging of the frame bringing either the recorder or reproducer into operative relation with the surface and with the speaking or listening tube, substantially as set forth. 9th. In a phonograph, the combination, with a revolving phonogram-cylinder, an arm having a movement parallel with the axis of said cylinder, and the reproducer carried by a frame mounted on such arm and adjustable laterally thereon, whereby the reproducer can be readily adjusted to the record substantially as set forth. 10th. In a phonograph, the reproducer carried by a pivoted frame swinging across the lines of record, and an adjusting screw for determining the lateral position of the reproducer, substantially as set forth 11th. In a phonograph, the combination, with the revolving phonogram-cylinder, of the holding-arm mounted to swing toward, and away, from the surface of said cylinder, and the reproducer mounted on such arm and laterally adjustable thereon, substantially as set forth. 12th. In a phonograph, the combination, with the revolving phonogram-cylinder, of the holding-arm mounted to swing toward, and away, from the surface of such cylinder, the reproducer mounted on such arm and laterally adjustable thereon, an adjusting-screw for determining the position of the holding-arm relative to the phonogram-cylinder, and an adjusting-screw for determining the lateral position of the reproducer, substantially as set forth. 13th. In a phonograph, the combination, with the revolving phonogram-cylinder, of the advancing holding-arm carrying the recorder or reproducer, and a stationary guide-rest for supporting the holding-arm in proper relation with the phonogram cylinder, substantially as set forth 14th. In a phonograph, the combination, with the revolving phonogram-cylinder, of the advancing holding-arm carrying the recorder or reproducer, a stationary guide-rest for supporting the holding-arm in proper relation with the phonogram cylinder, and an adjusting-screw for adjusting the height of the holding-arm above the guide-rest, substantially as set forth. 15th. In a phonograph, the combination, with the phonogram-cylinder, and the lead-screw, an arm carrying the recorder or reproducer, a guide-arm connected with the carrying arm, a yielding guide-block engaging with the lead-screw, a guide-rest and an adjusting-screw for adjusting the height of the carrying-arm upon the guide-rest substantially as set forth. 16th. In a phonograph, the combination, with the swinging-arm and the recorder or reproducer carried thereby, of the springy back-rest upon which such carrying-arm is thrown, substantially as set forth. 17th. In a phonograph, the combination, with the revolving phonogram-cylinder, of the advancing recorder or reproducer, and the scale for determining the position of the recording or reproducing point upon the phonogram or blank, substantially as set forth. 18th. In a phonograph, the combination, with the revolving phonogram-cylinder and recorder and reproducer mounted upon an advancing holding-arm and adjustable toward and away from the phonogram-cylinder, of a cutting tool movable with such holding arm, and independently adjustable toward, and away, from the phonogram cylinder, whereby the recorder and reproducer can be adjusted out of operative engagement with the phonogram-blank, and the cutting-tool can be adjusted forward into engagement with such blank, substantially as set forth. 19th. In a phonograph, the combination, with the revolving phonogram-cylinder, and the lead-screw, of the arm carrying the recorder or reproducer, a cutting-tool on such arm for reducing the surface of the phonogram or blank, and a guide-arm engaging the lead screw, and advancing the carrying arm, substantially as set forth. 20th. In a phonograph, the combination, with revolving phonogram-cylinder, of the swinging arm carrying the recorder or reproducer, a cutting-tool also carried by said arm, a guide rest, a screw for adjusting the position of the recorder or reproducer, and said cutting-tool with relation to the phonogram or blank surface, and a yielding guide-block engaging with the lead-screw and advancing said carrying-arm, substantially as set forth 21st. In a phonograph, the combination, with the cylinder-shaft having a fine screw-thread, the phonogram-cylinder mounted on such shaft, a stationary guide-rod, a sleeve mounted on such guide-rod, and capable of sliding and turning movements thereon, a guide-arm secured to said sleeve, and having a screw-threaded guide-block engaging the screw-thread, and the holding-arm for the recorder or reproducer also secured to said sleeve, substantially as set forth. 22nd. In a phonograph, the combination, with the cylinder shaft having a fine screw-thread, the phonogram-cylinder mounted on such shaft, a sta-

stationary gear wheel and the cog wheels on the drum shafts, substantially as herein shown and described.

No. 29,673. Car-Coupling. (*Attelage de chars.*)

William O. Rutledge, Galveston, Texas, U.S., 14th August, 1888; 5 years.

Claim.—1st. In a car-coupling, a vertical movable U-shaped frame, mounted in guides on a draw-head and adapted to support a coupling-pin, a horizontal movable U-shaped piece, mounted in supports on the draw-head, and extending across the lower edge of link recess in draw-head and spring catches on the draw-head adapted to engage the coupling-pin frame, and to be thrown out of engagement by the horizontal U-shaped piece, all combined substantially as shown and described. 2nd. In a car-coupling, a draw-head 1, having casings 2, with guides 5 having notches 15a, and spring catches 13, U-shaped coupling-pin frame, sliding U-shaped piece 16, having slots 18, engaging pins 17 and the projections 20, all combined substantially as described.

No. 29,674. Sulky Plough. (*Charrue à siège.*)

Samuel W. Woodlan and Rolland C. Patterson, Smithville, Ont., 14th August, 1888; 5 years.

Claim.—1st. In a sulky plough, a cam, pivoted to the tongue, a lever attached to the cam for operating the said cam, a bar attached to the tongue, with a connecting chain from the bar to the beam of the plough, for elevating or depressing the plough, substantially as and for the purpose specified. 2nd. In a sulky plough, the combination of the cam E, lifting lever G, lifting bar F, connecting rod or chain H, and beam A, all arranged and combined substantially as and for the purpose specified. 3rd. In a sulky plough, the hinged curved bar I, attached to the beam A at front and rear, and pivoted to the tongue D or boxing attached to the same, substantially as and for the purpose specified. 4th. In a sulky plough, the combination of the adjustable wheel M at the heel of the plough, with the ratchet lever N, beam A, and plough, substantially as and for the purpose specified. 5th. In a sulky plough, the combination of the slotted ratchet casting P, sliding axle O, wheel N, operating lever Q, and connecting rod R all arranged and combined to gauge the width of furrow, substantially as and for the purpose specified. 6th. In a sulky plough, the combination of the lever V with the ratchet block s bolted to the vertical position of the frame bar S, to shorten the frame and bring the said lever close to the driver's seat, substantially as specified.

No. 29,675. Type Writing Machine. (*Graphotype.*)

Alexander G. Donnelly, New York, N.Y., U.S., 14th August, 1888; 5 years.

Claim.—1st. The combination in a type writing machine, of a paper carrying roll, constructed and arranged to be intermittently moved about its axis and in the direction of its length, a series of radially arranged vibrating type bars or hammers, located above said paper carrying roll, with their pivotal axis in a plane inclined to a horizontal plane, and a series of keys, connected with said type-bars and arranged in a circle with their pads in a plane, also inclined to a horizontal plane, substantially as shown and described 2nd The combination of a paper carrying roll, a carriage for supporting said roll, and a second carriage, constructed and arranged to support said roll carrying carriage, and to be reciprocated therewith upon a fixed bed, and means, as set forth, of connecting said carriages together, so that they may be moved together, or the upper carriage may be moved independently of the lower carriage, but in the same direction as said lower carriage is fed, to give the letter and word space, substantially as described. 3rd. The combination of the bed A, A1, A2, the carriage B, provided with the detent spring f^4, and the carriage C, provided with a notch to engage said spring, when said carriages are constructed and arranged to be moved only in the direction of their lengths, substantially as described. 4th. The reciprocating carriage B, provided with the headed pin B^1, in combination with the carriage C, fitted to slide upon the carriage B and provided with a lipped socket B^2, to engage with said headed pin on the carriage B, when the carriage C is drawn nearly off of the carriage B, substantially as and for the purposes described. 5th. A series of type-bars, arranged radially to a common centre, each mounted and revoluble in a pivoted sleeve, a pinion secured to the outer end of each of said type-bars, a rack gear arranged to be moved to and fro about said common centre and to engage with said pinions, when the type bars are raised, and a finger key connected to each of said sleeves, all arranged and constructed substantially as and for the purposes described. 6th. The combination of a type bar, having a plurality of letters upon different sides thereof, and mounted near its outer end in a bearing in a pivoted sleeve, a pinion secured to the outer end of said type bar, and having formed in its outer end as many diametrical grooves as there are characters on said type bar, a reciprocating gear, arranged to engage said pinion when the type bar is raised and to be disengaged therefrom when the type bar is depressed, a key connected with said sleeve to vibrate it and its type bar in a vertical plane, and a fixed vertical guide lip, constructed and arranged to engage with one of the grooves in the end of the hub of said pinion, when the type bar is depressed, to print a character, substantially as and for the purposes described. 7th. In combination with a vibrating type bar, a finger key and stem connected therewith, a bent lever, pivoted to said stem by its outer end, and provided with a slot to receive its fulcrum pin, a flanged spindle arranged above the inner end of said lever, in position to be acted upon thereby, and a lever connected with and operated by said spindle for imparting a step by step motion to the paper roll carrying carriage, substantially as described. 8th. In combination with a series of type bars, arranged radially to a common centre and each provided with a toothed pinion and a ring gear, arranged to engage with all of said pinions and to be moved to and fro about said common centre, and provided with a radially projecting arm, extending outside of the enclosing casing, a pin set in the under side of said radially projecting arm, two springs secured to the casing of the head of the machine and arranged to bear one upon each side of said pin, a three-armed lever pivoted to the front of the casing, and having its lower or vertical arm forked to embrace the projecting end of said radial arm, and its two upper or oblique arms provided with finger pads, by which it may be oscillated about its axis in either direction, substantially as described. 9th. The combination, with the three-armed lever, for operating the ring gear, and the springs for assisting the same, a pin set in said lever, a spring for pressing said pin, towards the casing of the head, and a detent notch to receive the inner end of said pin, when said lever is in its normal or central position. 10th. The cap F^1, provided on its under side with the downwardly projecting and radially slotted annular rib f, having formed in its under side a circular groove, having a semicircular cross section, in combination with the wire ring J^1, secured in said groove by the screws f^2, and the series of levers fitted in said radial slots and fulcrumed upon said wire ring, as set forth. 11th. In combination with a paper roll carrying carriage provided with a toothed rack, a spring for moving said carriage endwise, an escapement wheel and a clutch disk firmly secured upon a common shaft, a toothed wheel mounted loosely upon said shaft, and engaging with said rack, a grip pawl connecting said wheel with the clutch disk, and a reciprocating bar provided with two dogs, one upon each side of the escapement wheel, and arranged to alternately engage therewith, for the purpose of imparting to the carriage and roll a step by step movement, as set forth. 12th. The combination of the key lever I_1, the flanged spindle J^1, the lever K, provided with an open slot or fork at its lower end, the lever R^1, provided with the pin e^2, the escapement bar R, provided with the dogs t and t^1, the shaft P^2, the escapement wheel P^3, the pinion P^6, the clutch disk P^5, the grip pawl or dog e, the carriage B, provided with the rack Q, and a spring for moving the carriage endwise in one direction, substantially as described. 13th. In combination, with the carriage B provided with the rack Q, the shaft P^2, the gear wheel P^6, the clutch disk P^5, the grip dog e, the cord f^9, the drum f^8, the shaft f^7, the toothed hub S, the pawl u, the fixed casing S^1, the spring f^6, the escapement wheel P^3, and the reciprocating escapement bar R, provided with the dogs t and t^1, all arranged and adapted to operate substantially as described. 14th. The combination of the escapement wheel P^3, provided with the radial grooves a^1, the reciprocating bar R, provided with the stand b_3, and the dog t, firmly secured thereto upon opposite sides of said wheel, the pivoted and vibrating dog t^1, arranged to engage with said wheel upon the side of its axis opposite to the dog t, the stop a^3 for limiting the upward movement of the dog t^1 about its axis, and the stops d^1 and e^2, constructed and arranged to interchangeably limit the downward movement of said dog t^1 according as a short or long space feed is required. 15th. The combination of the escapement wheel P^3 provided with the radial grooves a^1, the reciprocating bar R provided with the stand b_3, and the dog t firmly secured thereto upon opposite sides of the axis of said wheel, the pivoted and vibrating dog t^1 arranged to engage with said wheel upon the side of its axis opposite to the dog t, the stop a^3 for limiting the upward movement of the dog t^1, and the the stop d^1 for limiting the downward movement of said dog t^1, substantially as described. 16th. The combination of the type key I, I_1, the lever J, the spindle J^1, the work-space key I_4, the levers K and R^1, the bar R, provided with the stand b_3, and the dog t firmly secured thereto, the escapement wheel P^3, the vibrating dog t^1, the stop pin a^3, the rod d_3, and the stops d^1 and e^2, all arranged and adapted to operate substantially as described. 17th. In a type writing machine, the combination of a paper carrying roll, mounted upon a reciprocating carriage, a spring for moving said carriage in one direction, an escapement for stopping and releasing said carriage, a register dial and index, a ratchet and pawl for intermittently operating said register a series of type bar operating keys, a word space key, a pivoted lever constructed and arranged substantially as set forth, to be vibrated a given distance when the type key is depressed and a greater distance when the word space key is depressed, and to act upon and impart motion to the register operating mechanism, only when said lever is moved its greatest distance. 18th. The combination of the shaft r mounted in suitable bearings, and provided with the longitudinal groove r^1, having detent notches r^2 formed in its bottom, the ribbon spool or drum N, the pin n^1 set radially in the hub of said drum, and the spring n^4 arranged to press said pin inward, substantially as described. 19th. The combination of the ribbon drum N, its shaft r, the ratchet wheel r_3, the hook-pawl r^4 the spring r^7, the lever O^1 and the ratchet wheel P^1, all arranged and adapted to operate, to intermittently move the inking ribbon in one direction, substantially as described. 20th. The combination of the two ribbon drums N, N, each provided with a ratchet wheel r_3, two hook pawls r^4, two springs r^7, the lever O^1 having a hook upon its inner end, the lever O^2 having a plain ratchet pawl shaped inner end and the intermittently revolving ratchet wheel P^1, and the two stands P, each provided with the two open slots p^2 and p^1, all arranged and adapted to operate substantially as described. 21st. In combination with the paper carrying roll and its carriage, the pivoted index finger W^1, constructed, arranged and adapted to operate, substantially as and for the purposes described. 22nd. In combination with the paper carrying roll, of a type writing machine, the pivoted and oscillating bar D^2, and the curved guide plate D^4, all arranged and operating substantially as described. 23rd. In combination with the paper carrying roll of a type writer, two ratchet wheels mounted upon its shaft, the thimble a^2 provided with the rods a^4, the springs a^5, the slotted arm D^1, each provided with the dog a^4, the bar D^2, the bent arm D^3 attached to an arm D^1, and the shoulders e^1 and e^4, for limiting the movement of the roll about its axis, substantially as and for the purpose described. 24th. In combination with the paper carrying roll of a type writer, two ratchet wheels mounted upon its shaft, the thimbles a^2, provided with the rods a^4, the springs a^5, the slotted arms D^1, each provided with the dog a^4, the bar D^2, the bent arm D^3, attached to the arms D^1, and provided with the pad b^7, the shoulder e^4 and the movable pendent stop d^3, all constructed, arranged and adapted to operate substantially as and for the purposes described. 25th. In combination with the paper carrying roll of a type writer, the two ratchet wheels C_3, the thimbles a^2 provided with the rods a^4, the springs a^5, the slotted arms D^1, each provided with the dog a^4, the bar D^2, the bent arm D^3 attached to the arms D^1 and each provided with the thumb pad b^7, a stop for limiting the movement of the arms

a heading device located on the side of the work opposite the anvil, for co-operating with the anvil to head the rivet, substantially as described. 24th In a rivetting machine, substantially as herein described, the combination, with the work table, having an aperture therein, a punch and a rivet holding anvil located on one side, the table mechanism, substantially as described, for alternately placing the punch and anvil in line with said aperture, and rivet feeding devices for placing rivets upon the anvil when removed from the aperture of a heading device located on the side of the table opposite the punch and anvil, and mechanism, substantially as described, for operating it, as set forth. 25th. In a rivetting machine, substantially as herein described, the combination of a work support, a punch or awl arranged to enter the work from one side, burr feeding devices, substantially as described, whereby burrs are placed in position on the opposite side of the work from the awl, so that each burr will be centered by the movement of the awl, a rivet inserting anvil interchangeable in position with the awl, independent mechanism, substantially as described, whereby the awl and anvil are successively operated, feeding devices, whereby rivets are supplied to the anvil, and an upsetting hammer located opposite the anvil, and mechanism to operate said hammer, whereby the rivets are upset on the anvil. 26th. In a rivetting machine, the combination of a work support, a punch or awl arranged to enter the work on said support from below, burr feeding devices, substantially as described, whereby burrs are placed upon the upper surface of the work over the awl, so that each burr will be centered by the upward movement of the awl, a rivet inserting device or anvil, which is interchangeable in position with the awl, independent mechanism, substantially as described, whereby the awl and anvil are successively operated, feeding devices, whereby inverted rivets are supplied to the anvil, and an upsetting hammer located above the plane of the work, and mechanism to operate said hammer, whereby the upper ends of the inverted rivets are upset. 27th. In a rivetting machine, substantially as herein described, the combination of a raceway and feeding mechanism cooperating therewith, adapted to feed inverted rivets under the work, a punch or awl adapted to enter the work from below, burr-feeding devices, substantially as described, whereby burrs are placed upon the upper surface of the work over the awl, so that each burr will be centered by the upward movement of the awl, a rivet inserting device or anvil, which is interchangeable in position with the awl, independent mechanisms, substantially as described, for successively operating the awl and anvil, and an upsetting device or hammer located above the plane of the work and mechanism to operate it, whereby the upper ends of the inverted rivets are upset, as set forth. 28th. The combination, with a work support, of a device for holding the burrs in contact with the work, a punch for penetrating the work and centering the burr, and connections between the burr holder and punch, whereby the punch will pass through the work, while the burr is in contact therewith, and means for introducing the rivets through the punched holes, and a heading device for heading them, substantially as described.

No. 30,016. Boom Stick. (*Estacade de port.*)

Frank H. Durell, Bay City, William Goldie, West Bay, and James Reid & Co., St Ignace, Mich., U.S., 20th October, 1888; 5 years.

Claim.—A boom stick, consisting of four timbers, secured together and parallel with each other, and substantially in the form of a cross in transverse section, substantially as and for the purpose set forth.

No. 30,017. Shoal Water Indicator.

(*Indicateur de bas fond.*)

Pedro Vigil and Juan N. Revueltas, Mexico, Mexico, 20th October, 1888: 5 years.

Claim.—1st. The combination, with a weighted vessel, of a non-conducting tube, provided with metallic contacts at its ends, a body of mercury placed in the tube and adapted to establish communication between the contacts at the ends of the tube, and a cable carrying electric conductor, substantially as described. 2nd. The combination, with a vessel A, of the non-conducting tube C provided with metallic disks *d, d*, the mercury filling *e*, the shot *f*, the plate *g*, the head D, the packing ring *o* and packing p, and the cable C and conductors *m, n*, substantially as described.

No. 30,018. Feed Water Heater.

(*Rechauffeur d'eau d'alimentation*)

Edward G. T. Collos, Chicago, Ill., U.S., 20th October, 1888; 5 years.

Claim.—1st. In a feed-water heater, the outer cylinders A and B having a steam space there-between, in combination with the internal steam cylinder H, the space between which and the cylinder B constitutes the water-chamber, and pipes O and Q connecting the ends of said internal cylinder with the steam space between the outer cylinders, substantially as described. 2nd. In a feed-water heater, the outer cylinders A and B having a steam space there-between, in combination with the internal steam cylinder H, lugs or ears N thereon, and screw-bolts M working through said lugs and bearing against the cylinder B, substantially as described. 3rd In a feed-water heater, the outer cylinders A and B, the internal steam cylinder H, the supporting legs thereof L, L, the ears N, N, and screw-bolts M, M, substantially as described. 4th In a feed-water heater, the combination, of the shells or cylinders A and B, the rings C, C, and the caps or covers D and E, whereby both a steam jacket and water-chamber are produced, and the necessity of employing two separate covers for said jacket and chamber dispensed with, substantially as described. 5th. In a feed-water heater, the cylinders A and B, with the rings C, C constituting a steam-jacket, the caps D and E for said cylinders and in connection therewith forming a water-chamber, in combination with the steam-cylinder H located in said water-chamber, supporting legs L, L, ears N, N, screw-bolts M, M, and pipes O and Q connecting said cylinder with the steam-jacket, substantially as described. 6th. In a feed-water heater, the external steam jacket A, B and an internal steam-jacket H, I, the space between which jackets constitutes a water-chamber, in combination with an auxiliary water-chamber R extending into and surrounded, excepting at the bottom, by said internal steam-jacket, substantially as described. 7th. In a feed-water heater, the external steam-jacket A, B, an internal steam-jacket H, I, the space between which jackets constitutes a water-chamber, and pipes O and Q connecting said internal and external steam-jackets, in combination with an auxiliary water-chamber R extending longitudinally into and surrounded, excepting at its open end, by said internal steam-jacket, substantially as described. 8th. In a feed-water heater, an auxiliary water-chamber R open at the bottom, in combination with a feed or supply pipe R1 opening therein, substantially as described. 9th In a feed-water heater, the external and internal steam-chambers or jackets A, B and H, I, with a water-chamber between said internal and external chambers, in combination with an auxiliary water-chamber R connected therewith and projecting into said internal steam-chamber substantially as described. 10th. In a feed-water heater, the external and internal steam-chambers or jackets A, B and H, I, the space between which constitutes a water-chamber, in combination with an auxiliary water-chamber R opening at the bottom into said water chamber and projecting into said internal steam-chamber, and a feed or supply pipe R1 opening into said auxiliary water-chamber having a funnel-shaped discharge end of a slightly less diameter than said chamber, substantially as described 11th. In a feed-water heater, the combination, with the outer shell A provided with a removable end cap E, and brackets V secured thereto on the periphery thereof near the lower end, of supporting legs G rigidly secured to said brackets, substantially as described. 12th. In a feed-water heater, an external steam-jacket A, B, a closed internal steam cylinder H, I, pipes or passages O, Q connecting the ends of said cylinder, in combination with the end-cap E constituting a sediment chamber in the bottom of said water-chamber, substantially as described. 13th. In a feed-water heater, the external steam-jacket A, B, and internal steam-jacket H, I having closed ends, the space between which constitutes a water-chamber, and the lower end-cap of said external steam-jacket constituting a water-chamber, in combination with an auxiliary water-chamber R extending into and surrounded, excepting at the bottom, by said internal steam jacket the bottom of said auxiliary-chamber, opening over the sediment-chamber, substantially as described.

No. 30,019. Hoop Cutting Machine.

(*Machine pour fendre les cercles*)

Alexander F. Ward, Detroit, Mich., U. S., 20th October, 1888; 5 years.

Claim.—1st. A hoop cutting knife mounted to operate in the arc of a circle, with a variable centre of motion to tilt the knife alternately in relation to the stationary bed, substantially as described. 2nd The combination, with the frame and stationary bed of a hoop cutting machine organized to cut bevel hoops from the edge of a plank, a cutting knife secured to an oscillating head to move in the arc of a circle, pivotal connections of said head independent of the frame of the machine, and a shifting device for such pivotal connections controlled by the knife-actuating mechanism to alternately shift the centre of oscillation of the knife, substantially as described 3rd The combination, with the stationary bed of a hoop cutting machine of the reciprocating knife head R carrying the knife in the arc of a circle, of the arms I pivotally secured to the shifting mechanism the wrists i, the main drive shaft R, the eccentrics S and the eccentric rods S1 secured to the wrists i, all arranged to operate substantially as described. 4th. The combination, with the reciprocating knife and stationary table of a hoop cutting machine of the kind described, the cutting blocks formed in sections and secured adjustably and removably in the rear ends of the bed, substantially as described. 5th. The combination, in a hoop cutting machine of the following elements: a stationary table, a cutting knife mounted to reciprocate in the arc of a circle, a knife head pivotally secured independent of the frame and carrying said knife a cutting block secured in the rear end of the table, two or more vertically reciprocating stops at the rear end of the table, two or more vibrating arms to remove the cut hoops from the table, mechanism for reciprocatingly actuating the knife, and mechanism for shifting the pivots of the knife head alternately into one of two positions, substantially as described. 6th. The combination, in a hoop cutting machine, of the stationary table, the cutting knife reciprocating in the arc of a circle, the knife head pivotally secured independent of the frame of the machine and carrying the cutting knife, the main drive shaft R, the counter shaft G, the eccentric N1, the lever M connected to the eccentric and provided with the cam groove *f*, the rock arm L on the rock shaft L1, the links J, K, the parts being arranged and constructed to operate substantially as described.

No. 30,020. Cigar. (*Cigare.*)

Henry T. Offterdinger, Washington, D.C., U.S., 20th October, 1888 5 years.

Claim.—1st. As a new article of manufacture, a cigar made wholly of tobacco, its body portion of substantially cylindrical form and its tip or mouth end compressed to a flattened form, as described and shown. 2nd As a new article of manufacture, a cigar having its tip end compressed and solidified, and its body relatively soft and porous. 3rd. As an improvement in the art of manufacturing cigars, the method consisting in forming the body as usual of substantially round form in cross-section at all points, and subsequently compressing and flattening the tip end as described, to give the same increased solidity and a permanently flattened form, while the body portions remain in substantially its original form and size. 4th. The improved mould for a cigar having its interior cavity of round form in cross-section, except at the tip end, and of flattened form at that point.

No. 30,021. Water Proof Composition for Paper. (*Composition imperméable à l'eau pour papier.*)

William H. Fay, Camden, N.J., U.S., 20th October, 1888; 5 years.

Claim.—A composition for rendering paper water-proof, tough,

stiff and durable, consisting of a mixture of one hundred parts of *rosin and forty* each of tallow and paraffine, substantially as described.

No. 30,022. Means of Conveying Postal Matter, Bullion, Valuables and the like at sea. (*Appareil pour le transport par eau des malles, de la monnaie, des valeurs et autre objets semblables.*)

William W. Fuzzey, Havelet, Guernsey, 20th October, 1888; 5 years.

Claim—1st. The hereinbefore described improved means of conveying mail or postal matter, bullion, valuables, and the like at sea, and of floating the same and saving life in cases of emergency. 2nd. In apparatus used for the purpose of the invention, in combination, the buoyant watertight casing 1 *strong* boned with surrounding bands 2 and adapted with life lines 10, top railing 19, cylinder 12 and *continued buoy* 13 *and watertight* doors 8, with an inner *partitioned* watertight lining 3 partitioned off into a ballasting compartment 21, buoyant compartments 5 and *watertight compartments* for reception of mail or other matter and adapted with watertight doors 7, substantially as *hereinbefore described*. 3rd. The method of securing such buoyant casing and lining thus respectively adapted to the deck of a vessel, by forming the chamber with conical feet 14 fitting into like shaped recessed sockets 16 *projecting from the deck, and lashing* the casing to the deck by cord 18 passing through staples 15, 17, respectively *projecting from* the said casing and deck, substantially as hereinbefore described.

No. 30,023. Theatrical Appliance. (*Coulisses de théâtre.*)

John T. Kilham and Josephene L. Beach, Lowville, N.Y., U.S., 20th October, 1888; 5 years.

Claim—1st. A scene composed of sets of interchangeable sections, the sections of one set being constructed to alternately hide and expose those of the other set, substantially as described. 2nd. A plurality of sectional scenes, combined with means for interchanging them, as set forth. 3rd. Two sectional curtains, the sections of one curtain being constructed and arranged to be either exposed over or concealed beneath the sections of the other curtain, as set forth. 4th. The combination, with a stationary sectional curtain, of a movable sectional curtain, the sections of which move between the sections of the stationary curtain, as set forth. 5th. The combination, with a stationary sectional curtain, of two or more movable sectional curtains, and means for simultaneously moving all of the sections of one curtain independently of the sections of the other curtain, substantially as and for the purpose described. 6th The combination, with a sectional stationary curtain, of two or more movable sectional curtains, the sections of which move between the sections of the stationary curtain, substantially as and for the purpose specified. 7th. A series of curtain sections adapted to be moved either vertically or horizontally and to be reversed in order to expose to view the opposite face, substantially as described and for the purpose specified. 8th. A curtain composed of separate sections, each carrying a portion of a scene, and arranged when overlapped to form a complete scene, substantially as described. 9th A curtain composed of separate reversible sections, each carrying a portion of a scene, and arranged when overlapped to form a complete scene, substantially as described.

No. 30,024. Blotting Pad. (*Coussinet-buvard.*)

Moses Affalo and James A. Game, London, Eng., 20th October, 1888; 5 years.

Claim.—1st. A blotting pad *a* mounted on a stiff backing, and furnished with a loop *b* for encircling the finger, or fingers, of the user, substantially as herein described. 2nd. A blotting pad *a* mounted on a backing or lining *a*1, and formed with a projecting tab *c* which, when folded over and secured to the stud *c*1, forms a loop for the thumb, the pad being further provided with a loop, or loops, such as *d*, adapted for encircling the hand, or hand and wrist, of the user, and for engaging with the stud or studs *c*1, substantially as and for the purpose set forth.

No. 30,025. Manufacture of Implements and Tools having Cutting Edges. (*Fabrication des instruments et outils tranchants.*)

Josephus Hooper, Louisville, Ky., and Thomas Clark, New Albany, Ind., U.S., 22nd October, 1888, 5 years.

Claim.—The method of making implements and tools with steel cutting edges from cast-iron, which consists in first casting a blank of hard casting of a form approximating that of the finished article, but of greater and uniform thickness of that portion intended for the cutting edges, then partially decarbonizing said blank, then working the partially decarbonized blank at its cutting edges until it assumes the shape of the finished article, at the same time condensing the grain at said edges and finally tempering said edges, substantially as described.

No. 30,026. Drier for Pottery, etc. (*Séchoir pour poterie, etc.*)

George W. Sharer, Terre Haute, Ind., U. S., 22nd October, 1888; 5 years.

Claim.—In a drier, the combination of the drying chambers having flues under the bottoms, furnaces having flues communicating with the flues beneath the drying chambers, the air ducts C and C1 in the side walls of the furnaces, and air ducts *c*1 and *c*2 formed in the divisional walls of the furnace flues, and delivering into the air inlets of the drying chambers, and the air ducts *c*3 being connected with duct *c*1 by lateral passages, and air ducts *c*2 being connected together by the duct *c*' and by it with passage or duct *c*, substantially as described.

No. 30,027. Improvements in Electricity Meters, parts of which improvements are applicable to Dynamo-Electrice Generators and Motors. (*Perfectionnements dans les compteurs à electricité, en partie applicables aux générateurs et moteurs dynamo-électriques.*)

George Hookham, Birmingham, Eng., 22nd October, 1888; 5 years.

Claim—1st. An electricity meter for measuring currents of constant, or nearly constant, electro-motive force, consisting of an electro-motor with constant field arranged substantially as hereinbefore described and illustrated in the accompanying drawings, so that the driving force is proportional to the current to be measured, the said electro-motor being combined with an electric brake also moving in a constant, or nearly constant, field, preferably the same field as that in which the armature rotates, substantially as herein described and illustrated in the accompanying drawings. 2nd. An electricity meter for measuring electrical energy, consisting of an elec *ro*-motor arranged as hereinbefore described and in part illustrated in the accompanying drawings, so that the driving force is proportional either to the quantity of the current to be measured, or to its electro-motive force, and, therefore, to the product of these quantities, the said electro-motor being combined with a separate electric brake, the field of which brake is kept constant, either by the use of saturated electro-magnets, or electro-magnets made by a current of constant electro-motive force, or by the use of permanent magnets kept constant and capable of regulation by the means described, also the exciting of the electro magnets, both of the motor and separate brake by the same shunt current, substantially as described. 3rd. In an electricity meter, the armature compound wound with a shunt circuit, having separate commutator and brush arrangements, for the purpose set forth. 3rd. *a* In an electricity meter, the armature and magnets compound wound with a shunt circuit of the conductor carrying the current to be metered, for the purpose set forth. 3rd. *b*. In an electricity meter, the armature compound wound with a shunt circuit, and the commutator brushes arranged with a positive lead on the commutator, for the purpose set forth 4th. In electricity meters, the obtaining a constant field either for the brake, or the armature, or both, by the use of electro-magnets of such construction and dimensions that they are kept in a state of saturation by a shunt current of the circuit in which they are employed, substantially as herein described. 5th. In electricity meters for currents of constant electro-motive force, and in electric brakes, the employment of permanent magnets arranged as described, with polar surfaces very large in proportion to the space between them, unoccupied by iron for the purpose of maintaining their field constant, and the means described, for regulating the same when, or if necessary, substantially as herein described and in part illustrated in the accompanying drawings. 6th. In electricity meters, the construction and arrangement of parts forming a divided commutator, making contact by means of mercury placed in insulated vessels, substantially as hereinbefore described and illustrated in the accompanying drawings, and the use of the divided commutator in, and in connection with, dynamo machines or electro-motors, as described. 7th. The construction and arrangement of parts forming a commutator making contact by means of mercury placed in insulated vessels, the axis of revolution of the commutator being vertical, substantially as herein described. 8th. In an electricity meter, the pole pieces of the electro-magnets, or permanent magnet, having radial, or nearly radial, grooves formed in them, as and for the purpose described. 9th. In an electricity meter, the combination, with the brake disc, of wires wound in sector form on same, and having their ends joined up to the commutator, substantially as and for the purpose described 10th. The arrangement and combination of parts hereinbefore described, and illustrated in the accompanying drawings, for diminishing the friction of the rotating axis of the meter in its bearings.

No. 30,028. Adding Machine. (*Machine pour additionner.*)

Eugene W. Vest, Keokuk, Iowa, U.S., 22nd October, 1888; 5 years.

Claim.—1st. In an adding-machine, a disk having a spiral series of holes, and a stop adapted to be inserted in any one of said holes, in combination with the registering-wheels, means for rotating them, and a stop carried by one of said wheels, and adapted to impinge against the stop first named for arresting the movement of the parts, substantially as set forth. 2nd. The combination, with the revoluble registering-wheels, of a disk having a spiral series of holes, a stop-pin adapted to be inserted in any one of said holes, and a stop carried by one of said wheels and adapted to impinge against the stop-pin for arresting the rotation of said wheels, substantially as set forth. 3rd In an adding-machine, the combination, with the registering-wheels and a movable stop-bar having connection with the units-wheel, of a disk having a spiral series of holes, a stop-pin adapted to be inserted in any one of said holes, and means for moving the end of the stop-bar, the distance between two adjacent rows of holes each time there has been a complete revolution of the units-wheel, substantially as set forth. 4th. In an adding-machine, the combination, with the revoluble registering-wheels and a sliding stop-bar movable in unison with the units-wheel, of a fixed disk having a spiral series of holes, a movable stop adapted to be inserted in any one of said holes, and means for moving the sliding stop-bar, the distance between two adjacent rows of holes at each complete revolution of the units-wheel, substantially as set forth. 5th. In an adding-machine, the combination, with the registering-disks and a disk having a spiral series of holes, and a spiral cam groove, of a stop-pin adapted to be inserted in any one of said holes, and a stop-bar moved by the cam-groove the distance between two adjacent rows of holes each time the units wheel makes a complete revolution, substantially as set forth. 6th. In an adding-machine, a disk having a spiral series of holes and a corresponding cam-groove, in combination with a shaft passing centrally through it, a movable stop-bar carried by said shaft and engaging in said cam-groove, the registering mechanism actuated by the rotation of the shaft, and a stop-pin

adapted to be inserted in any one of said holes for arresting the rotation of the shaft, substantially as set forth. 7th. In an adding-machine, a disk having a spiral series of holes and a corresponding cam-groove, in combination with the registering wheels, means for turning them, a stop-pin adapted to be inserted in any one of said holes, and mechanism operated by the cam-groove for coming in contact with said stop-pin, and arresting the further rotation of the registering-wheels, substantially as set forth. 8th. The combination of the shaft E having a clutch-connection with the register-wheel I, a stop-bar W sliding transversely to the shaft having a stud W1, and a fixed plate C having a spiral cam-groove C1 in which the stud works, and a spiral series of holes C2, for the purpose set forth. 9th. The combination of the shaft E, a register-wheel turning freely thereon, a clutch-collar U turning with the shaft but having vertical movement thereon, a cross-bar fixed to the collar and having teeth engaging the register-wheel, and a lever constructed to lift the collar and having a finger engaging the register-wheel when the teeth of the cross-bar are disconnected therefrom, for the purpose set forth. 10th. In an adding-machine, the combination, with the units-wheel of the operating shaft, the sliding clutch mounted thereon, the detent for preventing retrograde rotation of said wheel, and a single operating lever whereby the clutch is moved into, and the detent out of engagement simultaneously, and *vice versa*, substantially as set forth. 11th. In an adding-machine, the combination, with the registering-wheels and the operating-shaft, of the sliding clutch-sleeve U, the cross-bar U1, the forked lever V engaging at one end with said sleeve, the depressible operating rod V2 engaging the other end of the lever V, and having the extension V5, and the elevating-spring V4, substantially as set forth. 12th. The combination of the shaft T1, the lever T2, spring T5, the shaft E with suitable gearing between the shafts, a register-wheel turning loosely upon the shaft a clutch-connection U U1 U2 and actuating lever V having a finger V5, engaging the register-wheel when the clutch is disengaged, substantially as set forth. 13th. The combination, with the toothed wheel, the pallet engaging therewith and means for oscillating said pallet, of the slide *l3* to which said pallet is secured, substantially as set forth.

No. 30,029. Dry Closet. (*Cabinet à la terre sèche*)

Isaac D. Smead, Toledo, Ohio, U.S., 22nd October, 1888; 5 years.

Claim.—1st. The combination, in a dry closet, of a vault having a duct D connected to the vent-shaft E at one end for the passage of a current of air, and a separate duct D1 underneath the former and connected at one end to a smoke flue T for the passage of smoke, with a heater located at or near the entrance or mouth of said vault, and having its smoke pipe connected to the lower duct, substantially as and for the purpose set forth. 2nd. The combination, in a dry closet, of a vault provided with the two horizontal ducts D and D1, arranged one over the other and separated by a horizontal partition of absorbent material, the upper of said ducts being connected with a vent shaft for the passage of air and the lower of said ducts being connected with smoke flue I, and a heater H located at or near the mouth of said ducts, and having its smoke pipe connected to the lower duct, substantially as and for the purpose set forth.

No. 30,030. Apparatus for the Manufacturing of Charcoal. (*Appareil pour la fabrication du charbon de bois*)

Jacob Scherffius, Winona, Minne., U.S., 22nd October, 1888; 5 years.

Claim—1st. In an apparatus for producing charcoal, the combination, with a fire-box and a jacket surrounding it and forming a hot-air chamber, of a charring-receptacle receiving air from, and returning it to, the said hot-air chamber, a jacket surrounding said charging-receptacle and forming a chamber into which the products of combustion are led from the fire-box, and a smoke outlet for said chamber, substantially as set forth. 2nd. In an apparatus for producing charcoal, the combination, with a fire-box surrounded by a hot-air chamber, of a charring chamber, a jacket surrounding said charring-chamber, a pipe leading from the hot-air chamber to a point within the charring-chamber, pipes leading from the charring-chamber to the lower portion of the hot-air chamber and discharging air therein to be reheated, and pipes connecting the outlet of the fire chamber with the space between the charring-chamber walls and the jacket surrounding the same, substantially as described. 3rd. The combination, with a fire-chamber and a jacket surrounding the same, of a jacketted receptacle above the fire-chamber a pipe leading from the hot air space around the fire-chamber into the said receptacle, a smoke outlet pipe connecting the fire-chamber with the space between the receptacle and its jacket, and a pipe leading from the bottom of the receptacle into the jacketted space around the fire-chamber, and provided with a water trough, and a discharge nozzle entering a tank to discharge the products of distillation and be sealed therein and thereby prevent the entrance of cold air, substantially as set forth. 4th. The combination, with a jacketted fire-box, of a receptacle above the same, a pipe entering the receptacle from said jacketted space, and a return pipe leading from the bottom of the receptacle and discharging the air into the bottom of the jacketted space, and provided with a sealed discharge nozzle for the products of distillation, substantially as described. 5th In an apparatus for producing charcoal, the combination, with a fire-chamber, of a charring chamber, a jacket surrounding said charring-chamber, a space being left between the walls of the charring-chamber and the walls of the jacket, pipes connecting the outlet of the fire-chamber with the space between the walls of the charring-chamber, and its jacket, valves or dampers, arranged in connection with said pipes, a smoke-pipe leading from the space between the charring-chamber and its jacket, and a branch smoke-pipe provided with a damper leading from the discharge opening of the fire-chamber to the main smoke-pipe, substantially as described.

No. 30,031. Propeller Wheel.

(*Hélice de propulsion.*)

Henry D. Hodgeman, Laramie, Wyoming, U.S., 22nd October, 1888; 5 years.

Claim.—A wheel consisting of a series of blades radiating diagonally from a central hub, turning as they approach the periphery to lie in a plane at right angles to the hub, said blades merging into a peripheral ring, and constructed thickest at their point of intersection with the hub, and thinnest at the periphery, whereby essentially circular openings are formed projecting diagonally through the wheel in a double curve, or S-shaped line, substantially as shown and described.

No. 30,032. Combined Anvil, Vise and Drill.

(*Enclume, étau et drille combinés*)

John A. Robbins, London, Ont., 22nd October, 1888; 5 years.

Claim.—A combined implement consisting of frame A, anvil B, sliding vise blocks C, J, and drill F, G, said vise-blocks and drill being adjustably attached to the frame A by set-screws I, E, or pins, substantially as shown and specified.

No. 30,033. Device for the Manufacture of Engravers' Blocks (*Appareil pour la fabrication des blocs de graveurs.*)

Charles Thomson, Toronto, Ont., 22nd October, 1888; 5 years.

Claim.—A planer and jointer for the manufacture of engravers' blocks and other articles, composed of the foregoing described parts, substantially as combined and arranged and operating as set forth.

No. 30,034. Imprinting Marks and Devices upon Folded Piece Goods, and in Apparatus therefor. (*Marque et appareil d'impression sur les pièces des marchandises pliées et appareil pour cet objet.*)

James A. Cundall, Manchester, Eng., 22nd Oct., 1888: 5 years.

Claim.—1st. A printing block, having the letters or characters in relief, and the sides vertical or under cut, as set forth. 2nd. In a printing machine, the combination of an intermittently travelling web B2, a platen Q to which the printing block is secured, inking devices, consisting of rollers X, P, S, S, a bed plate B3, a gauge plate or plates U, and mechanism timed to adjust and operate the several parts automatically, substantially as set forth.

No. 30,035. Box or Crate. (*Boîte ou manne.*)

Charles E. Parks, Watertown, Wisconsin, U.S., 22nd October, 1888, 5 years.

Claim—1st. In a box section, the combination of a suitable frame having wires or cords stretched across the same, with a flexible wooden filling, woven in and out or over and under said wires or cords. 2nd. In a box section, the combination of a suitable frame, having wires or cords stretched across the same, with a filling, consisting of thin strips of wood, woven alternately over and under said wires or cords, and secured at their ends to said frame. 3rd. A box or crate, consisting of a series of box sections, and formed of a frame having wires or cords stretched across the same, and a filling of thin strips of wood woven over and under said wires or cords, and removable fastening devices for temporarily securing said sections together.

No. 30,036. Hot Water Furnace.

(*Caloryère à eau chaude.*)

Jean Baptiste Vincent, Montreal Quebec, 22 Octobre, 1888; 5 ans.

Résumé.—Dans une fournaise à eau chaude et portant, des "drop tubes" ou tuyaux en culs de sac, la série ou faisceau de "drop tubes" L, L, reliée à une plaque V pouvant laisser passer les tuyaux K, K, le tout pouvant être enlevé en bloc du corps principal de la fournaise, en combinaison avec le compartiment G, à enveloppes concentriques F, H, les tuyaux K, K, les retours d'eau froide I, I, les couvercles Q, Q1, à boulons T, T, et la distribution J, J1, J2, J, O, O, O, O, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 30,037. Fire Signal and Burglar Alarm.

(*Avertisseur d'incendie et d'effraction.*)

James E. Church and W. J. Blakely, Minneapolis, Minnesota, U.S., 24th October, 1888; 5 years.

Claim.—1st. The combination, in a device of the class described, of an alarm mechanism, a casing enclosing the same, a shaft mounted in bearings in said casing and forming a pivotal support therefore, arms projecting in opposite directions from said shaft, a stop engaging said alarm mechanism, a spring adapted to hold said stop in engagement with said alarm mechanism, and a slide connected with the arms on the said shaft and engaging said stop, substantially as and for the purpose set forth. 2nd. The combination, in a device of the class described, of the alarm mechanism, the casing inclosing the same, a notched disk 23, the slide 33, provided with the detent adapted to engage the notch in said disk, the shaft 21 permanently mounted in bearings in said casing and forming a pivotal support therefore, and provided with the arms 47 engaging said slide, whereby said alarm mechanism is released as said casing is turned in either direction upon its pivot, or as the shaft is turned in either direction in said casing, substantially as described. 3rd The combination, with the casing 2, of the alarm mechanism inclosed therein, the shaft 21 forming a pivotal support for said casing, the releasing device connected with said shaft, the bar 61 secured to said casing, and a series of wires 63 connected with said bar, and adapted to be connected with the doors and windows, for the purpose set forth. 4th. The combination, with the casing 2, of the alarm mechanism inclosed therein, the shaft 21 forming a pivotal support for said casing, the releasing device connected with said shaft, the bar 61 projecting from the top and bottom of said casing, and the

series of operating wires 63 connected with said bars, any one of which wires is adapted to be operated independently of the others to turn said casing upon its axis. 5th. The combination, with the *alarm mounted upon a pivotal support and provided with the projecting bar 61*, of the bar 65 adapted to engage with said bar 61, the spring 67 surrounding said bar 65 and adapted to retract the same, the stop lever 71 adapted to engage said bar 65 and the series of levers 73 bearing upon said lever 71, and each provided with the spring 75 and cord 77, all substantially as described. 6th. The combination, with the tilting alarm provided with the projecting bar 61, and the spring lever 65 adapted to engage therewith, of the stop-lever 71 engaging said lever 65 and holding it against the tension of its spring, the independent spring-levers 73 bearing upon said lever, the cords 77 connected with said levers 73, and the pivoted plates 81 provided with numbers and connected with said cords, all substantially as and for the purpose set forth. 7th. The combination, in a fire signal apparatus, of an alarm mechanism, a casing mounted upon a pivotal support and inclosing said alarm, a spring actuated bar adapted to engage with said casing and to turn it upon its pivotal support, a stop holding said bar normally out of engagement with said alarm, a series of releasing devices, any one of which is adapted to release said stop and permit it to tilt the alarm casing, and a series of cords connected with said releasing devices, whereby, when any one of said cords is burned off, one of the releasing devices will be operated and the alarm will be sounded. 8th. The combination, in a fire signal apparatus of an alarm, a casing mounted upon a pivotal support and inclosing said alarm, an operating bar connected with said casing and adapted to turn it upon its pivotal support, a series of cords connected with said operating bar, and a series of index plates connected with said cords, whereby, when any one of said cords is burned off, the alarm mechanism is operated, and the corresponding index device is also operated, substantially as described.

No. 30,038. Means for Cleaning and Polishing Metals. (*Moyens de nettoyer et polir les metaux.*)

John Dean and George H. Kingsley, Cleveland, Ohio, U. S., 24th October, 1888; 5 years.

Claim.—In the art of abrading and polishing, the combination of an abradent, as powdered emery, or the like, with small, soft metal bodies, as leaden balls, or their equivalent, the abradent and metal bodies being separable and distinct elements, whereby, when employed in a rumbler, said elements co-operate in polishing exposed surfaces, substantially as set forth.

No. 30,039. Sad Iron. (*Fer à repasser.*)

Joel Bennitt, Tiffin, Ohio, U. S., 25th October, 1888; 5 years.

Claim.—As an improved article of manufacture, a sad iron, consisting of a shell A, having hook-shaped lugs B, a reversible flat cover D, an open ended arched shield E, handle G and lever H, having handle I, substantially as described and for the purpose specified.

No. 30,040. Manufacture of Knitted Fabrics. (*Fabrication des tricots.*)

Joseph J. Adgate and Samuel P. Kittle, Grey's Inn Road, Eng., 25th October, 1888; 5 years.

Claim.—1st. The particular method, herein described, of introducing and interweaving an unknitted weft thread in a knitted fabric in course of manufacture, which method consists in leading the weft thread between the knitting needles, when the same are in their highest position and are separated into two rows, the weft thread being led in, in a gradually downwardly inclined direction, so that on the two rows of needles coming again into one line, the weft thread will be behind the needles of the front row, and in front of the needles of the back row, and will therefore be crossed between the needles by the warp thread which is introduced immediately afterwards into the hooks of the needles, so that on the casting off of the previously formed loops of warp thread, the weft thread will be entwined partially around the warp thread, substantially as specified 2nd. The herein described method of knitting a fabric with a striped pattern running longitudinally of the piece which consists in introducing an extra or pattern warp thread between the needles, when the same are separated into front and back rows of needles, the thread being laid in the hooks of the back needles, only so as to be looped by the back needles and not by the front needles, as specified, whether the warp threads forming the ground are or are not also looped by the same needles.

No. 30,041. Steam and Compressed Air Engines. (*Machine à vapeur et à air comprimé.*)

Frederick W. Cannon, London, Eng., 25th October, 1888; 5 years.

Claim—1st In a steam or compressed air engine, the described double arrangement of cylinders, with centre chamber in which works the valve gear, and into which the exhaust takes place before escaping into the atmosphere or into a condenser, substantially as set for the purpose described 2nd. In a steam or compressed air engine, the combination, with the described double cylinder arrangement and centre chamber, of the peculiar construction of valves *g*, the exhaust ports of which open into the said centre chamber, substantially as hereinbefore described and illustrated in the accompanying drawings. 3rd. In an engine of the kind herein described, the arrangements of mechanism for actuating the valve, as hereinbefore described and illustrated in the accompanying drawings. 4th. The modified arrangement of valve, hereinbefore described and illustrated in the accompanying drawings, in which the lateral motion of the valve is effected by a block moved up and down within the interior of the valve. 5th. A valve constructed as herein before described and illustrated in the drawings, that is to say, having a port passing right through it, so as to adapt it for converting a steam engine into a compound engine, substantially as hereinbefore described and illustrated in drawings. 6th. In a steam or compressed air engine, the method of exhausting into a centre chamber, as described, whereby the lubrication of the working parts is effected and the atmospheric pressure reduced, *substantially as and for the purposes* hereinbefore described. 7th. The combination of parts forming an improved steam or compressed air engine, arranged and operating as hereinbefore described and illustrated in the accompanying drawings. 8th. The improved compound engine, hereinbefore described and illustrated in the drawings.

No. 30,042. Means for Facilitating the Severance of Paper, Parchment, etc., and especially applicable to Envelopes, etc. (*Moyens de faciliter la séparation du papier, parchemin, &c., et spécialement applicable aux envelopes, etc.*)

Margaret B. Binns, Bebek, Turkey, 25th October, 1888; 5 years.

Claim—1st. The method of facilitating the severance of paper, parchment, cardboard, *and other materials, by means of a thread or* threads which is or are interlaced or interwoven through a series of perforations along the line at which such severance is to be effected, substantially as described. 2nd. Envelopes, postal and other wrappers and similar articles, having a thread extending through a series of perforations along the line at which the opening is to be effected, substantially as described

No. 30,043. Voltaic Battery. (*Pile voltaique.*)

Theophilus Coad, Forest Gate, Eng., 25th October, 1888; 5 years.

Claim.—1st. In voltaic batteries, the combination of the contact point C suitably held, and wedges D, as and for the purposes set forth. 2nd. In voltaic batteries, the combination of the contact point C, suitably held, and clip M, as and for the purposes set forth. 3rd. In voltaic batteries, the combination of the bent over contact piece H and wedges D, as and for the purposes set forth. 4th. In voltaic batteries, the combination of the bent over contact piece H and clip M, as and for the purposes set forth. 5th. In voltaic batteries, a porous pot, having only a narrow vertical portion of its surface opposite the zinc left porous, as set forth.

No. 30,044. Friction Clutch. (*Embrayage à friction.*)

James Macdonald, Chicago, Ill., U.S., 26th October, 1888; 5 years.

Claim.—1st. The combination of the cylinder J having an interior friction surface ring G, hub E, pin F, arm H having the bent portion *h1*, and the loose cone D, in operative connection with the lever C, substantially as described. 2nd. The combination of the cylinder J, having an interior lining of compressed paper ring G, hub E, pin F, arm H having the bent portion *h1*, and the loose cone D in operative connection with the lever C, substantially as and for the purposes specified. 3rd The combination of the cam or pin F, provided with the partially flattened surface *f2*, arm H, and set-screw *h*, whereby said set-screw may be tightened in proportion as power is applied to said arm with a hub, friction ring and cylinder, and a sliding cone connected with a hand lever, substantially as described. 4th. In a friction clutch having a friction cylinder and expansion ring adjusted upon a suitable hub therein, the combination of the cam or pin F provided with the partially flattened or eccentric surface *f2*, arm H and set-screw *h*, and part *f3* for adjusting the expansion of said ring to the wear of the interior friction surface of the shell with a loose cone in operative connection with a hand-lever, substantially as described.

No. 30,045. Metallic Piston Rod Packing. (*Garniture métallique pour tige de piston.*)

Theodore Falk, Chicago, Ill., U.S., 26th October, 1888, 5 years.

Claim.—1st. A metallic packing-ring provided with a number of longitudinal grooves, which are cut through for a portion of the length of said ring, and then gradually growing more shallow until they run out, substantially as and for the purpose set forth. 2nd. A metallic packing-ring having a conical bevelled end, and provided with a number of grooves extending from end to end, and which are only cut clear through for a portion of the length of said ring, substantially as and for the purpose set forth. 3rd. The combination, with a metallic packing-ring having a conical bevelled end, and provided with a number of graduated grooves, as described, of a cap-ring fitting over the conical end of said ring, and a spiral spring interposed between said cap-ring and the bottom of the stuffing-box substantially as and for the purpose set forth. 4th. The combination, with the metallic packing-ring C provided with a number of diagonal grooves, as described, of the loosely arranged seat-ring *b1* bevelled on the inner edge next the piston rod, and having a spherical bearing surface for the contacting end of said ring, which has a corresponding surface, substantially as and for the purpose set forth. 5th. The combination, with the packing-ring C having a conical bevelled end and longitudinal grooves, as described, of the cap-ring *b* fitting over the conical end of said packing-ring, and provided exteriorly with the shoulder *a*, the coiled spring *a*, the seat-ring *b1*, and the packing-gland D, all constructed and arranged substantially as set forth. 6th. The combination, with the packing-gland D provided with the lubricating-chamber *d*, of the ring or washer *d*, the screw-cap *d*, and the oil-cup *d1*, substantially as set forth.

No. 30,046. Metal Wheel. (*Roue en métal.*)

Thomas S. Page, Toledo, Ohio, U.S., 26th October, 1888; 5 years.

Claim—1st. In a wheel, a hub provided with outer disks having flanges and inner disks of a diameter to fit within the flanges and be secured thereon by the overlapping flange of the outer disk, in combination with spokes secured between the disks and passed through openings formed in the flanges, as and for the purpose set forth. 2nd.

In a metal wheel, a band or rim serving as a shield or sand-band for the hub, and provided with a series of projections for retaining the bent portions of the return spokes within the hub, as and for the purpose set forth. 3rd. The herein described wheel comprising a box, telescopic disks secured to the box at each end thereof, a rim, spokes secured to the rim at their outer ends, the inner ends thereof being secured between the disks and held from radial movement by projections upon the disk caused to impinge upon the spokes by overlapping the edge of one disk upon the other, as and for the purpose set forth. 4th. In a metal wheel, disks having fastening devices for engagement with the spokes, the disks being formed of different diameters with the edge of one disk overlapping the other, a perforation through the centre of the disks, an eyelet within the perforation having each end bent to overlap the outer side of the disks, in combination with spokes screwed between the disks, as and for the purpose set forth.

No. 30,047. Securing Window Blinds to Rollers. (*Arrête-store de fenêtre.*)

Henry Northcote, Toronto, Ont., 26th October, 1888; 5 years.

Claim.—A window-blind fastener consisting of roll *d*, catch *a*, spring *b* and nut *c*, all formed and combined as and for the purpose hereinbefore set forth.

No. 30,048. Toe Weight. (*Pesée de sabot.*)

Frank W. Floyd, Detroit, Mich., U.S., 26th October, 1888; 5 years.

Claim.—1st. A toe weight for horses, consisting of a plate or tenon having its inner surface concaved to fit the convex surface of the hoof, and adapted to be fastened to the hoof by screws, and a weight attached to the plate, or tenon, by a dovetail joint, and further secured by a screw passing through the weight and plate, or tenon, and into the hoof, substantially as and for the purposes described. 2nd. A toe weight for horses, consisting of a plate, or tenon, having its inner surface concaved to fit the convex surface of the hoof, and adapted to be fastened to the hoof by screws, and additionally secured thereto by a spur at its lower end, adapted to be inserted between the hoof and the shoe, and a weight attached to the plate or tenon by a dovetail joint, and held in place by a set-screw passing through the weight and into the plate, or tenon, substantially as and for the purposes described. 3rd. A toe weight for horses, consisting of a plate, or tenon, having its inner surface concaved to fit the convex surface of the hoof, and adapted to be fastened to the hoof by screws, and additionally secured thereto by a spur at its lower end to be inserted between the hoof and the shoe, and a weight attached to the plate by a dovetail joint, the weight and plate being additionally secured by a screw passing through the weight and plate and into the hoof, substantially as described. 4th. In a toe weight for horses, the combination, with a dovetail tenon having its inner surface concaved to fit the convex surface of the hoof, and attached thereto by a screw, and additionally secured by a spur in its lower end adapted to be inserted between the hoof and shoe, of a mortised weight adapted to fit onto the tenon, and a screw adapted to pass through the weight and tenon and into the hoof, substantially as described. 5th. In a toe weight for horses, the combination, with the plate, or tenon, B, having its inner surface concaved to fit the convex surface of the hoof, and provided at its lower end with the spur B_1, and also provided with screw holes *b*, and elongated opening b_3, and bevelled edges b_2, of the weight C provided with a recess *c* having its edges bevelled to fit the edges of the plate, or tenon B, an orifice c_2 and the screw c_3 which passes into the hoof, substantially as described. 6th. A toe weight for horses, consisting of a plate having its inner surface concaved to fit the convex surface of the hoof, and secured to the hoof by means of a screw, or screws, and a spur attached to the lower end of the plate and adapted to enter between the hoof and shoe, substantially as described.

No. 30,049. Washing Machine.

(*Machine à blanchir.*)

Anthony W. Burke, Toronto, Ont., 26th October, 1888; 5 years.

Claim.—1st. An auxiliary bottom B composed of a series of V-shaped bars connected together by the metal strips *a*, in combination with projections *b* extending inwardly from the sides of the washing chamber, so as to form supports for the auxiliary bottom B, as shown. 2nd. A washing chamber having a metallic bottom B pressed into the sides of the chamber, so as to form water-tight joints, in combination with an auxiliary bottom B composed of V-shaped bars connected together by metal strips *a*, the said auxiliary bottom being supported within the washing-chamber clear of its metal bottom, substantially as and for the purpose specified. 3rd. A convex rubber C composed of V-shaped bars *d* connected together by wooden end plates e_1, levers or standards D fixed to the end plates *e*, and having slots *f* made in them, in combination with the pivot pins E, and hooks F, arranged substantially as and for the purpose specified. 4th. A convex rubber C composed of V-shaped bars *d* connected together by wooden end plates *e*, and having slots *f* made in them, the pivot-pins E, and hooks F, in combination with the levers G connected to the levers D by the handle J, and adjustably pivoted upon the pivot-pins H passing through longitudinal slots *b*, and forming pivots-supports for the notched dogs I pivoted on the levers G, substantially as and for the purpose specified. 5th. A washing-machine having a concaved corrugated auxiliary bottom supported within the washing-chamber above its metallic water-tight bottom, in combination with the convex corrugated rubber C having standards D pivoted in the handle J, the ends of which are pivoted on the upper ends of the pivoted levers G which are made vertically adjustable, substantially as and for the purpose specified.

No. 30,050. Means of Generating and Superheating Steam. (*Moyens de produire et surchauffer la vapeur.*)

Alexander Young, Honolulu, Hawaiian Islands, 26th October, 1888; 5 years.

Claim.—1st. The herein-described method of superheating exhaust steam from the higher pressure cylinders of compound engines before it enters the lower pressure cylinders, or superheating the steam or vapor from the coils of multiple effect evaporators before it enters the next coils in order, utilizing for this purpose the heat of combustion gases on their way to the chimney. 2nd. For operating, in the manner set forth in the preceding claim, the combination of a series of boiler compartments in one or more of which steam is generated, and in the other, or others, of which exhaust, or spent steam, or vapor of one pressure, or of several degrees of pressure is superheated by the hot gases resulting from the combustion of fuel in the generating boiler, or boilers, the whole constituting a graduated boiler arranged and operating substantially as described. 3rd. The combination of a graduated boiler, such as is referred to in the preceding claim, with a compound engine, or with a multiple effect evaporating apparatus, substantially as described.

No. 30,051. Spring Bed Bottom.

(*Sommier élastique.*)

Stewart Grafton, Weston, Ont., 26th October, 1888; 5 years..

Claim.—In a spring bed bottom constructed with cross-bars A, A_1, springs B, cross-bar C, the combination of the unperforated slats D, staples d_1, cord H, staples d_2, and eyes h_1, hooks I and staples d_1, the whole constructed and arranged and operating substantially as set forth.

No. 30,052. Belt Fastener. (*Agrafe de Courroie.*)

Timothy Gingras, Buffalo, N.Y., U.S., 29th October, 1888; 5 years.

Claim.—In combination with the contiguous sections of a belt, the staples C having their points passed through contiguous parts of said sections, and then bent back into or through the same on opposite sides of the body of each staple, substantially as set forth.

No. 30,053. Belt Fastener. (*Agrafe de Courroie.*)

Timothy Gingras, Buffalo, N.Y., U.S., 29th October, 1888; 5 years.

Claim.—1st. A belt fastening, consisting of a staple, having its ends bevelled inward from the outside, but their inner faces left vertical, and having the right edge of one end and the left edge of the other end also bevelled, the other edges of said ends being left vertical, in order that the points of the staple may be on opposite sides of its middle longitudinal line, as set forth. 2nd. A staple, having its ends bevelled on the outside, and the right edge of one end and left edge of the other bevelled also, and further provided with the additional slants *b*, forming blunt points, substantially as set forth.

No. 20,054. Combined Chair, Fish-Plate and Rail Coupler. (*Coussinet, éclisse de chemin de fer et accoupleur de rail combinés.*)

Willard Wilt, Eureka, California, U.S., 29th October, 1888; 5 years.

Claim.—The improved railway chair and fish-plate described, consisting essentially of a single piece of metal, having a base increased in thickness, as shown, and the vertical branches forming the fish plates, reduced so as to allow them to yield laterally and embrace the web of rails of various thickness, substantially as specified.

No. 30,055. Portable Frog or Car Replacer. (*Rail de raccordement portatif pour remettre sur la voie les chars de chemins de fer.*)

William O. Cooke, Chicago, Illinois, U. S., 29th October, 1888; 5 years.

Claim.—1st. A portable frog or car replacer, provided with a shoulder for raising blind wheels, substantially as described. 2nd. In a portable frog or car replacer, the combination of piece A, having shoulder E, with piece B secured thereto, substantially as described. 3rd. In a portable frog or car replacer, the combination of piece A, having shoulder E and lug F, with piece B having lug F_1, the lug-fitting into the grooves in the sides of the rail, and preventing the frog from tilting or tipping, substantially as described.

No. 30,056. Steam Generator.

(*Générateur de vapeur.*)

Edward E. Roberts, Red Bank, N. J., U. S., 29th October, 1888; 5 years.

Claim.—1st. The combination, with a steam and water drum, and pipes depending at opposite ends thereof and on opposite sides of the fire-box, the pipes at each end having a cross connection, by which they communicate with the drum of the distributers C_2, each connecting the depending pipes which are on the one side of the fire-box, and the coils E springing from the opposite distributers alternately forming the crown of the fire-box, and communicating at their upper ends with the drum, substantially as herein described. 2nd. The combination, with a steam and water drum, and pipes depending from the ends thereof, of hot water distributers, each connecting the depending pipes which are on one side of the generator, upright coils connected at their lower ends with the distributers and at their upper ends with the drum and forming the crown of the fire-box, and dry or superheating coils arranged transversely to the planes of the upright coils and on opposite sides of the fire-box, leaving the coils which form the crown of the fire-box fully exposed to the fire, substantially as herein described. 3rd. The combination, with a base or foundation, of the stand pipes C supported thereon and the steam and water drum, the pipes at each end of the drum being connected by a cross-pipe which connects with and supports the drum, the horizontal distributers connecting the stand-pipes which are on opposite sides of the generator, the grate arranged between said distributers, and the upright coils E leading from the dis-

tributers to the drum and forming the crown of the fire-box, substantially as herein described. 4th. The combination, with the steam and water drum D, the downward pipes G and distributers, of the upright coils F, connecting the distributers and drum and forming the crown of the fire-box, the feed-water heating coils G and the superheating coils H, the ledge of angle-iron F^1 surrounding the lower portion of the generator, and the case or cover enclosing the generator and fitting on said ledge, substantially as herein described. 5th. The combination, with a steam and water drum, the water columns or stand-pipes C, which communicate at their upper ends with the drum, and water distributers C^2 connecting the stand-pipes near but above their lower ends, thereby forming sediment pockets in the lower ends of the stand-pipes, of the return coils E to the drum, and blow-off connections leading from the sediment pockets in the stand-pipe below their connection with the water distributers C^2, substantially as herein described.

No. 30,057. Cattle Stanchion.

(*Stalle à bétail.*)

Abiather T. Fairbrother, Janesville, Iowa, U.S.; 29th October, 1888; 5 years.

Claim.—1st. In a cattle stanchion, the movable bar D, in combination with the vertical latch F mounted in a suitable frame, and having the shoulders f^2, f^2, the operating lever connected to the latch and the spring coiled on the latch and provided with a curved extension or arm adapted to bear at its end against the free end of the movable bar, whereby the latter is automatically opened, substantially as and for the purpose specified. 2nd. In a cattle stanchion, the rack A and the movable bar D pivoted at its lower end in the rack, and having a bevelled upper end, the vertical latch F mounted in openings in a suitable frame affixed to the rack, the operating lever mounted on a standard on the said frame, and pivoted at one end to the upper end of the latch, and the spring C coiled on the latch and provided with the curved arm or extension *g* integral with the lower end of the spring, and bearing against the free end of the bar D, when the latter is in its closed position, substantially as specified.

No. 30,058. Sled Brake. (*Frein de Traineau.*)

Russell M. Woodard, Norton, Vermont, U. S., 29th October, 1888; 5 years.

Claim.—1st. The combination of the rock-shaft a^1, the boxes a^2, a^2, the links or straps a^4, a^4, and the brakes or dogs *a*, *a*, substantially as described and for the purpose set forth. 2nd. The combination, with the rock-shaft a^1, boxes a^2, a^2, links a^4, a^4 and dogs *a*, *a*, of the lever *b*, substantially as described and for the purpose set forth. 3rd The combination, with the rock-shaft a^1, boxes a^2, a^2, links a^4, a^4 and dogs *a*, *a*, of the arm *c*, substantially as described and for the purpose set forth.

No. 30,059. Registering Gauge for Railway Car Brakes. (*Indicateur pour freins de chars*)

Robert Potts, St. Thomas, Ont., 30th October, 1888; 5 years.

Claim.—1st. The combination of the figured bar C and the movable indicator A, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the bar C and the movable indicator A and the cross-head, of any power brake, substantially as and for the purpose hereinbefore set forth.

No. 30,060. Axle Box. (*Boîte à graisse*)

James Des Brisay, Vancouver, British Columbia, 30th October, 1888; 5 years

Claim.—1st. In an axle box, the combination, with vertical guide-ways, of a box provided with rollers travelling on the same guide-ways, substantially as shown and described. 2nd. The combination, with vertical guide-ways, of a box made in two parts and fitting on the said guide-ways, and rollers mounted to rotate in the vertical sides of said box and travel on the said guide-ways, substantially as shown and described. 3rd. The combination, with the frame arms, of a steel plate held on one of the said arms, a wedge held adjustably on the other arm, a box mounted to slide on the said arms, and rollers mounted to turn in the said box and held against the said plate and wedge, substantially as shown and described. 4th The combination, with the box D made in two parts, and provided with a recess in its bottom, of a plate held on the bottom of the said box and closing the said recess, bolts for fastening the said two parts together, and rollers mounted to revolve in the vertical sides of the said box and adapted to travel on the vertical guide-ways of the box, substantially as shown and described. 5th. The combination, with the box made in two or more parts, and provided with flanges on its ends, of rollers mounted to revolve in the said flanges, and adapted to travel on the guide-ways of the box, substantially as shown and described. 6th The combination, with the box, provided with flanges at its ends, of rollers mounted to revolve in the said flanges, a steel plate on which travel the rollers, on one end of the said box, and an adjustable wedge on which travel the rollers on the other end of the said box, substantially as shown and described. 7th. The combination, with the box D, provided on its lower part with a recess, of an oil casing held in the said recess and provided with an outwardly extending filling pipe, a perforated plate held in the said casing and supporting hair waste or other material, and a spring for pressing the said perforated plate upward, substantially as shown and described. 8th. The combination, with the box D, provided in its lower part with a recess, of an oil casing held in the said recess and provided with an outwardly-extending filling pipe, a perforated *plate held in the said casing and supporting hair waste or other material*, a spring for pressing the said perforated plate upward, and a bottom plate secured to the box D and supporting the said oil casing, substantially as shown and described.

No. 30,061. Letter and Document File.

(*Serre-papier.*)

Edward Phillips, Mount Forest, Ontario, 30th October, 1888; 5 years.

Claim.—1st A cabinet, having letter or document drawers supported on slanting shelves arranged in the cabinet, substantially as and for the purpose specified. 2nd. A cabinet, having letter or document drawers supported on slanting shelves arranged in the cabinet, in combination with a hinged clamp arranged inside the cabinet to engage with a notch or notches made in the side or sides of the drawers, substantially as and for the purpose specified 3rd. A cabinet, having letter or document drawers supported on slanting shelves arranged in the cabinet, in combination with a hinged clamp arranged inside the cabinet to engage with a notch or notches made in the side or sides of the drawer, and a cord attached to the hinged clamp, and arranged substantially as and for the purpose specified. 4th. A cabinet, having letter or document drawers supported on *slanting shelves arranged in the cabinet, in combination with the* hook F and cord or strap G, substantially as and for the purpose specified. 5th. A cabinet, having letter or document drawers supported on slanting shelves arranged in the cabinet, in combination with a hinged clamp, arranged inside the cabinet to engage with a notch or notches made in the side or sides of the drawer, a spring arranged to act against the clamp to hold it in the notch, and a cord attached to the hinged clamp to raise the said clamp, substantially as and for the purpose specified.

No. 30,062. Lifting Machine for Railways, etc. (*Machine à soulerer pour chemin de fer, etc.*)

Francis Golightly, John K. Golightly and Francis Golightly, Jr., Hooley Hill, Eng., 30th October, 1888; 15 years.

Claim.—The combination, substantially as shown and described, consisting of the bed plate, provided with the bearings *b*, *c*, *d*, caps b^1, c^1, the screw spindle *e* having a right and left hand screw-thread cut thereon, the screw-threaded nuts *f* and *g*, bearings f^1, f^2, g^1, g^2, rollers f^3, f^4, g^3 and g^4, the arms or links *h*, h^1, *i* and i^1, the shoe *l*, worm-wheel *m*, adapted to engage with the worm *n*, the bracket *o*, the square nut of the worm *n*, the whole forming a complete device.

No. 30,063. Car Coupling. (*Attelaye de char*)

George W. Toler, Neodesha, Kansas, U. S., 30th October, 1888; 5 years.

Claim—1st In a car coupler, the combination, with the draw-head, the pin and the pivoted guide bar D, having the guide face d^1, provided with the retaining flanges d^2, of the double crank shaft journalled under the car, the pulley situated over the draw-head, the chain or cord running thereover and connecting the one crank of the shaft and pin, the pitman journalled on the other crank, the slotted link connecting the pitman and guide bar, and the coiled spring extending normally the pitman and the link, substantially as specified. 2nd. In a car coupler, the combination, with the draw-head, the pin, the crank shaft journalled under the car, the pulley and the chain or cord connecting the crank-shaft and pin over the pulley, of the double angled lever journalled in bearings on the roof of the car, and the link connecting the depending arm of said lever and the upstanding handle of the crank-shaft, substantially as specified.

No. 30,064. Window. (*Fenêtre.*)

John B. Zettler, Canton, Ohio, U S., 30th October, 1888; 5 years.

Claim.—1st. In a window, the combination, with a sash provided with laterally-projecting arms, of depending rods projecting below the sill of the window, and having their terminals connected by a cross-bar, provided with a depending rack-bar, and of a gear provided with an operating handle and meshing with said rack-bar, substantially as specified. 2nd. The window-casing A, having the slotted recesses A^3 and the perforated sill A^4, in combination with the sash B, having the T-arms B5, depending rods B6, cross-bar B7 having rack B8 and the scroll-gears B9 mounted in the brackets B10, and *having the operating handle* B^{11}, *substantially as specified*.

No. 30,065. Saw Mill Dog. (*Clameau de scierie.*)

James H. Miner, Baton Rouge, Louisiana, U.S., 30th October, 1888; 5 years.

Claim.—1st. In combination, the frame, the dog fitted to guides in said frame, said guides being deeper at the rear than the depth of the shank of the dog, whereby the said dog is permitted an adjustment to throw the point in or out, a spring pin engaging with notches in the upper side of the dog, and an independent fitting and holding device arranged beneath the dog, substantially as described. 2nd. In combination, a frame arranged to slide on the guide standard having guides made to allow sliding movement of the dog, and also tipping movement to draw the point toward the standard, a spring pin fitting notches in the upper edge of the shank of the dog, and an eccentric and lever independent of the dog for raising and holding the shank thereof, substantially as described. 3rd. In combination, the guide standard, having a row of holes, the frame sliding thereon, the lever slotted to receive a pin set in the frame, a pin, as H1, passing through the end of said lever, and through one of the holes in the standard, guides in the frame arranged to allow sliding and tipping movement of the dog, a spring pin fitting notches in the upper edge of the shank of the dog, and a device for lifting and holding the shank, substantially as described.

No. 30,066. Car Axle Lubricating Apparatus. (*Boîte à graisse.*)

Samuel Vessot, Joliette, Que., 30th October, 1888; 5 years.

Claim.—1st. In an axle lubricating apparatus, the combination, with the axle box C and axle A, of disc M, loose springs D, D, block

d d, and frame E, consisting of channelled side pieces F, F1 having cover pieces G, G1 with scraping edges *g, g1*, for the purposes set forth. 2nd. In combination with the axle box C, and axle A, disc M, frames E and K, compression spring L, and loose springs D, D, for the purposes set forth. 3rd. The combination, with axle box C having chamber C1, and axle A having groove *a*, of disc M channelled side frames F, F1 and loose springs D, D, all substantially as herein set forth. 4th. The combination, with the axle box C having chamber C1, of front plate C2 with opening fitted with bars, or grating T, door with rim, and spring for holding door closed, and means for securing said plate C2 to axle box, all substantially as herein set forth.

No. 30,067. Saw Sharpening Machine.

(*Machine à affuter les scies.*)

Milo Covel, Chicago, Ill., U.S., 30th October, 1888; 5 years.

Claim.—1st. In a saw sharpening machine, the combination, with the supporting frame, of the head-piece B, the bracket *a4*, said head-piece being pivoted to said bracket at one side and provided in the other side with a segmental slot, and an adjusting bolt passing through said slot, whereby said head-piece may be given a greater or less degree of inclination, substantially as and for the purpose set forth. 2nd. In a saw sharpening machine, the combination, with the cam C1 rigidly mounted on the driving shaft, of a curved feed arm having a roller journalled in the lower end which has frictional contact with said cam, and provided in the upper end with an elongated slot, a feed-finger secured to said feed-arm and adjustable in said slot, a rock-shaft upon which said feed-arm is rigidly mounted, and a spring coiled on said rock-shaft, whereby the lower end of said feed-arm is normally held in contact with the cam C1, and the feed-finger brought into engagement with the teeth of the saw in regular order of succession, substantially as and for the purpose set forth. 3rd. In a saw sharpening machine, the combination, with the saw contacting end, of the feed-finger provided with the downward projecting lip *b6* of the stationary plate *b1*, substantially as set forth. 4th. In a saw sharpening machine, the combination, with a feed-finger, of the bracket *a4*, the adjustable stop *b8* and the adjusting bolt *b9*, having a screw-threaded engagement with said stop, substantially as and for the purpose set forth. 5th. In a saw sharpening machine, the combination of the bracket D, the bar D1, the screw-threaded shaft D2, the hinge-plate *d* pivoted at its lower end to said bracket, the clamping-plate *d2* provided with elongated slots, and adjustably secured to said hinge-plate, and the spring *d5*, substantially as and for the purpose set forth. 6th. In a saw sharpening machine, the combination, with the bracket D, of the cam locking lever D3 pivoted to said bracket, the back-plate *d5*, and the spring *g*, whereby the saw is locked against a back movement only, substantially as set forth.

No. 30,068. Metallic Strap Fastener.

(*Joint de courroie métallique.*)

Ephraim Latham, Washington, D.C., and Ethan A. Sawyers, Brownsville, Oregon, U.S., 30th October, 1888; 5 years.

Claim.—1st. A metallic strap fastener 10 consisting of frame 12 having stud 13 and loops 11, as described and shown. 2nd. A metallic strap fastener 10, in combination with the loop 22, substantially as and for the purpose hereinbefore set forth.

No. 30,069. Thermostat. (*Thermostat.*)

George W. Blake and Enoch Rutzler, New York, N.Y., U.S., 30th October, 1888; 5 years.

Claim.—1st. The combination, with a steam or hot-water pipe and a damper or valve, of a support connected with said pipe, a rigid bar having one end connected with said support, a lever having its fulcrum at the other end of said bar and bearing against said pipe, a flexible bar applied lengthwise between said support and lever, and a connection between said flexible bar and the damper or valve, substantially as herein described. 2nd. The combination, with a steam or hot-water pipe, and a damper or valve, of a flexible bar connected with the latter, two supports for the ends of said flexible bar connected with the pipe at distant points, one of the said supports being a lever against which said pipe expands lengthwise, and a rod or link forming a direct connection between said lever and the other support for the flexible bar, the connection of said rod or link with the lever being on the opposite side of its fulcrum to that on which it supports the flexible bar, substantially as herein described. 3rd. The combination, with a steam or hot-water pipe and a damper or valve, of a flexible arm connected with said pipe, a rigid bar having one end connected with said arm, a lever having its fulcrum at the other end of said bar and bearing against said pipe, a flexible bar applied lengthwise between one arm of the said lever and the said flexible arm, a connection between the opposite arm of said lever, and the said flexible arm, and a connection between said flexible bar, and the damper or valve, substantially as herein described. 4th. The combination, with a steam or hot-water pipe, and a damper or valve, a support connected with said pipe, a rigid bar having one end connected with said support, a lever having its fulcrum at the other end of said bar and bearing against said pipe, and two flexible bars, the flexure of which is in opposite directions applied lengthwise between said lever and support, of a lever fulcrumed on one of said flexible bars, a connection between said lever, and the other of said flexible bars, and a connection between said lever and damper or valve, substantially as and for the purpose herein described.

No. 30,070. Machine for Sharpening Harrow Disks. (*Machine pour aiguiser les disques des herses.*)

Edward A. Sloat, C. P. Rood, La Fargeville, N.Y., U.S., 30th October, 1888; 5 years.

Claim.—1st. In a machine for sharpening harrow disks, bearing B carrying cog wheel O, pinion P, and crank Q, chuck M, suppor' bearings C, C having spurs F, hooked bar D secured through cross-beams *a, a* by turr-screws E, substantially as described and for the purposes set forth. 2nd. In a machine for sharpening harrow disks, a knife-support G bent at one end, hinged lever bar J, weight I, serrated plate L and pivoted knife standard K carrying a knife G1, substantially as described and for the purposes set forth. 3rd. In a machine for sharpening harrow disks, the combination of the knife support G, hinged lever bar J, weight I, serrated plate L, knife standard K with a bearing B, cog wheel O, pinion P, crank Q, chuck M, bearings C, C having spurs F, and hooked bars D secured through cross-beams *a, a*, by turn-screws E, all substantially as described and for the purposes herein set forth.

No. 30,071. Padlock. (*Cadenas.*)

William F. Froast, Samuel R. Slaymaker and John F. Barry, Lancaster, Penn., U.S., 30th October, 1888; 5 years.

Claim.—1st. The combination, with the case having slots to receive the journals of the tumblers and filling-plates to keep said journals in place, of the tumblers having journals at one end, and springs bearing upon the inner faces of said tumblers to force the vibrating ends of the same apart, substantially as and for the purpose specified. 2nd. The combination, with the case having slots to receive the journals of the tumblers and filling plates to keep said journals in place, of the tumblers journalled at one end in said slots, and curved springs passing around the journalled bearing lips of said tumblers, and having their ends resting against the inner faces thereof to force the vibrating ends of the same apart, substantially as and for the purpose specified. 3rd. The tumblers journalled in the case at their inner ends, and having inwardly projecting arms interlocked at the other, with a space between said arms to receive the key to draw those ends of said tumblers together, and springs connected with said tumblers to force the vibrating ends of the same apart, substantially as and for the purpose specified. 4th. The combination, with the case and shackle, of tumblers extending lengthwise between the top and bottom of the shell or case, and having projections on the sides or faces thereof to engage notches in the shackle, and means for forcing the tumblers into engagement with said shackle, the tumblers being constructed to be disengaged from the shackle by a key, for the purpose specified. 5th. The combination, with the case and shackle, of tumblers C, C journalled in the top of the case extending toward the bottom thereof, and provided on their outer faces with projections *c* adapted to engage notches *b2* in the arms of the shackle, a spring bent around arms D projecting inwardly from the upper ends of the tumblers and bearing against the inner faces of said tumblers, and rectangular arms G projecting inwardly from the lower ends of the tumblers and lapping each other so as to form an opening to admit the key, all constructed and operating, substantially as specified. 6th. The combination, with the case provided with a slot in the side of one of the openings in which the shackle is inserted, of the shackle having one end *b* provided with a head at its outer end, and having a recess cut therein above one side of said head, said side of the head being constructed to be bent inward to lessen the size of the mouth of said recess, substantially as and for the purpose specified. 7th. The combination, with the bottom plate provided with a ward *k*, of the tumblers and the lips having the recesses 5 cut in the inner faces thereof, substantially as and for the purpose specified. 8th. The combination, with the bottom plate K having the ward *k*, of the guide plate 6 rigidly fastened on the inner edge of the lip *l*, substantially as and for the purpose specified

No. 30,072. Extension Lamp Fixture.

(*Monture de Lampe.*)

Frank Rhind, and Edward Miller, Meriden, Conn., U.S., 30th October, 1888; 5 years.

Claim.—1st. In a hanging lamp fixture, the combination of a hanger adapted to be secured to the ceiling and so as to prevent its rotation, a frame hung to said hanger upon an axis and so as to rotate thereon, a spring-actuated drum arranged upon an axis in said frame, two or more chains wound upon said drum and running therefrom at opposite sides over supports in the frame, a lamp support below hung to the free ends of said chains, the said frame adapted to receive a rotative movement upon its axis from the lamp support through the chains, and mechanism, substantially such as described between the fixed hanger, the rotating frame and drum adapted to interlock the frame and drum, substantially as specified, and whereby under the rotation of the said frame in one direction imparted thereto from the lamp support below through the chains, the said drum and frame are disengaged to permit the rotation of the drum independent of the frame or by the rotation of the frame in the opposite direction, the frame and drum are interlocked. 2nd. In a hanging lamp fixture, the combination of a hanger adapted to be secured to the ceiling and so as to prevent its rotation, a frame hung to said hanger upon an axis and so as to rotate thereon, a spring-actuated drum arranged upon an axis in said frame, two or more chains wound upon said drum and running therefrom at opposite sides over supports in the frame, a lamp support below hung to the free ends of said chains, the said frame adapted to receive a rotative movement upon its axis from the lamp support through the chains, a dog between said frame and drum arranged to interlock the one with the other, and mechanism between the hanger and frame, substantially such as described, whereby under the rotation of the said frame imparted thereto from the lamp support below through the chains, the said dog is thrown out of its engaging position to permit the rotation of the drum independent of the frame. 3rd. In a hanging lamp fixture, the combination of the hanger adapted to be secured to the ceiling and so as to prevent its rotation, a frame pivoted upon said hanger and so as to rotate thereon, a spring-actuated drum arranged upon an axis in said frame, two or more chains wound upon said drum and running therefrom at opposite sides over supports in the frame, a lamp support below hung to the free ends of said chains, a dog hung to the frame and adapted to engage the said drum so as to prevent the reaction of the drum spring, a projection from said dog and a corresponding cam stationary upon said hanger with which cam the

said projection from the dog is adapted to engage under a rotation of the said frame from the lamp support below, and so as to disengage the drum from the frame, substantially as described.

No. 30,073. Snow Plough.

(*Charrue à neige.*)

David B. Knight, Ricoburg, Que., 30th October, 1888, 5 years.

Claim.—1st The combination of the sled *A* pivoted arms *d* and mould boards *e* attached thereto, links *m* and adjustable levers *k*, the whole substantially as set forth. 2nd. The combination of the sled A, pivoted arms *d*, mould-boards *e* attached to said arms, blocks *o*, plates *h*, stanchions *i*, levers *k*, connecting rods *m*, and pins *n*, the whole substantially as described.

No. 30,074. Hook for Fastening Ropes.

(*Crochet pour attacher les cordes.*)

Walter A. Perry, New Bedford, Mass., U. S., 30th October, 1888; 5 years.

Claim.—1st. As a new article of manufacture, a rope fastener consisting of a shank terminating at rear in a base, and provided at the sides with cleats *d*, *d1*, and at the top with a hook, a forwardly projecting member *c* being arranged between the forward ends of the cleats, substantially as described. 2nd. As a new article of manufacture, a rope fastener consisting of a shank terminating at rear in a base, and forward in a projecting member c, cleats *d*, *d1* arranged on each side of the shank to leave wedge-shaped openings *e*, *f*, *g* and *h*, and a hook rising from the upper side of the shank, the inner facings of the openings and lower bend of the hook being corrugated or roughened.

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

1236. J. A. McRAE, 2nd 5 years of No. 17,864, from the 11th day of October, 1888. Improvements in Seamless Upper Boots and Shoes, 4th October, 1888.

1237. W. RENNIE, 2nd 5 years of No. 17,861, from the 10th day of October, 1888. Improvements on Ditching Machines, 5th October, 1888.

1238. F. CROMPTON, (assignee), 2nd 5 years of No. 17,835, from the 9th day of October, 1888. Improvements on Apparatus for forming and shaping Corsets, 9th October, 1888.

1239. F. CROMPTON, (assignee), 2nd 5 years of No. 17,836, from the 9th day of October, 1888. Improvements on Apparatus for Shaping Corsets, 9th October, 1888.

1240. J. MASSIE, 2nd 5 years of No. 17,850, from the 10th day of October, 1888. Improvements on Machines for making Barrels, 9th October, 1888.

1241. L. P. BRUNEAU, 2nd 5 years of No. 18,314, from the 15th day of December, 1888. Improvement in the Attachment of Horses to Vehicles, 9th October, 1888.

1242. A. HARRIS, SON & CO., (Re-issue of Patent No. 17,849), 2nd 5 years of No. 22,095, from the 10th day of October, 1888. Improvements on Self-Binding Harvesters, 9th October, 1888.

1243. A. HARRIS, SON & CO., 2nd 5 years of No. 17,898, from the 16th day of October, 1888. Improvements on Harvester Binders, 9th October, 1888.

1244. H. COLLARD, 3rd 5 years of No. 9,241, from the 14th day of October, 1888. Improvements on Wrought Iron Fences, Gates, Railing and Cresting, 9th October, 1888.

1245. W. DUNN, D. B. RUFFNER AND G. S. BOLTON, 2nd 5 years of No. 17,939, from the 23rd day of October, 1888. Improvements on Nut Fasteners, 9th October, 1888.

1246. G. VALIANT, 2nd 5 years of No. 17,882, from the 15th day of October, 1888. Improvements on Seams for Fine Boots, 11th October, 1888.

1247. G. VALIANT, (Re-issue of Patent No. 17,896), 2nd 5 years of No. 23,306, from the 16th day of October, 1888. Improvements in Boots, 11th October, 1888.

1248. THE J. B. ARMSTRONG MANUFACTURING COMPANY, AND THE GUELPH CARRIAGE GOODS COMPANY, (assignees), 3rd 5 years of No. 9,302, from the 30th day of October, 1888. Improvements on Carriage Tops, 12th October, 1888.

1249. R. WOOD, 2nd 5 years of No. 17,888, from the 15th day of October, 1888. Improvements on Splints for the forearm adapted to the Palmer Aspect of the hand and Forearm, 13th October, 1888.

1250. I. M. VAN STONE AND F. CROMPTON, 2nd 5 years of No 18,316, from the 15th day of December, 1888. Improvements in Corsets, 13th October, 1888.

1251. T. AHEARN, 2nd 5 years of No. 18,042, from the 10th day of November, 1888. Improvements in Watchmen's Detectors, 13th October, 1888.

1252. THE EXCELSIOR NEEDLE COMPANY, assignee, 2nd and 3rd 5 years of No. 18,175, from the 24th day of November, 1888. Improvements on Machines for Swaging Needle Blanks, etc., 13th October, 1888.

1253. W. H. RODDEN, 2nd 5 years of No 17,883, from the 15th day of October, 1888. Improvements on Wire Fencing, 15th October, 1888.

1254. THE BALL ELECTRIC LIGHT COMPANY, (assignee), 2nd 5 years of No. 18,020, from the 3rd day of November, 1888. Improvements on Dynamo-Electric Machines, 19th October, 1888.

1255. E. W. VANDUZEN, 2nd 5 years of No. 17,959, from the 24th day of October, 1888. Improvements on Steam Water Elevators, 19th October, 1888.

1256. G. CALCOTT, 3rd 5 years of No. 9316, from the 5th day of November, 1888. Improvements on Extension Scaffolds, 19th October, 1888.

1257. T. A. EDISON, 3rd 5 years of No. 9,282, from the 19th day of October, 1888. Improvements on Means for Recording Sounds and in Reproducing such sounds from such Record, 19th October, 1888.

1258. J. R. HERSEY, 2nd 5 years of No. 17,945, from the 24th day of October, 1888. Improvements in Rolling Mills, 22nd October, 1888.

1259. J. T. DUNHAM, 2nd 5 years of No. 18,116, from the 17th day of November, 1888. Improvements on Combined Tags and Envelopes, 22nd October, 1888.

1260. THE INTERNATIONAL TERRA COTTA LUMBER COMPANY, (assignee), 2nd 5 years of No. 20,619, from the 25th day of November, 1889 Improvements on Combined Fire Proof Elevators and Ventilating Shafts, 24th October, 1888.

1261. D. KEARNEY, 2nd 5 years of No. 18,305, from the 15th day of December, 1888. Improvements in Stop Valves, 24th October, 1888.

1262. H. C. COLE, 2nd 5 years of No. 18,103, from the 17th day of November, 1888. Improvement in Malt Shovels, 24th October, 1888.

1263. H. C. COLE, 2nd 5 years of No. 17,969, from the 25th day of October, 1888. Improvements in Snow Shovels, 24th October, 1888.

1264. JAMES LOGAN, 2nd 5 years of No. 18,017, from the 2nd day of November, 1888. Improvements on Artificial Stone, Grave Vaults, 27th October, 1888.

1265. A. M. RUSLAND, 2nd 5 years of No. 18,073, from the 14th day of November, 1888. Improvements in Eave Gutter Forming Machines, 30th October, 1888.

OCTOBER LIST OF TRADE MARKS.

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3271. V'VE. THEOPHILE ROEDERER ET CIE., de Reims, France. Vins de Champagne, 1 Octobre, 1888.

3272. V'VE. THEOPHILE ROEDERER ET CIE., de Reims, France. Vins de Champagne, 1 Octobre, 1888.

3273. TASSE, WOOD & COMPANY, of Montreal, Que. Cigars, 2nd October, 1888.

3274. *JOSEPH PICKERING & SONS, of Albyn Works, Burton Road, Sheffield, Yorkshire,* England. Polishing Compounds of all descriptions, Harness Blacking, Razor Paste, Plate Powder, Knife Powder, and general Household Preparations, 9th October, 1888.

3275. BUSBRIDGE & CO., of East Malling Mills, Kent, England. Paper, 9th October, 1888.

3276. BUSBRIDGE & CO., of East Malling Mills, Kent, England. Paper, 9th October, 1888.

3277. BUSBRIDGE & CO., of East Malling Mills, Kent, England. Paper, 9th October, 1888.

3278. GOODALL, BACKHOUSE & Co., of Leeds, Yorkshire, England. General Trade Mark, 9th October, 1888.

3279. GOODALL, BACKHOUSE & CO., of Leeds, Yorkshire, England. General Trade Mark, 9th October, 1888.

3280. J. S. FRY & SONS, of Union Street, Bristol, Gloucestershire, London, and Sydney, New South Wales. Chocolate, Cocoa and all Manufactures thereof, 9th October, 1888.

3281. R. LANG & SON, of Berlin, Co. of Waterloo, Ont. Harness, Belting, Sole, Upper and other descriptions of Tanned Leather, 11th October, 1888.

3282. CHASE & SANBORN, of Boston, Mass., U.S. Coffee and Coffee Compounds, 12th October, 1888.

3283. CHASE & SANBORN, of Boston, Mass., U.S. Coffee and Coffee Compounds, 12th October, 1888.

3284. WILLARD PARKER KING, of Truro, N.S. Proprietary Medicines, 12th October, 1888.

3285. REVERSIBLE COLLAR COMPANY, of Boston, Mass, U.S. Collars and Cuffs, 12th October, 1888.

3286. KINNEY TOBACCO COMPANY, of New York, U.S. Manufactured Tobacco, and particularly Smoking Tobacco, 17th October, 1888.

3287. KINNEY TOBACCO COMPANY, of New York, U.S. Manufactured Tobacco, and particularly Smoking Tobacco, 17th October, 1888.

3288. KINNEY TOBACCO COMPANY, of New York, U.S. Manufactured Tobacco, and particularly Smoking Tobacco, 17th October, 1888.

3289. JAMES FAIR, of Clinton, Co. of Huron, Ont. Flour, 17th October, 1888.

3290. ISAAC PITMAN & SONS, of Bath, England. Phonetic Shorthand Books, 19th October, 1888.

3291. D. RITCHIE & CO., of Montreal, Que. Cigarettes and Tobacco, 22nd October, 1888.

3292. J. P. BUSH MANUFACTURING COMPANY, of Chicago, Illinois, U.S Beef-juice in a Concentrated Form, used as a Nourishment in all cases of Debility, and especially adapted to Consumptive or Dyspeptic Patients, 24th October, 1888.

3293. T. C. CAMBRIDGE, of Montreal, Que. Salve, 25th October, 1888.

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4462. APRIL. (Chanson d'Avril) Paroles de Remy Belleau. English words by William Hardinge, Music by A. Goring Thomas. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 1st October, 1888.

4463. WE'LL KEEP THE OLD GREY MARE, JOHN. Song. Words by Clifton Bingham. Music by J. L. Molloy. The Anglo-Canadian Music Publishers' Association, (Ld.), London, England, 1st October, 1888.

4464. THE KINDERGARTEN DRAWING PRACTICE BOOK. Selby & Co., Toronto, Ont., 2nd October, 1888.

4465. MISS LOU. By Edward P. Roe. (book). The Rose Publishing Co., Toronto, Ont., 2nd October, 1888.

4466. THE DOMINION ILLUSTRATED. Volume I. Number 11.

4467. " " " " " 12.

4468. " " " " " 13. *(Publication).* *G. E. Desbarats & Son, Montreal,* Que., 3rd October, 1888.

4469. CHART OF ELOCUTIONARY DRILL. Thomas Blair Browning, Toronto, Ont., 3rd October, 1888.

4470. A STRANGE MESSAGE. By Dorn Russell. (book). William Bryce, Toronto, Ont., 4th October, 1888.

4471. LES URSULINES DES TROIS RIVIERES. Volume I. Les Ursulines des Trois Rivières, Que., 4 Octobre, 1888.

4472. ROBERTSON'S LANDMARKS OF TORONTO. Which is now being preliminarily published in separate articles in the "*Toronto Evening Telegram.*" (Temporary Copyright). John Ross Robertson, Toronto, Ont., 4th October, 1888.

4473. CANADIAN IDYLLS. By W. Kirby, (book). William Kirby, Niagara, Ont., 6th October, 1888.

4474. AMONG THE FOREST TREES, OR, HOW THE BUSHMAN FAMILY GOT THEIR HOMES. (book). The Rev. Joseph H. Hilts, Hamilton, Ont., 8th October, 1888.

4475. AMAZONEN-RITT. für Pianoforte, von Fritz Spindler. Sydney Ashdown, Toronto, Ont., 8th October, 1888.

4476. THE HAND BOOK OF CANADIAN DATES. By Fred. A. McCord. Dawson Bros, Montreal, Que., 9th October, 1888.

4477. VADE MECUM, OU ECRIN DE PRIERES. Offert à la jeunesse. Alphonse Audet, Ottawa, Ont., 9 Octobre, 1888.

4478. ATHLETIC LEAVES. A Literary Souvenir of the M.A.A.A. Fair. Montreal, September, 25th to the 28th, 1888. Samuel M. Baylis and William H. Whyte, Montreal, Que., 11th October, 1888.

4479. LE CATECHISME DES PROVINCES ECCLESIASTIQUES DE QUEBEC, MONTREAL, OTTAWA. La Corporation Archiepiscopale Catholique Romaine de Quebec, 12 Octobre, 1888.

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4481. HOW TO SAY THE ROSARY WITHOUT DISTRACTIONS, OR POINTS FOR MENTAL OCCUPATION WHILST RECITING THE VOCAL PRAYERS. James A. Sadlier, Montreal, Que., 15th October, 1888.

4482. REPORTS OF CASES DECIDED IN THE COURT OF APPEAL FOR ONTARIO, DURING PARTS OF THE YEARS 1887-1888. Reported under the authority of the Law Society of Upper Canada, Volume XIV. The Law Society of Upper Canada, Toronto, Ont., 15th October, 1888.

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4485. THE OLD WHERRY. Song. Words by Edmund Jackson. Music by A. H. Behrend. The Anglo-Canadian Music Publishers' Association, (L'd.), London, England, 19th October, 1888.

4486. AUSTRALIA AND HOMEWARD. By Rev. D. Vannorman Lucas. Daniel Vannorman Lucas, Toronto, Ont., 22nd October, 1888.

4487. YE OLDE TYME. Gavotte., op. 11, No. 1. By Clarence Lucas. Clarence Lucas, Toronto, Ont., 23rd October, 1888.

4488. BRIDAL MARCH. Op. 11, No. 2. By Clarence Lucas. Clarence Lucas, Toronto, Ont., 23rd October, 1888.

4489. A CRACK COUNTY. By Mrs Edward Kennard. (book). The National Publishing Co., Toronto, Ont., 24th October, 1888.

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4491. THE DOMINION ILLUSTRATED. Volume I., Number 14.

4492. " " " " " 15.

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4497. THE GARDEN OF PRAYER. Words by G. Clifton Bingham. Music by Vernon Rey. Sydney Ashdown, Toronto, Ont., 29th October, 1888.

4498. GRANNIE'S RINGS. Song. Words by Arthur Chapman. Music by Theo. Bonheur. Sydney Ashdown, Toronto, Ont., 29th October, 1888.

4499 HON. EDWARD BLAKE'S MARCH By Byron C. Tapley. Byron C. Tapley, St. John, N.B., 29th October, 1888.

4500. THE DESERTED VILLAGE. By Oliver Goldsmith, with Life and Explanatory Notes. Dawson Bros., Montreal, Que., 29th October, 1888.

4501. TRANSLATIONS IN VERSE FROM HOMER AND VIRGIL. By J. M. Harper. Dawson Bros., Montreal, Que., 29th October, 1888.

4502. QUEER PEOPLE WITH WINGS AND STINGS AND THEIR KWEER KAPERS. (book). Palmer Cox, Granby, Co. of Shefford, Que., 30th October, 1888.

4503. QUEER PEOPLE WITH PAWS AND CLAWS AND THEIR KWEER KAPERS. (book). Palmer Cox, Granby, Co. of Shefford, Que., 30th October, 1888.

4504. QUEER PEOPLE SUCH AS GOBLINS, GIANTS, MERRY-MEN AND MONARCHS AND THEIR KWEER KAPERS. (book). Palmer Cox, Granby, Co. of Shefford, Que., 30th October, 1888.

4505. QUEER PEOPLE AND THEIR KWEER KAPERS. BIRDS THAT TALK. GIANTS THAT FLEE. BEASTS THAT THINK. INSECTS THAT FLIRT. SPRITES THAT DANCE. Palmer Cox, Granby, Co. of Shefford, Que., 30th October, 1888.

4506. MONSEIGNEUR L. N. BEGIN, prise en soutane. (photographie). Mark A. Montminy, Quebec, Que., 30 Octobre, 1888.

4507. MONSEIGNEUR L. N. BEGIN, prise en manteletta, (photographie). Mark A. Montminy, Quebec, Que., 30 Octobre, 1888.

4508. MONSEIGNEUR L. N. BEGIN, prise avec collerette, (photographie). Mark A. Montminy, Quebec, Que., 30 Octobre, 1888.

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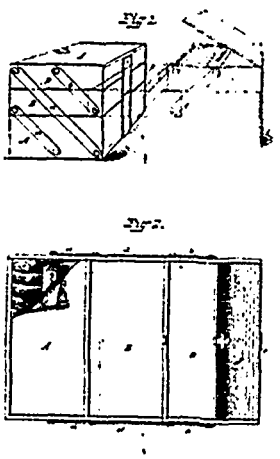
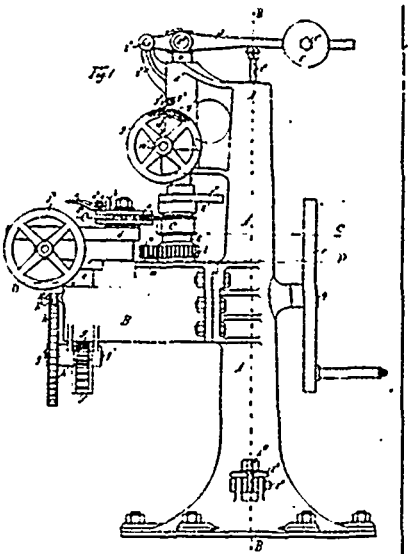
ILLUSTRATIONS.

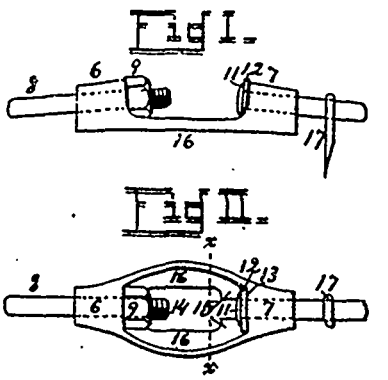
Vol. XVI. OCTOBER, 1888. No. 10.



29929 Cowles' Package for Containing and Displaying Merchandise.



29930 Ewers' Machine for Seaming Tin Boxes.



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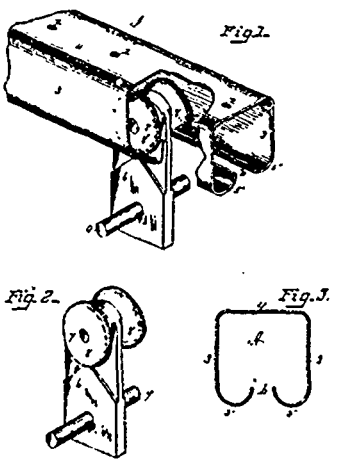

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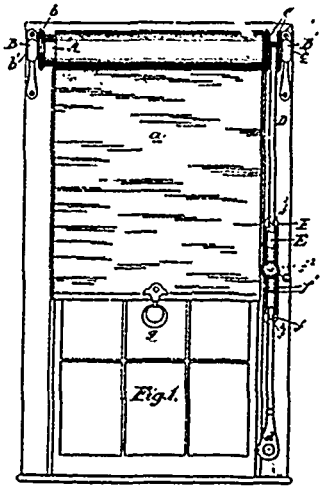

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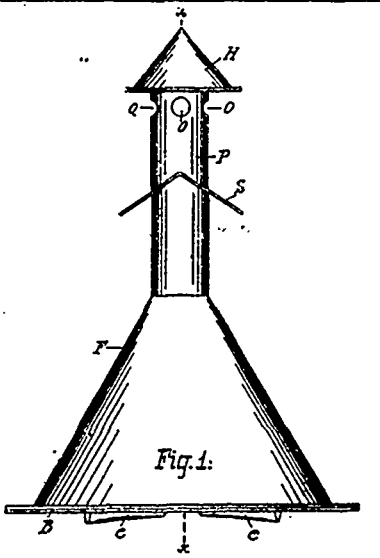
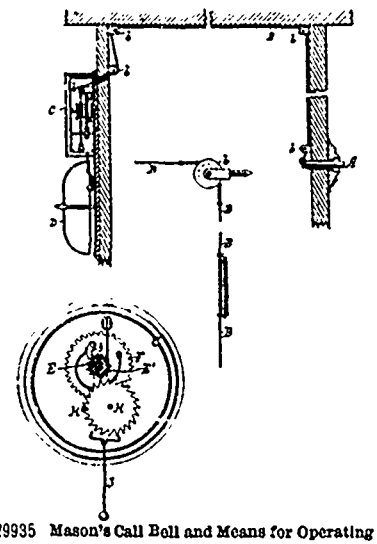
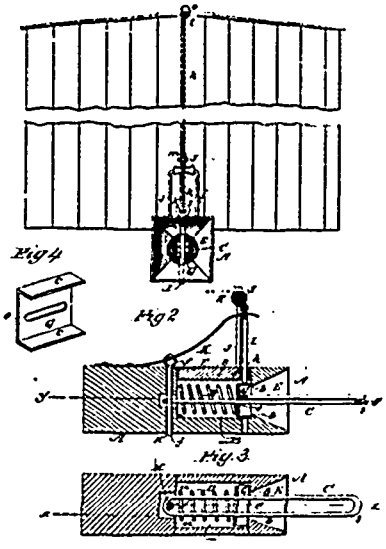


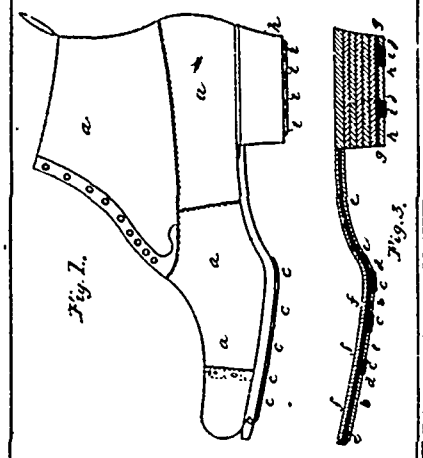
29964 Welsh's Ventilator.



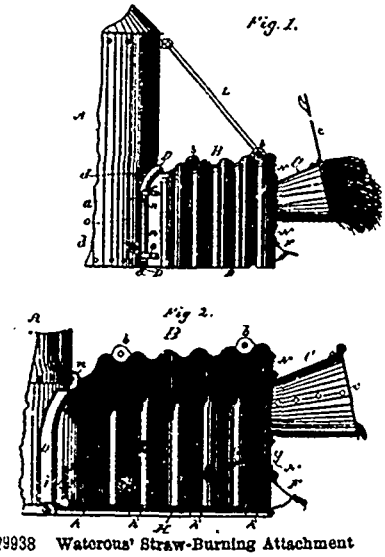
29935 Mason's Call Bell and Means for Operating Same.



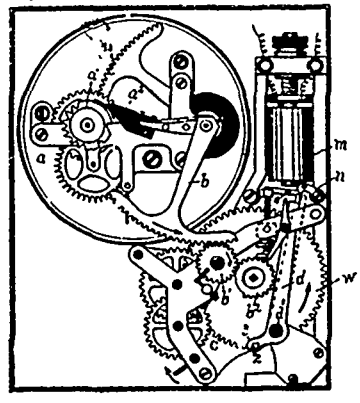
29936 Clarridge's Car Coupling.



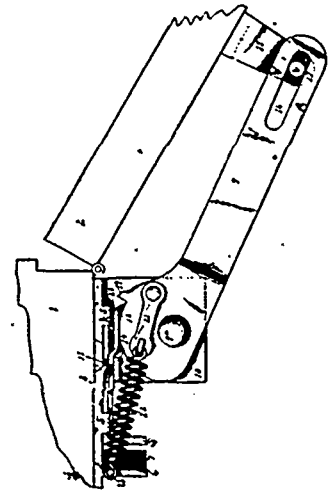
29937 Scafe's Manufacture of Boots and Shoes.



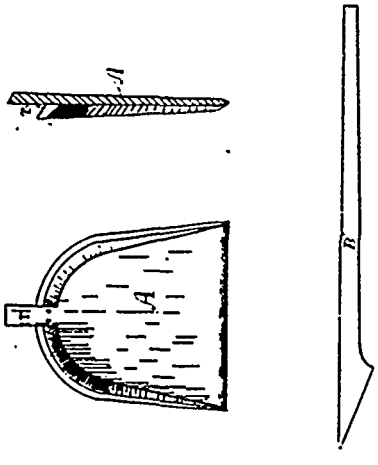
29938 Waterous' Straw-Burning Attachment for Boilers.



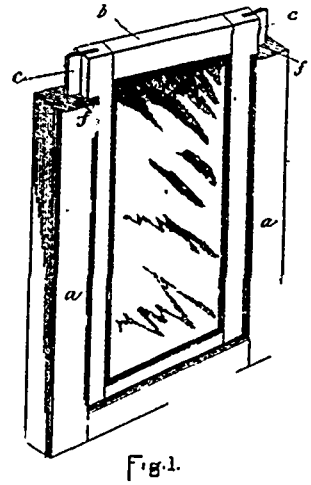
29939 Flanders' Fire Alarm Box.



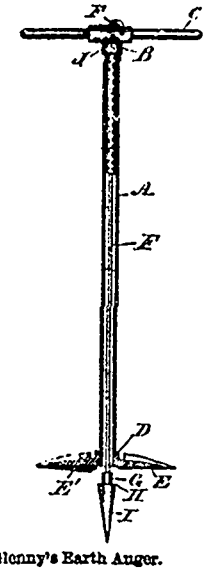
29940 Tobey's Door Check.



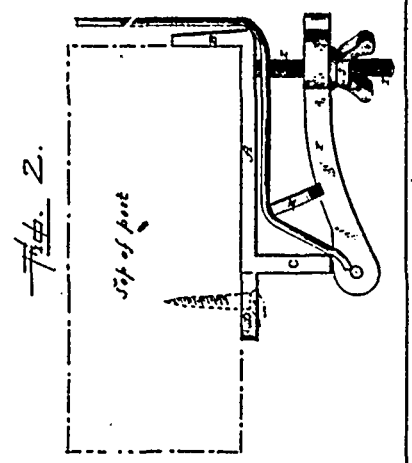
29941 Fillon's Wooden Shovel.



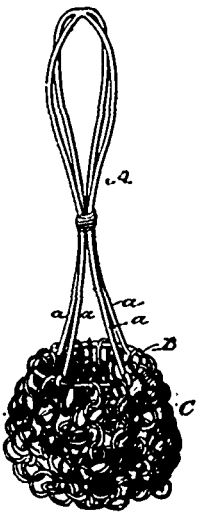
29942 Dawson's Car Window.



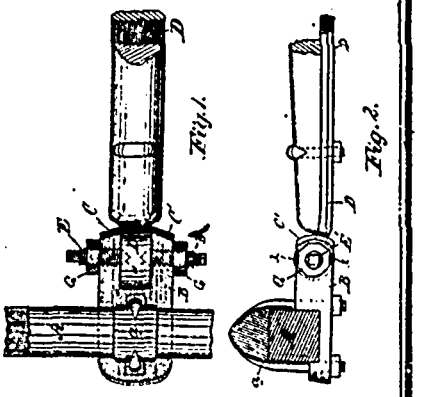
29943 Glenny's Earth Auger.



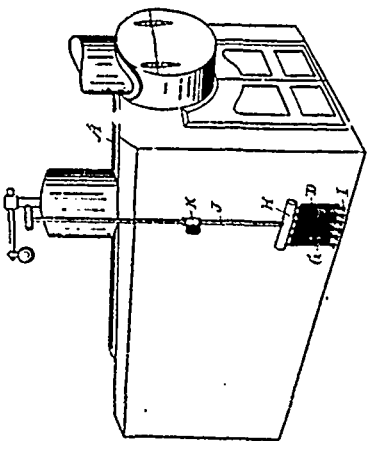
29944 Wintrode's Tension Device for Making Picket Fences.



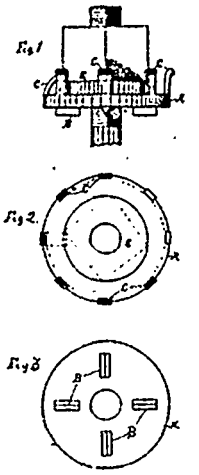
29945 Miller's Dish-Washer.



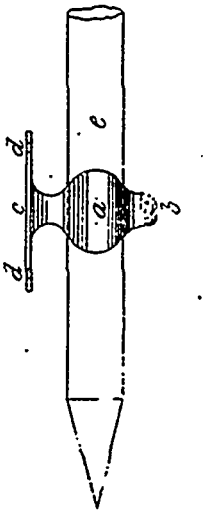
29946 Mirfield's Thill Coupling.



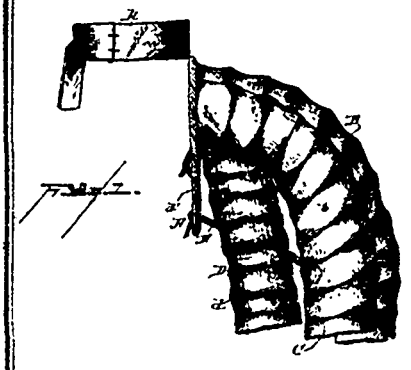
29947 Leadbeater's Air-Feeding Device.



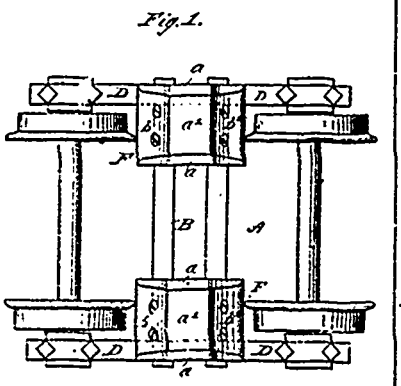
29948 Sleicher's Nut Lock.



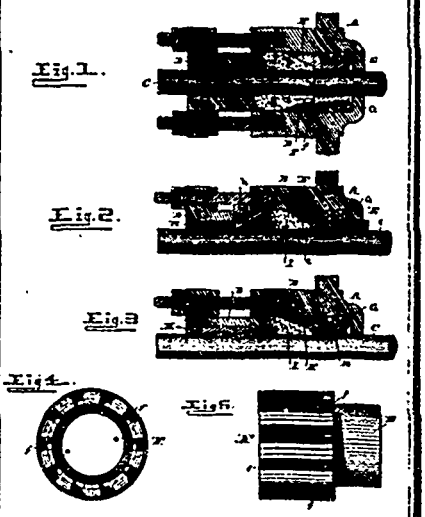
29949 Downes' Spring Clip Holder for a Pencil, Penholder or other Article.



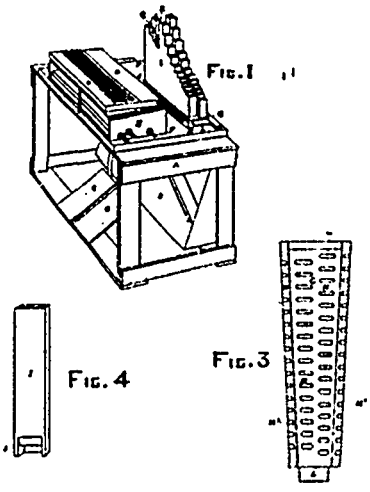
29950 Jackson's Bustle.



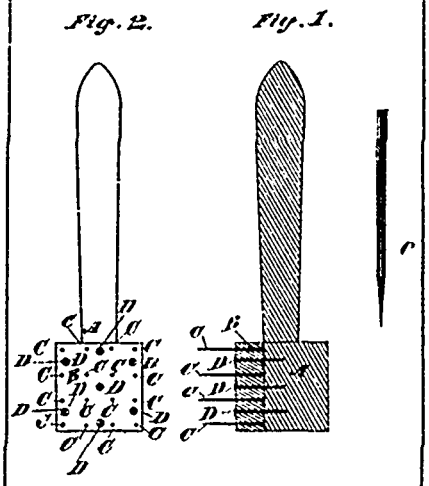
29951 Woodruff's Safety Shoe for Car Trucks.



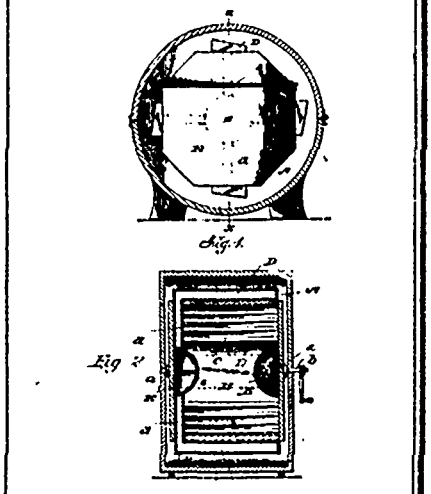
29952 Mill's Piston Rod Packing.



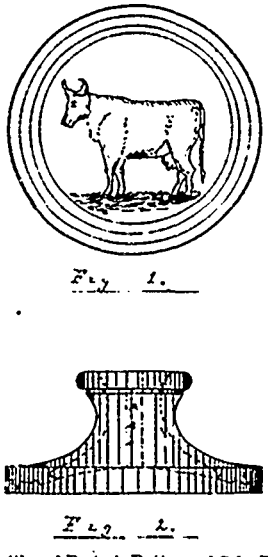
29953 Scribner's Reed Organ.



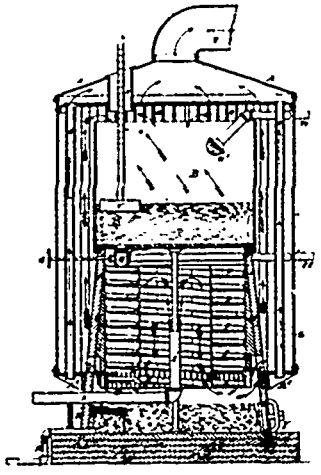
29954 McClure's Machine for Chipping Ice.



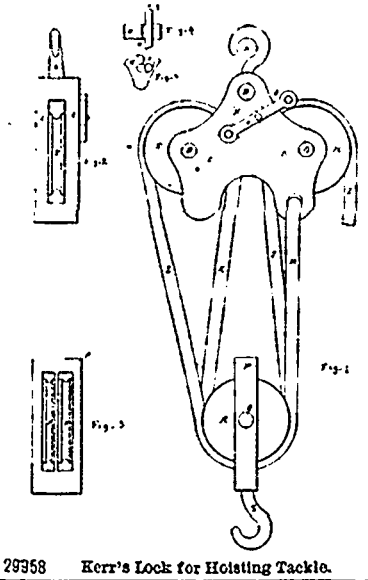
29955 Ducharme & Erard's Washing Machine.



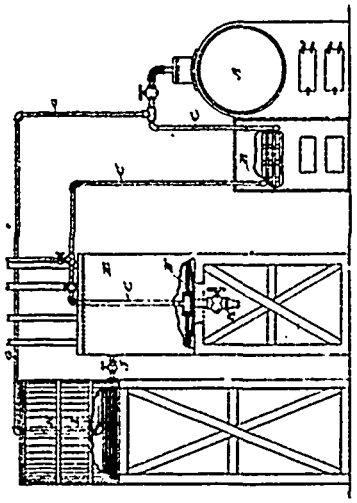
29956 Smith and Porter's Butter and Cake Print.



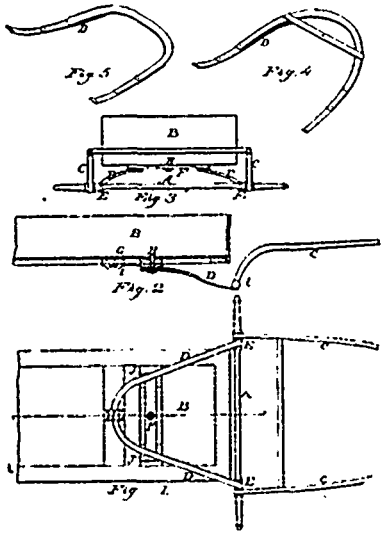
29957 Draper's Duplex Heater



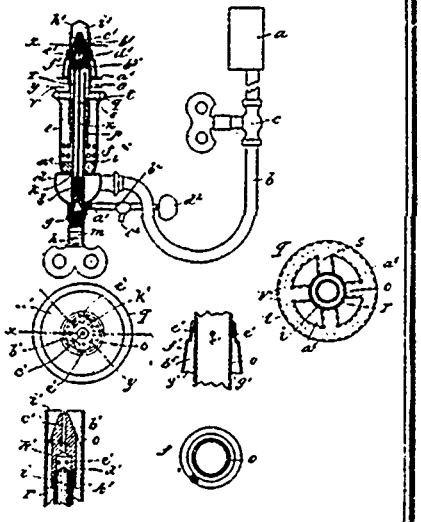
29958 Kerr's Lock for Hoisting Tackle.



29960 Sparrow's Process for Producing a Merchantable Article from the Refuse of the Petroleum used in the Production of Illuminating Gas.

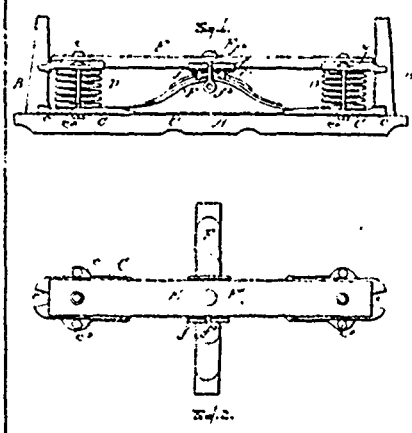


29961 Black's Vehicle Running Gear.

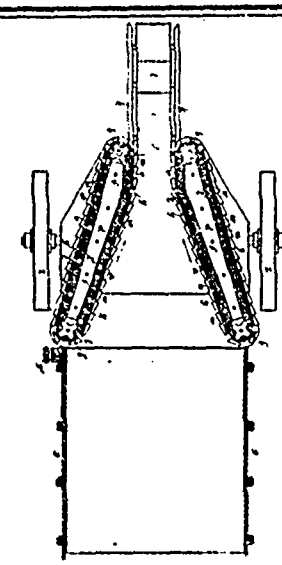


29962 Walsh's Lamp.

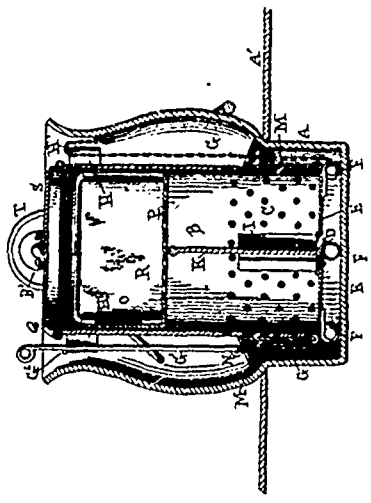
29963 St. Clair's Wearing Apparel.



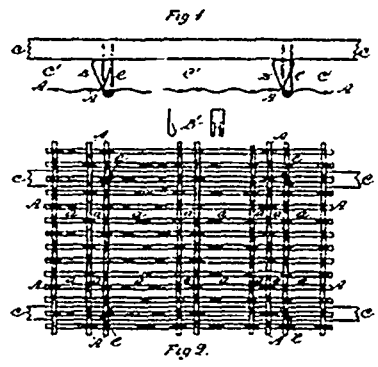
29964 Howard's Waggon Spring.



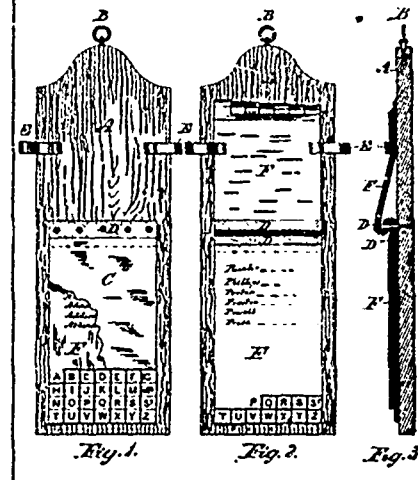
29965 Howard and Bonsfield's Baling Press.



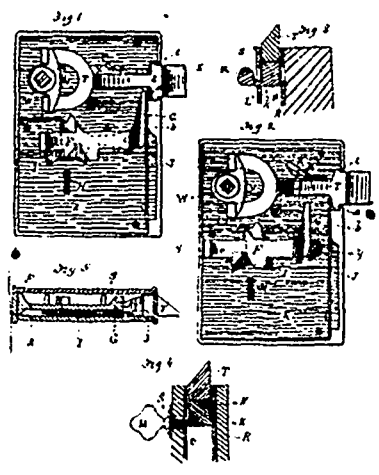
29966 Irwin's and Hardy's Cooking Vessel.



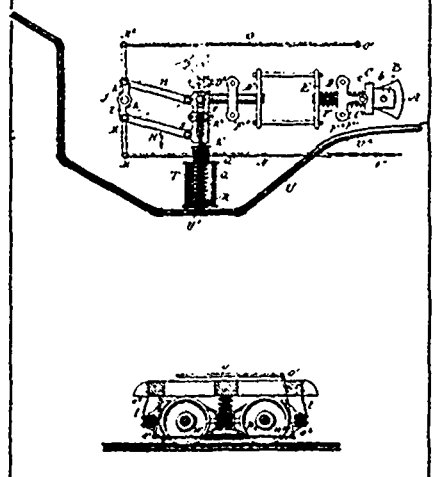
29967 Cockburn's Wire Lathing.



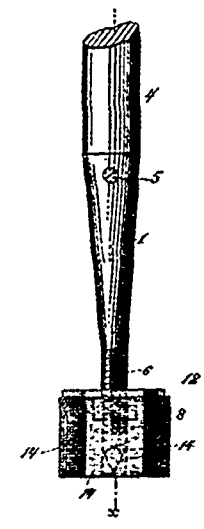
29968 O'Brien's Telephone Address Indexes and Advertising Devices.



29969 Martin's Combined Door Locks and Latches.



29970 Sterrett's Car Brake



29971 Donald's Crutch Attachment.

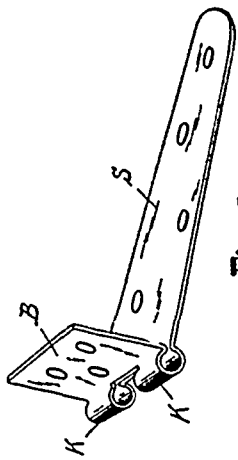
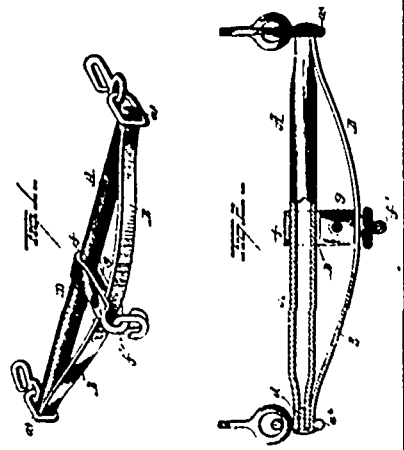
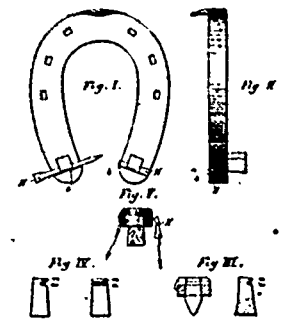


Fig. 2.

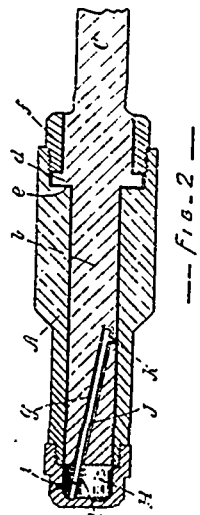
29972 Bourne's Hinge.



29973 Baltzly's Whiffletree.

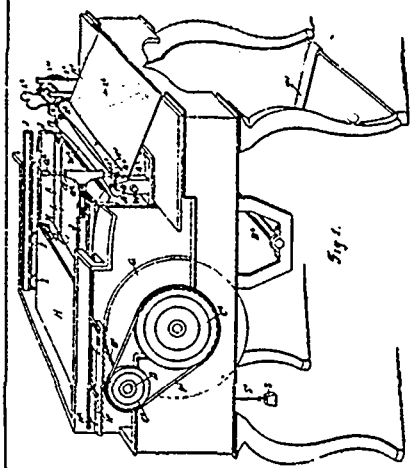


29974 Von Manstein's Horse Shoe Calkins.

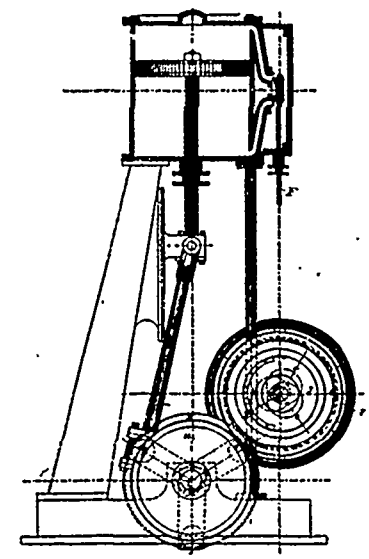


— Fig. 2 —

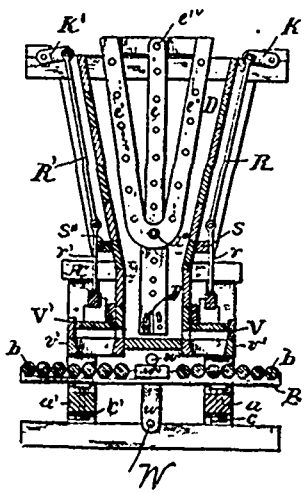
29975 Lebel's Carriage Axle.



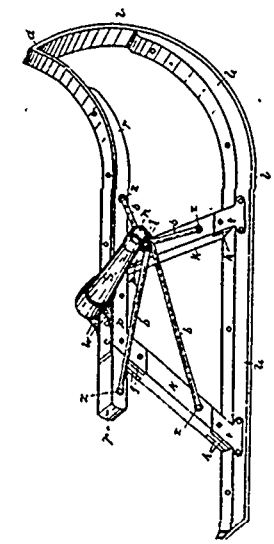
29976 Driefer's Machine for Making Cigars.



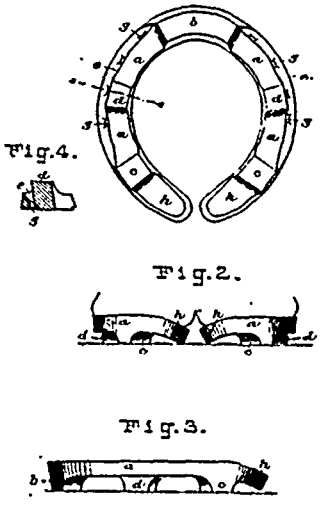
29977 Larochelle's Steam Engine.



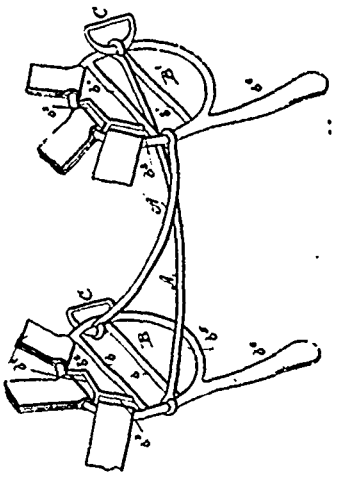
29978 Woodbury's Brick Machine.



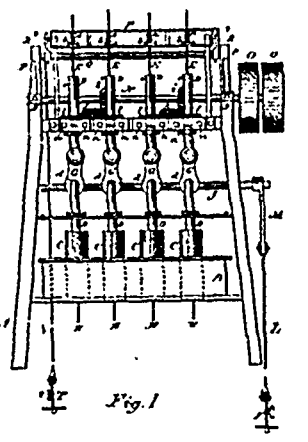
29980 Wyeth's Sleigh Runner Attachment for Wheeled Vehicles.



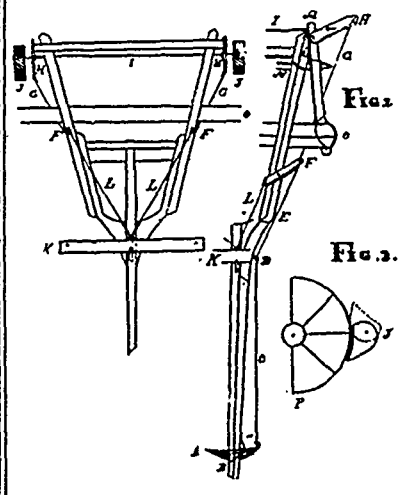
29981 Russell's Horse Shoe.



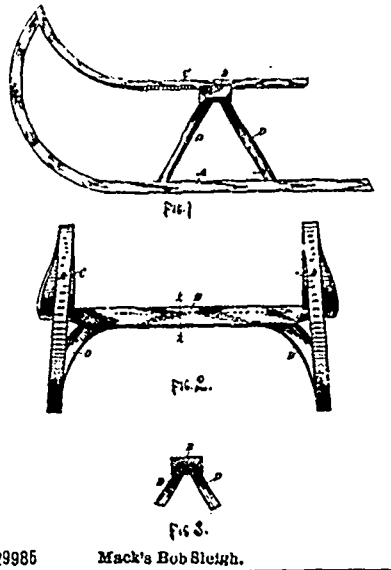
29982 Campbell's Bridle Bit.



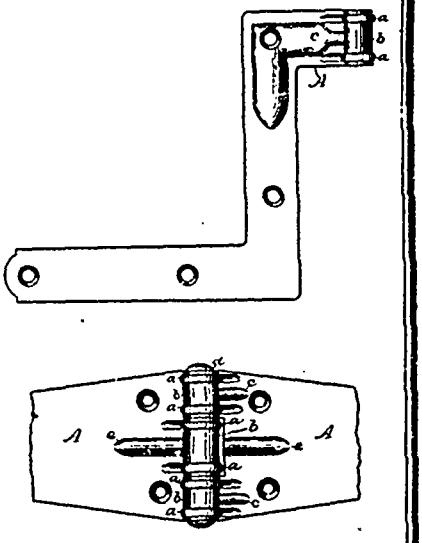
29983 DeCow and Carpenter's Machine for Soldering Caps on Fruit Cans.



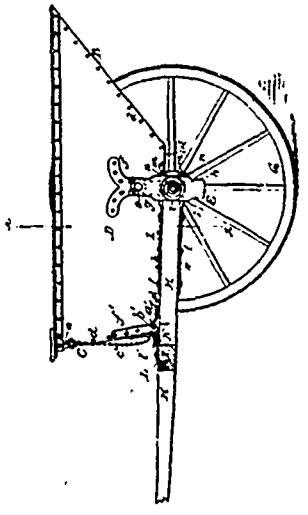
29984 Frazer's Automatic Waggon Brakes.



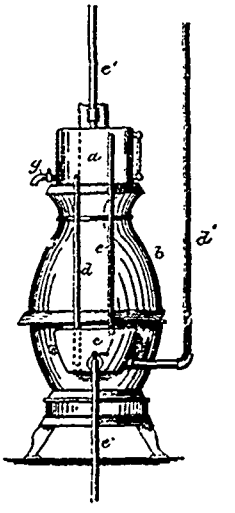
29985 Mack's Bob Sleigh.



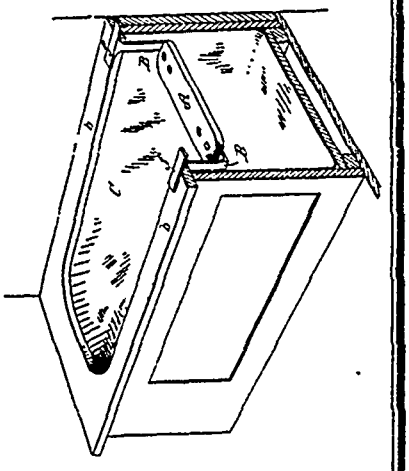
29986 Hart and Corscaden's Sheet Metal Hinge.



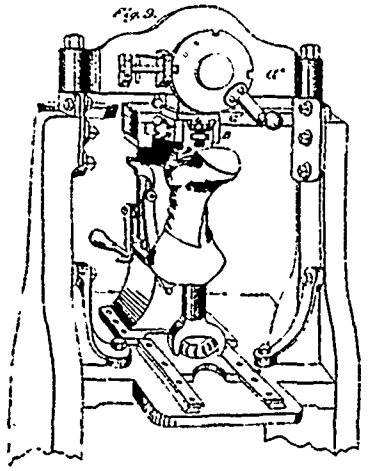
29987 Hill's Dumping Cart or Waggon.



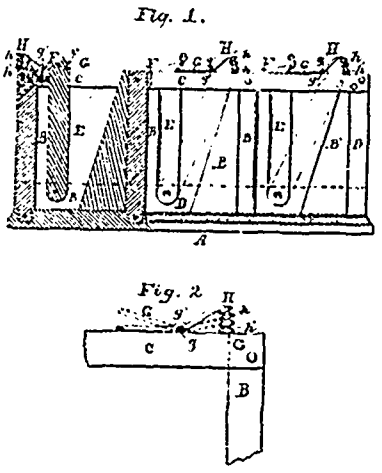
29988 Brewer's Hot Water Attachment for Stoves.



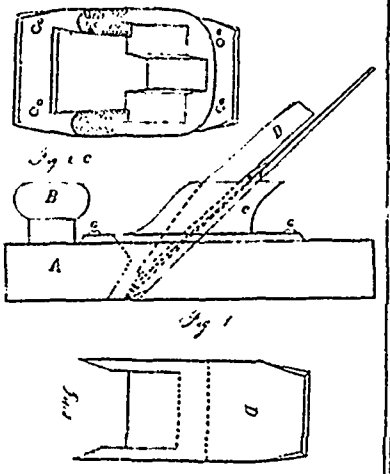
29989 Sloat's Seat for Bath Tubs.



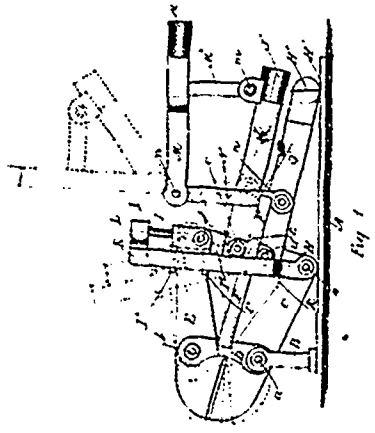
29990 McGonnegle and Twoodie's Breasting Attachment for Boot and Shoe Heeling Machines.



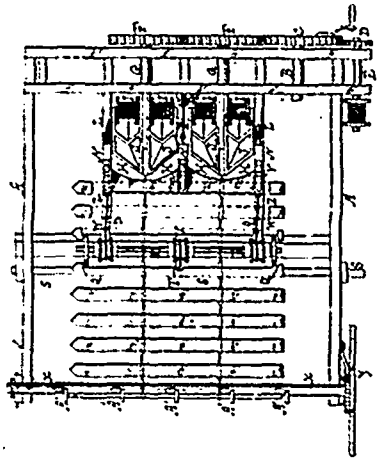
29991 Miner's Stanchion for Securing Cattle Within the Stable.



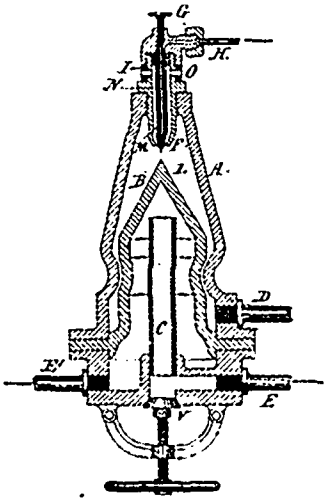
29992 Nicol's Bench Plane.



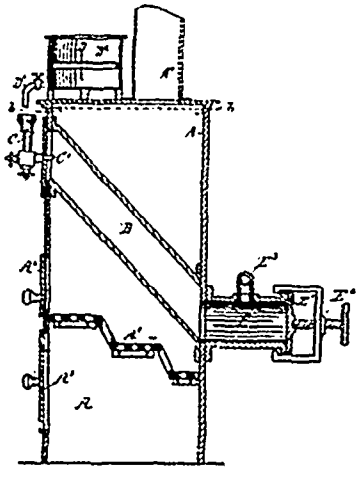
29993 Guertin's Punch and Shears.



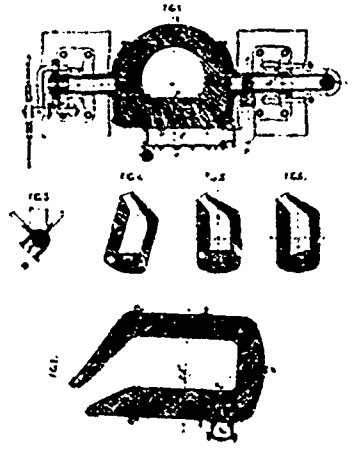
29994 Curtis' Machine for Making Picket Fences.



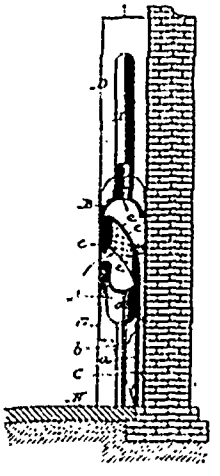
29995 Ramot's Apparatus for Supplying Combustible Fluid to Oil or Gas Motor Engines.



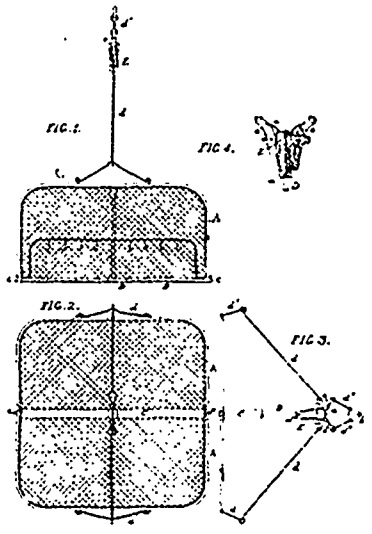
29996 Wren's Manufacture of Illuminating Gas.



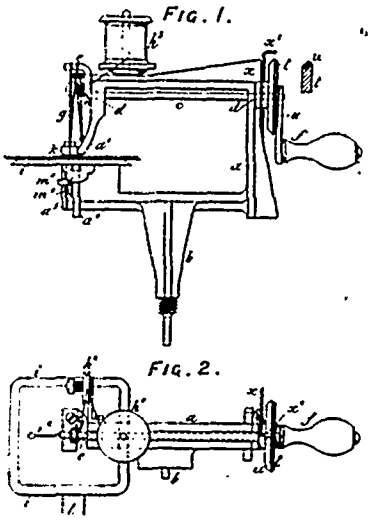
29997 Robert's Improvements on the Conversion of Crude or Pig Iron into Malleable Iron or Steel, and Apparatus therefor.



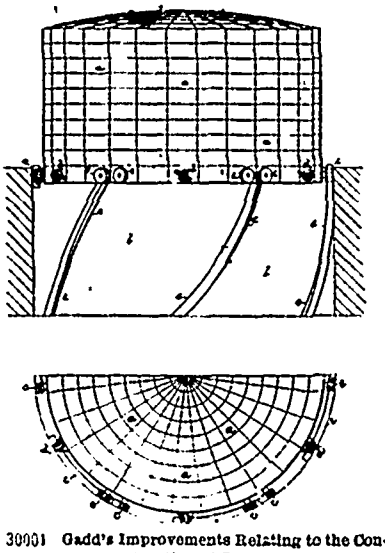
29998 Wills' Urinal.



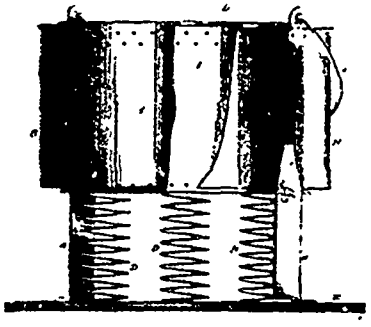
29999 Flick's Folding Lobster Trap



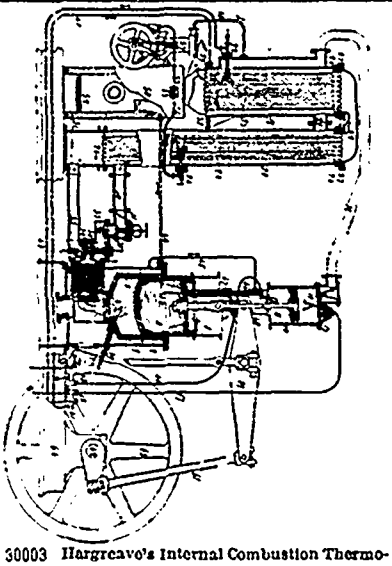
30000 Jackson & Martin's Lock Stitch Sewing Machine.



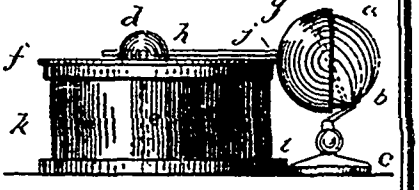
30001 Gadd's Improvements Relating to the Construction of Gas Holders.



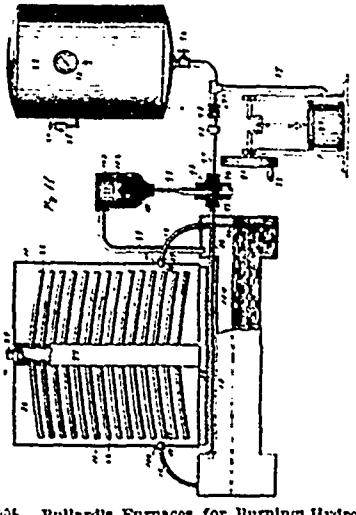
30002 Sloan's Vessel for Transporting Breakable Goods.



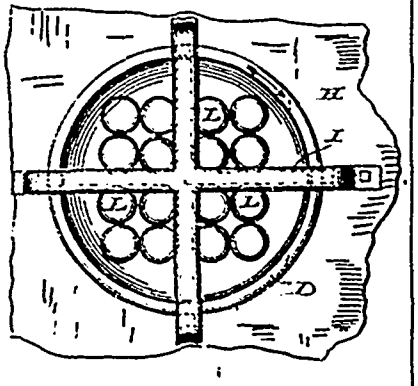
30003 Hargreave's Internal Combustion Thermo-Dynamic Motors.



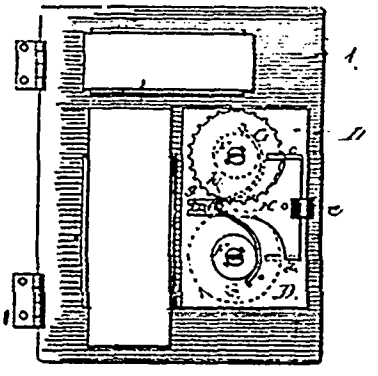
30004 Rugg's Astronomical Apparatus.



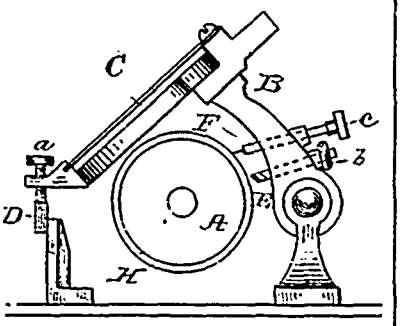
30005 Bullard's Furnaces for Burning Hydro-Carbon Fuel and Steam Generator Therefor.



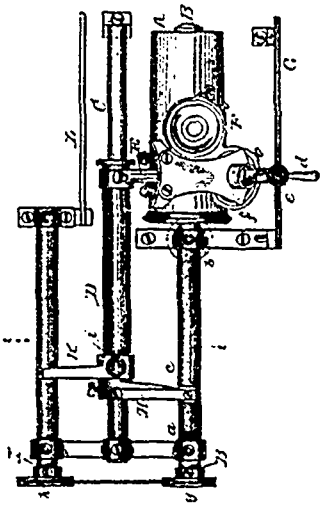
30006 Sherman's Triturator



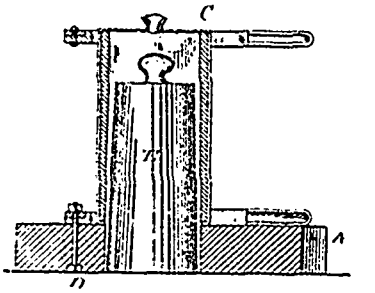
30007 J H & H Morris' Permutation Lock



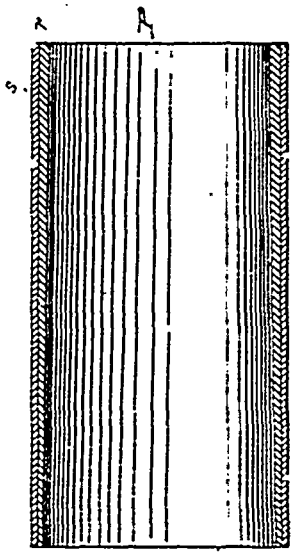
30008 Edison's Burnishing Attachment for Phonographs.



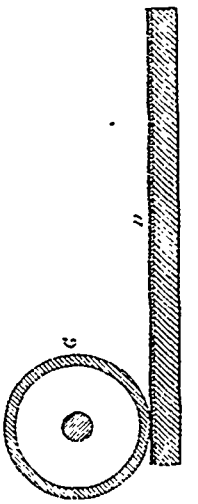
30009 Edison's Feed and Return Mechanism for Phonographs.



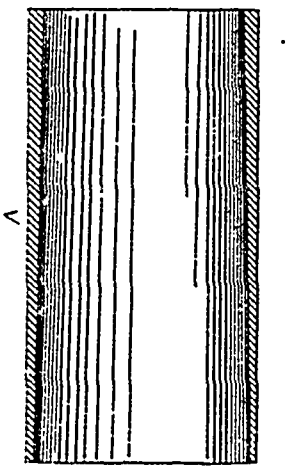
30010 Edison's Process of Making Phonogram Blanks.



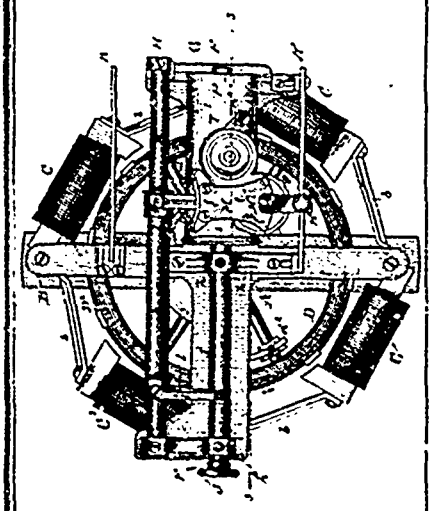
30011 Edison's Phonogram Blank.



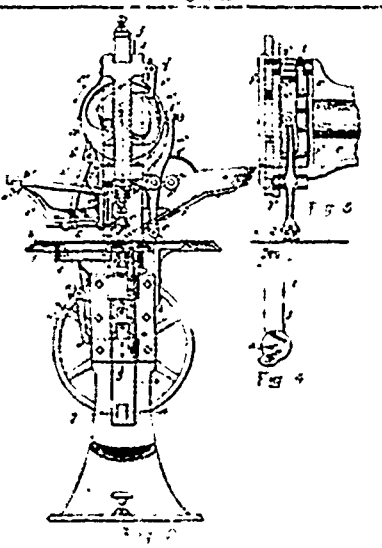
30012 Edison's Process of Duplicating Phonograms.



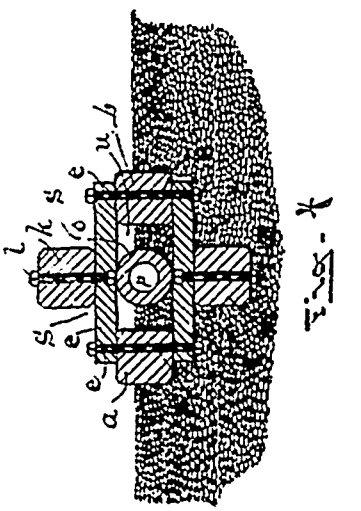
30013 Edison's Phonogram Blank.



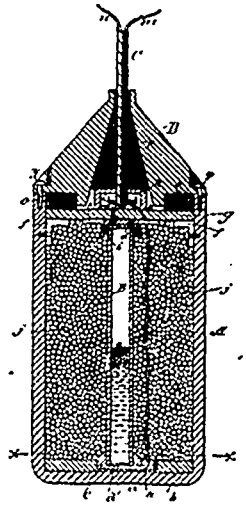
30014 Edison's Phonograph.



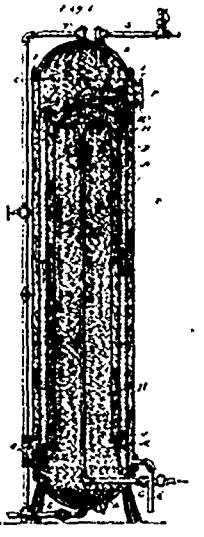
30015 Sarg, Seelye and Coy's Riveting Machine.



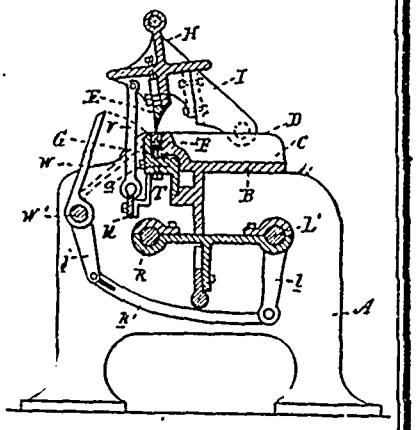
30016 Durell and Goldie's Room Stick.



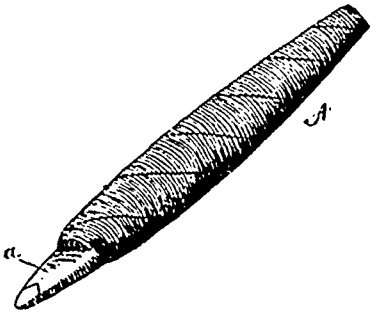
30017 Vigil and Revueltas' Shoal Water Indicator.



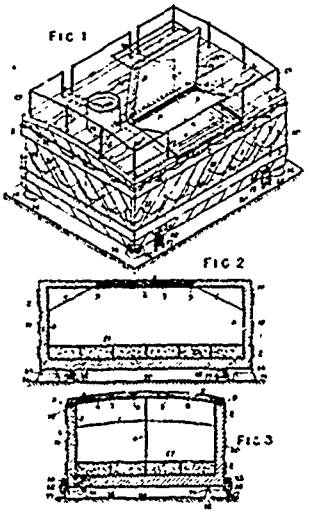
30018 Colles' Food Water Heater.



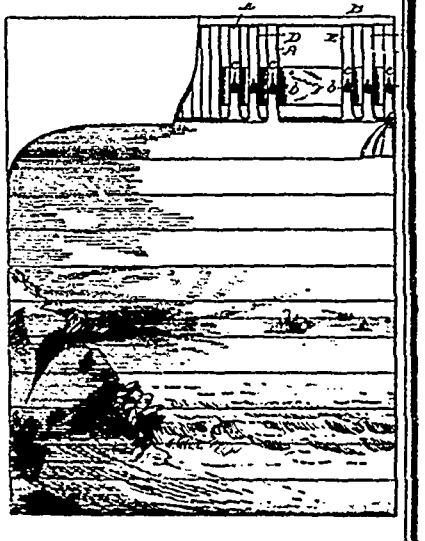
30019 Ward's Hoop Cutting Machine.



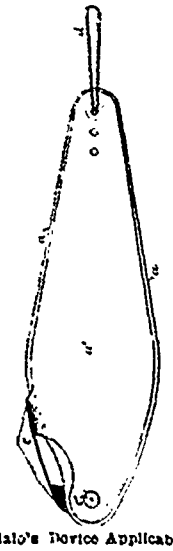
30020 Offordinger's Cigar.



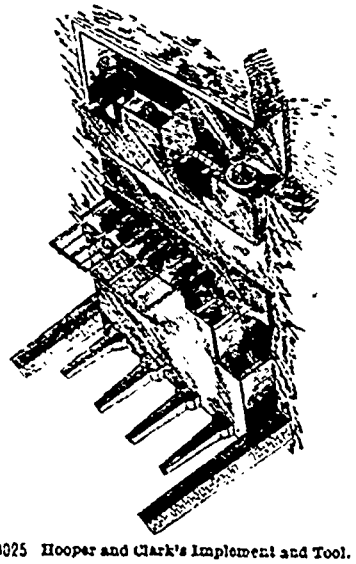
30022 Fuzzey's Means of Conveying Postal Matter, Bullion, Valuables and the like, at Sea.



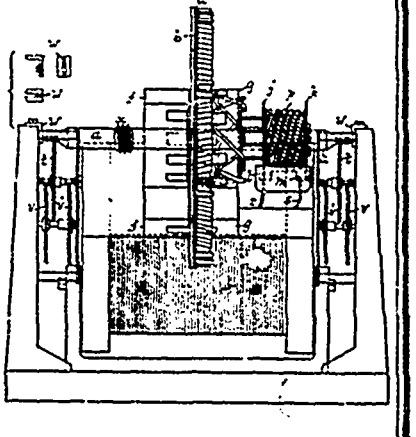
30023 Kilham's Theatrical Appliance.



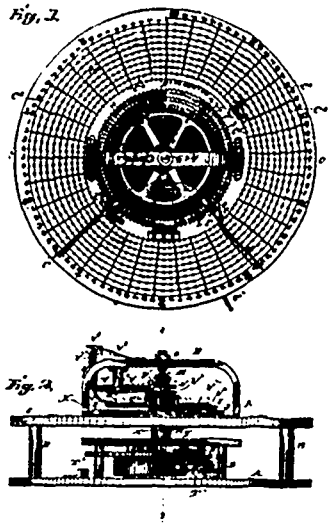
30024 Afialo's Device Applicable for use as Blotting Pads.



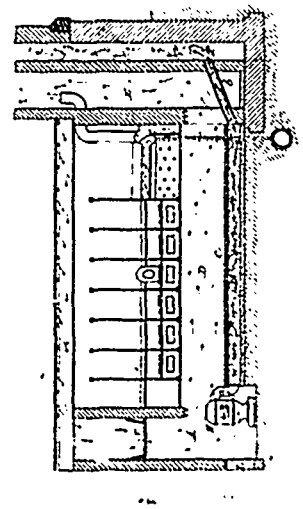
30025 Hooper and Clark's Implement and Tool.



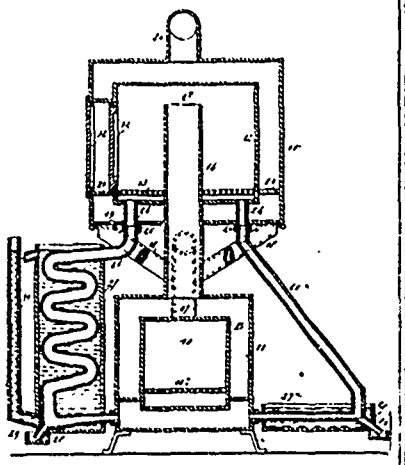
30027 Hookham's Electricity Meter, etc.



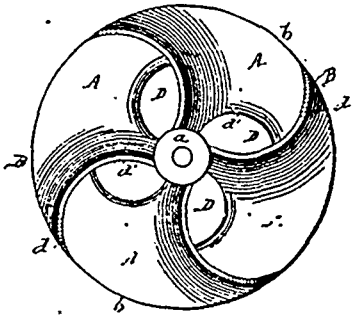
30028 Vest's Adding Machine.



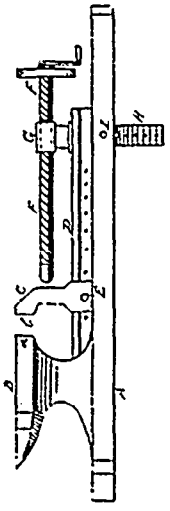
30029 Smead's Dry Closet.



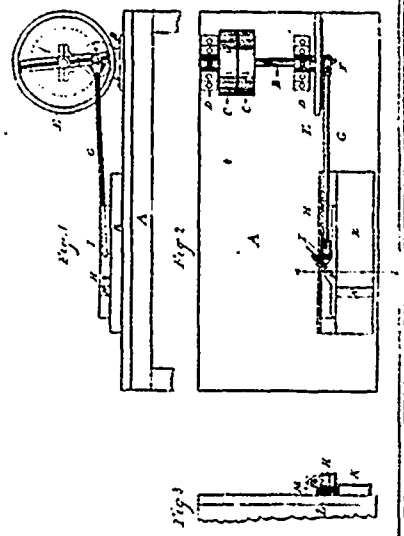
30030 Scherffius' Apparatus for Charcoal.



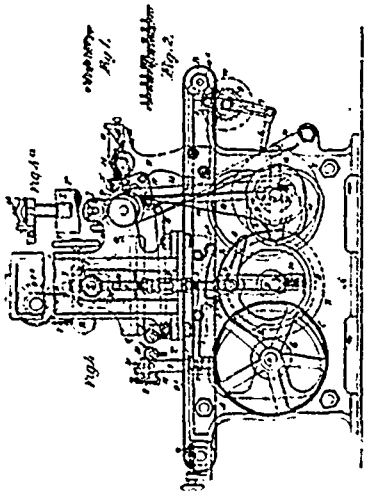
30031 Hodgeman's Propeller Wheel.



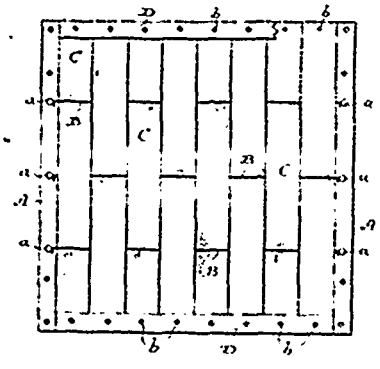
30032 Robbins' Combined Anvil, Vise and Drill.



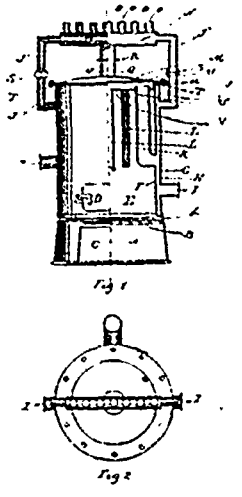
30033 Thomson's Engravers' Block.



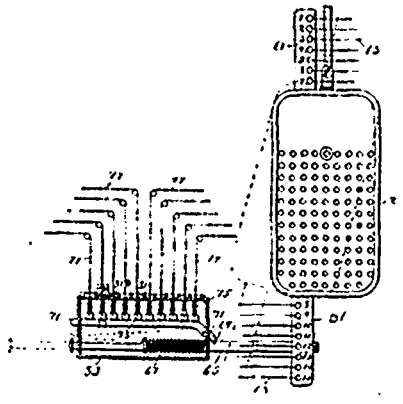
30034 Caudall's Imprinting Marks and Devices upon Folded Piece Goods, and Apparatus therefor.



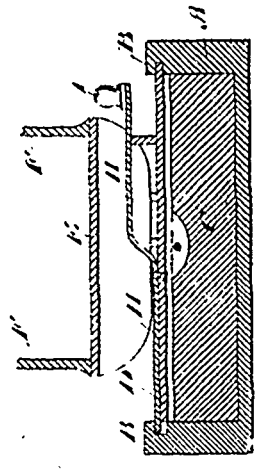
30035 Parks' Box or Crate.



30036 Vincent's Hot Water Furnace.



30037 Church's Fire Signal and Burglar Alarm.



30039 Bennitts' Sad Iron.

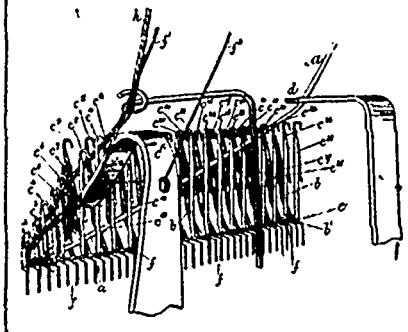
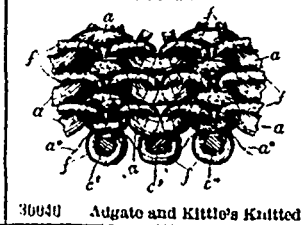
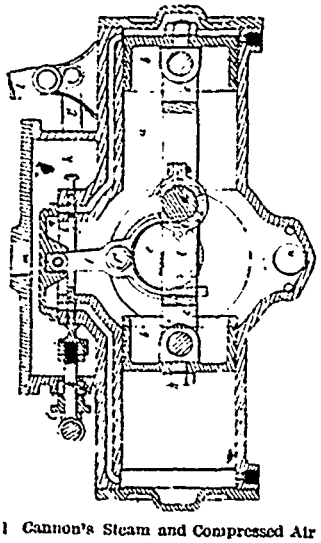


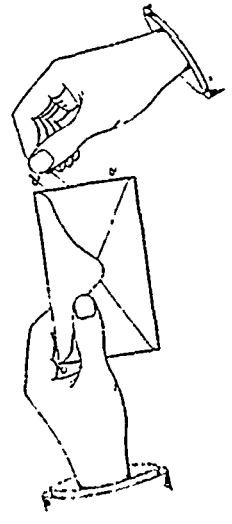
FIG 2.



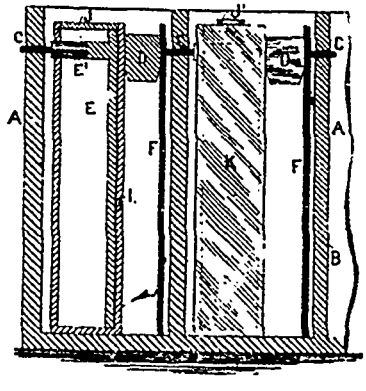
30040 Adgate and Kittle's Knitted Fabric.



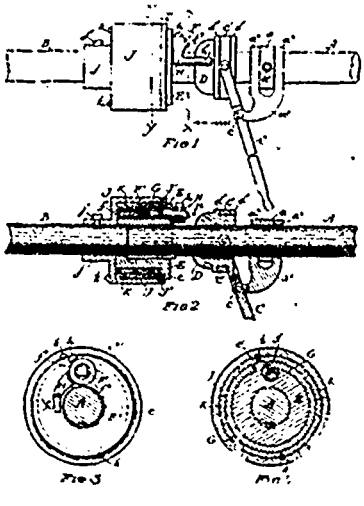
30041 Cannon's Steam and Compressed Air Engine.



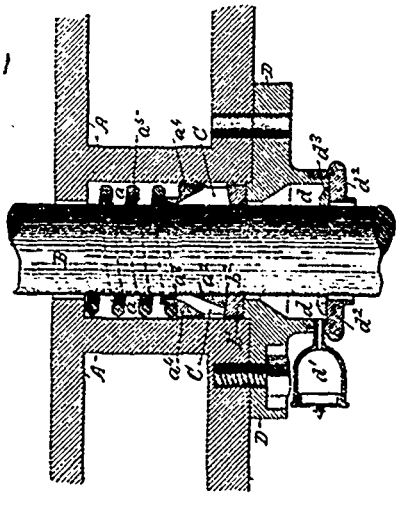
30042 Binns' Means for Facilitating the Severance of Paper, etc.



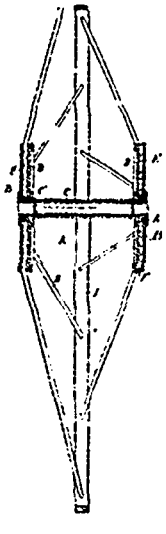
30043 Coad's Voltaic Battery.



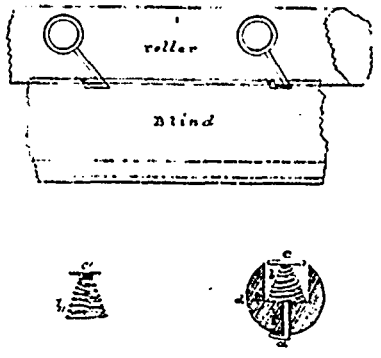
30044 Macdonald's Friction Clutch.



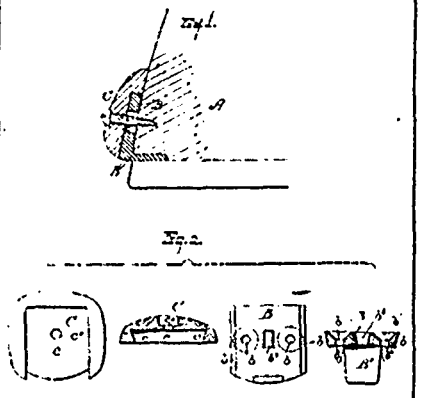
30045 Falk's Metallic Piston Rod Packing.



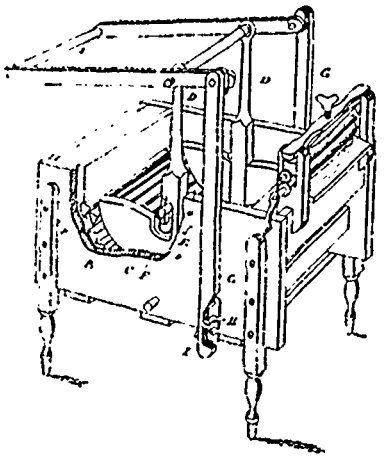
30046 Page's Metal Wheel.



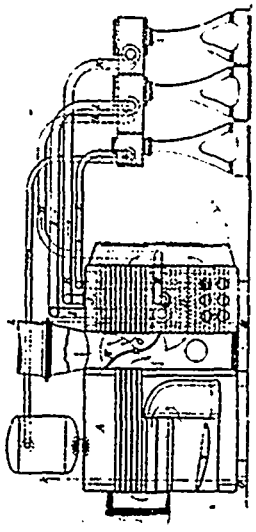
30047 Northcote's Securing Window Blinds to Rollers.



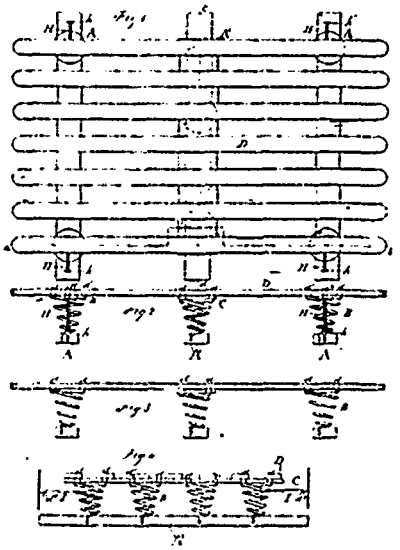
30048 Floyd's Toe Weight.



30049 Burke's Washing Machine.



30050 Young's Means of Generating and Superheating Steam.



30051 Grafton's Spring Bed Bottom

FIG. 1.

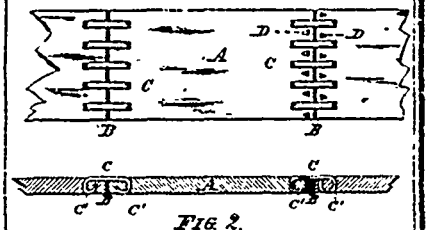


FIG. 2.

FIG. 3. FIG. 4. FIG. 5.

30052 Gingras' Bolt Fastener.

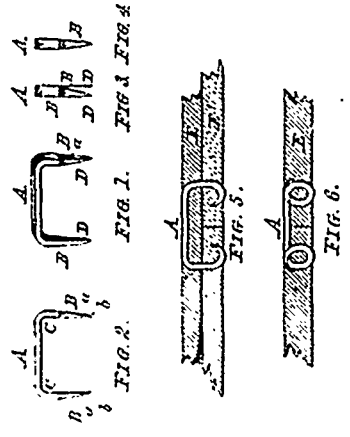


FIG. 1. FIG. 3. FIG. 4.
FIG. 2.
FIG. 5.
FIG. 6.

30053 Gingras' Bolt Fastener.

Fig. 1.

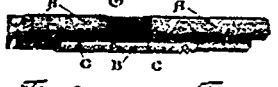


Fig. 2.

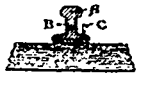


Fig. 3.

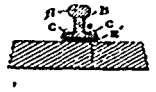


Fig. 4.

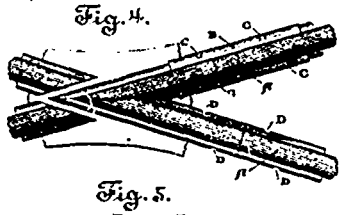
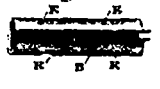
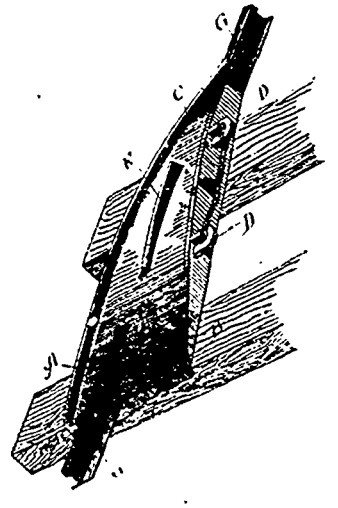


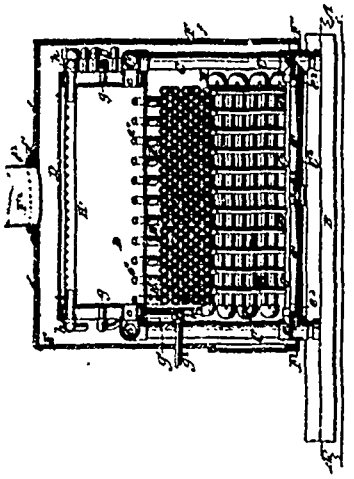
Fig. 5.



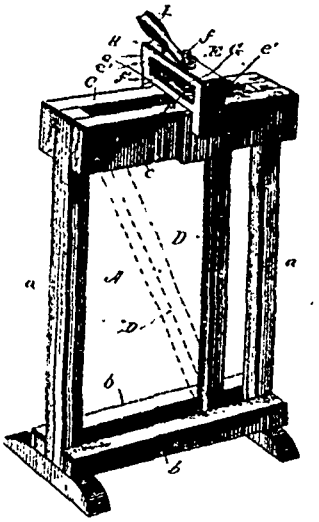
30054 Witt's Chair, Fish-Plate and Rail Coupler.



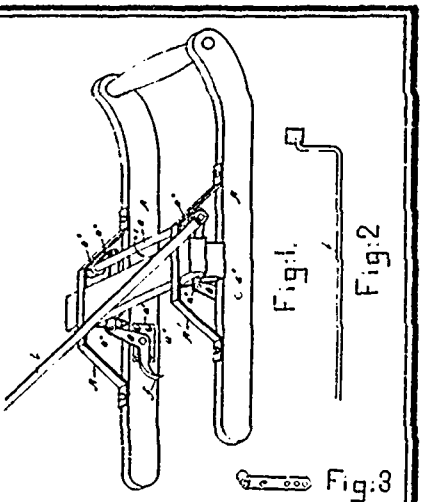
30055 Cooke's Portable Frog or Car Replacer



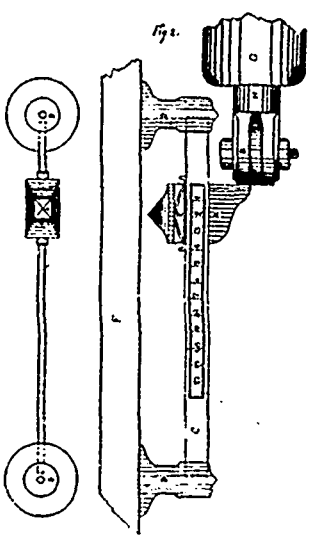
30056 Roberts' Steam Generator.



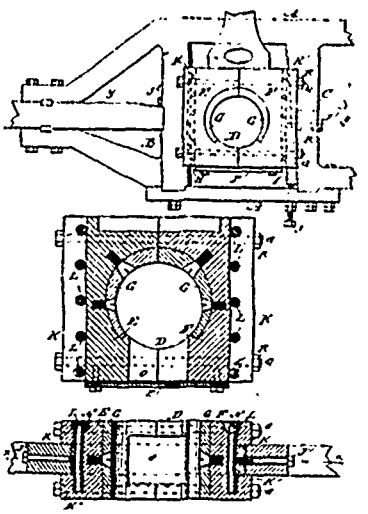
30057 Fairbrother's Cattle Stanchion.



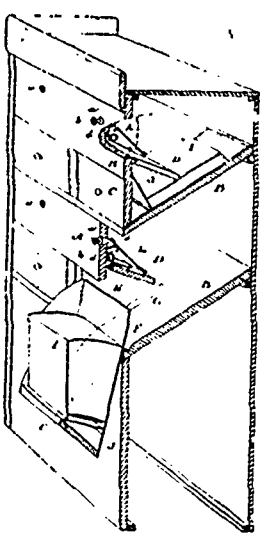
30058 Woodard's Sled Brake.



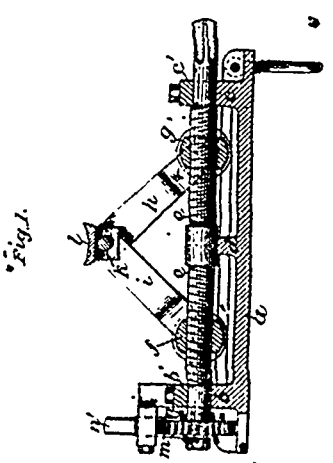
30059 Pott's Registering Gauges for Car Brakes.



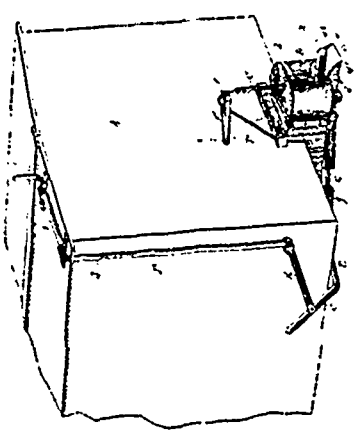
30060 DesBrisay's Axle Box



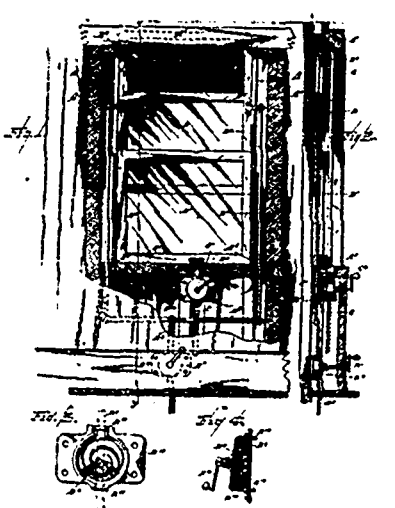
30061 Phillips' Letter and Document File.



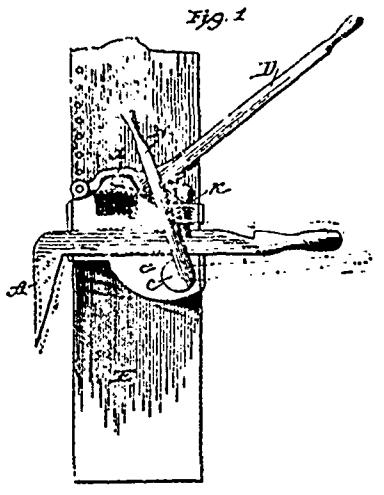
30062 Golightly's Lifting Machine for Railways.



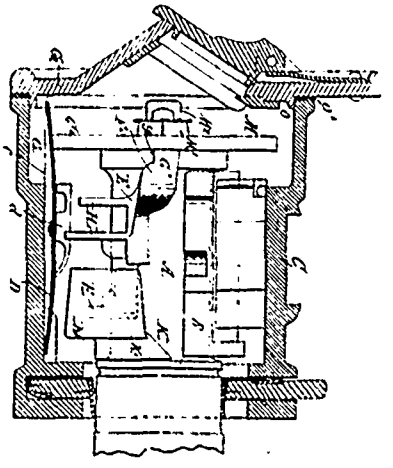
30063 Toler's Car Coupling.



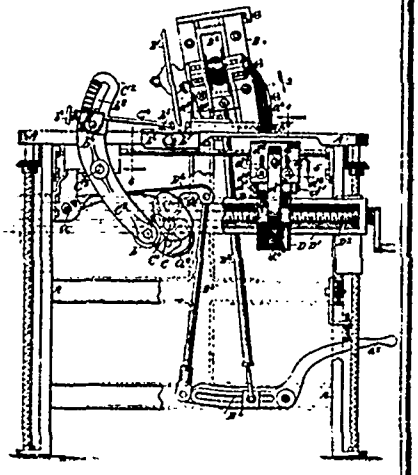
30064 Zettler's Window



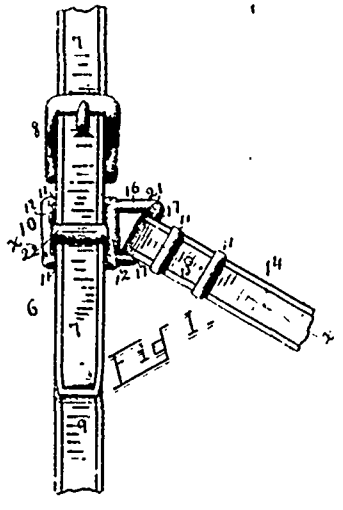
30065 Miner's Saw Mill Dog.



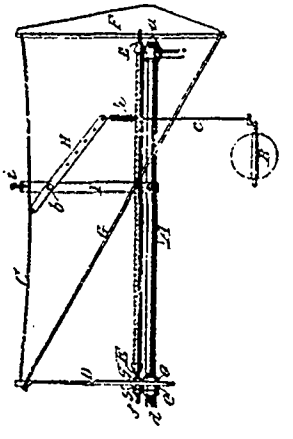
30066 Vessot's Car Axle Lubricating Apparatus.



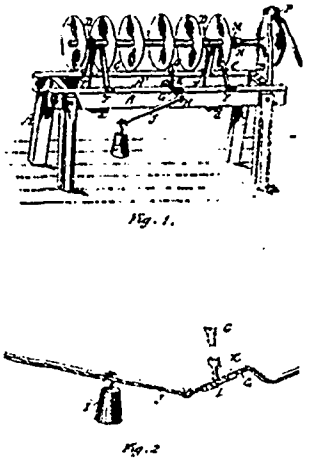
30067 Covel's Saw Sharpening Machine.



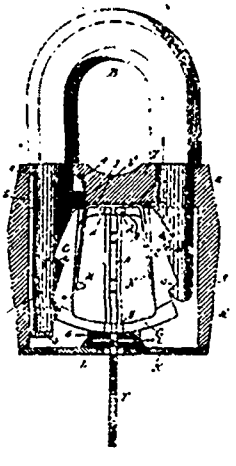
30068 Latham's Metallic Strap Fastener.



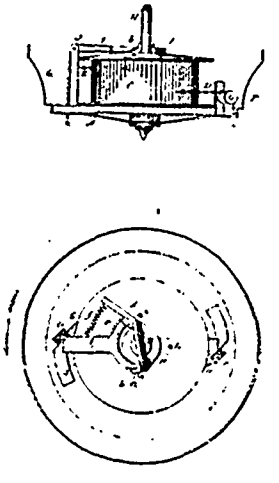
30069 Blake's Thermostat.



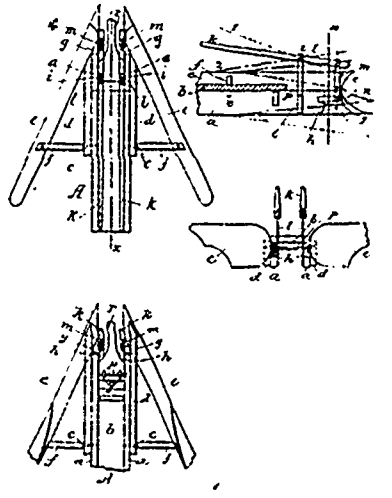
30070 Sloat's Machine for Sharpening Harrow Disks.



30071 Frost's Padlock.



30072 Rhind's Extension Lamp Fixture.



30073 Knight's Snow Plough.