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INVENTIONS PATENTED.

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

No. 27,093. Sock for Boots and Shoes.

(*Chausson.*)

Thomas Barker, Todmooden, Eng., 2nd July, 1887; 5 years.

Claim.—The manufacture of boot and shoe socks, composed of a horsehair or cork sole with swansdown on the top, and a perforated material under it, substantially as herein described.

No. 27,094. Animal Poke. (Carcan.)

Abner W Bishop, Middleborough, Ohio, U. S., 2nd July, 1887; 5 years.

Claim.—1st. The combination of the poke bow A, and the guard B hinged at one end thereof to one arm of the bow, and provided with a stem N at the opposite end, having a neck and collar to extend through the aperture P of the other arm of the bow of slotted plate O, and spring T, arranged substantially as described for the purpose set forth.

No. 27,095. Pen or Pencil Holder.

(*Porte-plume ou crayon.*)

Sarah J. Merriek, San Antonio, Texas, U.S., 2nd July, 1887; 5 years.

Claim.—1st. In a pen and pencil holder, the combination, with the body A having clamps and clips, bent from said body portion in opposite directions, as shown, to form finger and pencil receptacles a, b, of the pen-holder B formed integral with the body portion, as shown and described. 2nd. The combination, with the body A having on its front portion, a series of circular openings a to receive the finger of the human hand, the rear portion of said body provided with a pencil-holder, of the pen-holder B secured to the lower circular opening, as shown and described.

No. 27,096. Cart. (Charrette.)

John S. Hulett, Napanee, Ont., 2nd July, 1887; 5 years.

Claim.—The combination of the box R, coil springs x, the spring bars B and D, and the frame G, substantially as and for the purpose hereinbefore set forth.

No. 27,097. Grain Separator.

(*Séparateur des grains.*)

Christian Kasper, Cleveland, Ohio, U.S., 2nd July, 1887; 5 years.

Claim.—1st. In a grain separator, the case A formed with enlargement a near its top, and a deflector a₂, in combination with inclosed screens forming zig-zag grain channel B fixed rigidly in the sides of the case, the grate C located in the enlargement a and adjustable at its lower end to regulate the speed of the grain flowing over it, and the gate D operating between the grate and the deflector a₂, substantially as set forth. 2nd. In a grain separator, the case A formed with enlargement a, deflector a₂, ledge a₃ and guides a₅, in combination with inclosed screens forming a zig-zag grain channel B, a grate C occupying the enlargement a, and gate D located between the deflector a₂ and grate C and narrower than said grate, substantially as set forth. 3rd. In a grain separator, the inclined grate comprising longitudinal bars angular in cross section of uniform size

throughout their length, set with an angle in the plane of the grate surface, and curved downward at their lower ends, as shown, and a cross-piece connecting said bars at their curved ends, substantially as set forth. 4th. In a grain separator, a grate comprising longitudinal parallel bars angular in cross section and bent at one end, as shown, in combination with serrated top plates and plain lower clamping-plates and packing, substantially as set forth. 5th. In a grain separator, the case A provided with a door as a₆, in combination with the zig-zag channel having removable pieces as b₂, substantially as set forth.

No. 27,098. Bird Perch Swing.

(*Juchoir-balançoire d'oiseau.*)

Elijah H. Russell, London, Ont., 2nd July, 1887; 5 years.

Claim.—1st. A bird perch swing formed of coiled spring wire, substantially as shown and described and for the purposes specified. 2nd. A bird perch swing formed altogether or only partially of coiled spring wire, substantially as described. 3rd. A bird perch swing formed of coiled spring wire A, in combination with a hollow perch B, substantially as shown and described and for the purposes specified.

No. 27,099. Running Gear for Vehicles.

(*Train de voiture.*)

Robert McLaughlin, Ohawa, Ont., 2nd July, 1887; 5 years.

Claim.—1st. A clip-tie R having a lipped recess S made therein, in which recess is placed the rubber washer t, the side spring T, in combination with the metal washer q, the rubber or leather washer r and end spring V, the whole being held together by the pin u and the bolts v, substantially as described and specified. 2nd. A clip-tie having a recess formed therein, in which recess is placed a rubber washer which bears against the enlarged head of a pin, which passes through the side spring, a metal washer next to said side spring, a rubber or leather washer and through an end spring, in combination with bolts which pass through each end of said clip-tie, and through holes formed in said end spring and provided with nut, sor enlarged at their ends for the purpose of binding the springs together, substantially as described and specified.

No. 27,100. Appliance for Intensifying Combustion. (*Appareil pour aviver la combustion.*)

Reginald W. Hewett, Birmingham, Eng., 2nd July, 1887; 5 years.

Claim.—1st. The combination, with a furnace, of a section fan or other exhauster, located and operated so as to create a partial vacuum in the furnace for the purpose of drawing air through the fire, substantially as specified. 2nd. A suction fan or other exhauster connected to an air-tight chamber G, in combination with tubes D arranged to connect the chamber G to the smoke flues of the furnace, substantially as specified. 3rd. A suction fan or other exhauster connected to an air-tight chamber G, in combination with the tubes D arranged to connect the chamber G to the smoke flues of the furnace, and conveyed through the water tanks E, F, substantially as and for the purpose specified.

No. 27,101. Oil Stove. (Poêle à huile.)

August F. Zimmerling, J. A. Dutcher and P. E. Dutcher, Milwaukee, Wis., U.S., 2nd July, 1887; 5 years.

Claim.—1st. In an oil stove, the combination, with the body, of the stove A provided with combustion chamber B of a separate movable lamp, an oil reservoir and a supporting platform located beneath the respective ends of said combustion chamber, said reservoir being located in rear of said lamp upon the same plane therewith upon said platform, and adapted to counterbalance and support said lamp when drawn out from the stove, oil ducts or tubes E communicating between said reservoir and lamp, and chimneys J located in the combustion chamber B above said lamps, substantially as and for the purpose specified. 2nd. In an oil stove, the combination of the movable lamp C, cone K affixed thereto and adapted when raised to enter the base of the chimney supporting plate M located above said

lamp chimney J and deflector P, said deflector P being supported by a bracket affixed to said plate independently of said lamp and chimney, substantially as and for the purpose specified. 3rd. The combination of the chimney J, chimney-supporting plate M resting at its respective ends upon the eccentrics L, eccentrics L and lamps C, said plate M and the chimneys thereon being adapted to be raised and lowered by turning said eccentrics, and said lamps engaged with or disengaged from said chimneys, substantially as and for the purpose set forth. 4th. In an oil stove, the combination, with the body A, of the chimney-supporting plate M located at the bottom of the combustion chamber, deflector supporting bracket R affixed to said plate M, deflector P affixed to said bracket R above the lamp C within the chimney J, chimney J and lamp C, substantially as set forth.

No. 27,102. Draught Hook for Vehicles.

(*Crochet de tirage de voiture.*)

George Heon, Resto O. Wood and Julia B. Wood, Manchester, N.H., U.S., 2nd July, 1887; 5 years.

Claim.—1st. The combination of draw-bar D, nut E, spring C, tube A and T-brace, substantially as herein described and set forth. 2nd. The combination of draw-bar D, nut E, spring C, tube A and T-brace, with the thills and cross-bar of a vehicle, in the manner and for the purposes substantially as herein described.

No. 27,103. Clothes Pin. (*Épingle d'Étendage.*)

William H. Johnson, Onslow C. Mann and George E. Marvine, Delhi, N.Y., U.S., 2nd July, 1887; 5 years.

Claim.—A clothes-pin formed of a single piece of metal, bent upon itself to form two substantially parallel arms, one of which is bifurcated and said arms bent to form hooks and springs to engage the line and hold the said pin in place thereon, substantially as shown and described.

No. 27,104. Torsion Spring for Vehicles.

(*Ressort de voiture.*)

Benjamin D. Shaw, Beverly Ohio, and A. W. Hayward, Chicago, Ill., U.S., 2nd July, 1887; 5 years.

Claim.—1st. The combination, with the axle, of the cross-bars D, D₁ and the springs E, E, all connected together and adapted to operate in the manner described. 2nd. In a vehicle torsion-spring, the link 10 made movable along the arms 11 and 12, from 13 to 4 to regulate the length and stiffness of the spring, as set forth.

No. 27,105. Flower Pot. (*Pot à fleurs.*)

James W. Black, Berwick, N.S., 2nd July, 1887; 5 years.

Claim.—A flower-pot with the combination of the clips or attachment C, the holes or rings d, d, d, and the bracket or rings E, E, substantially as and for the purpose hereinbefore set forth.

No. 27,106. Wire Fence. (*Clôture en fil de fer.*)

John G. Schiller, Youngstown, Ohio, U.S., 2nd July, 1887; 5 years.

Claim.—1st. A joint securing plate for the vertical and horizontal wires, of a wire fence consisting of a metal plate having a diametric semi-cylindrical groove extending from edge to edge thereof, and an elongated diametric slot across-section, said groove at the centre of the plate, the outer ends of the slot and the inner ends of the two parts of the groove (at the points it meets the slot) being chamfered or inclined, as set forth. 2nd. In combination, a plate having on one face, a diametric semi-cylindrical groove extending from edge to edge, and an elongated slot crossing said groove at the centre, a wire provided with a V-shaped or curved bend projected through said slot, and another wire laid in said groove and passed through the apex of said bend, substantially as set forth. 3rd. A wire fence consisting of suitable posts, horizontal and vertical wires and joint-plates, the joints of said fence each consisting of a plate having an elongated diametric slot having chamfered or inclined outer ends, and a diametric semi-cylindrical groove crossing said slots and chamfered at the crossing, a vertical wire having a bend thrust through said chamfered slot and a horizontal wire laid in said groove and passed through said bend, as set forth.

No. 27,107. Fan Motor for Rocking Chairs.

(*Porte-éventail pour fauteuils à bascule.*)

Moïse Marcoux, St. Eugène de Grantham, Que., 2nd July, 1887; 5 years.

Claim.—1st. An adjustable rocking-chair fan motor secured to the rocker of the chair, and operating a swinging fan by means of the levers, geared segments, standard cord, pulley and spring, as herein shown and described. 2nd. In a rocking-chair fan motor, the levers G and H fulcrumed on the bow E, and having the geared segments i and j arranged to operate the fan A through the cord L, pulley C, and spring m, substantially as herein shown and described. 3rd. In a rocking-chair fan motor, the combination of the bow E secured to the chair rocker by the set screw f, with the levers G and H fulcrumed on it, and provided with the geared segments i and j, the wheel k, cord l, standard D, spring m, pulley C and fan A, substantially as herein shown and described.

No. 27,108. Pencil Sharpener. (*Taille-Crayon.*)

Charles E. Gould and Frank H. Cook, Leominster, Mass., U.S., 2nd July, 1887; 5 years.

Claim.—1st. In a pencil sharpener, a disk provided with an abrading surface, a chuck pivoted to swing at right angles to the plane of said disk and a cranked miter gear engaging gears on said parts, whereby they are simultaneously rotated in opposite directions. 2nd. In a pencil-sharpener, a disk provided with an abrading surface, a chuck pivoted on the frame at a point beyond the edge of the disk, and forward of the plane thereof, and adapted to swing in a plane at

right angles to the plane of said disk and a cranked miter gear engaging gears on said parts, whereby they are simultaneously rotated in opposite directions. 3rd. In a pencil sharpener, the combination of the disk H, said paper F covering the surface thereof, a plate R disposed over the center of said sheet of sand paper, and a screw i passing through said plate and clamping said paper F at the center of the disk H. 4th. In a pencil-sharpener, the combination, with a cranked miter-gear Q, of a shaft E provided with an abrading-disk H, a pinion J connected to said shaft and meshing with the miter Q, a swinging stock M, and a clutch O working therein and provided with a pinion Y meshing with said miter gear Q. 5th. In a pencil sharpener, a chuck for holding the pencil provided with the rods v, f, plates w and elastic band a, substantially as and for the purpose specified. 6th. In a pencil-sharpener, the chuck O having the cap P and end T, and provided with the rods v, f, plates w and elastic band a, combined and arranged to operate substantially as set forth. 7th. In a pencil-sharpener, the plates w having the flaring ends d, in combination with the rods v, elastic band a and body of the chuck O, substantially as set forth. 8th. The improved pencil sharpener herein described, the same consisting of the body B having the brackets C, K, the journaled gear Q provided with the crank l, the chuck O provided with the pinion Y, the disk H provided with the paper F, clamp R and screw i, the shaft E provided with the pinion J and the pivoted stock M provided with the handle m, combined and arranged to operate substantially as described.

No. 27,109. Manuel Power. (*Force à bras.*)

Jasper Bates, Thornbury, Ont., 2nd July, 1887; 5 years.

Claim.—1st. The combination, with the base A and lever G, of the toggle lever I, posts J, J, connecting rod K and lever M, as set forth. 2nd. The curved lever S, fulcrumed between posts J, J at the jointure of the toggle levers G I, and provided with a rigid handle W, as set forth.

No. 27,110. Fifth-Wheel for Vehicles.

(*Rond d'avant-train de voiture.*)

Robert McLaughlin, Oshawa, Ont., 2nd July, 1887; 5 years.

Claim.—1st. A fifth-wheel having an upper wear-iron notched to receive the under reach-iron, in combination with the under wear-iron, the layer or layers of rubber or other yielding material and pressure-plate, the whole being adjusted by a set screw working in a bracket, substantially as and for the purpose specified. 2nd. A fifth wheel having an upper wear-iron notched to receive the under reach iron, in combination with the under wear-iron having two lips or flanges formed on each side of the circle, the layer or layers of rubber or other yielding material and pressure-plate, the whole being adjusted by a set-screw working in a bracket, substantially as and for the purpose specified. 3rd. A fifth-wheel having an upper wear-iron notched to receive the under reach-iron, in combination with the under wear-iron having pins projecting through a layer or layers of rubber or other yielding material, and a pressure-plate, the whole being held together adjustably, substantially as and for the purpose specified. 4th. The under wear-iron a having the lips e, and the pins f formed on it, substantially as and for the purpose specified. 5th. The combination, with the fifth-wheel P and the reach, of the wear-iron h on said fifth-wheel, and recessed to receive said reach, the wear iron a having lips e to embrace and guide the fifth-wheel, and oppositely-extending pins f, the pressure-plate K sleeved on said pins the layer or layers of rubber S between the plate K and wear iron a and through which pins f pass, the bracket t embracing said wear-irons, pressure-plate and rubber and the set-screw n passed through said bracket and bearing on the pressure plate, substantially as shown and described and for the purpose specified.

No. 27,111. Car-Coupler. (*Attelage de Chars.*)

Eusébe Lalime, Malone, N.Y., U.S., 2nd July, 1887; 5 years.

Claim.—1st. The combination, with a draw-head formed with an upwardly extending hooked prong, of a swinging hook, a sleeve formed with a lever-arm and an inwardly-projecting feather, a link connecting the hook with the lever-arm of the sleeve, a cross-bar formed with a bit that is arranged within the sleeve and lever arms connected to the cross bar, substantially as described. 2nd. The combination with a draw-head formed with an upwardly and rearwardly extending hook or prong, and a forwardly-extending prong 19, of a hook formed with a point 21, a spur 22 and a shoulder 32, a sleeve having a lever 23 and an inwardly-extending feather 30, a link connecting the hook 20 with the lever 23, a bar 26 provided with lever-arms 31 and a bit 29, substantially as described.

No. 27,112. Button Fastener. (*Queue de bouton.*)

Eleazar Kempshall, New Britain, Conn., U.S., 2nd July, 1887; 5 years.

Claim.—A sheet-metal button fastener, consisting of a narrow head or base having an edgewise bearing surface, and having an integral puncturing prong projecting from said bearing surface, at a point to one side of the center of said surface, and in the same plane with the head or base, said prong being adapted in its tapered middle portion to be bended over to form a button holding loop or hook, and having at its apex a short lateral curve or bend projecting over the lower end of said head or base, and coinciding in shape with the curve of the finished loop or hook, the whole being adapted to be struck from a sheet of metal in its finished form, all substantially as described and for the purpose specified.

No. 27,113. Calculating Machine.

(*Machine à Calculer.*)

Frederick L. Bancroft, St. Paul, Minn., U.S., 2nd July, 1887; 5 years.

Claim.—1st. In a calculating machine, the eccentric cam D, off o, collar F, set screw a, combined with the pull G, pivot g, arm K, spring L, pin b, lever I, pivot f, spring M, pin c and pin e, all arranged and operating as set forth and described. 2nd. In a calculating

machine, the numbered wheel *c*, pin *cr*, pin *Q*, combined with the box *A*, slots *s* and *st*, board *B*, slots *Br* and number or the jaw of the cylinder, all as set forth and described. 3rd. In a calculating machine, the numbered wheel *c*, pins *c'*, pins *g*, axle *o*, combined with the eccentric *D*, pall *G*, lever *I*, arm *K*, springs *W* and *L*, all arranged and operating substantially as set forth. 4th. In a calculating machine, the box *A*, slots *s* and *st*, board, *B*, slots *Br*, and colored spaces with numbers thrown to indicate units, hundreds, thousands and so forth, combined with the numbered wheels *c*, pins *c'*, cam *D*, pall *G*, all arranged and operating substantially as set forth. 5th. In a calculating machine, the wheel *c* axle *o*, pin *cr*, pin *Q*, combined with the top spring to regulate the position regulate the position of the pin *Q*, axle *P*, set screw *d*, all arranged and operating substantially as set forth. 6th. The calculating machine consisting of a cylinder *A*, with numbered cam-plate colored in diverse colors with slots *s* and *st*, board *B*, slots *Br*, the wheel *c* with numbers and pin *cr* on the periphery, the pins *Q*, pall *G*, pivot *g*, arm *K*, lever *I* pivot *f*, pins *b* *e* and *cl*, springs *L* and *M*, cam *D*, axle *O*, collar *F* *D* *H*, pin *h*, axle *P*, spring *R*, set screw *a*, all arranged as set forth and described.

No. 27,114. Marine Vehicle. (*Voiture Marine*.)

Frederick F. Campau, Detroit, Mich., U.S., 4th July, 1887; 5 years.

Claim.—1st. In a marine vehicle, a buoyant paddle wheel as an element of supporting and propelling a vehicle on the water, substantially as described. 2nd. In a marine vehicle, a buoyant paddle wheel consisting of a hollow water tight cylindrical body, with laterally projecting paddles, substantially as described. 3rd. In a marine vehicle, the combination of a platform supporting a deck, a crank axle journaled transversely with the frame, buoyant paddle wheels fast on said crank axle and supporting one end of said platform, propelling mechanism for revolving the paddle wheels, a float supporting the opposite end of the platform, and a steering gear applied to said float, all substantially as described.

No. 27,115. Method of Extracting Turpentine from Resins of Conifers. (*Mode d'Extraction de la Térébenthine des Résines des Conifères*.)

Eugene Schaal, Fenerbach, Germany, 4th July, 1887; 5 years.

Claim.—1st. The process of producing artificial turpentine from the resins of conifers, which consists first in separating from the resins the more volatile parts by distillation in vacuo up to about 270° centigrade, and continuing the distillation in vacuo up to about 310° centigrade, with or without the addition of steam, turpentine-oil, or other volatile neutral substances, substantially as set forth. 2nd. The process of producing artificial turpentine, which is easily soluble in spirits of wine, which consists in dissolving the turpentine obtained from resins of conifers, or the difficultly-boiling turpentine like distillates which are obtained by the aid of a current of a hot neutral gas or vapor in suitable solvents, such as spirits of wine, and separating them from the turpentine solution by distillation, substantially as set forth. 3rd. As a new product artificial turpentine produced from the resins of conifers by the process described and having the characteristics set forth.

No. 27,116. Leather Belting. (*Courroie de Cuir*.)

Thomas Kerr, New York, N.Y., U.S., 4th July, 1887; 5 years.

Claim.—The improved belting consisting of two layers of pieces of leather or other suitable material, the joints of the pieces in one layer alternating with the joints of the pieces in the other layer, the pieces of both layer, being united into one compact belting by longitudinal side stitching of wire and by transverse stitching passed through oval holes at the adjoining ends of the pieces, all substantially as and for the purpose set forth.

No. 27,117. Process of Annealing Wire.

(*Procédé pour recuire le fil de fer*.)

Thomas Kerr, New York, N.Y., U.S., 4th July, 1887; 5 years.

Claim.—A process of annealing wire, consisting in passing the wire over a bass-wood fire until it is heated to about 550° Fahrenheit, then plunging it in bath of water, substantially as and for the purposes set forth.

No. 27,118. Receptacle for Holding Medicinal and other Compounds. (*Réceptacle pour les compositions médicinales et autres*.)

Edgar S. Burnham, Buffalo, N.Y., U.S., 4th July, 1887; 5 years.

Claim.—1st. In a receptacle for holding medicinal compounds, the combination of the body or outside casing, an interior casing of dissimilar metal and within it a casing of perforated metal, leaving an annular space between the perforated casing and the casing surrounding it, a central tube of perforated metal having a central space within it, a packing of cotton or other similar material between the outer sides of the perforated tube and the inner sides of the perforated case, and openings communicating with the annular space and the chamber within the central tube, a cover or screw cap at the top for opening communication with the interior of the receptacle, a separate chamber at the bottom for receiving and holding the medicinal compounds, and a means for supplying the compound or a portion of it to the packing when required, substantially as described. 2nd. A receptacle for receiving and holding medicinal compounds, consisting of an outer casing of copper, an inner casing of zinc, an interior casing of perforated metal leaving an annular space surrounding it, a packing of cotton or other similar material, a central perforated tube and a means for communicating between the annular space and the space within the perforated central tube, in combination with a receptacle at the bottom to receive and hold the medicinal com-

ound, a means for admitting a portion of the compound to the interior of the receptacle when required, and a screw-cap at the top and also at the bottom, as and for the purposes described.

No. 27,119. Cuff Holder. (*Fermeoir de poignet*.)

Perry A. Jones, Seymour, Ind., U.S., 4th July, 1887; 5 years.

Claim.—1st. A cuff-holder consisting of the parallel bars *A*, *B*, jaws *C*, *C'* secured to said bars, the pivoted clasp *B'*, the spring *B₂* and a button for connection with the cuff, substantially as described. 2nd. The cuff-button *b* having lugs *H*, *I*, secured to one side of centre or eccentrically on under side of said button, in combination with post *c*, parallel bars *A*, *B*, spring *F*, and a clasp for securing the device to the sleeve, as set forth. 3rd. A cuff-holder having at one end, means substantially as described, for connecting with a cuff, and provided at its other end with lateral jaws *C*, combined with a clasp *B'* and spring *B₂*, all being constructed and arranged substantially as set forth. 4th. The combination, in a cuff-holder, provided at one end with means, substantially as described, for connecting with a cuff, of jaws *C* arranged at the opposite end of such holder, the clasp *B'*, the spring *B₂* and the stirrup *G*, as and for the purposes specified.

No. 27,120. Machine for Cutting String or Green Beans. (*Machine à couper les fèves rameuses*.)

Joshua Young and Nelson Green, Waterford, Ont., 4th July, 1887; 5 years.

Claim.—1st. In a string or green bean cutting machine, one or more chutes designed to direct the bean towards the cutting knives. 2d. In a string or green bean cutting machine, one or more chutes designed to direct the beans towards the cutting knives, in combination with a series of knives carried on a revolving cylinder, substantially as and for the purpose specified. 3rd. In a string or green bean cutting machine, one or more chutes designed to direct the beans towards the cutting knives, in combination with a series of knives carried on a revolving cylinder, having a cone or cones to direct the cut beans, substantially as and for the purpose specified. 4th. In a string or green bean cutting machine, a revolving cylinder provided with a series of knives, in combination with a cone or cones, substantially as and for the purpose specified. 5th. In a string or green bean cutting machine, one or more chutes designed to direct the beans towards the cutting knives, in combination with a series of knives carried on a revolving cylinder acting on a roller, substantially as and for the purpose specified.

No. 27,121. Thrashing Machine.

(*Machine à battre*.)

George F. Strangway and David W. Vary, Strathroy, Ont., 9th July, 1887; 5 years.

Claim.—1st. The independent extension agitators *J*, *J₁* and cross-bars *I₁*, *I₃*, in combination with the perforated stationary bars *S*, double throw crank shaft *H* and pivotal hangers or support *K*, *K₁*, substantially as described and for the purpose specified. 2nd. The independent extension agitators *J*, *J₁*, inclined arms *R*, *R₁* and cross-bars *I₁*, *I₃*, in combination with the perforated stationary bars *S*, double throw crank shaft *H* and pivotal hangers or supports *K*, *K₁*, substantially as shown and described and for the purpose specified. 3rd. The independent extension agitators *J*, *J₁* pivoted near one end on supports or hangers *K*, *K₁*, in combination with and operated by the cranks of a double throw crank shaft *H*, substantially as described. 4th. The independent extension agitators *J*, *J₁*, pivoted near one end on pivotal supports or hangers *K*, *K₁*, and operated by the cranks of two crank shafts *E* or by the cranks of a double throw crank shaft *H*, substantially as described. 5th. The independent extension agitators *J*, *J₁*, pivoted near one end on the hangers or supports *K*, *K₁*, and operated by the cranks of two crank shafts or the crank of a double throw crank shaft, in combination with the toothed wheels *G*, *G₁*, substantially as described and for the purpose specified. 6th. The independent extension agitators *J*, *J₁*, hangers or supports *K*, *K₁* and cross-bars *I₁*, *I₃*, *I₄*, in combination with the crank shaft *E*, toothed wheels *G*, *G₁*, and double throw crank shaft *H*, substantially as described and for the purpose specified. 7th. The shoe *N* pivoted on a hanger or support *D₂* near one end, and pivoted or supported on and operated by the hanger or support *L₁*, substantially as described. 8th. The pivotal tumbler *U₄*, spring *T₁* and the stud pin *U₂*, in combination with the projection or fall *U₃* and carriers *U*, substantially as shown and described and for the purpose specified.

No. 27,122. Machine for Sawing Shingles.

(*Machine à scier le bardeau*.)

Walter R. Close, Bangor, Me., U.S., 9th July, 1887; 5 years.

Claim.—1st. In a shingle sawing machine, the swinging bolt carrier *A* pivoted to the frame below the saw sliding in the guide *D*, formed to receive and sustain the upper end of the bolt carrier through its vibrations, substantially as described. 2nd. In a shingle sawing machine, the combination of the saw, the swinging bolt carrier *A* pivoted so the frame *C* below the saw vibrating in the guide *D*, the longitudinally adjustable compensation weight *H* on the lower end of the bolt carrier *A*, the spur-roll set works *n*, *n₁* adjusting the shingle bolt to the saw, the slotted crank *I*, wrist-pin *k* and connecting rod *F* used for giving the bolt-carrier a reciprocating motion, substantially as described. 3rd. In a shingle sawing machine, the combination of the saw, the jointer *J* on the same arbor with the saw, the swinging bolt carrier pivoted to the frame below the saw and vibrating in the guide *D*, substantially as described. 4th. In a shingle sawing machine, the set works consisting of the upper set-roll *n* journaled to a weighted sliding head *G*, connected with the bolt carrier *A* by bolts, provided with rollers running in grooved slots *e*, *e₁* in the sliding-head, and raised by the lever *f* for the purpose of applying the bolt, in combination with the swinging bolt carrier *A*, substantially as described. 5th. In a shingle sawing machine, the

combination of the curved bed plate T, containing the longitudinally curved slot with the lever M connected with the upper and lower set rolls n, n_1 by means of the weighted pawls r, r_1 , said lever provided with a roller at its lower end passing through the curved slot in the bed plate T and operating the set-rolls, substantially as described. 6th. In a shingle sawing machine, the saw guards h, h_1 bolted to the frame and conforming to the periphery of the saw, substantially as described. 7th. In a shingle sawing machine, the hinged shingle guard t provided with a spring at one end to hold it against the saw, allowing it to spring back to prevent breaking the saw in case a shingle should happen to pass through, in combination with the saw, substantially as described. 8th. In a shingle machine, the break or lever P with its spring catch Q acting upon the main feed shaft S, for the purpose of starting or stopping the vibrating bolt carrier r , respectively of the saw, substantially as described. 9th. In a shingle sawing machine, the combination of the saw, the jointer J on the same arbor with the saw, the swinging bolt carrier A pivoted to the frame C below the saw and running in suitable guides D, the compensation weight H adjustable on said bolt carrier, the lever M connecting and operating the set-rolls n, n_1 by the weighted pawls b, b_1 the lower end of said lever provided with a roller running in the longitudinal curved slot in the bed plate T, the weighted sliding-head G containing the upper spurred set roll connected to the bolt carrier by bolts having rollers running in grooved slots in said sliding head and operated by the lever f , the slotted crank I, connecting rod and wrist-pin E & operating the bolt carrier A, the lever P acting on the main feed shaft S, the saw guards h, h_1 each side of the saw and the shingle guard t containing the spring in one end, all substantially as described.

No. 27,123. Substitute for Whiffletree.

(*Système d'attelage sans palonnier.*)

Alexander F. Gibson, Galt, Ont., 9th July, 1887; 5 years.

Claim.—The chain or cord E connected to the harness, as described, in combination with the friction rollers D, journaled in suitable brackets attached to the doubletree A, substantially as and for the purpose specified.

No. 27,124. (Malt) Kiln Dumping Floor.

(*Atre à bascule de touraille.*)

Frank Kohler and William A. Chambers, St. Louis, Mo., U. S., 9th July, 1887; 5 years.

Claim.—1st. In a malt kiln dumping floor, the combination of the sections A hinged at either corner of their respective ends, and having bearing strips K with upright arms J, bars G and rollers H, substantially as shown and for the purpose described. 2nd. In a malt kiln dumping floor the combination of the sections A hinged at either corner of their respective ends, and having bearing strips K with upright arms J, bars G having toothed racks L, rollers H, toothed pinions M, Q, shaft N and spur wheel P, substantially as shown and for the purpose described.

No. 27,125. Manufacture of Boots and Shoes. (*Fabrication des chaussures.*)

Michel L. Lion, London, and Frederick Cutlan, Castle Hill, Eng., 9th July, 1887; 5 years.

Claim.—1st. In the improved manufacture of boots and shoes, driving the fasteners whether of the improved form or otherwise through the inner sole before the inner sole is fixed upon the last, substantially in the manner and for the purpose hereinbefore set forth. 2nd. The method of lasting the upper to the insole by tightly drawing the edges thereof over the invented points of the fasteners and forcing such points through the upper, substantially in the manner and for the purpose hereinbefore set forth. 3rd. In the manufacture of boots and shoes, the improved method of attaching the outer sole and heel to the upper and inner sole in one operation, substantially in the manner hereinbefore set forth. 4th. The improved manufacture of boots and shoes, substantially in the manner and for the purpose hereinbefore described and set forth, and represented in the drawings.

No. 27,126. Metallic Shingle or Roofing Plate. (*Bardeau ou feuille métalliques à toiture.*)

Lewis D. Cartright, Hyde Park, Ill., U. S., 9th July, 1887; 5 years.

Claim.—1st. In a metallic shingle or roofing plate, one or more edges bent to form an upwardly-extending flange and continued to form a nailing-flange, said flanges being extended downward so as to overlie the surface of the plate below, in combination with corresponding edges adapted to extend over the upwardly-extending flanges and form a seam on the inside thereof, but not come in contact with or approach the nailing-flange at all, substantially as and for the purpose specified. 2nd. In a metallic shingle or roofing-plate having four equilateral sides, the combination of an upwardly-extending flange formed on two adjacent upper edges of the shingle, and continued to form nailing-flanges, said flanges being extended downward so as to overlie the surface of the shingle or plate below with the two adjacent lower edges of the shingle adapted to extend over the upper edge flanges of adjoining shingles and form seams on the inside thereof, substantially as and for the purpose specified. 3rd. In a metallic shingle or roofing-plate, one or more edges bent into a flange F extending up and backward over the plate and continued to form a nailing-flange f , in combination with corresponding downwardly and inwardly-bent edges E adapted to engage with the flanges F of similar sheets, substantially as and for the purpose specified. 4th. In a metallic shingle or roofing-plate, one or more edges bent into a flange F extending up and backward over the plate, and continued to form a nailing-flange f , said flange being continued downward so as to overlie the surfaces of the shingle or plate below, in combination with downward and inwardly-bent edges E adapted to engage with the flanges F of similar sheets, substantially as and for

the purpose specified. 6th. In a metallic shingle or roofing-plate having four equilateral sides, the combination of flanges F extending up and backward over the plate, and continued to form the nailing flanges f on the two upper adjacent sides, with the flanges E extending inward and downward in the two lower adjacent sides, all substantially as and for the purpose specified. 6th. A metallic shingle or roofing-plate having four equilateral sides, the combination of flanges F extending up and backward over the plate and continued to form the nailing-flanges f on the two upper adjacent sides said flanges being continued downward so as to overlie the surface of the shingle or plate below with the flanges E extending inward and downward in the two lower adjacent sides, all substantially as and for the purpose specified. 7th. A metallic shingle or roofing-plate having the hooked flanges F, and nailing-flanges f in its two adjacent upper edges, the corresponding hooked flanges E in its adjacent lower edges, and having its point a formed by bending the flange E to or nearly to a right angle with the plate, substantially as and for the purpose specified.

No. 27,127. Metallic Roofing Plate or Shingle. (*Feuille à toiture ou bardeau Métalliques.*)

Lewis D. Cartwright, Hyde Park, Ill., and Stephen P. Darlington, West Chester, Penn., U. S., 9th July, 1887; 5 years.

Claim.—1st. In metal shingles adapted to interlock with each other, the combination of an edge F having a fold f with downwardly-bent edge F₁, and nailing-flange F₂, with an edge E having a depressed gutter E₁ with a sloping inward edge. 2nd. In metal shingles adapted to interlock with each other, the combination of an edge F having a fold f with downwardly-bent edge F₁, and nailing-flange F₂ with an edge E having a depressed gutter E₁ with a sloping inward edge and an obliquely-inclined flange E₂. 3rd. In metal shingles adapted to interlock with each other, the combination of the adjoining edges F having folds f with downwardly-bent edges F₁, and nailing-flanges F₂ with the opposite adjoining edges E having depressed gutters E₁ and inclined flanges E₂. 4th. In metal shingles adapted to interlock with each other, the combination of the adjoining edges F having folds f with downwardly-bent edges F₁, and nailing-flanges F₂ with the opposite adjoining edges E, having depressed gutters E₁ with inclined inner sides and inclined flanges E₂. 5th. In metal shingles adapted to interlock with each other, substantially as shown and described, the combination, with the main shingle, of the plate C, as and for the purpose specified. 6th. In metal shingles adapted to interlock with each other, substantially as shown and described, the corner a , cut and bent, substantially as shown, so that the shingles may be staggered or set in broken lines upon the roof. 7th. In metal shingles adapted to interlock with each other, substantially as shown and described, the corner e cut horizontally so that the shingles may be staggered or set in broken lines upon the roof. 8th. In metal shingles adapted to interlock with each other, substantially as shown and described, the corners f_1, f_2 , cut so that the folds f shall terminate just before the points where the gutters E₁ cross the lateral corners of the shingles. 9th. In a metallic shingle, the device of a gutter depressed below the level of the sheet formed in the edge or edges of the same, and adapted to be covered in use by a flange or projection of another shingle. 10th. In a metallic shingle adapted to interlock with each other, substantially as specified, the combination of depressed gutters formed in the upper edges thereof, with overlapping flanges formed in the lower edges thereof and continued to form nailing-flanges. 11th. In a metallic shingle the device of an S-shaped flange f , continued to form a nailing-flange having a downwardly-projecting edge F₂ adapted to rest upon the surface of a shingle, inserted in said flange.

No. 27,128. Metallic Roofing Plate or Shingle. (*Feuille à toiture ou bardeau Métalliques.*)

Lewis D. Cartwright, Hyde Park, Ill., U. S., 9th July, 1887; 5 years.

Claim.—1st. As a new article of manufacture, metallic roofing shingles having an edge C provided with a hook D, having a downwardly-projecting point d , and a projection F and flange G beyond said point, and an opposite edge B having a projection J and a hook T adapted to interlock with the point d and projection F of a familiar shingle. 2nd. In metallic shingles, substantially as shown and described, the combination, with the hook D d , formed in one edge of the shingles, of the open space E adapted to extend back of the interlocked edges of the adjoining shingle and form an unobstructed gutter, substantially as shown and described.

No. 27,129. Snow Plough for Railroads.

(*Charrue à neige de chemin de fer.*)

David Kirk, Bracebridge, Ont., 9th July, 1887; 5 years.

Claim.—The upwardly-slanting flat bottom A, divided by a knife-edged outwardly-flaring partition B, the outwardly-flaring sides C, in combination with the hinged wings D operated by the rods E, substantially as and for the purpose specified.

No. 27,130. Cockle Machine. (*Machine à Nielle.*)

Faustin Prinz, Milwaukee, Wis., U. S., 9th July, 1887; 5 years.

Claim.—1st. A cockle machine cylinder, formed of iron or analogous hard metal, and having portions thereof cut and depressed, such cut and depressed portions forming cavities in the cylinder, substantially as described. 2nd. The combination of the cylinder, the shaft supporting the same, the brackets secured to the shaft and extending upward therefrom, the elastic straps connected to the upper parts of the brackets and the trough suspended by said straps, substantially as described. 3rd. The combination of the cylinder, the shaft passing through the same, the nuts secured to said shaft and provided with the arms connected to the cylinder, the brackets secured to said shaft, the elastic straps depending from said brackets, the trough suspended by said straps and the ratchet-teeth secured to

the arms of one of the hubs to strike and vibrate the trough in the rotation of the cylinder, substantially as described. 4th. The combination of the cylinder, the shaft supporting the same, the trough suspended from the shaft, the finger connected to the shaft, means to vibrate the trough, and the stop attached to the trough to strike against the finger to limit the vibration of the trough, substantially as described. 5th. The combination of the cylinder, the shaft supporting the same, the brackets connected to the shaft, the spring strap or plate connected to the brackets, the knocker connected to said strap, and the inclined shoes or blocks connected to the cylinder to strike and snap the knocker against the cylinder in the revolution of the latter, substantially as described. 6th. The combination of the cylinder formed with cavities, the trough supported within the cylinder, the perforated bar connected to the trough, and the extractor composed of the rods having hook ends inserted between the trough and bar, and passed through the perforations in the bar, substantially as described. 7th. The combination of the cylinder formed with cavities, the trough supported within the cylinder, the perforated bar secured to the trough, and the extractors composed of a series of rods having hooked ends fitting in the perforations of said bar, a portion of said rods lying across the other portion to cover the spaces between the several rods, substantially as described. 8th. The combination of the rotating cylinder, the shaft supporting the same, the brackets extending above the shaft, the spring straps secured to the brackets, the trough connected to the straps, the lever connected to the shaft to turn the same, and means for locking the lever, substantially as described.

No. 27,131. Manufacture of Paint and Paint Bases. (*Fabrication de peinture et des bases de peintures.*)

James P. Perkins, Pullman, Ill., U.S., 9th July, 1887; 5 years.

Claim.—1st. As a new product suitable for a paint base, silicate iron slag in granular or pulverulent form and calcined. 2nd. As an improved paint, calcined silicate iron slag mixed with oil or other suitable vehicle. 3rd. The process of making paint from silicate iron slag, and a vehicle which consists in first reducing the slag to a granular or pulverulent form, then calcining it and mixing it with the vehicle, substantially as described.

No. 27,132. Flat Iron Heater.

(*Fer réchauffeur d'un fer à repasser.*)

Ellen Dillon, Sioux City, Iowa, U.S., 9th July, 1887; 5 years.

Claim.—1st. The improved flat iron heater, consisting of the horizontal perforated base-plate A, and the pyramidal body c perforated over its whole surface, and open at the bottom, said parts being connected, as shown and described. 2nd. The combination of the conical slotted cover B, with the body portion A having the central elevated part E, and surrounding vertical rim b on which said cover rests, as shown and described.

No. 27,133. Ice Tongs. (*Pincés à glaces.*)

Newton K. Wright, Pawawa, Mich., U.S., 9th July, 1887; 5 years.

Claim.—1st. In combination with the legs of a pair of ice tongs, the links C connecting the handle D with the legs A, said legs being provided with the flanges heads B, substantially as described. 2nd. The combination of the legs A, A, provided with the flanged heads B, with the links C and handle D, provided with the ears a, when constructed, arranged and operating, substantially in the manner and for the purposes set forth.

No. 27,134. Car-Coupling. (*Attelage de chars.*)

Jenu F. R. X. Hérard, St. Guillaume, Que., 9th July, 1887; 5 years.

Réclame.—1o. La combinaison du bloc A, avec cheminée à rainure B, le tiroir à rainure c, la manivelle a levier D, la cheville à languette E, la manivelle G. 2o. La combinaison du support j, fixé par deux vis i, et permettant au moyen de la cheville, avec cran dans le bout de la languette de tenir la maille F à hauteur convenable, tel que décrit et pour les fins ci-indiquées.

No. 27,135. Pedal Attachment for Reed Organs. (*Disposition aux pédales des harmoniums.*)

Lawrence A. Subers, Phoebus, Va., U.S., 9th July, 1887; 5 years.

Claim.—1st. The combination, in a pedal attachment for organs, of the fixed frame and adjustable end strips, whereby the attachment is adapted for use with organs of different widths. 2nd. The combination, in a pedal attachment for organs, of the fixed frame, the adjustable end strips and the folding wing pieces. 3rd. The combination of a reed organ having a vacuum or pressure chest, a pedal attachment having a vacuum or pressure box, and a pipe or tube located outside of the organ casing, and forming a communication between the vacuum or pressure box of the attachment and that of the organ. 4th. The combination of the vacuum or pressure chest or the organ or pedal attachment, the flexible connecting tube and a connecting plate secured to the casing of said vacuum chest, and having an opening for the reception of said tube. 5th. The combination of an organ with a pedal attachment having two or more sets of reeds, valves and pedals controlling the action of the reeds, and a stop or stops, whereby one or more of the sets of reeds may be rendered mute.

No. 27,136. Whip. (*Fouet.*)

Edmund P. Knapp, San Jacinto, Cal., U.S., 9th July, 1887; 5 years.

Claim.—1st. The combination with the end of a whip of a metallic

ring C, having an eye c seated, and having movement in a groove formed in the end of the whip, the link e secured in the eye c and the loop e', to which the lash is secured, whereby the said lash is allowed to turn around the whip end without becoming entangled, substantially as described. 2nd. In a whip, the combination of the stock, a thimble secured to the end thereof, and provided with a circumferential groove near its end, the ring revolving in said groove, the lash and the link secured to the end of the lash and passing through a loop on the edge of the ring, so as to turn up and down on the latter, substantially as specified. 3rd. In a whip, the stock threaded at its smaller end, and having a circumferential shoulder adjacent to its threaded part, and the thimble provided with an internally-threaded socket to engage the threaded end of the stock down to said shoulder, and provided with a circumferential groove near its end in combination with a ring revolving in said groove, and having a small loop on its edge, the whip-lash and the triangular closed link secured to the lash and turning up and down in the loop on the ring, substantially as specified. 4th. In a whip, a ring C seated and having movement in the groove formed in the end of the whip, and the lash connected to the ring, whereby the said lash is allowed to turn around the whip end without becoming entangled, as set forth.

No. 27,137. Door Check. (*Arrête-porte.*)

George S. White, Danbury, Conn., U.S., 9th July, 1887; 5 years.

Claim.—1st. In a door check, the combination, with the attaching plate, of the coil spring secured thereto, and whose end is adapted to engage with the floor, and the catch secured upon the face of the plate, and whereby the wire is held out of engagement when desired, substantially as specified. 2nd. The combination, with the attaching plate, of the post thereon, the spring coils arranged around the post, the tangential arm of the spring wire and the catch, whereby the latter is retained out of engagement with the floor, substantially as set forth. 3rd. The combination, with the attaching plate, of the post formed thereon, the spring wire coiled about the post, the tangential spring arm bent into U-form and expanded outward at its extremity, and the catch upon the plate for the engagement of said spring arm, substantially as set forth. 4th. The combination in a device of the character described, with the plate A, of the catch B, the post C, the spring coils D, the free end E bent into U-shape and the outwardly projecting handle F, all arranged as described and for the purpose set forth.

No. 27,138. Bottle Stopper.

(*Bouchon de bouteille.*)

Edwin L. Lloyd, Philadelphia, Penn., U. S., 9th July, 1887; 5 years.

Claim.—1st. The combination of the retainer, the stopper detachable therefrom, and a catch hung to a transverse pin or bar on the stopper, and constructed to engage with the retainer, all substantially as specified. 2nd. The combination of the stopper having a yoke, with a catch hung to a transverse pin or bar on the stopper, and projecting up into said yoke, all substantially as specified. 3rd. The combination of the stopper having a yoke, with a catch hung to a transverse pin or bar on the stopper, and having an elastic finger projecting up into said yoke, all substantially as specified. 4th. The stopper having a base plate with recessed edge and pin crossing said recess, in combination with a catch hung to said pin, and having a finger constructed to engage with the stopper retainer, all substantially as specified. 5th. The combination of the retainer, the stopper detachable therefrom, and a catch pivoted to the stopper and constructed to engage with the retainer, all substantially as specified. 6th. The combination of the stopper having on the underside a rubber cap or packing, with a catch pivoted to the stopper, and having a bearing upon said rubber cap, said catch having a finger constructed to engage with the stopper retainer, all substantially as specified. 7th. The combination of the stopper having a yoke and a rubber packing, with a catch pivoted to a pin at one side of the stopper, and having at the other side of the stopper a loop bearing on the rubber packing, and terminating in a finger projecting up into the yoke, all substantially as set forth. 8th. The combination of the stopper having a yoke and a catch hung to the stopper, and having a finger projecting up into said yoke with a retainer having a central inwardly projecting loop adapted to pass beneath the yoke, and engage with the catch finger, all substantially as specified.

No. 27,139. Portable Disinfecting Apparatus. (*Appareil portatif à désinfecter.*)

William W. Rosenfield, New York, N. Y., U. S., 9th July, 1887; 5 years.

Claim.—1st. In a portable disinfecting apparatus, the combination, with a heater arranged to heat a quantity of water charged or impregnated with a disinfectant, of a hose or pipe arranged to conduct the heated water from the heater to the place of use, and a pump arranged to force the water from the heater through the hose, the whole being mounted upon a suitable vehicle, substantially as described. 2nd. In a portable disinfecting apparatus, the combination, with the feeding apparatus C, arranged to charge or impregnate a stream of water with a disinfectant, of a heater arranged to heat the water, and a hose or pipe arranged to conduct the heated water from the heater to the place of use, the whole being mounted upon a suitable vehicle, substantially as described. 3rd. In a portable disinfecting apparatus, the combination, with the feeding apparatus C arranged to charge or impregnate a stream of water with a disinfectant, of a heater arranged to heat the water, a hose or pipe arranged to conduct the heated water from the heater to the place of use, and a pump arranged to force the water from the heater through the hose, the whole being mounted upon a suitable vehicle, substantially as described. 4th. The herein-described portable disinfecting apparatus, consisting of the force-pump B, and a suitable motor for operating the same, the feeding apparatus C arranged to charge or impregnate a stream of water with a disinfectant, a heater D arranged

to heat the water, and the hose E F, the whole being mounted upon a suitable vehicle and arranged to co-operate substantially as and for the purpose set forth.

No. 27,140. Attachment for Cooking Vessels. (*Disposition aux ustensiles de cuisine.*)

Ralph A. Willison, Hartwell, Ohio, U.S., 9th July, 1887; 5 years

Claim.—An attachment for a cooking vessel, consisting of a metallic frame having at its upper part, a flanged rim whereby it is supported in the vessel, the wires connecting with said rim and descending to form the bottom, a bail attached to the upper ends of said wires, and a removable wire crate or basket fitting within said frame, substantially as described.

No. 27,141. Machine for Making Spur Wheel Fencing. (*Machine à faire les garde-roues dentées.*)

Chester A. Hodge, Chicago, Ill. (assignee of John Willoughby), DeSoto, Mo., U.S., 11th July, 1887; 5 years.

Claim.—1st. In a machine for manufacturing spur wheel fencing, the combination, with a feed device for the main fence-wires, of a spur-wheel carrier, a pivot wire feed device, knives for severing the pivot bending or folding devices, and dies or clinchers for pressing the folded ends of the pivot into position, substantially as specified. 2nd. In a machine for manufacturing spur-wheel fencing, the combination, with the feed device for the main fence wires, of a spur-wheel carrier, a feed device for delivering the spur-wheels one by one to said carrier, a pivot wire feed device, knives for severing the pivot, pivot bending or folding devices, and dies or clinchers for pressing the folded ends of the pivot into position, substantially as specified. 3rd. The combination, with suitable guides or supports for the two fence strands, of a spur-wheel carrier or device for moving the spur-wheel into position between the two fence strands, and a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, substantially as specified. 4th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, substantially as specified. 5th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, and knives for severing the pivot-wire, substantially as specified. 6th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, and knives for severing the pivot-wire, substantially as specified. 7th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, knives for severing the pivot-wire, and bending devices for folding the ends of the pivot about the two fence strands, substantially as specified. 8th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, knives for severing the pivot-wire, and bending devices for folding the ends of the pivot about the two fence strands, substantially as specified. 9th. The combination, with a spur-wheel carrier or device for conveying the spur-wheel into position between the two fence strands, of a pivot-wire feed device for thrusting the pivot-wire through the opening in the spur-wheel, knives for severing the pivot-wire, and bending devices for folding the ends of the pivot about the two fence strands, and dies or clinchers for pressing the folded ends of the pivot into the required form, said dies or clinchers having slots or recesses for the spur-wheel, substantially as specified. 10th. The combination, with devices for bending the ends of the pivot about the two fence strands, of slotted dies or clinchers for finishing said operation, substantially as specified. 11th. The combination with devices for bending the ends of the pivot-wire about the two fence strands, of a pair of reciprocating dies or clinchers having slots for the spur-wheel, substantially as specified. 12th. The combination, with a rotary coiling or bending shafts C, C, of slotted clinchers or dies G, G, substantially as specified. 13th. The combination, with a vibrating or swinging spur-wheel carrier D having clamps d, of a rotary feed-wheel K having pins k on its periphery, and a supply tube L, substantially as specified. 14th. The combination, with two parallel coiling shafts C, C, provided with gears o₃, o₃, of a reciprocating double rack o₂ for actuating the same, substantially as specified. 15th. The combination, with two parallel rotary coiling shafts C, C, provided with gears o₃, o₃, of a reciprocating double rack o₂, cam Q, lever o, and link o₁ for actuating the same, substantially as specified. 16th. The combination, with a vibratory or swinging spur-wheel carrier D, provided with clamp d, of a cam and suitable connecting mechanism for actuating said clamp, substantially as specified. 17th. The combination, with a spur-wheel carrier D, of clamp d, cam P, link p, crank p₁, hollow shaft p₂, cam Q, lever q, pin q₁ and lever q₂, substantially as specified. 18th. The combination of clincher or dies G, G₁, with cam S, T, levers s, t, and links s₁, t₁, substantially as specified. 19th. The combination, with supply tube L, of feed-wheel K having pins k on its periphery, and a curved guard H, substantially as specified. 20th. The combination, with a supply tube L, of feed-wheel K having pins k upon its periphery, cams U, lever u, link u₁, pawl lever u₂, and ratchet u₃ on the shaft of said feed-wheel, substantially as specified. 21st. The combination, with two parallel guides or supports for the two fence wires a, a₁, of a carrier or device for conveying the spur-wheel into position between said fence wires, said carrier having a semicircular seat or recess for said spur-wheel, substantially as specified.

No. 27,142. Device for Supporting Harrow and Cultivator Teeth to Supporting Beams. (*Appareil pour assujétir les dents des herses et des scarificateurs aux bâtis.*)

Daniel McKenzie and Aaron Burdick, Jimiata, Mich., U.S., 11th July, 1887; 5 years.

Claim.—1st. The combination, with the tooth-bar, of the coupling-plate having ribs G across its face, the tooth pivotally attached to its lower end, the spring F having its upper end held between the tooth-bar and the coupling plate, and having its lower end connected to the tooth, and the clip or U-shaped bolt passed through the tooth-bar and across the coupling-plate between the ribs G, substantially as set forth. 2nd. The combination, with the tooth-bar, of the coupling-plate having ribs C across its face, the tooth pivotally attached to the lower end of the plate, the spring F having its upper end held between the coupling-plate and the tooth-bar, and having its lower end provided with the wings f projecting forward of the tooth, a bolt passed through these wings across the face of the tooth, and the clip passed through the tooth-bar and across the face of the coupling-plate between the ribs G to secure the several parts together, substantially as specified. 3rd. The combination with the tooth bar, of the coupling-plate provided at the upper end with wings E and at the lower ends with lugs c, and having the rib G across its face about midway the ends, the tooth having its upper end pivotally secured between the lugs c, the spring F having its lower end connected to the tooth, and its upper end held between the coupling-plate and the tooth-bar, and between the wings E and the clip passed through the tooth-bar and across the coupling-plate between the ribs G, substantially as described and shown.

No. 27,143. Foot Cushion for Horses.

(*Bourrelet pour sabot de cheval.*)

James H. Dempsey, James T. Bennett, and Frederick M. Baird, Chicago, Ill., U.S., 11th July, 1887; 5 years.

Claim.—1st. As a new article of manufacture, a foot cushion for horses, the same comprising a yielding rubber body flat upon its upper face, continuous over the bottom of the foot, and having upon its under side and integral therewith a frog-cushion conformed to extend beneath and elastically sustain the frog of the foot, and having also thickened heel calks to elastically sustain the heel quarters and cause a slight lateral expansion of the foot at such point, and having a reduced portion in front of the heel calks to receive a short iron shoe, substantially as described. 2nd. As a new article of manufacture, a foot cushion for horses, the same comprising a yielding rubber body continuous over the bottom of the foot, and having upon its under side and integral therewith a frog cushion conformed to extend beneath and elastically sustain the frog of the foot, and provided upon its lower surface with the deep intersecting grooves extending obliquely towards the centre from the rear edge of the cushion, and having also thickened heel calks to elastically sustain the heel quarters and cause a slight lateral expansion of the foot at such point, and having a reduced portion in front of the heel calks to receive a short iron shoe, substantially as described.

No. 27,144. Lubricating Composition.

(*Composition lubrifiante.*)

The Dreher Manufacturing Company, New York, N. Y. (assignee of Hirom J. Dreher, Bloomingdale, N. J.), U.S., 11th July, 1887; 5 years.

Claim.—1st. A lubricating composition, composed of refined paraffine wax, refined tallow, refined petroleum oil, and refined plumbago, in about the proportions specified, substantially as and for the purpose set forth. 2nd. The method herein specified, of preparing a lubricating composition of paraffine wax, refined tallow, refined petroleum oil and refined plumbago, consisting in mixing and combining the paraffine wax and refined tallow in a heated condition, adding the refined petroleum oil, and then the refined plumbago, thoroughly commingling the mass and allowing the mass to cool for use, substantially as specified.

No. 27,145. Production of Colored Photographic Pictures. (*Production de photographies en couleur.*)

Edward W. Parkes, London, Eng., 11th July, 1887; 5 years.

Claim.—The process of producing colored photographs, by coloring the back of the pellicle having the positive photographic picture upon it with the desired colors in flat tints, substantially as described.

No. 27,146. Horse Collar. (*Collier de cheval.*)

Daniel J. Thompson, Dutton, Ont., 11th July, 1887; 5 years.

Claim.—1st. In a horse collar, the combination of outer frame A, inelastic sock or tube B, and elastic air-filled tube or sock C, substantially as shown and specified. 2nd. An air-tight sock or tube C filled with compressed air, in combination with a horse collar, and forming the packing thereof, substantially as shown and specified.

No. 27,147. Convertible Stand. (*Dressoir brisé.*)

Frederic S. Weatherley, Quebec, Que., 11th July, 1887; 5 years.

Claim.—1st. The herein described convertible stand composed of the pairs of parallel corner posts a, a, and B, B, the end cross bars C, D, E and F connecting the posts of each pair, the pairs of side bars G and H connecting the posts A, B and A, B respectively, and the removable boards N, having the side notches O and P, the said posts end and side bars all having a like cross section adapted to the notches O and P in the boards, as and for the purposes set forth.

2nd. The portable frame, constructed of the two pairs of corner posts *a, a*, and *B, B*, the posts of each pair being braced together, the side bars *G* and *H* hinged to the posts *B, B* and *A, A*, respectively, and having tenons *K* on their free ends adapted to slots *L* in the opposite posts, and a movable catch button on the end of each tenon *K*, substantially as shown and described. 3rd. In a convertible stand of the character described, the combination, with a supporting bar, as *H*, having a slot *R* extending through a part only of its cross-section, of a board *V*, having a notch adapted to embrace the said bar, a catch arm pivoted to the board at the notch therein and adapted to enter the slot in the bar, substantially as shown and described. 4th. In a convertible stand of the class described, the combination, with the corner posts *A, A*, and *B, B*, and the end and side bars *C* and *G* connecting the same, of the blocks *S* fixed in the upper angles of the posts and end bars, and extending to within a short distance of the ends of the same, and the board *N* having notches *O* and *P* adapted to embrace the end of the corner posts and resting on the blocks *S*, substantially as shown and described.

No. 27,148. Metallic Box or Case for Storing Articles of Food, Tobacco, Snuff Paint, etc. (*Boîte métallique pour les substances alimentaires, le tabac, la peinture, etc.*)

William B. Williamson and George H. Williamson, Worcester, Eng., 11th July, 1887; 5 years.

Claim.—Combining with a loose cover used to protect the contents of the box or case, after the box or case has been opened, or combining with a loose ring-like rim, which can be fitted on the tagger or other top of the box or case, a pointed cutter or cutters, substantially of the kinds hereinbefore described and illustrated in the accompanying drawings, the said combined loose cover or rim and cutter or cutters being used to remove or cut away the tagger tin top or other top of the box or case and acting, substantially as described and illustrated.

No. 27,149. Multiple Speed Gearing for Machinery. (*Engrenage à vitesse variable pour machinerie.*)

George W. Kirkpatrick and Helen M. Kirkpatrick, Macedon, N.Y., U.S., 11th July, 1887; 5 years.

Claim.—1st. A changeable speed gear, consisting of a casing adapted to be rotated, actuating pinions journaled therein, and an internally cogged ring meshing with said actuating pinions. 2nd. In a changeable speed gear, a casing adapted to be rotated, actuating pinions journaled therein, and the internally cogged ring meshing with said actuating pinions and provided with flanges overhanging the periphery of the casing. 3rd. In a changeable speed gear, the combination with the revolving casing, the internally cogged ring, the actuating pinions journaled in said casing and having clutch members upon their hubs, a removable pinion provided upon its hub with a clutch member and the driving pinion. 4th. In combination, with a driving pinion, a revoluble casing, an internally cogged ring actuating pinions journaled in the casing, a removable pinion adapted to be clutched to the hubs of the actuating pinions and a latch or detent to lock the revoluble casing. 5th. In combination with a revoluble casing fitted with actuating pinions, and an internally cogged ring, a removable pinion, the bracket and the driving pinion. 6th. In combination with the revoluble casing provided with a notched flange, the actuating pinions, the internally cogged ring, the removable pinion adapted to be clutched to the hub of the actuating pinions, the driving pinion and a spring-pressed latch to engage the notched flanges of the casing. 7th. The combination of the driving pinion, the bracket carrying an intermediate gear constantly meshing with the driving pinion, the revoluble casing provided with an internally cogged ring and actuating pinions, and the removable pinion adapted to be clutched to the hubs of said actuating pinions. 8th. In combination with the following elements, a revoluble casing actuating pinions journaled therein, the ring provided with internal cogs and geared with said actuating pinions and provided with peripheral cogs, the driving shaft and its pinions, a bracket, a geared wheel controlling the feed mechanism of a fertilizer distributor, and a lever to throw the peripheral teeth of the speed gear into mesh with said geared wheel. 9th. The combination of the driving shaft and its pinion, the bracket carrying the changeable speed gear and the gear wheel *K* of a driven shaft, a lifter roller and the lever provided with the trip latch lying in the path of the lifter roller.

No. 27,150. Manufacture of Stockings.

(*Fabrication des bas.*)

John Blacklock, Toronto, Ont., 12th July, 1887; 5 years.

Claim.—A stocking formed on a circular knitting machine, with a uniform stitch throughout, and fashioned on the machine by the successive reduction of the number of stitches in the courses, so as to conform when knitted to the shape of the calf and ankle before being placed on a board or shaper, substantially as described and specified. 2nd. The method of producing full-fashioned plain hosiery, with a uniform stitch throughout, by a circular knitting machine, so as to conform to the shape of the calf and ankle without wetting and stretching the stocking on a frame, by the successive removal from the needle cylinder of one or more needles at a time from each side of the selvage, the stitches on the needles removed being placed on the next adjoining needles and knitting "flat web" with each successive set of needles for several courses further from the selvage, thus narrowing the stocking until the requisite amount of "fa-hioning" has been accomplished, then removing or running the work off this needle cylinder and running it onto another needle cylinder, carrying a less number of needles, less by the number of the needles, so removed from the first cylinder and completing the stocking in the usual manner with the latter needle cylinder, when the opening at the part "fashioned" can be closed by stitching or

crochet and the stocking completed, substantially as described and specified. 3rd. A stocking knit on a circular machine, with a uniform stitch throughout, and fashioned at the lower swell of the calf and ankle by stitching along the selvage, the superfluous knitted material having been doubled in and trimmed off, so as to form a stocking, which will conform to the shape of the calf and ankle before being placed on a board or shaper, substantially as specified. 4th. The method of producing "fashioned" plain hosiery by knitting on a circular machine, the leg of the stocking adapted to cover the lower rounding of the calf, then removing the work off this cylinder and running it onto the needles in a needle cylinder, carrying the requisite lesser number of needles, and completing the stocking in the usual manner, with this latter cylinder doubling in the corner formed above the work knitted by the latter cylinder, stitching it along the selvage so as to conform to the shape of the leg, turning the stocking inside out, and removing and trimming off the part so doubled, in substantially as specified.

No. 27,151. Apparatus for Heating and Cooling Fluids. (*Appareil pour réchauffer et refroidir les liquides.*)

Arthur G. Meeze, Redhill, Eng., 12th July, 1887; 5 years.

Claim.—1st. In apparatus for heating and cooling fluids, deflecting devices so arranged as to produce a succession of impacts, and consisting of two effective parts, viz: a deflecting annulus such as *a*, and a deflecting disc, such as *d*, contrived and arranged in juxtaposition with the annulus, so as to provide a surrounding escape space, substantially as and for the purposes hereinbefore described with reference to the Figs. 1 to 14 of the accompanying drawings. 2nd. In apparatus for heating fluids, compound deflecting devices, substantially as and for the purposes hereinabove described and referred to in Figs. 15 to 24 of the accompanying drawings. 3rd. The combination of my deflecting devices, with boilers and condensers, substantially as and for the purposes hereinabove described, and referred to in Figs. 25 to 27 of the accompanying drawings.

No. 27,152. Electrical Accumulator or Storage Battery. (*Condensateur ou batterie d'emmagasinage électrique.*)

Chainisonovitz P. Elieson, London, Eng., 12th July, 1887; 5 years.

Claim.—1st. An electrical accumulator, consisting of a frame of lead or other suitable material, containing spirals of sheet lead, whose surfaces are separated by suitable insulating and acid-proof material, substantially as hereinbefore described. 2nd. The combination of a containing vessel, a series of frames inclosed within said vessel, and the spirals *c* contained within said frame, substantially as hereinbefore described.

No. 27,153. Lock Nut. (*Arrête-écrou.*)

William A. Pangs, Detroit, Mich., U.S., 12th July, 1887; 5 years.

Claim.—1st. A lock nut, consisting of a nut having an orifice adjacent to the bore of the nut, and extending to the inner face of the nut, and a locking pin located in said orifice and projecting from the inner face of the nut, substantially as shown and described. 2nd. The combination, with a screw-bolt and fish-plate, or like surface, of a nut having an orifice adjacent to and communicating with the bolt opening, and a locking pin located in said orifice and projecting from the inner face of the nut, so as to bear on the fish-plate or like surface and be forced into the nut, as the latter is secured upon the bolt, substantially as shown and described. 3rd. The combination, with a screw bolt and fish-plate or like surface, of a nut having an orifice adjacent to and communicating with the bolt opening, and a locking pin located in said orifice and projecting from one of the faces thereof, substantially as shown and described. 4th. A lock-nut consisting of a nut, provided with an orifice communicating with the bore of the nut, and having in combination therewith a locking pin engaged in said orifice, the bore of the nut and the face of the pin adjacent thereto screw-cut, the construction being such that the screw-cut face of the pin may be forced inwardly to lock the nut, substantially as described. 5th. The combination, with a screw-bolt and fish-plate, or like surface, of a locking nut consisting of a nut provided with an orifice parallel with the bore of the nut and adjacent thereto, having in combination therewith a locking pin engaged in said orifice and projecting from the inner face of the nut, so as to bear on the fish-plate or like surface, and be forced into the said orifice as the nut is screwed upon the bolt, substantially as and for the purpose described.

No. 27,154. Octave Coupler for Organs, etc.

(*Régistré d'orgue, etc.*)

Andrew H. Hammond, Worcester, Mass., U.S., 12th July, 1887; 5 years.

Claim.—1st. In an octave coupler, a device for securing the coupler levers upon the coupler board, consisting of a post provided with a hole extending through the body thereof for the purpose of holding and supporting the coupler lever, substantially as set forth. 2nd. The combination, with a coupler board provided with holes therein, and coupler levers, of posts provided with holes or slots therein for the reception of the coupler levers, and adapted to be inserted in the holes in the coupler board, substantially as set forth. 3rd. In octave couplers, wooden posts provided with holes or slots therein for the reception of the coupler lever, as a means for securing the coupler levers upon the coupler board, substantially as described.

No. 27,155. Can. (*Boîte Métallique.*)

Daniel A. Burdette, Newburgh, Ont., 12th July, 1887; 5 years.

Claim.—The combination of the chamber *B* on the side of the top of a can, with the glass front *c*, substantially as and for the purpose hereinbefore set forth.

No. 27,156. Art or Process of Gelatinizing Nitro-Glycerine. (*Art de convertir en gelatine la nitro-glycerine.*)

Heinrich Dulitz, Duren, Germany, 12th July, 1887; 5 years.

Claim.—The process of gelatinizing nitro-glycerine with nitrated cellulose by means of an addition of picric acid (trinitrophenol or trinitrophenic acid), substantially as described.

No. 27,157. Wood Cutting Machine.

(*Machine à couper le bois de placage.*)

Thomas S. Crane, Brick Church, N.J., U.S., 12th July, 1887; 5 years.

Claim.—1st. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, and a rotary crank and connecting rod pivoted to such carrier, and crank to regulate the stroke of the piston rod and carrier, substantially as shown and described. 2nd. In a veneer cutting machine, the combination, with a knife-carrier, a knife thereon and ways to guide the knife-carrier, of a stay log fed intermittently toward the knife, a piston rod actuated by steam pressure to reciprocate the carrier, a rotary shaft having a crank with crank-pin secured thereon, and a connecting rod pivoted to the knife carrier and to the said crank pin, and operating by the reciprocating movement of the carrier to rotate the crank shaft, as and for the purpose set forth. 3rd. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier by a pivoted connecting rod, and means independent of the reciprocating piston rod for rotating such crank, as and for the purpose set forth. 4th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a piston rod actuated by a piston of suitable power to operate the knife, a crank connected with such carrier by a pivoted connecting rod, and an auxiliary engine for rotating the crank and of suitable power to turn the crank at the centres, substantially as herein set forth. 5th. In a veneer cutting machine, the combination with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier by a pivoted connecting rod, and an auxiliary engine connected with the said crank by a detachable clutch mechanism, as and for the purpose set forth. 6th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank connected with such carrier by a pivoted connecting rod, a cog-wheel having shaft connected with said crank, an intermediate shaft provided with pinion, and with clutch pulley, and an auxiliary engine connected with such clutch pulley, as and for the purpose set forth. 7th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, a cam upon the crank shaft, and feeding mechanism operated by said cam to actuate the stay log intermittently, as and for the purpose set forth. 8th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, two screws journaled in bearings and fitted to nuts upon the stay log, sprocket wheels upon such screws, and a chain for connecting them together, a cam upon the crank shaft, and a variable feeding mechanism operated by the cam to actuate the screws, as and for the purpose set forth. 9th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws journaled in bearings and fitted to nuts upon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, and a rotating friction wheel, with means for pressing it against such friction pulley to retract the stay log, when the feeding mechanism is detached. 10th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier screws journaled in bearings and fitted to nuts upon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, two frictional wheels rotated in opposite directions, and means for pressing either of them at pleasure upon the friction pulley, as and for the purpose set forth. 11th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws journaled in bearings and fitted to nuts upon the stay log, detachable feed mechanism applied to such screws, means for connecting the screws to rotate together, a friction pulley upon one of said screws, and two friction wheels rotated in opposite directions by said auxiliary engine, and means for pressing either of them at pleasure upon the friction pulley, as and for the purpose set forth. 12th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary crank shaft and crank connected with such carrier by a connecting rod, a stay log movable to and from the knife carrier, screws fitted to nuts upon the stay log sleeves, threaded externally and mounted in threaded bearings, and having the screws journaled therein with shoulders to prevent longitudinal movement, feed mechanism applied to such screws, and means for actuating such feed mechanism and for oscillating the threaded sleeves at the opposite ends of the knife carriers stroke, as and for the purpose set forth. 13th. In a veneer cutting machine, the combination, with a reciprocating knife carrier, of a steam piston rod to reciprocate such carrier, a rotary shaft and crank connected with such carrier by a pivoted connecting rod, an auxiliary engine connected with the said crank by a detachable clutch mechanism, a rotary brake wheel con-

nected with the crank shaft, means as a weight for throwing the brake automatically into operation, and a hand lever connected with the clutch mechanism and with the brake mechanism, and operated, substantially as described, to detach the brake and apply the clutch, as and for the purpose set forth.

No. 27,158. Steam Generator.

(*Générateur de vapeur.*)

William H. Farris, Rock Island, Ill., U.S., 13th July, 1887; 5 years.

Claim.—1st. In a steam generator, the combination, with a boiler, steam generating grate bars, and a hollow bridge-wall provided with a water receiving and a steam discharging chamber, of an independent water conducting pipe leading from the boiler to the said water receiving chamber of the bridge-wall, and a steam conducting pipe leading from the steam discharging chamber of the bridge-wall to the boiler, substantially as set forth. 2nd. In a steam generator, the combination, with a boiler, hollow steam generating, grate bars, and a hollow bridge-wall provided with a water receiving and a steam discharging chamber, the outlet from the water receiving chamber being only through tubes leading therefrom into the interiors of the hollow grate-bars, of a water conducting pipe leading from the boiler to the water receiving chamber of the bridge-wall, and a steam conducting pipe leading from the steam discharging chamber of the bridge-wall to the boiler, substantially as set forth. 3rd. In a steam generator, the combination, with a boiler, a bridge-wall provided with a water receiving and a steam discharging chamber, and hollow grate-bars through which the chambers in the bridge-wall communicate with each other, of a water connecting pipe leading from the boiler to the bridge-wall outside of the fire-space, and a steam conducting pipe leading from the bridge-wall to the boiler, substantially as set forth. 4th. In a steam generator, the combination, with the boiler and the bridge-wall provided with a water receiving and a steam discharging chamber, communicating with each other through the hollow grate-bars, of a water conducting pipe leading from the boiler to the bridge-wall outside of the fire-space, and a steam conducting pipe leading from the bridge-wall to the boiler and passing through the fire-space, substantially as set forth. 5th. In a steam-generator, the combination, with the bridge-wall with its water receiving and steam discharging chamber, of the water conducting pipe leading from the boiler to the bridge-wall outside the fire-space, and the steam conducting pipes leading from the bridge-wall to the boiler along the sides of and within the fire-space, substantially as set forth. 6th. The combination, with the steam generating grate-bars, and the bridge-wall with its water chamber and its steam chamber, of the independent water conducting pipe and the steam conducting pipes leading from separate points of the steam chamber and uniting in a common steam inlet pipe, substantially as set forth. 7th. The combination, with the steam generating grate-bars and the bridge-wall with its water chamber and its steam chambers, of the independent water conducting pipe with its stop valves and check valves, the steam conducting and generating pipes communicating freely with each other, and having a common steam inlet pipe leading to the boiler, and the check valve located in the common steam inlet pipe, substantially as set forth. 8th. The combination, with the steam conducting tubes leading from the steam chamber of the bridge-wall through the fire-space and thence to the boiler, of the compression joints between the tubes and the bridge-wall, the draw-rods for tightening the joints, the slotted lugs located at the side of the openings into the steam chamber, and the draw-rods with their heads and squared portions adapted to engage the lug, substantially as set forth. 9th. A steam generating bridge-wall, consisting essentially of a lower hollow section and an upper hollow section, the sections being connected together in a slightly tilting or rocking adjustment by a steam-tight joint, substantially as set forth. 10th. The bridge-wall consisting essentially of the rearwardly tilting hollow upper section, the two-chambered lower section, the two sections communicating with each other and being detachable from each other, substantially as set forth. 11th. A steam generating bridge-wall, composed of hollow sections united by a steam-tight compression joint, through which the sections communicate with each other, substantially as set forth. 12th. The combination, with the lower section of the bridge-wall, with its water and steam chambers, and the hollow grate bars communicating with the steam chamber direct, and with the water chamber through a circulating tube, of the upper bridge-wall section with its auxiliary steam chamber, in communication with the steam chamber of the lower section, and the steam conducting pipes leading from the steam chamber in the upper section to the boiler, substantially as set forth.

No. 27,159. Roofing Plate. (*Bardeau métallique.*)

Archibald McKillop, London, Ont., 13th July, 1887; 5 years.

Claim.—1st. A roofing plate having one of its margins bent to form the underlap *a*, and its opposite margin forming the double lap *b* and over reaching portion *c*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of a metallic roofing plate, having the double lap *b*, underlap *a*, and nails *d* with the roofing boards *B*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a metallic roofing plate, of the body *A* having the underlap *a*, and its opposite edge folded over with the clips *e*, substantially as herein shown and described.

No. 27,160 Butter Tub. (*Tinette.*)

James McAdam, Postville, Iowa, U.S., 13th July, 1887; 5 years.

Claim.—1st. In a butter tub, the combination, with a pail or tub provided with tongues, of a cover having its free edge bent into a groove or channel fitting over the rim of the tub, and then turned outward into a flange or projection provided with slots through which the tongues pass in use, substantially as described. 2nd. In a butter tub, the combination, with a pail or tub provided with tongues riveted thereto with one rivet, of a cover having its free edge bent into a groove or channel fitting over the rim of the tub, and then turned outward into a flange or projection provided with slots through which the tongues pass in use, substantially as described. 3rd. In a butter

tub, the combination, with a pail or tub provided with tongues, of a cover having its free edge bent into a groove or channel fitting over the rim of the tub, and then turned outward into a flange or projection, provided with slots through which the tongues pass in use, and a packing interposed in the groove or channel between the rim and cover, substantially as described. 5th. The combination, with a tub having *g* lid or cover, of a fastening hook and a pivoted piece or lever drawing such hook into position to hold the lid in place when turned under the hook, *pn* freeing it when turned out from under the hook, substantially as described.

No. 27,161. Car-Coupler. (*Attelage de chars.*)

Thomas Adress, Pittsville, Wis., U.S., 23th July, 1887; 5 years.

Claim.—1st. The combination of two longitudinally slotted draw-head, a hook pivotally secured in one of said draw-heads, a spring secured to the side of the opposite draw-head, a bolt secured in the free end of said spring, and a vertical rod provided with shank on its lower end and rigidly secured wheel on its upper end. 2nd. The combination of two longitudinally-slotted draw-heads, a hook pivotally secured in one of said draw-heads, a spring secured to the side of the opposite draw-head and having its free end provided with an elongated slot, a bolt suitably secured in said slot and a vertical rod provided with a shank on its lower end and rigidly secured wheel on its upper end. 3rd. The combination of two longitudinally-slotted draw-heads, a hook pivotally secured in one of said draw-heads, a removable bolt having grooved head, a lever having its free end fitting in the groove in the head of said bolt, a spring secured to the side of the opposite draw-head, a bolt secured in the free end of said spring, and a vertical rod having its lower end provided with a shank, and its upper end with a rigidly-secured wheel. 4th. The combination of two longitudinally-slotted draw-heads, a hook pivotally secured in one of said draw-heads and having extended lower portion, a bolt, a spring secured to the side of the opposite draw-head, a bolt secured in the free end of said spring, and a vertical rod having its lower end provided with a shank, and its upper end with a rigidly-secured wheel. 5th. In a car-coupling, the combination of a vertically slotted draw-head, a transverse bolt and a link having its ends in planes at right angles to each other, one end being adapted to be secured in said vertical slot, and the other end adapted to be secured in an ordinary draw-head.

No. 27,162. Steam Boiler. (*Chaudière à vapeur.*)

George Kingsley, Leavenworth, Ks., U.S., 13th July, 1887; 5 years.

Claim.—1st. The combination, with the outer casing, of the boiler composed of an outer shell and inner shell, with flattened crown-piece, and drop-tubes communicating with the water-space and descending into the fire-space of the inner shell, horizontal partitions *H*, *H* dividing the space between the outer shell and the outer casing into said chambers *I*, *I* and bottom chamber *J*, the rear ends of the side chambers being in communication with the fire-chamber, and their front ends communicating with the bottom chamber, and the feed-water coil *G* arranged in the bottom chamber, substantially as and for the purpose described. 2nd. The combination of the outer casing, the boiler composed of an outer shell and inner shell with flattened crown-piece, and drop-tubes communicating with the water-space, and descending into the fire-space of the inner shell, the said boiler being set in the casing so as to form a partition separating the space between the boiler and casing into side spaces *I*, *I* and bottom chamber *J*, the rear ends of the side chamber being in open communication with the rear end of the fire-chamber in the boiler, and the side spaces *I* and bottom chamber *J*, being in open communication with each other at the front end, substantially as and for the purpose described. 3rd. The combination with the outer wheel *A*, having pipes *P*, connecting with a dry-steam chamber of the inner shell having flattened crown-sheet with drop-tubes, and braces communicating with said crown-sheet and extended up into and fastened to the inner periphery of the pipes *P*, substantially as and for the purpose described.

No. 27,163. Ventilator. (*Ventilateur.*)

The E. & C. Gurney Company, (assignee of Edward Gurney and Charles W. Peniston), Toronto, Ont., 14th July, 1887; 5 years.

Claim.—1st. An air-flue provided with two valves acting upon two seats formed within the air-flue at a suitable distance apart, so as to leave a dead-air space between them when the valves are seated, in combination with mechanism arranged to connect the valves with a radiator or other heater, and so constructed that the increase or decrease of the temperature of the radiator is utilized for the purpose of opening and closing the valves located within the air-flue, substantially as specified. 2nd. The combination of the cap *C* having a passage *d*, and connected by a coupling with elbow pipe *C*₁ attached to a radiator, the expansion pipe *B* and the rod *D* which actuates a lever, substantially as described and for the purpose specified. 3rd. The combination of the bored cap *C* on which the expansion pipe *B* is sleeved, and connected by a coupling with the elbow pipe *C*₁ attached to a radiator, the rod *D*, bent lever *E* pivoted in bearings formed on the half sleeve *F* which is secured to the expansion pipe *B* and which communicates motion to valves in the air-flue, substantially as specified. 4th. The combination of the expansion pipe *B*, connected by a bored cap *C* and elbow pipe *C*₁ to a radiator, the rod *D*, bent lever *E* pivoted on bearings formed in the radiator, the cord *r*, pivoted lever *k*, handle *m*, valve-rod *n*, adapted to slide in suitable bearings formed in an air-flue *H* and carrying a valve which is moved from its seat by motion derived from the expansion of the pipe *B* when seated, substantially as specified. 5th. The combination of the bored cap *C* on which the expansion pipe *B* is sleeved, and connected by a coupling with the elbow pipe *C*₁ attached to a radiator rod *D*, bent lever *E* pivoted on a bearing formed on the half sleeve *F* attached to the expansion pipe *B*, the long arm *f* of the bent lever *E* being adapted to move between guides *g* also formed in said half sleeve *F*, and connected by the cord *r* to the pivoted lever *k* which is pivotally connected with an attachment formed at the inner end of the valve rod *n*, carrying by means of suitable bearings the valves

J and *K* adapted to open and close the apertures in the valve-seats *J*₁ and *K* formed in the air-flue *H*, substantially as described and specified. 6th. The combination of the cord *t* which passes over pulley *v* having suitable bearings in the air-flue, and attached to the inner end of the valve-shaft *n* which is supported by brackets *o*, and the weight *w* adapted to reset the valves in the air-flues when the radiator has become cooled, substantially as specified. 7th. A valve located in an air-flue and adapted to be moved from its seat by motion derived from expansion caused by a heated radiator, and a means for for automatically reseating said valve when the radiator has become cooled, substantially as specified. 8th. In combination with a radiator, an expansion pipe so formed and attached to the radiator as to cause by its elongation under the influence of heat derived from the radiator the movement of a rod which actuates a series of levers, connected together in such a manner as to give an increased lateral motion to a valve-rod, which moves a valve from its seat formed in an air-flue in a wall, substantially as and for the purpose specified. 9th. In combination, with a radiator, an expansion pipe so formed and attached to the radiator as to cause by its elongation under the influence of heat, the movement of a rod which actuated a series of levers, connected together in such a manner as to give lateral motion to a valve-rod adapted to slide in suitable bearings against the action of a weight or spring, and to move from their seats formed in an air-flue two valves, and also to permit of the reseating of the valves enclosing between them a dead-air space when the expansion pipe has become so cooled and contracted that the weight or spring may draw the valves back to their seats and exclude the cold outside air, substantially as specified.

No. 27,164. Wood Screw. (*Vis à bois.*)

The American Screw Company, Providence, R. I., (assignee of Hayward A. Harvey, Orange, N.J. U.S., 14th July, 1887; 15 years.

Claim.—The improved screw herein described, which consists in a screw having a thread, the convolutions of which gradually increase in diameter from their point of commencement adjoining the unthreaded part of the shank, while the part of the core adjoining the unthreaded portion of the shank gradually decreases in diameter until the thread has acquired its full depth.

No. 27,165. Waggon Gear. (*Train de wagon.*)

John Near, Thorndale, Ont., 14th July, 1887; 5 years.

Claim.—1st. A waggon gear, in which the axles are divided at or near the centre, substantially as shown and specified. 2nd. The divided axles *E*, pivoted at *G* to beam *C*, and having square inner ends *H*, provided with flanges *L*, which abut against curved outer faces of guide-plates *I*, *J*, and in combination therewith, substantially as shown and specified. 3rd. The combination, with divided axle *E*, of guide-frame *M*, bar *O* and tongue *B*, substantially as shown and specified.

No. 27,166. Fan Attachment for Sewing Machines. (*Evantail pour sewing machines à coudre.*)

Christian W. Cook, West Jordan, U. T., U. S., 14th July, 1887; 5 years.

Claim.—1st. The combination, with the fan, its shaft and the pulley on said shaft, of the clutch head or clamping head *J* of a sewing machine, and the pulley *A* constructed to fit onto said head and provided with screws for attaching it removably to said head *J*, whereby said clutch may be operated to release the needle driving sheave without the necessity of removing said pulley. 2nd. The combination, with the fan, its shaft and the pulley on said shaft, of the clutch-head or clamp-head *J* of a sewing machine, the pulley *A* mounted removably on said clutch head, and provided with two grooves of different depths to receive the belt *l* and the said belt connecting the pulley *A* with the pulley on the fan-shaft, substantially as described. 3rd. The combination, with the elastic bracket *D* and its clamp, of the fan shaft mounted rotatively in bearings carried by said bracket, the fan and pulley mounted on said fan-shaft, the clutch-head *J*, the pulley *A* mounted on said clutch head and the belt *l* connecting said pulley *A* with the pulley on the fan-shaft, substantially as set forth.

No. 27,167. Churn. (*Baratte.*)

William H. Lynch, Danville, Que., 14th July, 1887; 5 years.

Claim.—1st. In combination with the body of the churn, the ventilator *G* having apertures *H*, pipe *J* and screw cap *I* or equivalents, as shown and described for the purpose set forth. 2nd. In combination, with the body of the churn, the pipe *D* having perforations *K* on its inner end, and a hook *F* on its outer end closed, at the inner end and open at the outer end, and constructed to fit in the bung-hole of the churn and for the plug to fit in itself, as shown and described for the purpose set forth. 3rd. In a churn, the butter-milk strainer plug *L* made to fit the orifice *O* or the bung-hole through which the strainer is inserted, as shown and described for the purpose set forth.

No. 27,168. Composition for Electrodes for Secondary Batteries. (*Composition pour électrodes de piles secondaires.*)

Silvanus L. Trippe, St. Louis, Mo., U.S., 14th July, 1887; 5 years.

Claim.—1st. A composition, for which an electrode for a secondary or storage battery may be made, consisting of one ingredient to be withdrawn from the others by electrical or chemical action of another ingredient constituting the active agent of an electrode, and a third ingredient serving to hold such second ingredient together, as set forth. 2nd. A composition of metals, from which an electrode for a secondary or storage battery may be made, which consists of lead, zinc and silver, whereby when the zinc is withdrawn from the mixture by chemical or electrical action, and the lead is oxidized, an

electrode for storage batteries will be formed, substantially as described.

No. 27,169. Manufacture of Saddles.

(*Fabrication des sellettes.*)

Henry Stengel, Yonkers, N.Y., U.S., 14th July, 1887; 5 years.

Claim.—1st. The combination, with a saddle tree having the fore and aft projections S, S1, the flaps B, and a facing C, screws *e* inserted through the flap and tree beneath the facing, the pads having the fore and aft wings or projections *d*, *d1*, and made separate from the other parts, the screws *f1* and the terrets having screw-threaded shanks *f3*, the screws *f1* and the *f3* being inserted through the facing and the screws *f1* also through the flaps and both engaging nuts in the pads, substantially as herein described. 2nd. The combination, with the saddle tree and flaps B, and a facing C secured on the outer side of the tree, of pads formed wholly of flexible material made separate from the other parts, and secured to the saddle by screws inserted through the facing and tree, and engaging nuts in the flexible back of the pads, substantially as herein described. 3rd. The combination, with the saddle tree and its flaps B, and the facing C secured on the outer side of the tree, of pads D and terrets having inwardly projecting shanks inserted through the facing and tree and engaging nuts in the pads, substantially as herein-described. 4th. The combination, with the saddle tree and flaps and an outer facing, of screws passing through the tree for securing the flaps thereto, and concealed by the outer facing pass made separate from the flaps, and screws inserted through the outer facing and tree, and engaging nuts in the pads for securing the latter in place, substantially as herein described. 5th. The saddle tree herein described, having the fore and aft projections *a*, *a1*, the holes *b5* for terret screws, and the holes *a3*, *b4*, *b5* for the reception of screws to secure the flaps and pads in place, substantially as herein described.

No. 27,170. Fly Screen. (*Moustiquaire.*)

James Griffin, Montreal, Que., 14th July, 1887; 5 years.

Claim.—A fly screen for windows, constructed of top frame D, with portion D1 hinged at *d*, netting E and weighted gauge curtain F and supported on ledges C, as and for the purposes set forth.

No. 27,171. Central Draft Lamp.

(*Lampe à courant central.*)

Frank Rhind, Meriden, Conn., U.S., 14th July, 1887; 5 years.

Claim.—1st. In a tubular wick or central draft lamp, the combination of a central draft tube forming the inner wick tube open for the admission of air, an auxiliary tube, the internal diameter of which corresponds to the external diameter of said inner tube, and adapted to set over the upper end of said inner tube, the said auxiliary tube constructed with an extension above the inner tube of a diameter less than the diameter of the said inner tube, and so as to form an annular shoulder as a rest upon the upper end of the inner tube, the sides of said extension perforated to form an air distributor, substantially as described. 2nd. In a tubular wick or central draft lamp, the combination of a central draft tube forming the inner wick tube, an auxiliary tube adapted to set over the upper end of the said inner tube, and constructed with an extension above the end of said inner tube, the auxiliary tube closed at its upper end, the sides of the extension perforated to form an air distributor, and the said tubes constructed with one or more passages between them leading to the oil reservoir, substantially as described.

No. 27,172. Sleigh Brake. (*Enrayoir de traîneau.*)

Peter G. Walker, Westwood, Ont., 14th July, 1887; 5 years.

Claim.—1st. A sleigh brake, consisting of a pivoted swivel B, having reverse wedge ends B1, held back by a spring *b*, upright brake rods C held in guides and carried by a spring *c111*, and adapted to be forced downwardly by the wedge ends B1, said swivel operated by a lever, substantially as set forth. 2nd. The combination, with the runners A, raves A1, cross-pieces A11 and uprights A111 of the bars B1, swivel B, spring *b*, rods C, spring *c111* and lever D, substantially as set forth. 3rd. The combination, with the runners A, raves A1, cross-pieces A11, and uprights A111, of the bar B1, swivel B, spring *b*, rods C, spring *c111*, lever D1 and connection *d1*, substantially as set forth. 4th. The combination, with the frame-work of a sleigh, of the bar B1, swivel B, spring *b*, rods C, springs *c111*, lever D1, connection *d1* and stop D11, substantially as set forth. 5th. In combination with the frame work of a sleigh, the bar B1, swivel B, wedges B1, rods C, points *c*, guides *c1*, *c11*, spring *c111*, and means for operating said swivel B, substantially as set forth.

No. 27,173. Stove Grate. (*Grille de poêle.*)

The E. & C. Gurney Company (assignee of Edward Gurney), Toronto, Ont., 16th July, 1887; 5 years.

Claim.—1st. A frame or upper grate A, made shorter than the frame E, within which it fits, and having trunnions C formed on it, in combination with the rollers F journalled in the recesses D and designed to support the trunnions C, substantially as and for the purpose specified. 2nd. The cinder grates G, provided with handles H, and independently supported on ledges *a*, formed on the frame E, as specified. 3rd. The cinder grates G, located below the open space surrounded by the upper grate A, in combination with the movable grate A having trunnions C formed on it supported by the rollers F, substantially as and for the purpose specified.

No. 27,174. Grain Binder. (*Lieuse à grain.*)

The Johnston Harvester Company (assignee of Edward Pridmore), Batavia, N.Y., U.S., 16th July, 1887; 5 years.

Claim.—1st. The combination, with a binder driving train and the driving shaft, of the binder provided with the usual clutch of the trip lever having the diagonal arm integral therewith, and the spur

formed upon the wheel A, arranged substantially as described, whereby the said arm and spur will come into engagement just before the engagement of the trip lever and clutch-dog, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a self-binding harvester, provided with the usual clutch and driving mechanism, of the sprocket-wheel A having the spur *j* thereupon driven by the sprocket chain A2, the sprocket-wheel A1 having the driving pinion attached thereto, the trip-lever and the diagonal locking arm integral therewith, arranged substantially as and for the purpose hereinbefore set forth. 3rd. In a self-binding harvester provided with the usual driving mechanism, the combination of the trip lever, the diagonal locking arm integral therewith, the sprocket wheel having the locking spur thereupon, the sprocket chain, the driving pinion, the sprocket wheel attached thereto, mounted upon the stud having the collar and face nut, and the circularly-slotted supporting plate, arranged substantially as and for the purpose hereinbefore set forth.

No. 27,175. Machine for Loading Cartridges.

(*Machine à charger les cartouches.*)

Bailey, Farrell and Company, Pittsburg, Penn. (assignee of Edward A. Franklin, Brenham, Texas), 16th July, 1887; 15 years.

Claim.—1st. The combination, in a cartridge loader, of a reciprocating plunger with a shell holder arranged below the plunger, and provided with a removable spring bottom, which supports the shell against the action of the plunger, substantially as and for the purposes described. 2nd. The combination, in a cartridge charger, of a reciprocating plunger with a shell holder arranged below the plunger, and provided with a sliding spring bottom, which admits of the insertion and removal of the shell, and supports it against the action of the plunger, substantially as and for the purposes described. 3rd. The combination, in a cartridge loader, of a pivoted plate carrying the shell holder and normally closing the lower end of the powder or shot charger, which is arranged to register with the shell holder, a spring-actuated slide for controlling the passage between the charger and its hopper, said slide having an inclined flange at its outer end and a pin or striker on said plate, which engages the incline and closes the hopper when the shell holder registers with the lower end of the charger, substantially as and for the purposes described. 4th. In a cartridge loader, a charger composed of two telescoping tubes, one fastened to the bed plate over the receiving position of the shell holder, and the other to the supply hopper, in combination with a bracket on the bed plate, and adjustable fastening devices for supporting the hopper in any desired position over the fixed tube of the charger, substantially as and for the purposes described. 5th. The combination, in a cartridge charger, of a plunger, a plunger guide, a wad holder communicating at the bottom with the plunger guide, a spring-actuated wad-slide working through the base of the wad holder to push the bottom wad forward into the plunger guide, a vertical inclined arm on the slide, and a plunger lever provided with an arm which engages the arm on the slide and retracts the slide as the plunger descends, substantially as and for the purposes described. 6th. The combination, in a cartridge loader, of a reciprocating plunger, a plunger guide, a wad-holder arranged at the side of the guide, a wad passage between the wad holder and guide, a slide actuated by a spring to force a wad into the guide when the plunger is raised, and retracted by the plunger lever when the plunger descends, a charger arranged at each side of the guide each having a charging slide which admits the charge from a hopper into the charger, a radially moving plate closing the lower ends of the guide and chargers, a shell holder suspended on the moving plate, which is caused to register with the guide and chargers by the movement of the plate, and a movable bottom in the shell holder, substantially as and for the purposes described. 7th. A cartridge loader, having a hopper for containing powder or shot, a slide closing the bottom of the hopper, a charger arranged under the hopper, and a slide or plate closing the bottom of the charger, so that the charger may first be filled from the hopper, then cut off from the same, and finally discharged, substantially as and for the purposes described.

No. 27,176. Attachment for Billiard and Pool Tables. (*Disposition aux tables de billard et de poule.*)

Thomas E. Mather, Minnewakan, Dak., U.S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with a support, of an arm pivoted thereto, a target swivelled on the end of said arm, and a hook device for receiving and retaining said arm, substantially as set forth. 2nd. The combination, with a support, of an arm pivoted thereto, a target swivelled on the end of said arm, and a lower and upper hook for respectively engaging said arm in an operative and inoperative position, substantially as set forth. 3rd. The combination, with a support, of an arm depending therefrom, a cross-bar swivelled on said arm and a turning target located at each end thereof, substantially as set forth. 4th. The combination, with a support, of an arm depending therefrom, a cross-bar swivelled on said arm, and a turning target swivelled at each end thereof, substantially as set forth. 5th. The combination, with a support, of an arm depending therefrom, a cross-bar swivelled on said arm, an arched or turning target located at each end of said bar and a depending dog, substantially as set forth. 6th. The combination, with a supporting frame of an arm, devices for vertically adjusting the same, and an arched target swivelled on the end of the arm, substantially as set forth. 7th. The combination, with the supporting frame and notched cross-bar connected thereto, of a vertically moving arm adapted to engage said notch, and an arched target swivelled on the end of said arm, substantially as set forth. 8th. The supporting frame having the arm depending therefrom, provided with a swivelled arched target, said frame having upper horizontal portions, slotted as described, and fastening devices passing through said slots, substantially as set forth. 9th. An attachment for billiard and pool tables, having one or more swivelled targets suspended above and out of contact with the table, and capable of turning freely on its pivot, said targets

having an opening through which the balls may be shot, as and for the purpose described. 10th. An attachment for billiard and pool tables, comprising a fixed support and a target swivelled to the support and suspended thereby above and out of contact with the table, so as to be capable of turning freely on its pivot, said target having an opening through which the balls may be shot, as and for the purpose described. 11th. An attachment for billiard and pool tables, comprising a suitable fixed support and an arched target swivelled on the support and having a yielding cushion fixed thereon to thereby prevent injury to the missile when the latter strikes the target, as and for the purpose described. 12th. The combination of the support, having the fixed depending rods, and two or more arms pivotally connected to the rods and each carrying a swivelled target, as and for the purpose described. 13th. The combination of a fixed support depending from the ceiling, and having the rods, two or more arms connected to the rods and carrying swivelled targets, which are capable of turning freely on their pivots, and devices on the rods for holding the arms in an elevated or depressed position, substantially as described for the purpose set forth. 14th. The combination of a bracket fixed to the ceiling, the fixed rods depending from the bracket, the horizontal bar fixed to the rods and having a guide slot or opening, a vertically-adjustable arm H connected to the depending rods and fitted in the guide slot, and a swivelled target carried by the arm at its lower end, substantially as described.

No. 27,177. Tile Ditcher.

(Machine à canneler la tuile.)

Herman I. Potter, Leonardsburgh, Ohio, U. S., 18th July, 1887; 5 years.

Claim.—1st. In a tile ditcher, the combination, with the frame A carrying the channeled wheel D, the plough P, Q, and the chain-wheels E, G, H, K, S, O, of the endless chain N formed of plates γ , provided with extensions at one side bent over upon the body of said plates and upon themselves, and embracing the links z , substantially as shown and described for the purpose herein set forth. 2nd. In a tile-ditcher, the combination, with the frame A, the wheel D having channeled rim, and the plough P, Q, of the rods V, X, the cranks T and the levers W, α , substantially as herein shown and described, whereby the pitch of the said plough can be readily regulated, as set forth. 3rd. In a tile ditcher, the combination, with the frame A, the wheel D having channeled rim and the plough P, Q, of the bar d having rack-teeth e , the pinion-wheels f engaging the said teeth and the foot cranks g , substantially as herein shown and described, whereby the said plough can be readily raised and lowered, as set forth. 4th. In a tile ditcher, the combination, with the curved and flanged bar l , the curved bars j , having rollers k and the frame A carrying the channeled wheel D and the plough P, Q, of the wheels and axle n , M, the braces o and the tongue p, q , substantially as herein shown and described, whereby the draft can be readily applied to the machine, as set forth. 5th. In a tile-ditcher, the combination, with the frame A carrying the channeled wheel D, and the plough P, Q, of the curved bars j provided with rollers k , the curved and flanged bar l interposed between the said bars j , and provided with rack teeth r upon its concave side; the pinion wheel s engaging with the said rack-teeth, the bevelled gear wheels t, u and the shaft v and crank x , substantially as herein shown and described, whereby the frame and its attachments can be readily lowered and raised, as set forth.

No. 27,178. Stamp Pocket for Purses, Card Cases, Pocket Books, etc. (Etui à timbres-poste pour bourses, étui à cartes, porte-feuilles, etc.)

William J. Downes, London, Eng., 18th July, 1887; 5 years.

Claim.—An improvement in stamp pockets for card cases, pocket-books, purses and other like articles, by forming a suitable opening or aperture in the front of each stamp pocket, so as to enable a person to at once select and withdraw the required stamp or coin therefrom, in the manner above specified.

No. 27,179. Exercising Device for Musicians. (Appareil d'exercice pour les Musiciens.)

Almon K. Virgil, New York, N. Y., U. S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with a series of keys, of a series of sound-producing devices adapted to produce a short, quick sound, not a musical tone, arranged in position to be operated by the depression of the keys, substantially as described, whereby each excursion of each key produces two distinct sounds occurring at the same points in the travel of the respective keys, and one sound occurring in the travel of the key where in a musical instrument the musical tone would commence, and the other sound where the musical sound would cease. 2nd. The combination, with a series of keys, of a series of springs G, each of which springs has the motion of its free end limited by a flexible suspender e , substantially as described. 3rd. The combination, with a series of keys, of a series of speaking-springs arranged in position to be operated on the depression of the keys, and a series of other springs G having the extent of motion of their free ends limited by flexible suspenders, substantially as described. 4th. The combination, with a series of keys, each of which possesses a counterbalancing extension A₁, of a series of springs G in contact with said extensions A₁, and arranged upon a bar extending transversely through the instrument, said bar being connected by means of its extension H with the lever I, so formed as to be held stationary at different points, whereby the spring-sustaining bar may be rocked and held in any desired position. 5th. The combination, with a series of keys having counterbalance extensions A₁, of a series of speaking springs arranged above such counterbalance extensions, the free ends of said speaking-springs resting on said counterbalance extensions, and tending by their elasticity to press the said keys down upon their respective fulcrums as the keys are depressed, whereby the touch afforded by said keys is assimilated to that of a piano.

No. 27,180. Apparatus for Testing Electric Circuits. (Appareil pour essayer les circuits électriques.)

Alden D. Wheeler, Hyde Park, Mass., U. S., 18th July, 1887; 5 years.

Claim.—1st. In a circuit-testing apparatus, a rotary disk provided with a record dial and circuit-closers, in combination with the insulated terminals of a series of circuits successively wiped by said closers, the electromagnets common to each circuit, and the marker operated intermittently at each successive test, one of said circuit-closers co-operating with all the terminals a_1, a_2 , etc. of one set, and the other circuit-closer co-operating with all the terminals b_1, b_2 , etc. of the other set, substantially as herein described. 2nd. In combination with a fixed plate D, containing the individually-insulated terminals $a_1, a_2, a_3, b_1, b_2, b_3$, terminal ring e and circuit wires connected therewith, the circuit-closers a, b, c attached to and carried by the disk A, the two closers b, c being electrically united but insulated from the said disk, as herein set forth. 3rd. The combination, with the metallic plate D provided with the separately insulated terminals $a_1, a_2, a_3, b_1, b_2, b_3$, and ring e , of the rotary disk carrying the circuit-closers a, b, c , the peripheral stud g , catch-lever h and operating lever E, substantially for purposes stated. 4th. The disk A, its operating clock mechanism B, rotary circuit-closers a, b, c , stud g and catch-lever h , in combination with a fixed insulating plate D, containing the terminals of the several circuits, and the marker F and electromagnet G, operated successively by each and every circuit, substantially as described.

No. 27,181. Dental Apparatus.

(Appareil dentaire.)

Horace W. Parsons, Wamego, Ks., U. S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with an air pump, of a saliva-receptacle and an air-receiver, connected respectively with the suction portion of the pump and the air-discharge outlet thereof, the said receptacle and receiver being provided with tubes adapted to lead to the mouth of the patient, substantially as herein shown and described. 2nd. The combination, with a dental engine and an air-pump operated therefrom, of a saliva-receptacle connected with the pump, and provided with a tube adapted to lead to the mouth of the patient, and an air-receiver also connected to the pump and provided with a pipe adapted to lead to the mouth of the patient, substantially as herein shown and described. 3rd. The combination, with the dental engine, of an air-pump, an air-receiver holding the air discharged by the pump under pressure, a valve for controlling the discharge of air from said receiver, a tube or duct adapted to convey such discharged air from the receiver to the outer or tool-carrying end of the working-arm of the engine, and to the mouth of the patient, and means, substantially as described, for heating the air prior to its discharge from said tube, essentially as specified. 4th. The combination, with the working-arm c of a dental engine, and an air-pump, of an air tube having an insulated mouth-piece G, and a push-pin s , and attached to the said working-arm c , and an electric battery and its connections with the mouth-piece, substantially as herein shown and described. 5th. The mouth-piece G composed of the metal tube l , the non-conducting and indestructible material n and the shield o , and provided with the push-pin s , substantially as herein shown and described. 6th. In apparatus for treating patients during dental operations, the air compressing vessel E adapted to receive a forced current of air, and to discharge the same as required, in combination with the piston or plunger a within said vessel, the spring b operating to actuate said plunger against the incoming current of air, and means, substantially as described, for determining the pressure of the air within the vessel E, essentially as and for the purposes herein set forth.

No. 27,182. Combined Mangle and Wringer.

(Calandre-essoreuse.)

Thomas Collier, Racine, Wis., U. S., 18th July, 1887; 5 years.

Claim.—1st. The upright upper section a_{11} of the mangling-frame, in combination with the sleeves g fitted thereon and provided with guides g , and the removable supplemental table G supported by said guides, substantially as set forth. 2nd. The rolls frame, saddle-pieces and springs e_3 , in combination with pinion c_2 carried by the upper roller, a pinion meshing therewith and carried by a wheel or disk on the shaft of the lower roll, another pinion D₁ arranged eccentrically on the outer face of said disk, a fixed circular rack meshing with said gear D₁, and a pinion on the hub of the power-wheel which also meshes with said pinion D₁, substantially as set forth.

No. 27,183. Car Brake. (Frein de char.)

John W. Stark, Toledo, Ohio, U. S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with the lever K pivoted to the hanger L, and engaging with the chain H connected to the brake-rod G, of the bolt N pivoted to the lever K, and passing through the slotted lug l_{11} on the hanger L, said bolt being provided with a spring exerting a downward pressure to release the brakes, substantially as shown and described. 2nd. The combination, with the lever K pivoted to the hanger L, and engaging with chain H connected to the brake lever l , of the bell-crank lever M, pivoted to the hanger L and connected to the lever K by the rod R, substantially as described. 3rd. The combination of the lever K pivoted to the hanger L, and engaging with the chain H connected to the brake-rod G, the bolt N pivoted to the lever K, and passing through the slotted lug l_{11} on the hanger L, said bolt being provided with a spring exerting a downward pressure on the lever K, and the bell-crank lever M pivoted to the hanger L and connected to the lever K by the rod R, all arranged and operating substantially as shown and described. 4th. The combination of the lever K, pivoted to the hanger L, and engaging with the chain H, passing around the pulley I secured to the bottom of the car and connected to the brake-rod G, the bolt N pivoted to the lever K, and passing through the slotted lug l_{11} on the hanger L, said bolt being provided with a spring exerting a downward pressure

on the lever K, and the bell-crank lever M pivoted to the hanger L and connected to the lever K by the rod R, the said levers K and M engaging at their outer ends with racks S and guards T, all constructed and arranged substantially in the manner shown and described and for the purpose specified.

No. 27,184. Windmill. (*Moulin à vent*.)

Alpheus A. Kinney, Ravenna, Neb., U.S., 18th July, 1887; 5 years.

Claim.—1st. In a windmill, the combination of a frame and two sets of vanes, the front set being at right angles to the face of the wheel, and the rear set being at an angle to the front set and having their front edges in a line with the rear edges of the front set. 2nd. In a windmill, the combination of radiating arms upon the wheel-shaft, wheel sections of vanes secured to cross-bars provided with trunnions at their ends, pivoted in lips upon the arms, a sliding adjustable sleeve upon the wheel shaft, blocks pivoted at their ends between the inner ends of the radiating arms, and having rods sliding in perforations in the middle of the blocks, and pivoted to the sleeve with their inner ends, and arms pivoted with their inner ends to the outer ends of the rods, and with their outer ends to the outer portions of the wheel sections, as and for the purpose shown and set forth. 3rd. In a windmill having a downwardly-projecting sleeve journaled in the supporting frame and formed with a vertical slot in its side, the combination of a governing rod having a headed bolt projecting through and sliding in the slot, a collar upon the sleeve and having a groove in its inner side for the head of the bolt, and a handle for sliding it up and down upon the sleeve, as and for the purpose shown and set forth.

No. 27,185. Alarm for Doors, etc.

(*Timbre pour portes, etc.*)

Nahum J. Busby, Maplewood, Mass., U.S., 18th July, 1887; 5 years.

Claim.—1st. In a door-alarm, the combination of an ordinary bell-striking mechanism having the usual main-spring and arbor therefor, and a take-up spring secured near such arbor, and the bell-pull wire secured to such take-up spring, with an intermediate connection connecting said take-up spring with said arbor, whereby when the wire is pulled out the main-spring is partially wound, as described. 2nd. The combination, with the frame G and the main take-up spring and its shaft arranged in such frame, as described, and with the bell-hammer operative main-spring and train also arranged in said frame, and the intermediate connection connecting the main-spring arbor and the main take-up spring, of the auxiliary take-up spring applied to the main take-up shaft and to the said frame, substantially as set forth. 3rd. The combination, with the bell, its hammer and the operating train, of the latter consisting of the main-spring, its arbor, the ratchet wheel fixed and the gear revoluble on such arbor, the pawl and its spring applied to such gear, the lantern-pinion and its shaft, and the pallets and their shaft, of the arm fixed on the said arbor, the actuating-wire, the take-up spring, and the link or rod connecting the latter with the said arm, all being substantially and to operate as represented.

No. 27,186. Tube Cleaner. (*Nettoyeur de tuyau*.)

George Wishart, Montreal, Que., 18th July, 1887; 5 years.

Claim.—1st. The combination, with the flexible tube B connected to boiler, of branch A and head C with stopped end E and shallow spiral passages Et, all substantially as herein set forth and for the purposes described. 2nd. The combination, with the branch A, of the head D, with hood D₁ and pipe D₂, and outlets from same, all as herein set forth and for the purposes described. 3rd. In combination, with the branch A, the head C formed of head proper D, with hood D₁ and pipe D₂, and the stopper E with spiral recessed outlets Et, Et, all substantially as herein described and for the purposes set forth.

No. 27,187. Compound for Making Bricks, etc. (*Composé pour faire les briques, etc.*)

James P. Perkins Pullman, Ill., U.S., 18th July, 1887; 5 years.

Claim.—The within-described compound for the manufacture of bricks and other burned products of clay, consisting of a moist mixture of clay and paraffine distillate, otherwise known as "intermediate oil," substantially as and for the purposes set forth.

No. 27,188. Gate Latch. (*Loquet de barrière*.)

Theodore Martin, Wallaceburg, Ont., 18th July, 1887; 5 years.

Claim.—1st. In a gate latch of the kind described, the combination of a latch slidingly secured to the gate frame, a spring carrying the said latch and adjustable connection between the latch and spring, substantially as described. 2nd. In a gate latch, the combination of the latch B, slidingly secured to the gate, the spring bar A, secured upon the inside of the frame of the gate, and adjustable connection between the free end of the spring and the rear end of the latch, substantially as described. 3rd. In a gate latch, the combination of the sliding latch B, having adjusting notches d, e, f, the spring A notched upon its free end to adjustably engage therewith, and a rocking plate removably attached to the gate above the latch, substantially as described.

No. 27,189. Machinery for the Manufacture and Application of Angle Clamps for Uniting the Corners of Cardboard and other Boxes. (*Machine de fabrication et d'application des serre-joints pour assujétir les angles des boîtes de carton et autres.*)

Henry Campbell, London, Eng., 18th July, 1887; 5 years.

Claim.—1st. The improved machinery for the manufacture and application of angle clamps for uniting the corners of cardboard and other boxes, consisting of mechanism for cutting out or shaping the claws on the edges of a strip of metal, for bending the said strip of metal longitudinally, and the claws at the edges thereof inwards, for feeding or drawing forward the strip of metal a distance equal to the length of a finished angle clamp, for shearing off the angle clamps to length, and for applying the finished angle clamps to the corners of boxes, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawings hereto annexed. 2nd. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for cutting out or shaping the claws on the edges of a strip of metal, for bending the said strip of metal longitudinally, and the claws at the edges thereof inwards, for feeding or drawing forward the strip of metal a distance equal to the length of a finished angle clamp, and for shearing off the angle clamps to length, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawings hereto annexed. 3rd. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for cutting out or shaping the claws on the edges of a strip of metal, for bending the said strip longitudinally and the claws at the edges thereof inwards, and for feeding or drawing forward the strip of metal, all arranged, combined and operating substantially as hereinbefore described. 4th. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for bending or shaping to the desired form, a strip of metal previously cut out with claws on its edges for feeding or drawing forward the strip of metal a distance equal to the length of finished angle clamp, for shearing off the angle clamp to length, and for applying the finished angle clamp to the corners of boxes, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawing hereto annexed. 5th. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for bending or shaping a strip of metal previously cut out with claws on its edges, for feeding or drawing forward the strip of metal a distance equal to the length of a finished angle clamp, and for shearing off the angle clamps to length, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawings hereto annexed. 6th. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for feeding or drawing forward a strip of metal previously cut out with claws on its edges, and bent or shaped to the desired form a distance equal to the length of a finished angle clamp, for shearing off the angle clamps to length, and for applying the finished angle clamps to the corners of boxes, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawings hereto annexed. 7th. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for feeding or drawing forward a strip of metal previously cut out with claws on its edges and bent or shaped to the desired form a distance equal to the length of a finished angle clamp, and for shearing off the angle clamps to length, all arranged, combined and operating substantially as hereinbefore described and illustrated in the drawings hereto annexed. 8th. In machinery for the manufacture of angle clamps for uniting the corners of cardboard and other boxes, mechanism for feeding or drawing forward the strip of metal consisting of grasping devices carried by a reciprocating sliding carriage, and a lever operated by suitable cams and springs, so as to effect both the reciprocating motion of the carriage and the closing and opening motions of the grasping jaw, as hereinbefore described and illustrated in the drawings hereto annexed. 9th. In machinery or apparatus for applying angle clamps to the corners of cardboard and other boxes, the mechanism for pressing the claws of the clamps into the corners of the boxes, consisting of a pair of jaw, arranged and operating as hereinbefore described and illustrated in the drawings hereto annexed.

No. 27,190. Thermostat. (*Thermostat*.)

Lawson B. Stone, Marblehead, Mass., U. S., 18th July, 1887; 5 years.

Claim.—1st. In combination with the case and the Bourdon spring, the unnumbered end of which forms one terminal of an electric circuit, the spring-actuated insulated terminal adjustable with respect to said Bourdon spring, whereby the thermal degree of alarm may be regulated, substantially as stated. 2nd. The combination, with the thermostat, substantially as herein described, of the oil-cup and its feed-duct, the latter serving by convection of heat to operate a Bourdon spring united therewith, all co-operating as stated. 3rd. In combination with post E and case C, the Bourdon spring c attached to said post, a spring f attached to said case, a contact e carried by the latter spring and an adjusting screw e' acting against spring f, substantially as set forth. 3th. A Bourdon spring c, an adjustable terminal e opposed thereto, an insulating sleeve surrounding said terminal, a spring to which said sleeve is attached, and an adjusting screw acting against the latter spring to adjust the terminal, substantially as set forth.

No. 27,191. Art or Process of Blowing Glass. (*Manière de souffler le verre.*)

Richard E. Donovan, Francis Hazlett and James Johnston, Dublin, Ireland, 18th July, 1887; 5 years.

Claim.—1st. In apparatus for blowing glass, the combination formed by the chamber a, the pipe or tube b, piston c and hollow rod or plunger d, with the tubular cap f for providing for the free ingress and egress of air, and for the repetition of the stroke of the piston, in the manner substantially as herein specified and set forth. 2nd. In apparatus for blowing glass, the combination formed by the chamber a, the pipe or tube b, the piston c and the solid piston rod d, with the arrangement for allowing the free ingress and egress of air, in the manner substantially as illustrated in Fig. 4 of accompanying drawings.

No. 27,192. Window Sign. (*Enseigne de vitrine.*)

James B. Kerr, Toronto, Ont., 18th July, 1887; 5 years.

Claim.—1st. A window sign made up of a light frame, carrying the letters arranged inside of the glass, and means for connecting said sign to the window frames, in such manner that it can be temporarily turned back or entirely removed, substantially in the manner and for the purpose specified. 2nd. In a window sign, the combination of the frame A, letters B and plates C affixed thereto, plates D fastened to the window frames and removable pintles E, substantially as and for the purpose described.

No. 27,193. Harvester Cutter Bar.(*Porte-lams de moissonneuse.*)

Daniel B. Detweiler, Berlin Ont., 18th July, 1887; 5 years.

Claim.—1st. In a harvester cutter mechanism, the combination, with the fingers, each provided with two recesses on its upper surface, the cross strips resting in the forward one of the recesses in the fingers, and each having a recess to receive the ledger plates, of ledger plates resting in these recesses and secured to a bar 21 resting in the rear one of the recesses of the said fingers, substantially as herein shown and described. 2nd. In a harvester cutter mechanism, the combination, with fingers formed with recesses 11 and 14, and provided with cross-bars formed with recesses 13, of a bar 21 carrying ledger plates 20 formed with bevelled points 2, arranged to fit within the recesses 11 of the fingers, while the main bodies of the plates are arranged to rest within the recesses 13 of the cross-bars 12, substantially as described. 3rd. In a harvester cutter bar, the combination, with fingers formed with recesses 14 and a ledge 16 defined by a shoulder 17, of a bar 22 carrying ledger plates 20, said bar being arranged to rest within the recesses 14, substantially as described. 4th. In a harvester cutter bar, the combination, with fingers formed substantially as described, of a bar 21, and ledger plates 20 rivetted to said bar, there being a space between each ledger plate, substantially as described. 5th. In a harvester cutter bar, the combination, with the fingers and their supporting bar, of a knife bar and blades 30 and 30a secured to said bar, the blades 30 being wider than the blades 30a, substantially as described.

No. 27,194. Combined Napkin-Holder and Ring. (*Rond porte-serviette.*)

Charles W. Higgins, Toledo, Ohio, U.S., 18th July, 1887; 5 years.

Claim.—1st. In a combined napkin ring and holder, the combination with a central piece A adapted to be inserted between the collar and neck of the user, of the rod B and swivelled spring clips c, substantially as set forth. 2nd. In a combined napkin ring and holder, a central piece A having a hook at one end, and a pivoted link at the other, adapted to interlock and form a ring, combined with the rod B and swivelled spring clips c, substantially as set forth.

No. 27,195. Demijohn or Carboy Case for Acids and other Liquids. (*Bouteille d'osier pour les acides et autres liquides.*)

Robert A. Marshall, San Francisco, Cal., U.S., 18th July, 1887; 5 years.

Claim.—1st. In combination with the case A, the pivoted door B having the bottom rest C, and the side bail clasps D, the discharge slot G and the tie cord F for the purpose of holding a bottle carboy or other vessels for holding acids or other liquids, and tipping them for filling bottles and pouring out into other vessels, constructed and operated substantially as and for the purposes set forth. 2nd. In combination with the case A having the hump H, the foot-cleats K and handle L of the pivot door B having the bottom rest C, the side bail clasps D, tie cord F and discharge slot G, for the purpose of shipping demijohns, carboys and other vessels containing liquids and facilitating the handling of the same, constructed and operated substantially as and for the purposes set forth.

No. 27,196. Art or Method of Measurements for Cutting and Fitting Dresses or other Garments. (*Manière de prendre mesure pour les vêtements.*)

Mary V. Coleman, Atlanta, Ga., U.S., 19th July, 1887; 5 years.

Claim.—As an improvement in the art of dress cutting and fitting, a system in which the proportions of the several parts are determined by means of a diagram consisting of arcs and sectoral lines, the proportionate lengths of which correspond with the known proportions of the body and are deduced from a single measurement, substantially as specified.

No. 27,197. Automatic Drawbridge Gate.(*Barrière automatique de pont-levis.*)

Charles W. Martin, Wallaceburg, Ont., 19th July, 1887; 5 years.

Claim.—1st. The combination, with a vertically moving bridge gate, of a lever adjusted in proximity to the swinging end of the draw in the longitudinal centre of the bridge, and adapted to operate through suitable connections by oscillating in a vertical plane transverse the bridge, and a cam carried by the draw and adapted to actuate said lever, substantially as described. 2nd. The combination, with a movable bridge gate, of the oscillating lever D, chain E and its operative connections, with the bridge gate sheaves F and G, and cam S, all arranged to operate substantially as described. 3rd. The combination, with a movable bridge gate, of the oscillating lever D, chain E and its operative connection with the gate sheaves F and G, head H, stem I secured in bearings, and the cam S, all arranged to operate substantially as described.

No. 27,198. Conforming Collars of Coats, Cloaks and Mantles and Holding the same in place. (*Manière d'ajuster les collets des habits et des manteaux.*)

Herbert L. Wheeler, Sherbrooke, Que., 19th July, 1887; 5 years.

Claim.—In combination with a coat, cloak or mantle collar, a spring stay, substantially as shown and described and for the purpose hereinbefore set forth.

No. 27,199. Hydraulic Nozzle.(*Lance Hydraulique.*)

John Pinkerton, Barkerville, B.C., 19th July, 1887; 5 years.

Claim.—1st. The distributor or shell A, having collars B, C for connection of inlet and outlet pipes, as set forth. 2nd. The distributor or shell A, having a flange D, in combination with annular ring E and packing F, as set forth. 3rd. The globe G having gudgeons H, in combination with the distributor A, having a flange D, packing F, and ring E, as set forth. 4th. The combination, with the globe G, of the bridge bar L, elevis M and bolt N for connection with the distributor A, as set forth. 5th. The globe G having an elliptical opening K for inlet of water, in combination with shell A, as set forth. 6th. The globe G having pipe J, and upwardly bending nozzle Q, and handle P, as set forth.

No. 27,200. Machine for Twisting Wire Cable. (*Machine à tordre les câbles en fil de fer.*)

Edward C. Jones, Hamilton, Ont., 19th July, 1887; 5 years.

Claim.—1st. In a machine for twisting wire cable, the combination of the frame A, revolving reels E, E on the shaft D, and having adjustable brackets a attached thereto the shaft D, the vertical revolving shaft B, the upper end being hollow and provided with an opening c for the insertion of the wire, and made to operate substantially as and for the purpose specified. 2nd. In combination with the revolving shaft B, and reels E, E of the bevel gear G attached to shaft B, and the bevel gear H on shaft I and driven by the driving pulley J for revolving the reels horizontally for twisting the wire, substantially as specified. 3rd. In combination with the reels E, E, shaft B and wires p, p, of the tension wheel M, the wheel h, and spring block i, as and for the purpose specified. 4th. In combination with the reels E of the brakes d, as and for the purpose specified. 5th. In combination with the reels E, E, of adjustable brackets a attached thereto in slotted arms of the wheel by which they can be shifted as required, for putting on the coils of wire or any other purpose whatever, substantially as specified. 6th. The combination of the reels E, E, shaft D, shaft B, frame A, driving gear G, H, I, J, tension wheels m, n, spring i, wheel x, lower reel O, shaft M, gear wheels N, n, y, all arranged and constructed substantially as and for the purpose specified.

No. 27,201. Method of Manufacturing Gas from Benzoline, etc., and apparatus employed therein. (*Mode de production du gaz de benzoline, etc., et appareil pour cet objet.*)

Thomas Drake, Huddersfield, Eng., 19th July, 1887; 5 years.

Claim.—1st. The improvement in the art of making combustible gas, which consists in first dehydrating the air by bringing it in contact with a moisture-absorbent, then heating it, and then passing the heated air through a volatile hydrocarbon liquid. 2nd. The improved apparatus for making combustible gas, consisting of the combination of a lower, a dehydrating vessel, a heating apparatus connected to said dehydrating vessel, and a carbureting vessel connected to said heating apparatus, whereby the air is first dehydrated, then heated, and finally carbureted. 3rd. A carbureting vessel consisting of an inner oil-vessel and an outer water-vessel with an intervening space or jacket, an air-inlet pipe entering the bottom of said oil-vessel, and a gas outlet pipe entering the top thereof. 4th. A carbureting vessel consisting of an inner oil-vessel and an outer water-vessel with an intervening space or jacket, an air inlet pipe entering the bottom of said oil-vessel, a gas outlet pipe entering the top thereof, and a water-chamber beneath the oil-vessel and communicating therewith through the tube. 5th. The combination of a carbureting vessel, and means for injecting air into and forcing it through the oil therein, with a gas outlet pipe and a series of perforated diaphragms in said pipe to prevent firing back into the vessel.

No. 27,202. Fanning Mill. (*Tarare-cribleur.*)

Edward Armstrong, Goderich, Ont., 19th July, 1887; 10 years.

Claim.—1st. The combination of the dividing screen A, the cockle screen B and the grass seed sieve C, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with the dividing screen A, and the cockle screen B, of the first main sieve E, and the second main sieve F, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, with the first main sieve E and the second main sieve F, of the conducting sieve G, and the chess-screen H, substantially as and for the purposes hereinbefore set forth.

No. 27,203. Truss. (*Bandage herniaire.*)

Charles Cluthe, Toronto, Ont., 19th July, 1887; 5 years.

Claim.—1st. A truss made of spring metal bent so as to fit the contour of the body, the sides of the truss extending above the hips of the wearer, while the front portion to which the pads are attached extends below the abdomen at an angle corresponding in a measure to the angle of the bottom portion of the abdomen, substantially as and for the purpose specified. 2nd. A truss made of spring metal

bent so as to fit the contour of the body, the sides of the truss extending above the hips of the wearer, while the front portion to which the pads are attached extend below the abdomen at an angle corresponding in a measure to the angle of the bottom portion of the abdomen, in combination with a spring pad adjustably connected in guide formed in the front portion of the truss A, substantially as and for the purpose specified. 3rd. A spring *f* coiled, as described, and connected at one end to the pad-holder D, and at its other end to spindle *e*, in combination with the spring *d* connected at one end to the pad-holder D, and at its other end to the spindle *e*, substantially as and for the purpose specified. 4th. A pad B having a hub *g* formed on it, with a hole through the said hub to permit the passage of the truss A, which has a groove *h* cut in it, as described, in combination with a set screw *i* which passes through the hub *g* into the groove *h*, substantially as and for the purpose specified. 5th. A pad B having a hub *g* formed on it, and a button *k* formed on the said hub, in combination with a truss A, substantially as and for the purpose specified.

No. 27,204. Combined Necktie and Shirt Bosom. (*Cravate devant de chemise.*)

David S. Brædon, Durham, and Zebulon Harmon, Portland, Me., U.S., 19th July, 1887; 5 years.

Claim.—1st. The combination, with a bosom-holder, consisting of a front piece having a central opening, and an attached back piece covering said opening, of a removable bosom inserted between the two, and a waterproof covering permanently attached over said back piece, substantially as described. 2nd. The combination, with the ornamented front piece A B C having a central opening, and provided with a back piece *g h i* covering said opening, of a removable bosom *c* inserted between the back and front, and a waterproof covering permanently attached over the back piece, substantially as described.

No. 27,205. Combined Cuff-Holder, Necktie Supporter, etc. (*Agrafe de manchette, cravate, etc.*)

William H. Voss and Emma R. Voss, East Stroudsburg, Penn., U.S., 19th July, 1887; 5 years.

Claim.—1st. In a combined cuff-holder and necktie-supporter, the combination, with the jaws binged together intermediate of their ends, and provided with the spiral spring between them, of the pin B with the bent point B and straight point C, substantially as specified. 2nd. In a combined cuff holder and necktie-supporter, the combination, with the jaws binged together intermediate of their ends, and provided with the spiral spring between them, of the pin B with the bent point or hooks at both ends thereof having serrated edges, substantially as specified.

No. 27,206. Match Magazine and Lighter.

(*Allumoir porte-allumette.*)

James S. Foley, Chicago, Ill., U.S., 19th July, 1887; 5 years.

Claim.—1st. As an improved match magazine, a hollow plunger designed to contain a number of stub matches, and having spring fingers formed at its open end, and arranged to grasp and separate the matches as they are discharged from the said open end, substantially as and for the purpose specified. 2nd. As an improved match magazine, a hollow plunger designed to contain a number of stub matches and having spring fingers formed at its open end, arranged to grasp and separate the matches as they are discharged from the said open end, in combination with a case designed to hold the plunger, and having spring jaws formed at its open end, and designed to hold the stub match when it is discharged from the plunger, substantially as and for the purpose specified. 3rd. As an improved match magazine, a hollow plunger designed to contain a number of stub matches, and having spring fingers formed at its open end, arranged to grasp and separate the matches as they are discharged from the said open end, in combination with a spring arranged to ignite each match as it is discharged from the plunger, substantially as and for the purpose specified. 4th. As an improved match magazine, a hollow plunger designed to contain a number of stub matches, and having spring fingers formed at its open end, arranged to grasp and separate the matches as they are discharged from the said open end, in combination with a case designed to hold the plunger, and having spring jaws formed at its open end, and designed to hold the stub match when it is discharged from the plunger, a spring finger connected to the case designed to support the stub matches when in the plunger and ignite them as they are discharged separately from the said plunger, substantially as and for the purpose specified. 5th. A plunger A fitted into a case B and secured therein by a pin *d* passing through a slot *b* made in the plunger A, a spring C fitted between the shoulders *e* on the case B and the collar *f* fixed to the plunger A, the fingers *g* and *h* formed on the open end of the plunger A, in combination with the spring finger E attached at one end to the case B, and having its other end bent so as to extend through a hole in the case B made immediately below the normal position of the end of the plunger A, substantially as and for the purpose specified. 6th. A plunger A fitted into a case B, and having formed on its upper end the fingers *g* and *h*, in combination with the spring finger E and jaws K, the whole being arranged substantially as and for the purpose specified.

No. 27,207. Device for Folding and Holding Blankets, etc. (*Appareil pour rouler et sangler les couvertures, etc.*)

Walter Scott (assignee of Robert G. Henry), Waterbury, Conn., U.S., 19th July, 1887; 5 years.

Claim.—As an improved manufacture, a blanket or similar article provided with two or more hanging devices, arranged centrally thereof, two of the said devices being at or near the opposite edges of the said article, whereby the said hanging devices are adapted for use in evenly folding, as well as in suspending the article to which they are attached, substantially as set forth.

No. 27,208. Check Valve. (*Souape de sûreté.*)

John G. Blunt, Boston, Mass., U.S., 20th July, 1887; 5 years.

Claim.—The herein described check valve, composed of the part A having the boss or projection *a*, and the part B having the recess, and two or more ribs having inclined faces, and of the frusto-conical valve *c* having a backward and forward movement, and also a rising and falling movement within the recess, seating itself upon the projection *a* by gravity and guided in its movements by the inclined ribs, all substantially as described.

No. 27,209. Car Brake. (*Frein de chars.*)

Henry Hanson, Boston, Mass., U.S., 20th July, 1887; 5 years.

Claim.—1st. In a brake of the character described, the cylinder B provided with the piston E, rod G, spring H and pipe *k*, the pipe P provided with stop-cocks *p*, in combination with the chain K, pulley L, pivoted lever R, brake-beam T and shoe W, substantially as described. 2nd. In a brake of the character described, the chain U provided with the claw-hook *f*, in combination with the brake-rod V, chain K, rod G, piston E, spring H, cylinder B, pulley L, pivoted lever R, beam T and shoe W, substantially as set forth. 3rd. In a brake of the character described, the cylinder B secured to the body A, and having the pipe *k* provided with the stop-cock *m*, the piston E, rod G, spring H, chain K, pulley L, pivoted lever R, lever R pivoted to the arm S, beam T, shoe W, pipe P provided with the stop-cocks *p, p, p*, couplings *i* and pump Q, combined and arranged to operate substantially as described. 4th. In a brake of the character described, the combination of the following instrumentalities to wit: a cylinder provided with a piston, a spring for forcing the piston towards one end or head of said cylinder, an air-pipe connected with an air pump at the engine, and opening into said cylinder between the piston and a head of the cylinder, a chain connected with the piston or rod thereof, a pulley over which said chain passes, a pivoted lever connected with said chain, suitable stop-cocks for said pipe and a brake beam provided with shoes and connected with said lever, substantially as set forth. 5th. In a brake of the character described, the stop-cock *g*, in combination with the pipe P, pump Q, and cylinder B for letting the air out of said cylinder to put on the brakes, substantially as described. 6th. In a brake of the character described, the branch-pipe *k* provided with the stop-cock *m*, in combination with the cylinder B and pipe P to enable the air to be kept in the cylinder when required, or prevented from entering it when desired, substantially as set forth.

No. 27,210. Fire-place. (*Foyer*)

James G. Smith, Cleveland, Ohio, U.S., 20th July, 1887; 5 years.

Claim.—The improved fire-place herein described, provided with a double back wall, the inner of which is inclined forward, the back wall being substantially vertical, as shown, the air inlet, the continuons or zig-zag horizontal flue B, the inclined flues and horizontal top flue having discharge openings, substantially as specified.

No. 27,211. Ventilating Cap.

(*Capuchon de cheminée.*)

Hiram F. Henry, Gowanda, N.Y., U.S., 20th July, 1887; 5 years.

Claim.—1st. A ventilating cap, consisting of a section of pipe, provided with outwardly and upwardly projecting branches, having their angle of meeting directly over the centre of the said pipe, and provided with imperforate cones, plates or shields secured a short distance from their ends, substantially as shown and described. 2nd. A ventilating cap, consisting of a pipe or conduit provided with upwardly and outwardly projecting branches at its upper end, having their meeting directly over the centre of said pipe, or conduit plates, shields or cones, secured a short distance from the ends of the said branches, and a deflector consisting of a saddle in the angle of the branches or a horizontal plate, substantially as set forth and described.

No. 27,212. Portable Heating Apparatus for Warming Feet. (*Chauffe-pieds.*)

William H. Swift, Revere, Mass., U.S., 20th July, 1887; 5 years.

Claim.—1st. The combination of a heating chamber, composed of the base-plate *a*, side walls *a1*, end walls *a2* and imperforate heat absorbing top-plate *b*, and connecting bolts with a heating device placed inside said heating chamber, all substantially as described. 2nd. The combination of a heating chamber, composed of the base-plate *a* having vent holes *d*, the side walls *a1*, having vent-openings *d1, d2*, and the top plate *b*, with bolts *c*, having the extended end portions *c1* forming feet for the device and the lamp placed inside the said heating chamber, substantially as described. 3rd. The heating chamber, consisting of the perforated base-plate *a*, perforated side walls *a1*, end walls *a2*, soapstone top plate *b* and connecting-bolts *c*, combined with the lamp *e*, substantially as shown and described.

No. 27,213. Sulky Plough. (*Charrue à siège.*)

William S. Pates, Alton, Ill., U.S., 20th July, 1887; 5 years.

Claim.—1st. The combination, with the axle B, of the brackets N and P secured on the axle, the bail M hinged to the brackets, a plough having its beam extending over the bail and axle and hinged to the bail, and a lever and connections between the lever and the bail for raising and lowering the bail and plough supported thereon, substantially as described. 2nd. The bracket M, formed with angle flanges N₁ and N₂, tubular stud or sleeve O and the arm R, substantially as described. 3rd. The combination, with the axle B and the tongue F, of the bracket N having angle flange N₁ on the axle, and angle flange N₂ over the tongue, and the bolts N and N₂ by which the bracket is secured to the tongue and to the axle respectively, substantially as described. 4th. The combination, with the axle B,

brackets N and P, the bail M and plough having its beam extending over the bail and axle, of the rock-lever K, hand-lever H, rod Q pivoted to the rock-bar, and extending through an arm of the bracket N and the spring surrounding the rod, substantially as described. 5th. The combination, with the axle B, the bail M, devices for raising and lowering the bail, and a plough having its beam extending over the bail and axle, of the clip V secured to the beam, having trunnions W, adjustable saddle-brackets Y on the rear bar of the bail, having corrugated surface Y₂, tubular lugs X and elongated slots Y₁, washers Y having corrugated surfaces and the bolts Z, substantially as described. 6th. The combination, in a sulky plough, of the plough beam extending over the axle and hinged by saddle brackets to a lifting bail, the said brackets having elongated slots and a corrugated friction surface and corrugated washers with set screws, all arranged to adjust the attachment of the gang-beam to the bail and level the plough, substantially as described and for the purpose set forth.

No. 27,214. Ice and Snow Plough for Railroad Tracks. (*Charrue à glace et à neige de chemin de fer.*)

Edward Leslie, Orangeville, Ont., 20th July, 1887; 5 years.

Claim.—1st. An ice and snow plough, consisting of a plough D projecting below the top surface of the rail in proximity to its inner edge, an outwardly projecting scraper E arranged to rest upon the top of the rail, in combination with an arm or frame attached to the plough, and journalled on the axle of the wheel before which the scraper is located, substantially as and for the purpose specified. 2nd. The frame C journalled on the axle of the track-wheel, and having ploughs D and scrapers E attached to it, in combination with mechanism to vertically adjust the said frame, as specified. 3rd. The frame C, provided with arms B journalled on the axle A and having ploughs D and scrapers E attached to it, in combination with the crank-shaft G connected to the frame C and having a lever I attached to it, substantially as and for the purpose specified. 4th. A flanger connected to a frame or arm journalled on the truck axle, and having a downward projection b formed on the said flanger, which extends outwardly beyond the outside of the truck wheel, the frame K provided with arms L journalled on the axle M, in combination with the flangers J, having projections b formed on them, and mechanism for imparting the vertical adjustment to the said flangers, substantially as and for the purpose specified. 5th. A beam P, having an elongated slot d made in it to fit upon the bearing R, substantially as and for the purpose specified. 6th. A link Q arranged to connect the beam P with the frame K, so that the lateral adjustment of the latter will not affect the beam, in combination with the piston rod O connected to the beam P, and working within the steam cylinder N, substantially as and for the purpose specified.

No. 27,215. Glazier's Diamond Tool.

(*Diamant de vitrier.*)

Arthur T. Duncan, Clinton Mo., U.S., 20th July, 1887; 5 years.

Claim.—1st. In a glazier's diamond-tool, the combination of the slotted guide-plate, the handle and the diamond secured thereto, so as to project through the slot in the guide-plate, substantially as specified. 2nd. In a glazier's diamond-tool, the combination of the handle, the transversely slotted guide-plate secured to said handle, the diamond secured to a suitable block as to project through the slot in the guide-plate, and means substantially as described, whereby the diamond may be adjusted in position to cut to the best advantage on a natural angle, substantially as specified. 3rd. In a glazier's diamond-tool, the combination of the handle, the transversely-slotted guide-plate and mechanism, substantially as described, whereby the pressure of the diamond on the glass may be regulated to cause it to cut more or less depth therein, substantially as specified. 4th. The combination, with the handle, the slotted guide-plate and the diamond supported in the handle by means, substantially as described, of the rod d forming part of the supporting mechanism, the block c holding the diamond and the set-screw e, substantially as and for the purpose specified. 5th. The combination, with the handle, the slotted guide-plate and the diamond supported in the handle by means, substantially as described, of the plate E, provided with the curved slot e, the plate D, provided with the teeth d and screw-pin d₂, and pivoted as described upon the plate E, the nut d₃ engaging the pin d₂, and the worm-shaft e₁ having bearings in the lugs e₂, and engaging the teeth d, substantially as and for the purpose specified. 6th. The combination, with the handle, the slotted guide-plate and the diamond supported in the handle, by means substantially as described, of the plate E, the rectangular adjusting piece F provided with the screw-pin f₂ and the nut g₃, the rock-shaft G provided with the arm g on which the piece F is pivoted, and the plate g₂ provided with the curved slot g₁, substantially as and for the purpose specified. 7th. The combination, with the handle, the slotted guide-plate, and the diamond supported in the handle, by means substantially as described, of the rock-shaft G provided with the supporting arm g, bracket K, the link i, the spring I and the regulating screw k₁, substantially as and for the purpose specified. 8th. The combination of the handle A rounded on top to suit the grasp, the guide-plate B composed of the horizontal plate b, and vertical plate b₁, and provided with the slot b₂ and notches l, l₁, the diamond secured to a proper block and projecting out of the slot b₂, and mechanism substantially as described, whereby the angles that the diamond makes with the handle both longitudinally and laterally, and the pressure of the diamond on the glass can be regulated, substantially as specified.

No. 27,216. Waterproof Bonnet and Hat.

(*Chapeau imperméable.*)

Anna B. Floyd, Boston, Mass., U.S., 20th July, 1887; 5 years.

Claim.—Ladies' and misses' bonnets or hats, made externally of and trimmed externally with gossamer rubber fabrics, substantially as set forth.

No. 27,217. Method of Making Lead Lined Boilers. (*Manière de faire les bouilloires plombées.*)

George R. Noble, New London, Conn., U.S., 20th July, 1887; 5 years.

Claim.—The method of preparing lead-lined boilers, digesters, or other vessels and utensils of any required shape, consisting of the following steps: first, lining separate plates of iron with lead, leaving an unlined edge or removing the lead around the edge of the plate after it has been applied, second, rolling or pressing the plates so lined into proper shape, third, rivetting the iron plates together at their unlined edges, fourth, covering the rivetted space with lead, and fifth, fusing the said lead covering and the adjacent edges of the plate-lining, whereby a substantially homogeneous coating of lead is given to the inner surface of the vessel.

No. 27,218. Iron Box or Kettle to Hold Corroding Matters, either Liquid, in cakes, pulverized or in pieces, such as Caustic Soda, etc. (*Boîte ou chaudière en fer destinée à contenir des matières corrosives fondues, en pains, en poudre ou en morceaux concassés tel que des caustiques de soude et autres.*)

Théophile Blouin, Trois Rivières, Que., 22nd July, 1887; 5 years.

Réclame.—Comme nouvel article de manufacture de boîtes faites en métal, mon nouveau découpage G et H formant les glissières p et c, g et h, et I formant, le ressort J dont l'arrêt est K, le dit arrêt K, et son méplat J sur prolongations l et l₁ de couvercle les parties d'arrêts estampés k et k₁, et les estampages et bosses p et q₁, le tout et en tout tel que ci-dessus décrit et spécifié et pour les fins indiquées.

No. 27,219. Means and Process for Sugar Refining and Filtering, Clarifying and Purifying Sugar-Liquors, Sirups and Saccharine Juices. (*Moyens et procédés de défécation des liqueurs de sucre, des sirups et des jus saccharins.*)

Ferdinand G. Wiechman, New York, N.Y., U.S., 22nd July, 1887; 15 years.

Claim.—1st. The process of clarifying sugar-liquors, sirups and saccharine juices, by subjecting them to no action of finely powdered diatomaceous earth or finely powdered quartz, substantially as described. 2nd. The process of the filtration of sugar-liquors, sirups, or saccharine juices through or over a layer of finely powdered diatomaceous earth or finely powdered quartz, substantially as described. 3rd. As a new filtering medium, and as a new agent for removing cloudiness, turbidity and the impurities in sugar-liquors, sirups and saccharine juices, powdered diatomaceous earth and powdered quartz, substantially as described. 4th. The regeneration of the powdered diatomaceous earth, and powdered quartz, by washing or by ignition, or by both.

No. 27,220. Railway Switch.

(*Aiguille de chemin de fer.*)

Robert H. Isbell, New York, and Walter S. Logan, Brooklyn, N.Y., U.S., 22nd July, 1887; 5 years.

Claim.—1st. In a railway switch, the combination of the knee-joints and an actuating lever, each of the knee-joints having one end pivoted upon some stationary part, and the other end pivoted upon a bar attached to the movable rails, and the lever being attached to each knee-joint by a pivot which acts as a fulcrum to move the other, substantially as and for the purposes described. 2nd. The particular switch, shown and described, consisting of movable and fixed rails, in combination with bar b, double knee-joint c, c₁, d, d₁, and actuating lever C. 3rd. The particular switch, shown and described, consisting of movable and fixed rails, in combination with bar a, double knee joint o, o₁, p, p₁, and actuating lever O. 4th. The combination of a switch operated by a double knee-joint, and actuating lever pivoted thereto and fulcrumed thereupon, as described with the angle-plate t and its connections u and u₁, operated by the said actuating lever, substantially as and for the purpose described. 5th. Combination of a switch operated by a double knee-joint, and actuating lever pivoted thereto and fulcrumed thereupon, as described, with mechanism to set a signal also operated by the said actuating lever, substantially as and for the purpose described. 6th. The combination of a switch operated by a double knee-joint, and actuating lever pivoted thereto and fulcrumed thereupon, as described, with the angle-plate t, and mechanism to set a signal both connected to and operated by the said actuating lever, substantially as and for the purpose described.

No. 27,221. Road Cart. (*Cabrouet.*)

Edward Borland, Tilsonburg, Ont., 22nd July, 1887; 5 years.

Claim.—1st. The combination in road-carts, of the springs C and the suspending bar G, with the shafts A, A, and the body E, in the special manner hereinafter specified substantially as and for the purpose hereinbefore set forth. 2nd. In road carts, the plate d and the spring x, and the combination of the same with the body E, and the suspending bar G, substantially as and for the purpose hereinbefore set forth.

No. 27,222. Spool-Holder. (*Porte-bobine.*)

William P. Clarke, Winnipeg, Man., 22nd July, 1887; 5 years.

Claim.—1st. The combination of the base-piece A, and uprights B,

B₁, provided with arms *b*, the rods for supporting the spools, and the bars E, E₁ provided with holes *d*, and spiral slots *c* leading from the edges of bars to the holes, substantially as specified. 2nd. The combination of the base-piece A, uprights B, B₁, the pivoted rods C, C₁, the spring clamps D, D₁, and the bars E, E₁, provided with holes *d* and spiral slots C, substantially as specified.

No. 27,223. Stove Utensil Stand.

(*Dessous d'ustensile de cuisine.*)

Benjamin Weatherbee, Summerside, P.E.I., 22nd July, 1887; 5 years.

Claim.—As a new article of manufacture, a stove utensil-stand consisting of the sections A, B having rims C, D and bottoms rivetted together, a filling E being a non-conductor or adapted to resist heat, and a handle F for portability, as set forth.

No. 27,224. Horse Poke. (*Carcan de cheval.*)

John J. Magee, London, Ont., 22nd July, 1887; 5 years.

Claim.—1st. The clamps C, C for securing the cross-bar to the poke-standards, substantially as shown and described. 2nd. The clamps C, C, in combination with the standards S, S formed with a curve *a*, and the cross-bar B, substantially as shown and described and for the purpose specified. 3rd. The clamps C, C, standards S, S, formed with curve *a* and cross-bar B, in combination with the pointed pins F, bolts A, pins E and springs D, substantially as shown and described and for the purpose specified.

No. 27,225. Axle. (*Essieu.*)

Edwin Firth Troy, N.Y., U.S., 22nd July, 1887; 5 years.

Claim.—1st. In an axle, the spindle having the revolving thimble provided with the channel, combined with the axle box having a nib, kink or indentation to fit in the channel of the thimble, as set forth. 2nd. In an axle, the spindle provided with the spring actuated revolving thimble, as set forth. 3rd. In an axle, the spindle having the revolving thimble provided with the threaded portion, combined with the axle box threaded at the outer end, and the cap nut screwed over the threaded portion of the thimble, and also upon the threaded end of the axle box, as set forth. 4th. In an axle, the spindle having the revolving thimble provided with the channel, and the threaded portion combined with the axle box having the threaded outer end, and the kink or indentation to fit in the channel of the thimble, and the cap nut forming the reservoir for oil, said nut screwing upon the thimble and also upon the threaded outer end of the axle box, as set forth. 5th. In an axle, the spindle having the reduced outer end forming the two shoulders E, F, combined with the thimble G bored to fit over the reduced end of the spindle between the shoulder F and the extreme outer end, said washer being arranged outside the thimble, so as to bear against the outer end of the thimble and held in place by riveting, as set forth. 6th. The axle having the revolving thimble G on the spindle, provided with a channel J, and an oil conducting groove C on the spindle, combined with the axle box, a cap nut screwed upon the axle box, and hollowed out beyond the end of the thimble to form a reservoir for oil, as set forth. 7th. In an axle, the spindle having the revolving thimble, combined with the axle box having a nib, kink, or indentation to engage the thimble, as set forth. 8th. In an axle, the spindle having the oil conduit or groove C, and provided with a revolving thimble having a groove or channel J, the latter serving to conduct the oil to the conduit or groove C of the spindle, as set forth. 9th. The axle having the revolving thimble G, and the locking washer H therefor, the latter being provided with the flaring or bevelled portion *e* at the outer edge, for the purpose set forth. 10th. In an axle, the spindle having the revolving thimble having the threaded portion, in combination with the axle box threaded at its outer end, and a cap nut screwed upon the threaded portion of the thimble, and also upon the threaded portion of the axle box, and having an internal shoulder or drop portion *m* to bear against the end of the axle box, and a rubber ring *M* fitted within the nut against the shoulder *m*, so that the end of the axle box abuts against the ring, as set forth. 11th. In an axle, the spindle having the revolving thimble, combined with the axle box having a connection with the thimble to cause the latter to turn with the axle box, said axle box having a threaded outer end, and the cap nut screwed over the outer end of the axle box, so as to turn with the same, whereby the axle box thimble and cap nut will all turn together, as set forth. 12th. In an axle, the spindle having the revolving thimble, in combination with the axle box provided with a threaded outer end, and having a connection with the thimble, whereby the latter will turn with the axle box, and the cap nut also having a connection with the thimble and screwing over the threaded end of the axle box, as set forth.

No. 27,226. Vehicle Axle. (*Essieu de Voiture.*)

John M. Brosins, Atlanta, Ga., U.S., 22nd July, 1887; 5 years.

Claim.—1st. In a vehicle axle, the combination of the rectangular hollow axle A, extension spindle B, bed J and clips G, with screws F arranged to hold both the spindles and bed to the hollow body and allow the longitudinal adjustment of the spindle in said body, substantially as set forth. 2nd. In a vehicle axle, the combination of the rectangular hollow axle A, extension spindle B provided with projections I, sleeve C having notches I and the nut N upon the end of said spindle serving to retain the sleeve in place upon the spindle, and the axle box upon the sleeve, substantially as specified.

No. 27,227. Art of Manufacturing Starch and Machine Therefor. (*Art de fabriquer l'amidon et appareil pour cet objet.*)

Edgar E. Dweyca, Glen Cove, N.Y., U.S., 22nd July, 1887; 5 years.

Claim.—1st. The improvement in the manufacture of starch, consisting in first producing the deposition of the starch upon a starch

run or starch plane, and in then adding water and liquefying the starch while still upon the run or plane, substantially as herein described. 2nd. The improvement in the manufacture of starch, consisting in first producing the deposition of starch upon a starch run or starch plane, and in then liquefying the starch while still upon the run or plane, by the combined action of rubbers or scrapers and water kept in motion by the rubbers or scrapers, substantially as herein described. 3rd. The improvement in the method of liquefying compact and solid starch deposits, consisting in subjecting the surface of the deposit to the combined action of rubbers or scrapers, and water kept in motion by the rubbers or scrapers, substantially as herein described. 4th. The combination, with a starch run or starch plane, of rubbing or scraping devices for acting with water to liquefy starch while on the run or plane, substantially as herein described. 5th. The combination, with a starch run or starch plane, of rotary rubbers or scrapers for acting with water upon the deposit of starch to liquefy the starch while on the run or plane, and which are vertically movable to provide for raising them out of the way when depositing starch upon the run or plane, substantially as and for the purpose herein described. 6th. The combination, with a starch run or starch plane, of rotary rubbers or scrapers for acting with water upon the deposit of starch to liquefy the starch while on the run or plane, and which are free to rise and fall as they rotate, so as to bear on the starch deposit by their weight, as the depth of the starch deposit is reduced, substantially as and for the purpose herein described. 7th. The combination, with a starch run or starch plane, of an upright shaft and arms projecting rigidly therefrom to serve as drivers, rubbing or scraping arms loose upon said shaft, and connections between the rigid arms or drivers and the loose arms, whereby the latter are carried round by the shaft and caused to act with water on the starch deposit to liquefy the starch while on the run or plane, substantially as herein described. 8th. The combination, with a starch run or starch plane, of a series of rotary arms for acting with water upon the starch deposit to liquefy the starch while upon the run or plane, and shields or aprons projecting from said arms to prevent the spatter of the liquefying starch as the arms pass over lumps of starch, substantially as herein described. 9th. The combination, with a starch run or starch plane, of upright shafts, each supported by a step at the bottom of the run or plane, and provided with arms to act with water on the starch deposit to liquefy the starch while on the run or plane, a driving shaft and gearing through which the upright shafts are driven, and movable bearings for the upper ends of the upright shafts to provide for disengaging them from their driving mechanism, substantially as herein described.

No. 27,228. Window Sash. (*Croisée de fenêtre.*)

Frederick E. Smith, Boston, Mass., U.S., 22nd July, 1887; 5 years.

Claim.—1st. A glazed window sash, having double panes so arranged as to form an air-space or chamber between them, its upper rail being provided with a flue which leads upwardly from said chamber and opens on the inner face of the sash, and its lower rail provided with a flue which leads downwardly from said chamber and opens on the outer side of the sash, said flues being provided with means for closing the same, substantially as described. 2nd. The sash C, having the panes *v, v*, arranged to form the air-chamber *m*, the top rail K of said sash being provided with the inwardly opening flue *t* and pivoted plate *i*, and the meeting-rail *y* with the outwardly opening flue *f* and pivoted plate *v*, substantially as set forth. 3rd. The sash D, having the panes *v, v*, arranged to form the air-chamber *M*, the meeting-rail *r* of said sash being provided with the flue *d* and pivoted plate *i*, and the lower rail *b* with the flue *z*, knob *p*, plate *q* and a rod journalled horizontally in the rail *h* to which said plate and knob are attached, the knob being disposed at the inner and the plate at the outer side of the sash and the plate adapted to close said flue, substantially as described.

No. 27,229. Snow Plough. (*Charrue à Neige.*)

Jacob G. Roberts, Tecumseh, Mich., U.S., 22nd July, 1887; 5 years.

Claim.—In a snow plough, the combination of the curved mould-boards A, provided with the outer lifting flanges B, with the inner flanges C carrying adjustable hangers D, and brush-heads E, the parts being constructed, arranged and operating substantially in the manner and for the purposes described.

No. 27,230. Mower Knife Sharpening Machine. (*Machine à rémouler les lames des faucheuses.*)

Louis P. Sefton, Toronto, Ont., 22nd July, 1887; 5 years.

Claim.—A mower and reaper knife sharpener for sharpening the knives of these machines without the removal of said knives from the machines, and constructed with or without the handle *c* having two united strands of steel wire *d, d*, in the middle to strengthen the same, substantially as shown and described as a new manufacture.

No. 27,231. Lawn Mower. (*Faucheuse de pelouse.*)

William L. Woodruff, Iowanda, Penn., U.S., 22nd July, 1887; 5 years.

Claim.—1st. As an improvement in lawn mowers, the draft mechanism consisting of the notch bar, draft rope movably attached to said bar, guard plate and pin, all combined and arranged substantially as set forth, to allow movement of the machine in a line parallel to that followed by the operator, but at a distance therefrom, as specified. 2nd. In a lawn mower, the combination of a transverse draft bar, a rope adjustably attached to said bar, and devices for guiding and preventing contact of said rope with the wheels when the mower is operated, in the manner substantially as set forth. 3rd. In a lawn mower, the combination, with the plates C, C, of the bar D provided with a series of inclined notches *a, a*, the guard plate *d, d*, having pin *c* and the rope E having a ring *b* at one end for engagement with the notches of the bar, as set forth.

No. 27,232. Steam Boiler. (*Chaudière à vapeur.*)

Henry Sewrey, Barrie, Ont., 22nd July, 1887; 5 years.

Claim.—1st. A vertical boiler composed of an inner and an outer shell, with a water space between the two, the inner shell being fluted and stayed by rows of horizontal water tubes extending across and above the fire-box, the outer shell being cylindrical and held in position by bolts, so arranged that the said outer shell may be readily removed, substantially as and for the purpose specified. 2nd. A rectangular shell A, having rows of water tubes B and angle-iron D to stay it, in combination with the cylindrical shell E detachably connected to the inner shell A, and having its crown F strengthened by the stays G, substantially as and for the purpose specified.

No. 27,233. Sewing Machine Attachment and Connection Therefor. (*Machine à coudre.*)

Lois W. McClung, Pueblo, Col., U.S., 22nd July, 1887; 5 years.

Claim.—1st. A sewing machine attachment consisting essentially of a lever pivotally connected to a bar that is arranged for attachment to the frame of the machine, and a link pivotally connected to the inner end of the lever, and arranged for connection with the pitman of the machine, substantially as described. 2nd. The combination, with the crank shaft of a sewing machine, of a balance wheel, a pitman, a treadle, a lever pivotally connected to a bar that is arranged to be adjustably connected to the frame of the machine, and a link that is pivotally connected to the lever and to the pitman of the machine, substantially as described. 3rd. The combination, with a lever provided with a folding or detachable handle, of a bar adjustably connected to the frame of the machine, a link pivotally connected to the lever, a machine pitman to which the link is pivotally connected, and a balance wheel, substantially as described. 4th. The combination, with a hand attachment for sewing machines of the character described, of a pitman clamp carried by the attachment, and clamps for connecting the attachment to the machine frame, substantially as described. 5th. The combination, with a sewing machine attachment consisting of a bar, a lever pivotally connected thereto, a link carried by the lever and a means for attaching the same to the machine frame, of a clamp consisting of a yoke 20, a follower 22, a set-screw, and a means for holding the set-screw, substantially as described. 6th. The combination, with an adjustable bar arranged for attachment to the frame of the machine, of a lever pivotally connected to the bar, a link pivotally connected to the inner end of the lever, and a clamping attachment, substantially as described, whereby the link may be connected to the lever, as and for the purpose stated. 7th. The combination, with a supporting-bar formed with vertical slots, of T-shaped bolts arranged to pass through said slots, nuts arranged to engage the threaded shanks of the T-shaped bolts, U-nuts arranged to encircle a portion of the machine frame and to pass through apertures formed in the heads of the T-bolts, a lever pivotally connected to the bar, a link connected to the inner end of the lever, a U-shaped yoke pivotally connected to the lower end of the link and formed to receive the pitman of the machine, a follower mounted between the arms of the yoke, a bolt passed through apertures formed in the yoke arms, a nut arranged to engage a threaded shank formed upon the bolt, and a set-screw carried by the bolt, substantially as described.

No. 27,234. Composition of Matter to be used in Converting India Rubber or any of its Compounds into Hardened Rubber. (*Composition de matières pour servir à convertir le caoutchouc ou chacun de ses composés en caoutchouc dur.*)

William B. McHarvey and Walter A Rose, Rochester, Penn., U.S., 22nd July, 1887; 5 years.

Claim.—A compound composed of oxide of iron, and petroleum or rock oil to be used in the converting of india rubber or any of its compounds into hardened rubber, substantially in the proportions and for the purposes set forth.

No. 27,235. Weighing Machine for Grain, Seeds, Granular and Pulverous Substances. (*Balance-bascule pour les grains et les substances granulées et en poudre.*)

Henry Pooley and Son, (assignee of Henry Pooley and John Parkinson), Liverpool, Eng., 22nd July, 1887; 5 years.

Claim.—1st. In an automatic weighing machine of the type herein described, the combination of the "catch grain" *g* for receiving the flow of grain after the weighing of the material is completed, having trunnions *g* mounted and working in bearings attached to the sides of the receptacle C, in combination with the discharging door C₁ and connecting lever *g*, whereby the said "catch grain" *g* is operated and the flow of grain after full weight is reached, is caught, substantially as and for the purposes set forth. 2nd. The combination, with the weight or pan scale of a weighing machine of the type herein described, of a mechanism having a spring *i* and constructed to exert an upward pressure to the said pan or weight scale, until the weigh beam is substantially in equipoise, whereby the full weight of the weights, and weight scale is not exerted against the weighing receptacle C, until the weigh beam is in equipoise, substantially as and for the purposes set forth. 3rd. In a weighing machine of the type herein described, the means, substantially set forth for discharging the weighing receptacle C, which means consists of a weight or hammer *d* mounted upon a bearing *d*₁ and caused to fall over through the falling of the beam A, whereby the catches *a*₂ of the lever *a*, through the rod *a*₁, are disengaged from the projections C₂, and the door C₁ is opened by the weight of the grain within the receptacle C. 4th. In automatic weighing machines of the type herein described, the valve

k of the feed shoot *h*, in combination with the link *m*₁ and device *l*, such devices being mounted on the weigh beam, whereby the said valve is closed as the beam comes into equipoise, such equipoise being obtained previously to the full weight of the material being supplied to the weighing receptacle C by the spring mechanism *i*, substantially as and for the purposes set forth. 5th. The combination, in a weighing machine, of the type herein set forth, of the valve *k* and a cut-off valve or a scoop *g*, the valve or scoop *g* being operated from the discharging door C₁ of the weighing receptacle C, and the valve *k* being operated by the falling of the weighing beam A, as set forth. 6th. The feeding shoot of a weighing machine of the type herein set forth, constructed with a groove *m* into which the edge of the cut-off valve *k* falls in shutting off the supply to the weighing receptacle, substantially as set forth. 7th. The combination, with the cut-off valve *k* of a weighing machine of the type herein described, of the adjustable shutters or slides *n*, whereby the final feed of material to the weighing receptacle C can be regulated and varied, substantially as set forth. 8th. In a weighing machine of the type herein set forth, the combination, with the discharging door C₁ of the receptacle C, of the counterbalance weight C₃, catch lever *a*, catch jaws *a*₂, rod *a*₁, hammer *d*, slide *e*, operating together, and whereby the door C₁ is opened, the receptacle C discharged and, when discharged, the door C₁ is closed and held, substantially as set forth. 9th. In a weighing machine of the type herein set forth, the catches *a* having jaws *a*₂ mounted on fulcrum *a*₁, in combination with the rounded nose projections C₂ of the door C₁, whereby the automatic engagement of the catch lever *a* with the discharging door C₁ is effected, as set forth. 10th. The combination of the spring *i*, base *i*₂, plate *i*₃, rods *i*₄, lock nut *i*₅, substantially as and for the purposes set forth.

No. 27,236. Tilting Valve for Dividing Grain, etc. (*Valve à bascule pour séparer les grains, etc.*)

William H. Campbell, Cleveland, Ohio, U.S., 23rd July, 1887; 5 years.

Claim.—1st. The combination, with a tilting valve having a divided ridge and sloping wings, of a depending arm or poise for balancing the valve, substantially as set forth. 2nd. In a tilting valve, the combination, with an apron having sloping wings and dividing ridge centrally located on the apron, of a supporting bar pivoted on knife edges, a depending arm adjustably secured to the supporting bar, a poise mounted on the arm and made adjustable lengthwise of the latter, the parts being arranged substantially as set forth.

No. 27,237. Show Case. (*Montre à marchandises.*)

Edwin J. Fletcher, New York, N.Y., U.S., 23rd July, 1887; 5 years.

Claim.—1st. In a show case, the uprights D situated within the case of the rear portion thereof, and having arms D₁, D₂ extending outward therefrom, in combination with the trays G supported by, and arranged to slide on said arms D₁, D₂, as herein specified. 2nd. In a show-case, the uprights D situated within the case at the rear portion thereof, having arms D₁, D₂ of different lengths, extending forward therefrom, provided with recesses *d*, in combination with trays G having stops *g*, as herein specified. 3rd. In a show-case, the uprights D situated within the case at the rear portion thereof, having feet D₄ and arms D₁, D₂ and D₃ formed therewith, said arms being provided with recesses *d*, in combination with trays G having stops *g* supported by, and arranged to slide on said arms D₁, D₂ and D₃, as herein specified. 4th. The show-case described, divided into lengths, the doors B for each one of the lengths, the uprights A₁ between the doors, the uprights D situated within the case at the rear portion thereof adjacent to, and in front of the uprights A₁, and having arms D₁, D₂ and D₃, and the trays G resting upon, and sliding on the said arms D₁, D₂ and D₃, all combined and arranged for the purposes herein specified.

No. 27,238. Device for Cleaning Gun Barrels. (*Appareil pour nettoyer les canons des fusils.*)

Samuel H. Heginbottom, East Saginaw, Mich., U.S., 23rd July, 1887; 5 years.

Claim.—1st. In a gun-cleaning device, the combination, with a hollow rod and a wiper-holder, of a piece provided with a spiral twist or groove and with one end secured to the wiper-holder, and the opposite end passed within the hollow rod, and a rigid pin projecting within the hollow rod and engaging with the spiral groove, substantially as herein set forth. 2nd. In a gun-wiping device, the combination, with a hollow rod *a* having the cross-pins *c* near its end, of a twisted piece *d* with one end passed into the rod *a* and between the pins *c*, and with its outer end secured to a wiping piece *f*, substantially as and for the purpose herein set forth. 3rd. In a gun-cleaning device, the combination, with a hollow rod *a* having the cross-pins *c* passed through the rod near its end, a twisted piece *d* passed into the rod and between the pins, and provided on its outer end with a wiping device, of a stop, *e*, secured to the inner end of the twisted piece and beyond the pins, substantially as and for the purpose herein set forth. 4th. In a gun-cleaning device, the combination, with a hollow rod *a* provided near its ends with the cross-pins *c*, a twisted piece *d* passed into the rod and between the pins, a wiper-piece *f* with one end provided with a screw-thread and secured to the outer end of the twisted piece *d*, of a sleeve *h* secured to the threaded end of the wiper-piece and extending over the twisted piece and reaching upon the end of the rod *a*, substantially as and for the purpose herein set forth.

No. 27,239. Magneto-Telephonic Apparatus. (*Appareil magnéto-téléphonique.*)

Frederick H. Brown, Washington, D. C., U.S., 23rd July, 1887; 5 years.

Claim.—1st. The combination, with a transmitting instrument

having a permanent magnet, helices wound around the magnet, and a diaphragm arranged in proximity to the poles of the magnet, of a receiving instrument of similar construction connected in circuit with the transmitting instrument, the number of convolutions of wire in the transmitting instrument being greater than in the receiving instrument, substantially as described. 2nd. The permanent magnet having parallel terminal arms of the same polarity, and the extended arm of opposite polarity, one of the said parallel arms being located between the other parallel arm and the neutral point of the magnet, in combination with the diaphragm secured to one of the parallel arms and free to vibrate over the other, and a helix on one or each of the parallel arms, substantially as described. 3rd. In a magneto-telephonic system, a magneto transmitting telephone having a magnetic field of greater intensity than that of its companion magneto receiving telephone, the said field varying in intensity in approximately the same proportion as the resistance between the said instruments.

No. 27,240. Apparatus and Tool for Finishing Boots, etc., also applicable for Shaping, Polishing or Finishing Metal or Wood. (*Appareil et outil pour polir les chaussures, etc., aussi applicable pour s'heper, dresser ou finir le metal ou le bois.*)

Thomas Gare, Stockport, Eng., 23rd July, 1887; 5 years.

Claim.—1st. The combination of a rotary flexible shaft *d*, consisting of two layers of wire of different sections and without a core, with a suitable driving gear and tool-holder *d*₂, the flexible shaft *d* being capable of rotating, sliding and radial movements, and the tool-holder *d*₂ arranged for the reception of rotary tools or cutters *c* applied to the article and guided by the hand of the operator, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bracket *g*, capable of swivelling in the bracket *g*₂, with the driving spindle *d* capable of rotating and sliding in the bracket *g*, substantially as and for the purpose hereinbefore specified. 3rd. The combination of a rotary flexible shaft *d*, spindle *e*₃ or handle *o*, with a solid or hollow disc *i* fixed at a right angle to the centre of rotation of the disc *i*, one side or face of the latter being made so as to act as a cutting, sand papering or polishing surface, substantially as and for the purpose hereinbefore specified. 4th. The combination of a rotary flexible shaft *d* or spindle *e*₃, with a disc *i*, the face of which is sectionwise rasp or file cut, so as to form passages *i*₁, or forming or providing the same with radial knives and slots *i*₂ and *d*₂ respectively, substantially as and for the purpose hereinbefore described. 5th. The combination of a rotary flexible shaft *d* or spindle *e*₃, with a disc having a soft bed or pad *k* applied between the face of the disc *i*, and sand or emery cloth or polishing lap *n* and *m*₁, the latter being fixed to the disc *i* by means of an annular elastic ring *l* fitting into a corresponding groove formed around the disc *i*, substantially as and for the purpose hereinbefore specified.

No. 27,241. Whiffletree. (*Palonnier.*)

Charles Davis and Newton Redmond, East Saginaw, Mich., U. S. 23rd July, 1887; 5 years.

Claim.—The improved draft equalizer herein described, consisting essentially of the main whiffletree *W*, the short link *d* and the long link *b* at opposite ends thereof, carrying rings as shown, the link *F* connecting the doubletree with the ring of the said short link, the longitudinally curved springs clipped to the rear middle portion of the doubletree and small whiffletree, the links *B* passing around the ends of the said double and whiffletree, and connecting the ends of the springs with the singletrees and draft-hooks, substantially as specified.

No. 27,242. Set Dog for Saw-Mills.

(*Clameau de scierie.*)

Adam Watson, Egremont, Ont., 23rd July, 1887; 5 years.

Claim.—1st. The combination, figure 1, of the lever *h* and pinion *j*, with the pitman *c* operating the frame *d*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, figures 2 and 3, of the lever *c*, a pinion *g*, with the rack *f*, operating the sewing beam *b*, substantially as and for the purpose hereinbefore set forth.

No. 27,243. Pianoforte. (*Pianoforte.*)

Wilhelm Hirtle, Berlin, Germany, 23rd July, 1887; 5 years.

Claim.—1st. A pianoforte, or other similar musical instrument, having a double set of wires or strings, in combination with two rows of keys, such as *f*, *m*, *k*, and a coupling or connecting lever, such as *n*, in such manner that, by drawing the lever between the upper and lower manuals and depressing the latter, a simultaneous action on both sets of strings or wires is produced, whereas by disconnecting or uncoupling the lever *n* only the strings or wires belonging to the one set of keys will be operated on, substantially as described in the foregoing specification and shown in the accompanying drawing. 2nd. In a pianoforte, or other similar musical instrument, the combination, with the mechanism set forth in claim 1, of a pedal, such as *p*, in such manner that, by coupling or uncoupling the lever *n* and depressing the said pedal, either both or only one set of wires or strings is or are operated on, substantially as described in the foregoing specification and shown in the accompanying drawing.

No. 27,244. Valve Gear. (*Mecanisme de soupape.*)

Delano H. Dugar, Cedartown, Ga., U. S., 23rd July, 1887; 5 years.

Claim.—1st. The combination, with the valve stem having a conical enlargement, and the cap plate having a conical shell projecting therefrom, fitting over the enlargement, and provided with openings extending therethrough, which terminate near the small end of the crank mounted on the cap plate projection and keyed to the valve

stem, a washer and nut on the outer end of the valve stem, and a packing interposed between the washer and the crank, substantially as and for the purpose set forth. 2nd. The combination of the valve-stem having a conical enlargement, the cap plate having a conical shell projection fitting over the enlargement, and provided with openings or passage ways leading from the inner face to the interior of the shell near its closed end, the crank mounted on the projection keyed to the stem and recessed on its outer face, a packing fitting in the recess, a flanged washer having a raised central projection bearing upon the packing, and a nut on the outer end of the valve stem to hold the parts in place, substantially as set forth. 3rd. The combination, with the valve stem having a shoulder formed thereon, and a truncated cone-shaped washer filled thereon and bearing upon the shoulder, of a cap plate fitted over the washer and having passage-ways formed therethrough, substantially as shown, a crank mounted on the projection of the cap plate and keyed to the valve stem, a nut and washer on the outer end of the valve stem, and a packing interposed between the washer and the crank, substantially as set forth. 4th. The combination, with the cap plate having a cone-shaped projection, and an annular groove at the base of the projection, of the crank mounted on the projection and having an annular flange fitting in the groove, substantially as and for the purpose set forth. 5th. The combination, with the steam chest and valves located therein near each end, dividing it into a central and end compartments, forming a live and exhaust chambers respectively, of removable plates closing sight holes or openings leading into the end or exhaust compartments, substantially as and for the purpose set forth. 6th. The combination of the steam chest, rotary and cut-off valves located near each end, and placed in a perpendicular position, cranks keyed to the stems of each, a cross-head on each side of the chest located midway of the valves, and pitmen connecting the cranks of the valve stems and the cranks of the cut-off stems with the respective cross-heads, whereby each two sets of valves are actuated simultaneously and independently of each other, substantially as set forth.

No. 27,245. Eye-Glass. (*Lunettes.*)

Charles W. Taylor, Chattanooga (assignee of John F. White, Gallatin), Tenn., U. S., 23rd July, 1887; 5 years.

Claim.—1st. In an eye-glass, having its two lenses connected by a spring, a divided spring having its two parts united by a hinge or joint, the axis of which is parallel with the focal axis of the glasses. 2nd. The combination of the lenses *A*, *A*, the divided spring *B* and knuckle-joint *C* having a horizontal axis, substantially as described. 3rd. The lenses *A*, the divided spring *B* having its adjacent ends formed and united by a horizontal pivot, in combination with shoulders or stops *a*.

No. 27,246. Baker's Oven. (*Four de boulangerie.*)

Anthony Meyer, St. Catharines, Ont., 23rd July, 1887; 5 years.

Claim.—1st. The flue underneath at the back end, and above the oven, substantially as and for the purpose hereinbefore set forth. 2nd. The flue *C* leading from the ash-pit to the chimney, substantially as and for the purpose hereinbefore set forth.

No. 27,247. Fire-Escape. (*Sauveteur d'incendie.*)

William Cluse, Tottenham, Eng., 25th July, 1887; 5 years.

Claim.—1st. A fire-escape, consisting of a folding ladder fixed to the wall of the house or building, and fitting, when folded, into a recess therein, and capable of being opened out when required for use by mechanism operated from the interior of the house, substantially as described. 2nd. A fire-escape, consisting of a folding ladder fixed to the wall of the house or building, and provided with additional steps or rounds to facilitate the passage by projecting mouldings, substantially as described. 3rd. A fire-escape consisting of a folding ladder fixed to the wall of the house or building, such ladder having steps or rounds furnished with horns *e*, *e*, which abut upon the uprights of the ladder when the ladder is opened for use, substantially as described.

No. 27,248. Harrow. (*Herse.*)

Timothy B. Hussey, North Berwick, Me., U. S., 25th July, 1887; 5 years.

Claim.—A rhomboidal-shaped harrow tooth, having inclined and parallel front and rear edges, and parallel horizontal upper and lower edges, the upper edge having opposite projecting flanges, said tooth having a stiffening rib on its back, the same being rolled in the blanks, substantially as set forth.

No. 27,249. Creamer. (*Garde lait.*)

Clement M. Léger, McGinley, N. B., 25th July, 1887; 5 years.

Claim.—1st. The combination, in a creamer, of the body *A*, having the elbow pipe *d*, with the swinging pipe *e*, which has one of its ends fitted to turn easily in the pipe *d*, and provided with the strainer *g*, substantially as shown and described. 2nd. The combination, in a creamer, of the cooling tube *H*, having the vent tube *i*, with a swinging pipe *e* socketed in the elbow pipe *d*, and provided with the funnel *F* and strainer *g*, substantially as shown and described. 3rd. The combination, in a creamer, of the cooling tube *H*, and vent tube *i* with a faucet for drawing off the milk, and a removable shield placed over it and held by cleats to the body of the creamer, substantially as shown and for the purpose set forth.

No. 27,250. Valve. (*Soupape.*)

William Wade, Trenton, Mich., U. S., 25th July, 1887; 5 years.

Claim.—1st. The combination, with the shell, seat and cage of a valve, of a valve-stem having a screw-thread thereon, a rotatable nut applied to the threaded portion of the stem within the cage, and detachably secured to the shell against rotation, and a collar secured to the stem, to turn therewith and slide longitudinally thereon, and

bearing against said nut and an inner wall of the case, substantially as described. 2nd. The combination of the cage H, spindle D having the squared part *d* and screw-thread *e* thereon, collar K fitted on the part *d* of the stem-nut L and set-screw *m*, substantially as shown and described. 3rd. The combination, with the valve casing, of the valve-stem D having the squared part E and head *f*, and the valve F having therein the plug G, substantially as shown and described. 4th. In a valve, the combination, with the valve-casing and a screw-threaded valve-stem, of a collar on and turning with said stem, above the threaded portion of the stem and within the valve-casing, a rotatable nut fitted to the threaded portion of the stem and bearing against said collar, and a set-screw tapped through the valve-casing to bear against the nut to lock it to the casing, substantially as described.

No. 27,251. Harrow Tooth-Holder.

(*Goupille pour dent de herse.*)

Joseph E. Beebe, Adair, Iowa, U.S., 25th July, 1887; 5 years.

Claim.—1st. A harrow tooth-holder having a vertical opening to receive the tooth, and a horizontal opening to receive the beam, and adapted to rock upon the beam to permit the tooth to automatically shift from a vertical to an inclined position, or *vice versa*, when the draft is reversed. 2nd. The combination of a notched bar, a holder provided with partially intersecting vertical and transverse apertures, each surface of the upper and lower walls of the transverse aperture extending part way in a horizontal, and part way in an inclined direction, the inclined portion of the one surface being arranged opposite the horizontal portion of the other surface, and a tooth adapted to pass through the vertical aperture of the holder and extended into the notch of the bar, whereby the former and the latter are interlocked, and the tooth permitted to automatically shift from a vertical to an inclined position, or *vice versa*, when the draft is reversed. 3rd. As an improved article of manufacture, a harrow tooth-holder consisting of a casting provided with a vertical and transverse aperture adapted to receive the tooth and beam respectively, the transverse aperture having its upper and lower surfaces or walls, each provided with a horizontal and an inclined surface, the said horizontal and inclined surfaces being arranged at opposite ends of the aperture, substantially as and for the purpose set forth. 4th. In combination with the harrow beam, the tooth-holder wholly enclosing the latter, and having the opening through which said harrow beam extends inclined or tapered from one end of said tooth-holder, as set forth. 5th. In a harrow, a tooth-holder having a vertical opening to receive the tooth, with means for adjusting the latter therein, and horizontal opening to receive the beam and adapted to rock upon the beam to permit the tooth to automatically shift from a vertical to an inclined position, or *vice versa*, when the draft is reversed. 6th. In a harrow, the combination of the single flat beam, and a pivoted tooth-holder consisting of two frames at right angles to each other, enclosing the tooth and beam respectively, the frame of the latter having its opening diminished in longitudinal width, to allow the tooth-holder to partially rotate on its pivot and the tooth to incline automatically, as set forth.

No. 27,252. Tubular Lantern.

(*Lanterne tubulaire.*)

John H. Stone, Hamilton, Ont., 25th July, 1887; 5 years.

Claim.—1st. In a tubular lantern, the combination of a metal strap I attached to the disc C, and the bent wire J passing through it and secured to the reservoir B, to form a single hinge for tipping the globe over horizontally, substantially as and for the purpose specified. 2nd. In a tubular lantern, the combination of the metal strap I, wire J, disc C, globe D, guard D and reservoir B, all constructed substantially as and for the purpose specified. 3rd. In a tubular lantern, the combination of the metal plate I, wire J, disc C, globe D, guard E and spring globe holder F, substantially as and for the purpose specified. 4th. In a tubular lantern, the combination of the metal strap I, wire J, disc C, reservoir B, globe D, guard E, spring globe holder F, tubes A and opening K in the bottom of top air chamber D, all arranged substantially as and for the purpose specified.

No. 27,253. Apparatus for the Combustion of Liquid Fuel. (*Foyer à combustible liquide.*)

John D. Bodwell, San Francisco, Cal., U.S., 25th July, 1887; 5 years.

Claim.—1st. In an apparatus for the combustion of liquid fuel, a chamber having inclined shelves extending inwardly from its opposite walls, said shelves having raised beads or ledges upon their lower or discharge edges, substantially as herein described. 2nd. In an apparatus for the combustion of liquid fuel, a chamber having inclined shelves projecting inwardly from opposite sides, the rear inclined wall with the opening near the top, said wall having the passages formed horizontally in its front and connected at one end, substantially as herein described. 3rd. In an apparatus for the combustion of liquid fuel, a chamber having vertical front and end plates, and a horizontal top and bottom, the rear of said chamber being inclined and having a horizontal opening or passage extending across near the top, as shown, in combination with inclined shelves projecting inwardly from the front and rear walls of the chamber, and provided with raised beads or ledges, as shown, and air passages or dampers formed in the end walls of the chimney, substantially as herein described.

No. 27,254. Combined Hammer and Jointer Plane. (*Marteau-varlope.*)

William S. Robertson, New Germany, N.S., 25th July, 1887; 5 years.

Claim.—1st. In a combined shingling hammer and planer, the combination of the hammer head A, plate F having aperture H and secured by bolt D and nut E, and a plane iron S clamped on bolt D by jam nuts K L, as set forth. 2nd. The hammer head A having a

flange F₁, provided with aperture H, and an incline M for backing the plane iron, as set forth.

No. 27,255. Fire Lighter. (*Allume.*)

Henry Wilcox and George E. Dowling, Montague, Mich., U.S., 25th July, 1887; 5 years.

Claim.—1st. As a new article of manufacture, a fire kindler consisting of the plates having protuberances at their edges, an intermediate absorbent packing projecting beyond the edges of the plate and a handle secured to the plate, substantially as described. 2nd. As a new article of manufacture, a fire-kindler comprising two flat perforated plates, having a series of protuberances or spurs along their edges, an intermediate absorbent packing projecting beyond the edges of the plates and a handle secured to the plates, substantially as described. 3rd. As a new article of manufacture, a fire-kindler comprising the plates having the projecting spurs, an intermediate absorbent packing projecting beyond the edges of the plates, a rivet or fastening-pin inserted through the plates and the packing, and a handle secured to the plates, substantially as described. 4th. The herein-described fire-kindler comprising the flat plates having transverse openings at one end, and a series of teeth or spurs *h* projecting outwardly from the several sides or edges thereof, a packing or filling of absorbent material, such as asbestos, located between the plates and extending to or beyond the edges of the plates, a rivet or rivets passing through the plates, to clamp them together and upon the packing or filling, and a handle having a hook or eye at one end that passes through the transverse aligned openings in the plates, substantially as described for the purpose set forth.

No. 27,256. Waggon Stake. (*Rancher de Wagon.*)

John M. Deitz, Otisco, and Thomas Page, Pontiac, Mich., U.S., 25th July, 1887; 5 years.

Claim.—1st. The upright B, provided with apertured head B₁₁₁₁₁, and the apertured bracket C, substantially as specified. 2nd. The combination, with a bolster of a waggon having the upright B formed with the head B₁₁₁₁₁, apertured as at B₁₁₁₁₁, and the bracket C formed with the knee portion C₁₁₁, apertured as at C₁₁₁₁, of the bar or pin E formed with the shoulder E₁, substantially as specified. 3rd. The upright B, formed of a single piece of metal, and having the tapered or shouldered screw-threaded lower end B₁₁, and the apertured head B₁₁₁₁₁ and the brace C, substantially as specified.

No. 27,257. Spark-Arrester. (*Garde-étincelle.*)

Frederick S. Bragg and Austin Lathrop, Corning, N. Y., U.S., 25th July, 1887; 5 years.

Claim.—1st. The combination, with the smoke-box of an engine, of a cinder discharge spout, and an air receiver outside of the cinder spout and communicating with the smoke-box, as set forth. 2nd. The combination, with the smoke-box of an engine, of a cinder discharge spout connected with the bottom of said smoke-box, a gate for controlling the egress of cinders, and a permanent air inlet to the spout above the gate thereof, substantially as set forth and shown. 3rd. The combination, with the smoke-box of an engine, of a cinder discharge spout connected to the bottom of said smoke-box, an air receiver outside of the cinder spout, and communicating with the smoke-box, and a valve for controlling the ingress of air to said receiver, substantially as set forth. 4th. The combination, with the smoke-box of an engine, of an air receiver projecting from the bottom of said smoke-box, and communicating therewith, and a cinder spout arranged inside of said air receiver, as set forth. 5th. The combination, with the smoke-box of an engine, of a tube projecting from the bottom of said smoke-box, and provided with ports in its side, and a cinder spout arranged inside of the aforesaid tube and a space between them, and the lower end of said spout extending below the aforesaid ports, substantially as set forth and shown. 6th. The combination, with the smoke-box of an engine, of a tube projecting from the bottom of said smoke-box, and provided with ports in its side, valves for regulating said tube, and a cinder discharge spout arranged inside of the aforesaid tube, and extending below the ports thereof, substantially as specified and shown. 7th. The combination, with the smoke-box of an engine, of a tube projecting from the bottom of said smoke-box, and provided with ports in the sides of its upper and central portions, valves for regulating the upper ports, and cinder discharge spouts arranged one above the other inside of the aforesaid tube, with spaces between the said spouts, and with the lower ends of said spouts extending respectively below the upper ports, and below the lower ports of the surrounding tube, substantially as described and shown. 8th. The combination, with the smoke-box of an engine, of an opening in the bottom of said smoke-box, a tube extending downward from said opening, cinder discharge spouts arranged inside of said tube ports in the side of the tube, and a valve connected to the lower end of the tube, substantially as described and shown. 9th. In combination with the valves V and U, the lever *l*, *l*, the rod *m* connecting the lever arm *l* with the valve V, and provided with a spring coupling at its connection with said valve collars *n*, *n*, on said rod, the bell-crank *o* having one arm engaging the rod *m* between its collars, and the rod *p* connecting the other arm of the bell-crank with the valve U, substantially as described and shown.

No. 27,258. Automatic Cut-Out for Incandescent Electric Lamps. (*Interrupteur automatique pour lampes électriques incandescentes.*)

The Ball Electric Light Company, (assignees of William A. Johnson), Toronto, Ont., 25th July, 1887; 5 years.

Claim.—1st. A resistance coil, formed of insulated fine wire, or other material of low conductivity, adapted to be thrown automatically into circuit, so as to afford another path for the electric current, when the electric lamp becomes out of circuit, and which resistance coil offers a resistance to the electric current equivalent to

that in the loop circuit, when the lamp is in circuit or incandescent, so as to prevent other electric lamps in the same series or set as the lamp in which the lamp circuit has become broken from receiving too high a current, substantially as specified. 2nd. In combination, with a wire leading from the main circuit, an electro-magnet adapted when energized and when the electric lamp is in circuit to attract the end of a pivoted armature, so as to raise the other end of this pivoted armature in such a manner as to break the circuit from, and to the main line, and through an equivalent resistance coil, substantially as specified. 3rd. A pivoted armature adapted to be actuated by, and to have one end thereof drawn to an electro-magnet, when the electric lamp is in circuit, and when the circuit through the incandescent lamp is broken, and the core of electro-magnet demagnetized to permit the end of pivoted armature away from the electro-magnet to be drawn down or descend, so as to close a circuit through an equivalent resistance coil, substantially as specified. 4th. The combination of the resistance coil B, composed of fine wire *f*, sheet asbestos *g* and perforated metal drum D, and the non-conducting base E, said resistance coil B having terminals *d* and *e* adapted to complete a circuit through the said resistance coil back to the main line, when the lamp circuit has become broken, substantially as specified. 5th. In an electric lamp, when the circuit through the lamp has become broken, the combination of the resistance coil B having terminal *d* connected with main line, and terminal *e* connected with strut F, non-conducting base E and armature H weighted at *l*, and having contact spring *k* and pivoted to standard I, and wire M leading to main line, thus forming a new circuit for the electric current, substantially as specified. 6th. In an electric lamp, when the current, through the lamp is complete, the combination of wire L, electro-magnet K and armature H pivoted in standard I, the non-conducting base E, the electro-magnet terminal *k* 3, binding post N, metal cap P, filament *t* and wires *u* and *v* enclosed in "vacuo" in glass bulb Q, screw R and wire M connected to standard I and completing the circuit back to the lamp line, and breaking the circuit through the equivalent resistance coil B, substantially as specified. 7th. The armature H pivoted on a standard suitably supported, and having a spring contact-piece *k* attached to the weighted end of said armature, which is adapted to complete a circuit through the strut F, and equivalent resistance coil B, when the circuit through the electric lamp has become broken, substantially as described and for the purpose specified. 8th. In an electric lamp, when the circuit through lamp is complete, an electro-magnet adapted to raise a spring contact piece on the weighted end of a pivoted armature, so as to break the contact with the terminal of a resistance coil, and leave the resistance coil out of circuit when the circuit through the lamp is complete, substantially as described and for the purpose specified. 9th. The pivoted armature H, pivoted on a standard suitably supported, and having one end thereof adapted to be brought in contact with the strut F, and complete a circuit through the equivalent resistance coil B, when the circuit through the electric lamp has become broken, substantially as specified.

No. 27,259. Bobbin-Holder. (*Porte-bobine.*)

William F. Fuller and Benson S. Snider, Port Elmsley, Ont., 25th July, 1887; 5 years.

Claim.—1st. A shell or thimble A provided with an elastic core having an eye for the reception of a spindle, said shell provided with an enlarged upper edge or bead lugs C, adapted to engage a bobbin and holding the elastic core in the shell, a sliding collar D upon said shell A, having its upper edge enlarged and adapted to pass freely over the enlarged upper edge or bead of the shell and clamp a thread, substantially as set forth. 2nd. The combination of the shell A, elastic core B, lugs C and sliding collar D, substantially as set forth. 3rd. The combination of the shell A, bead *a*, elastic core B, eye *b*, lugs C having hooked ends *c*, *c'*, sliding collar D, enlarged edge *d* and fast collar or flange E, substantially as set forth. 4th. The combination of the shell A, bead *a*, elastic core B, eye *b* and lugs C, substantially as set forth. 5th. The combination of the thimble A, bead *a*, collar D, enlarged edge *d* and fast flange or collar E, substantially as set forth.

No. 27,260. Spark-Arrester. (*Garde-étincelle.*)

Frederick S. Bragg and Austin Lathrop, Corning, N. Y., U. S., 25th July, 1887; 5 years.

Claim.—1st. The combination, with the smoke-box, of a locomotive provided with the spark arresting screen or diaphragm of a cinder discharge opening, and an air inlet to said smoke-box below the screen and separate and distinct from the cinder discharge opening, as set forth. 2nd. The combination, with the smoke-box of a locomotive provided with a spark-arresting screen or diaphragm, of a cinder discharge opening and an air inlet to said smoke-box at the front end thereof, and below the spark-arresting screen or diaphragm, as set forth and shown. 3rd. The combination, with the smoke-box of a locomotive, of a cinder discharge spout provided with a gate, an air inlet separate and distinct from said spout, a damper connected with the air inlet, levers for operating said gate and damper, and a controlling rod connected with the aforesaid levers, substantially as described and shown.

No. 27,261. Pipe-Cutter. (*Découpoir à tuyau.*)

Charles A. Barnes and Dan Mathews, Liverpool, N. Y., U. S., 25th July, 1887; 5 years.

Claim.—1st. A pipe-cutter, composed of a cutter-head having an eye extending through its axis, radial slots intersecting said eye, slides in said slots, cutters on the slides and a wedge sliding longitudinally in the eye of the cutter head and bearing against the inner ends of the slides, and interlocked with the cutter-head to compel the same to rotate with the wedge, substantially as set forth. 2nd. The combination of the cutter head, provided with an axial eye, square or rectangular in cross-section, radial slots intersecting the said eye at the sides thereof, slides in said slots, cutters on the slides, and a wedge sliding in the eye of the cutter-head and formed

with parallel flanges, having their bearings in the corners of the aforesaid eye, substantially as described and shown. 3rd. A pipe-cutter, comprising a cutter-head having an axial eye, radial slots intersecting said eye, slides in said slots, cutters on the slides, a wedge sliding longitudinally in the eye of the cutter-head, and interlocked with the cutter-head to compel the same to rotate with the wedge, and springs pressing the slides toward the wedge, as and for the purpose set forth. 4th. The combination of the cutter-head, having an axial eye of square or rectangular bar-form in cross-sections, and radial slots intersecting said eye at two opposite sides thereof, slides in said slots, cutters on said slides, a wedge sliding in the eye of the cutter-head with the bevelled sides of the wedge facing the aforesaid slides, and provided with longitudinal side flanges having their bearings in the corners of the eye of the cutter-head, and spring plates arranged lengthwise between the flanges of the wedge and secured at one end to the cutter-head, and connected at the opposite end to the cutter carrying slides, substantially as described and shown.

No. 27,262. Straw-Burning Attachment for Stoves. (*Foyer consommant la paille pour les poêles.*)

Fred Girtanner, Casper Hatz and Florian J. Hatz, Big Stone, Dak., U. S., 25th July, 1887; 5 years.

Claim.—A straw-burning attachment for stoves, comprising the fire-box having the front wall B provided with a damper, the neck F on the rear side near the bottom, the feeding drum resting upon the top of the fire-box, and the hinged adjustable valve in said drum, substantially as described.

No. 27,263. Running Gear for Road Wagons. (*Train de voiture.*)

Cyrus W. Saladee, Cleveland, Ohio (assignee of Charles W. Saladee, Freeport, Ill.), U. S., 25th July, 1887; 5 years.

Claim.—1st. In a road wagon, the combination of an axle and spring parallel to, and on opposite sides of the same, each rising at the centre and connected at the ends to bearings arranged transversely to, and on opposite sides of the axle, and a spring reach consisting of two flexion members, united at or about their centre portion, thence extending the united parts to connect with the front axle, and the rear ends of said members being diagonally extended to unite with the hind axle at widely separate points, substantially as set forth. 2nd. In a road wagon, the combination, with an axle, of self-compensating springs of the form described, parallel to, and on opposite sides of the same, each rising at the centre and connecting at the ends without links to stationary bearings resting on top of the axle, and consisting of the trunnion plate *ct* provided with a transverse hollow spool *c* integral therewith, and the detachable trunnion bolt F engaging the terminal eyes of the spring B, B, substantially as set forth. 3rd. In combination with the front end of the reach H and the axle K, the yoke L, lock-nuts N, O, and centre bolt Q, substantially as and for the purpose set forth. 4th. The combination, with the front end, of the reach H and the axle, the yoke L, lock-nuts N, O, intermediate spools M and the centre bolt Q, all constructed and arranged to operate substantially as and for the purpose set forth. 5th. The combination, with the front axle, the trunnion plate *ct*, hollow spool *c*, detachable bolt F, from which latter is suspended the terminal ends of the spring B, B, substantially as set forth.

No. 27,264. Method and Apparatus for Making Hoes. (*Mode et Appareil de Fabrication des Houes.*)

George B. Ely, St. Johnsbury, Vt., U. S., 26th July, 1887; 5 years.

Claim.—1st. That improvement in the art or method of making hoes, which consists in removing the scale from the plated-out blank, then rolling the said blank thinner at its edges than at its middle, and then, by a second rolling, reducing the same to a uniform thickness and curved shape, substantially as described. 2nd. That improvement in the art or method of making hoes, which consists in rolling the blank thinner at its edges than at its middle, then by a second rolling process reducing it to a uniform thickness, and at the same time giving it curvature in the direction parallel with the edge by the action of the rolls, and giving it curvature in the direction at right angles to the edge by rocking the blank as it enters and leaves the rolls, substantially as described. 3rd. That improvement in the art or method of making hoes or similar articles, which consists in removing the scale from the blank by striking the blank, when heated, with a wet die or drop hammer, and subsequently reducing the blank to its final shape by the action of other dies, substantially as and for the purpose described. 4th. That improvement in the art or method of making hoes, which consists in shaping the blank by rolls or oscillating dies, and in the final rolling, drawing the blank or plate at its middle portion more than at its edges, whereby the concave shape is imparted to the plate, substantially as described. 5th. That improvement in the art or method of making hoes, which consists in shaping the blank by rolls or oscillating dies, and in the final rolling, drawing the blank or plate at its middle portion more than at its edges, whereby the concave shape is imparted to the plate, and, tempering the plate, in the process of rolling, substantially as described. 6th. That improvement in the art or method of making hoes, which consists in, first spreading the blank, then reheating the same and striking it with wet wooden dies, whereby the scale is removed, and at the same time heat further reducing its thickness by pressure in rolls or oscillating dies, and then reheating and drawing or spreading the middle portion more than the edges by pressure in rolls or oscillating dies, whereby a concave blank with a smooth finished surface is produced, substantially as described. 7th. The combination, with a pair of rolls or oscillating dies, of a pendulum guide by which the material entering and leaving the rolls is given a definite rocking movement with relation thereto, substantially as described.

No. 27,265. Display Rack for Tissue Paper.*(Porte-papier-joseph.)*

Dennis J. O'Sullivan, Detroit, Mich., U.S., 26th July, 1887; 5 years.

Claim.—1st. In a device for the purposes specified, the combination of the frame having a series of supporting bars, the sheets of tissue paper suspended on said bars in nests of colors, whereby the outer sheet of a series of folded sheets may be removed without disturbing the remaining sheets of that series, as and for the purposes specified. 2nd. In a device for the purposes specified, the combination of the frame, the detachable legs, the adjustable supporting rails, the mechanism for supporting the adjustable rails, as and for the purposes specified. 3rd. In a device for the purposes specified, the combination of the two-part frame hinged at the center and provided with detachable legs, the central cross-rail *n*, the adjustable cross-rails *S*, supported as set forth and having the sheets of paper suspended thereon, as and for the purposes specified.

No. 27,266. Suture Appliance.*(Appareil à Suture.)*

Ferdinand A. Reichardt, New York, N.Y., U.S., 26th July, 1887; 5 years.

Claim.—1st. In a suture appliance, adhesive devices formed of a suitable fabric coated on one side with adhesive substance, and having a reinforced edge or edges in combination with a lacing or other fastener, substantially as set forth. 2nd. In a suture appliance, adhesive devices formed of a suitable fabric coated on one side with adhesive substance, having a non-adhesive reinforced edge or edges, in combination with a lacing or other fastener, substantially as set forth.

No. 27,267. Scaffold Bracket.*(Boulin d'échafaud.)*

Marcellus Ramsey, Miles Grove, Penn., U.S., 26th July, 1887; 5 years.

Claim.—1st. A scaffold bracket having the platform, a bracket plate rigidly affixed to the inner end of the platform, and having the depending lugs arranged in pairs and adapted to take over the rung of a ladder, and thereby hold the platform endwise movement in either direction, a draw iron or bolt having a square shank passing through an opening in the platform, and a hooked shaped lower end, and a nut fitted on the threaded end of the draw iron or bolt, as and for the purpose described. 2nd. A scaffold bracket having a platform, a standard connected thereto and having a longitudinal slot *h* near its lower end, a coupling plate pivotally connected to the lower end of the standard, and having a notch in its upper edge adapted to align with the slot *h* when the said plate has been adjusted around the rung of a ladder, and a non-rotatable bolt normally fitted in the slot of the standard and adapted to fit in the notch of the plate to detachably connect the free end thereof to the standard, as and for the purpose described. 3rd. A scaffold bracket having a platform, an extensible standard connected at its upper end to the platform, and having the lower end bifurcated to provide the integral arms, which diverge laterally from each other, the independent coupling plates pivoted to the free ends of the diverging arms, and the bolts for detachably connecting the free ends of the plates to the arms of the standard, as and for the purpose described. 4th. In a scaffold bracket the combination of a horizontal platform, a plate fixed to the outer end of the platform transversely of the same, and having a lug *d* at one side, which is extended beyond one side of the platform and an arm *E* at the outer end on one side of the platform and pivoted to one end of the fixed plate, said arm having a stop shoulder at its pivoted end, which is adapted to come into contact with the lug *d*, when the arm is elevated, substantially as described. 5th. A scaffold bracket having a platform and an extensible standard connected to the platform, the lower end of the standard being forked and the times or arms of the fork being passed down on opposite sides of the rung of a ladder, substantially as set forth. 6th. A scaffold bracket having a platform and an extensible standard connected thereto, the lower end of the standard being forked, and the arms of the fork being slotted and passed down on opposite sides of a rung of ladder, and a bolt passed through the slots in said arms, substantially as specified.

No. 27,268. Injector. (Injecteur.)

Harry Holden and Robert G. Brooke, Salford, Eng., 26th July, 1887; 5 years.

Claim.—1st. An injector comprising a passage for high pressure or live steam, a valve controlling said passage, and means whereby pressure arising from a jet produced by exhaust or low pressure steam will cause said valve to open and admit the live or higher pressure steam to said jet, for the purpose of increasing the velocity thereof and so enabling said jet to exert a greater pressure than that due to the velocity caused by the exhaust or low pressure steam alone. 2nd. An injector comprising a passage for high pressure or live steam, a valve controlling said passage, a chamber and a diaphragm or piston in said chamber in connection with said valve, said chamber being in communication with a nozzle or passage along which a jet produced by exhaust or low pressure steam is caused to flow, so that the pressure arising from said jet and acting against said diaphragm or piston will cause said valve to open and admit live or higher pressure steam to said jet, for the purpose of increasing the velocity of such jet, and so enabling it to exert a greater pressure than that due to the velocity caused by the exhaust or low pressure steam alone. 3rd. In an injector, the combination of a casing with pressure chamber and steam passages, a diaphragm 7 and ring 15 (or instead of these a piston) valve stem, and valve 8 (with or without spring 20) substantially as described for the purpose specified. 4th. The injector hereinabove described comprising casing, water nozzle 2, combining nozzle 3, overflow 4, delivery nozzle 5, cock 6, diaphragm 7 (or piston) and its containing chamber valve 8, passage 9, passage 10, passage 10 *a*, area 11, leak hole 16 to prevent accumulation of pressure on the top of the diaphragm or piston, overflow chamber 17 and weighted valve 18, substantially as described for the purpose specified. 5th.

A compound injector designed for use with both exhaust or low pressure steam, and high pressure or live steam, comprising an exhaust or low pressure combining nozzle and a supplementary nozzle, the end of said exhaust or low pressure combining nozzle being arranged directly within said supplementary nozzle, thereby dispensing with a separate delivery nozzle in the exhaust injector, substantially as described. 6th. The injector comprising ordinary exhaust or low pressure, combining nozzle *a*, exhaust overflow *a*3, supplementary overflow 4, supplementary delivery cone 5, discharge 6, weighted valve 8, delivery pipe 5 *a*, chamber with diaphragm or piston loaded valve 8, live steam entrance passage 11 and live steam chamber 10 *a*, the whole arranged and operating, substantially as described with reference to and illustrated in Fig. 4a of the drawings. 7th. The injector comprising passage 23, exhaust steam nozzle 24, combining nozzle 3, overflow 4, delivery nozzle 5, hollow spindle 11, delivery exit passage 5a, delivery pipe 5b, water supply 2, passage 9, pressure chamber with diaphragm 7 (or piston) steam supply 10, passage 10a, loaded valve 8, and overflow exit 17, the whole arranged and operating substantially as described with reference to, and shown in Fig. 5 of the drawings.

No. 27,269. Fence Locking Device.*(Lien de Clôture.)*

George W. Tomlinson, Baldwin, Ont., 26th July, 1887; 5 years.

Claim.—A fence lock composed of the wire *E*, placed vertically in the angle formed between the outer or projecting ends of the rails, having two end loops, one of which encircles the top rail of one series or panel, and the other similarly connected with the bottom rail of the adjoining series or panel, substantially as and for the purpose specified.

No. 27,270. Construction of Nest of Drawers and Analogous Furniture.*(Fabrication de commodes ou autres meubles.)*

Theodore F. S. Tinne, Hawkhurst, Eng., 26th July, 1887; 5 years.

Claim.—1st. The method of and means and appliances for supporting and guiding drawers, sliding shelves, and analogous articles, when partially or wholly drawn out, substantially as hereinbefore described and shown in the drawings. 2nd. The general construction and arrangement of the several and respective parts, and the several combinations of the same, constituting my improvements in the construction of nests of drawers, and analogous articles of furniture, substantially as and for the purposes hereinbefore described and shown on the drawings.

No. 27,271. Rail Fence. (Clôture de pals.)

George Russell, Ancaster, Ont., 26th July, 1887; 5 years.

Claim.—1st. In a rail fence, the combination of the crossed brace posts *a*, *a*, top rails *e*, *e*, uprights *c*, *c*, and wire lock *g*, the lower portion being filled up with horizontal rails *h*, all arranged and constructed substantially as and for the purpose specified. 2nd. In a rail fence, the combination of the tied crossed brace posts *a*, *a*, top rails *e*, *e*, uprights *c*, *c*, wired loop lock *g* and rails *h*, substantially as and for the purpose specified.

No. 27,272. Telephone Toll Collector.*(Percepteur de péage de téléphone.)*

The Canadian Telephone Company, (assignee of Charles Wittenberg), Indianapolis, Ind., U.S., 26th July, 1887; 5 years.

Claim.—1st. In a toll collector for telephones, the switch-lever of the telephone apparatus, the sliding bar engaging said lever, the coin chute and the pivoted catch-lever arranged to engage said sliding bar, and to project into said chute, all combined and arranged to co-operate with each other and with a coin, whereby the switch-lever is locked in position by the catch-lever and unlocked by the coin, substantially as specified. 2nd. In a telephone toll collector, the combination of the stationary chute arranged to receive a coin, two auxiliary chutes arranged below said stationary chute, the intermediate swinging tube arranged to receive a coin from said stationary chute, and to deliver the same to either of said auxiliary chutes, the electro-magnet arranged to draw said tube into position to deliver its contents into one of the two auxiliary chutes, a moving part of a telephone apparatus, as the switch-lever and intermediate connecting mechanism connecting said switch-lever and swinging tube, whereby the tube is swung into position to deliver its contents into either of said chutes by the movement of the switch lever, all arranged to co-operate as specified. 3rd. The combination, with the stationary coin receiving chute, of a toll collector and a stationary auxiliary chute arranged to receive the coin after leaving the first-mentioned chute, of an interposed swinging tube arranged to receive the coin from the first chute, a stop arranged opposite the free end of said swinging tube, whereby the coin is retained therein and an electro-magnet arranged to attract said tube and to draw it into a position to deliver its contents into said auxiliary tube, as specified.

No. 27,273. Means for Transmitting Rotary Motion. (Système de transmission du mouvement.)

Elliott J. Stoddard, Detroit, Mich., U.S., 26th July, 1887; 5 years.

Claim.—1st. The combination, with the part of a mechanism to or from which rotary motion is to be communicated, of an elastic circular band attached thereto in such a manner as to be immovable in respect to said part of said mechanism, and three or more wheels adapted to communicate motion by friction, and so arranged within said flexible band, with reference to each other and to said band that the pressure of said band upon any one of said wheels shall be balanced by the pressure of said band upon another or others of said wheel, substantially as shown and described. 2nd. A combination of a wheel 11, having secured thereto the elastic circular band 10,

and the wheels 7, 8, 9, said wheels being on shafts in a line with each other, and forced together by the elasticity of said band, substantially as shown and described. 3rd. A combination of a wheel 11, having secured thereto the elastic circular band 10, and the wheels 7, 8, 9, the wheel 9 being secured to a sieve over the axle of the wheel 11, and the wheels 7 and 8 being pressed against the wheel 9 by the elasticity of the band 10, substantially as shown and described. 4th. The combination of three or more wheels adapted to communicate motion by the friction of their circumferences, one or more of said wheels being elastic in the direction of its diameter, and a rigid ring, said elastic wheels being compressed within said ring, and so arranged in reference to each other and to said ring that the pressure caused by the elasticity of said wheels or wheel shall counteract each other, substantially as shown and described.

No. 27,274. Combination Tool.

(*Outil à combinaison.*)

Alexander Patterson, Syracuse, N.Y., U.S., 26th July, 1887; 5 years.

Claim.—1st. The combination of the part A, formed with the lateral deflection *a* and shank *b*, and the part A' formed with the lateral deflection *a'* and shank *b'*, and one of said parts being provided with a mortise at the juncture of the deflection and shank, and the other part being provided with the lug *c*, as set forth. 2nd. The combination of the part A, formed with the lateral deflection *a*, shank *b*, cam *d* and lug *c*, and the part A' formed with the lateral deflection *a'*, shank *b'* and mortise *m*, substantially as described and shown. 3rd. In a multiplex tool, the combination of the part A formed with the lateral deflection *a*, shank *b*, lug *c* and hammer-head *h*, and the part A' formed with the deflection *a'*, shank *b'* and mortise *m*, substantially as described and shown. 4th. In a multiplex tool, the combination of the part A, formed with the deflection *a*, shank *b*, lug *c* and pick *e*, and the part A' formed with the deflection *a'*, shank *b'* and mortise *m*, substantially as described and shown. 5th. In a multiplex tool, the combination of the part A, formed with the deflection *a*, shank *b*, lug *c*, and chisel-point *l* on the end of the shank, and the part A' formed with the deflection *a'*, shank *b'* and mortise *m*, substantially as described and shown. 6th. The combination of the part A, formed with the deflection *a*, shank *b*, lug *c*, hammer-head *h*, pick *e* and chisel-point *l*, and the part A' formed with the deflection *a'*, shank *b'* and mortise *m*, substantially in the manner set forth and shown. 7th. The combination of the part A, formed with the deflection *a*, shank *b* and lug *c*, and the part A' formed with the deflection *a'*, shank *b'*, mortise *m* and knife *f*, as set forth and shown. 8th. The combination of the part A, formed with the deflection *a*, shank *b* and lug *c*, and the part A' formed with the deflection *a'*, shank *b'*, mortise *m* and bifurcated chisel-point *n*, substantially as shown and set forth. 9th. The combination of the part A, formed with the deflection *a*, shank *b*, lug *c*, and the part A' formed with the deflection *a'*, shank *b'*, mortise *m*, knife *f* and shoulder *g*, substantially as described and shown. 10th. The combination of the part A, formed with the deflection *a*, shank *b* and lug *c*, and the part A' formed with the deflection *a'*, shank *b'*, mortise *m* and bifurcated chisel-point *n*, substantially as described and shown for the purpose set forth.

No. 27,275. Eye Glass or Spectacle Case.

(*Etui de lorgnon ou de lunettes.*)

Fisk Shailer, Chester, Conn., U.S., 26th July, 1887; 5 years.

Claim.—A spectacle or eyeglass case, constructed of leather or other flexible material, and provided upon its inner side or sides with a wiper, substantially as and for the purpose set forth.

No. 27,276. Plough Clevis. (*Volée de charrue.*)

William A. Hollingshead, Tottenham, Ont., 26th July, 1887; 5 years.

Claim.—1st. A plough clevis made in one piece and attached directly to the plough beam, said clevis being capable of adjustment with relation to said beam by means of two loose pins passing through holes in both, substantially as and for the purpose described. 2nd. The combination of the clevis A, having jaws *a*, *a'*, made in one therewith, and holes *a*, *a'*, with the plough beam B having slot *b* and holes *b*, *b'*, and adjustable pins C, D, securing same together, substantially as and for the purpose specified. 3rd. The plough beam B, having elongated slot *b*, and two series of holes *b*, *b'*, arranged at different radii with relation to said slot, as described, in combination with an adjustable clevis and two loose hold-fast pins, for the purpose set forth.

No. 27,277. Manufacture of Boots.

(*Fabrication des bottes.*)

John Greig, Toronto, Ont., 26th July, 1887; 5 years.

Claim.—As a new article of manufacture, a boot in which the upper is formed from two pieces of leather, one piece, before being crimped, being shaped into the form A, and having the rounded portions between *c* and *d* cut therefrom, which is crimped into the shape shown in Fig. 3, the heel portion being made by the stiffening piece B, substantially as shown and described.

No. 27,278. Siphon Device for Discharging Fluids. (*Appareil à siphon pour dépoter les liquides.*)

Charles N. Tyler, Buffalo, N.Y., U.S., 26th July, 1887; 5 years.

Claim.—1st. An oil can or other receptacle, provided with a siphon tube, its lower end communicating with the receptacle near the bottom, and its upper end constituting a rigid bent spout, substantially as set forth. 2nd. The combination of a receptacle and a rigid tube extending downward and communicating with the receptacle at the lower end, and extending upward beyond the top and bent

downward at its upper end, and constituting a siphon spout for discharging liquids from, or syphoning them into the receptacle, substantially as and for the purpose set forth. 3rd. The combination, in a siphon receptacle, of the body 1 and a syphoning tube, consisting of an enlarged section 2, and a smaller curved section 3, constituting the spout or nozzle, substantially as set forth. 4th. The combination of the receptacle body 1, and siphon tube provided with a recess 8 at the lower end, for the purpose set forth. 5th. In a siphon receptacle, the combination of the body 1, siphon tube and the vent tube 12, whereby the flow of liquid may be stopped or regulated and the liquid retained in the siphon tube, substantially as set forth. 6th. The combination of the receptacle 1, a stuffing box 3 communicating with the lower part of the receptacle, and a siphon tube provided with a bent nozzle 5, and a vertical portion having a horizontal branch extending into, and turning in the stuffing box, substantially as and for the purposes set forth. 7th. The combination, with a receptacle, of a discharge tube 5 having the horizontal branch extending into, and turning in the stuffing box, substantially as described. 8th. The combination of the receptacle, the bent tube 6, the tube 2 of larger diameter, the stuffing box 4 and the horizontal portion extending into, and turning in the stuffing box 3, substantially as and for the purposes described. 9th. The combination, with a receptacle, of a discharge siphon tube pivoted to, and communicating at the lower end, and capable of being turned from a horizontal to a vertical or any intermediate position, substantially as set forth.

No. 27,279. Apparatus for Braking and Starting Cars. (*Appareil pour enrayer et lancer les chars.*)

William H. Snider, Toronto, and Henry G. Orser, Ameliasburgh, Ont., 27th July, 1887; 5 years.

Claim.—In an apparatus for braking and starting cars, the combination, with the car body and the wheels, of a swinging frame pivoted to the underside of the car body, two transverse shafts and a longitudinal shaft geared to said transverse shafts, all journalled in said swinging frame, friction wheels or discs fixed on the ends of said transverse shafts and adapted to be thrown into contact with the car wheels, pulleys or drums upon the transverse shafts, springs attached to the car and connected with said pulleys or drums by cords or chains, and levers for moving the swinging frame, all arranged to operate substantially in the manner and for the purpose set forth.

No. 27,280. Attachment for Striping for Circular Knitting Machines. (*Appareil à barrer pour machines à tricot circulaire.*)

The Galt Knitting Company (assignee of Frederick H. Dennis), Galt, Ont., 27th July, 1887; 5 years.

Claim.—1st. As an improved attachment for striping on circular knitting machines, two or more sets of levers pivoted on the frame of the machine, and adjusted by two or more cams operated from a cam on one of the arms of the needle cylinder, substantially as and for the purpose specified. 2nd. As an improved attachment for striping on circular knitting machines, two or more sets of levers pivoted on the frame of the machine, and adjusted by two or more cams operated from a cam on one of the arms of the needle cylinder, in combination with a scissors secured to the frame of the machine, and operated from a cam on the needle cylinder, substantially as and for the purpose specified. 3rd. The levers D and E pivoted on the plate F, the lever D being provided with a loop C and connected by the take-up I to the rocking arm J on the end of the spindle i, and the lever E being provided with holes *d* and *e*, and connected by the rod K to the other end of the rocking arm J, in combination with the arm P adjustably secured to the spindle i, and operated by the cam R, which is caused to revolve on the shaft T by the dog *n* pivoted on the end of the lever U, which is operated by the cam V, substantially as and for the purpose specified. 4th. The levers G and H pivoted on the plate F, the lever G being provided with a loop *g* and connected by the take-up M to the rocking arm L on the end of the spindle j, and the lever H being provided with a hole *h* and connected by the rod N to the other end of the rocking arm L, in combination with the arm Q adjustably secured to the spindle j and operated by the cam S, which is caused to revolve on the shaft T by the dog *n*, pivoted on the end of the lever U, which is operated by the cam V, substantially as and for the purpose specified. 5th. The levers D and E, connected by the take-up I and rod K to the rocking arm J on the end of the spindle i, which is journalled in the standards *f*, and the levers G and H connected by the take-up M and rod N to the rocking arm L on the end of the spindle j, which is journalled in standards *f*, in combination with the arms P and Q, operated by the cams R and S respectively, which cams R and S are driven by the dog *n* pivoted on the end of the lever U, the other end of the lever U being provided with a pin *p*, arranged to come in contact with the side *q* of the cam V, substantially as and for the purpose specified. 6th. The levers D and E connected by the take-up I and rod K to the rocking arm J on the end of the spindle i, and the levers G and H connected by the take-up M and rod N to the rocking arm L on the end of the spindle j, in combination with the spring O connected at one end to the bent end of the lever D, and at the other to the arm I secured to the spindle j, substantially as and for the purpose specified. 7th. The levers D, E and G, H, operated as described, in combination with the sinker wheel C pivoted on the spindle *p* on the end of the rod B, substantially as and for the purpose specified. 8th. The levers D, E and G, H, operated as described, in combination with the scissors X pivoted at *u* and operated from the cam Y by the connection of the rods *v* and *w* to the upper blade of the scissors X, substantially as and for the purpose specified. 9th. A scissors X pivoted at *u*, and provided with a spring *z*, in combination with the rods *v* and *w* adjustably pivoted at *x* and arranged to act against the cam Y, substantially as and for the purpose specified. 10th. A cam R made in sections *l* and open sections of the same arc, in combination with a cam S made in sections *m* and

open sections of the same arc, the cams R and S being made to revolve on the shaft T by the dog *n* pivoted on the end of the lever U, substantially as and for the purpose specified. 11th. The cam S, composed of sections *m* screwed to the notched disc z, of which the ratchet-wheel *y* forms part, in combination with the spring dog 2 fitted into the notches I, of the disc z and the dog *n* pivoted on the end of the lever U, substantially as and for the purpose specified. 12th. The levers D, E, and G, H, operated as described, in combination with the yaru-holder 3, composed of a plate 4, spring 5 and arm 9 adjustably held on the standard A, substantially as and for the purpose specified. 13th. The arms P and Q adjustably secured on the spindles *i* and *j* respectively, in combination with the bent rods *l* adjustably secured on the standard *f*, substantially as and for the purpose specified. 14th. The lever U pivoted at O, in combination with the set screws *s* in the standards *r*, substantially as and for the purpose specified.

No. 27,281. Middlings Purifier.

(*Epurateur des gruaux.*)

William J. Purdy, Charles W. Malvan and William Akin, Carberry, Man., 27th July, 1887; 5 years.

Claim.—1st. A middlings purifier, provided with a distributing chamber, arranged above the screening chamber, substantially as described. 2nd. In a middlings purifier, the combination, with a hopper, of a feed roll and distributing roller, the parts being arranged substantially as described. 3rd. In a middlings purifier, the combination, with a hopper, of a feed roller, a means for regulating the feed, a distributing roller arranged beneath the feed roller and within a distributing chamber, a fan and passages leading from the fan to the distributing chamber, substantially as described. 4th. The combination, with a distributing chamber, of regulating valves, a distributing roller and a fan, substantially as described. 5th. In a middlings purifier, the combination, with a feed mechanism, of a distributing roller arranged within a distributing chamber that is provided with regulating valves, a screening chamber, screens arranged within said chamber, means for shaking the screens, and a means for drawing a current of air through the chamber, substantially as described. 6th. The combination, with a shaker frame, of screens mounted therein, every other screen being inclined in opposite directions, substantially as described.

No. 27,282. Harvester. (*Moissonneuse.*)

The Plano Manufacturing Company (assignee of Ezra A. Peck), Plano, Ill., U.S., 27th July, 1887; 5 years.

Claim.—1st. In a harvester, the main frame, in combination with the uprights, either or both of the elevator frames, consisting of angle-iron bent to the shape required, substantially as and for the purposes set forth. 2nd. The main frame, in combination with the pole hinged thereto, the link rod F threaded at its upper end, the seat bar or support arranged in line with the pole, the bracket G provided with bearings for both the rod F and shaft H, and mounted on the seat-bar, the nut-pinion *fi* and the shaft H mounted on the seat support, and provided with a pinion *h* engaging with the nut pinion, substantially as and for the purposes set forth. 3rd. The main wheel and axle, in combination with the main frame adjustable vertically thereon, the chain-wheel mounted on the axle, the lifting chain connected to said axle at one end, the screw-nut to which the chain is connected at its other end, the screw-shaft for adjusting said nut, the frame sill *a*, the stud-pin *j* on said sill, provided with a bearing for said shaft, and the rear sill of the frame supporting the rear bearing of the screw-shaft, substantially as and for the purposes specified. 4th. The main frame, in combination with the toothed sector plates fastened thereto, the swinging radius-arms, the main wheel axle, the pinions mounted thereon, the lever catch P provided with handle *pi*, and a device for operating the raising and lowering mechanism arranged near the said handle, substantially as and for the purposes set forth.

No. 27,283. Buckle. (*Boucle.*)

Charles R. Harris and William Silverman, Williamsport, Penn., U.S., 27th July, 1887; 5 years.

Claim.—1st. The buckle provided with two hooks, the one of which projects from the frame of the buckle, and the other of which is carried by the folding or closing portion of the buckle, and is constructed and arranged to hold and receive the hook of the frame portion within it, thereby forming a compound hook, substantially as specified. 2nd. The frame A of a buckle, having at its one or lower end a spring-doubled wire hook *c*, in combination with the folding or closing front portion B of the buckle, provided with a spring double wire hook *f*, constructed and arranged to receive and hold the hook *c* within it, essentially as described. 3rd. The tubular sleeve *e* of the buckle, in combination with the wire buckle frame A, and the wire folding and closing portion B having their ends *a*, *α* and *h*, *h*, respectively, both entered within said sleeve in like axial relation with one another, and with the sleeve, substantially as specified. 4th. The tubular sleeve of the buckle, provided with a socket-like projection *i*, in combination with the wire buckle frame A and wire folding and closing portion B, having their ends *a*, *α* and *h*, *h* entered within said sleeve part, substantially as specified. 5th. In combination with the frame A of the buckle, the wire folding and closing portion B of the buckle bent to form a doubled wire presser bar *k*, essentially as shown and described. 6th. The combination, with the doubled wire presser bar *k*, of the plate *l* secured thereto and provided with teeth *n*, substantially as specified. 7th. The flat fixed cross-bar S, in combination with the frame A having indentations *v* in its sides made to form straight indented continuations of the sides of the frame, of a length corresponding with the width of said bar at its ends for the reception and hold of the bar, essentially as described. 8th. The fixed cross-bar S, provided with downwardly-inclined teeth *o* along its one upper edge, in combination with the presser-bar of the buckle, substantially as specified.

No. 27,284. Magazine Gun, (*Fusil magasin.*)

Marcellus Hartley (assignee of Arthur W. Savage), New York, N.Y., U.S., 27th July, 1887; 5 years.

Claim.—1st. The combination of a breech-block and a hollow overlying cover or guide, to serve as a conduit or passage for cartridges from the magazine to the gun chamber. 2nd. In a magazine fire-arm, the combination of a breech block pivoted at its rear end, and a hollow overlying cover, to serve as a conduit for cartridges from the magazine to the gun chamber. 3rd. In a magazine fire-arm, the combination of a breech block pivoted at its rear end, and an overlying cover or guide pivoted on the same pivot, and adapted to swing with the breech-block, the two parts forming a passage for the cartridge from the magazine to the chamber, substantially as shown and described. 4th. In a magazine fire-arm, the combination of a breech block, a hollow overlying cover articulating at their rear end on the same axis, and an operating lever to impart the opening and closing movements to said breech-block, and to lock the same in its closed position, substantially as described. 5th. In a magazine fire-arm, the combination of a breech block pivoted at its rear end, an overlying cover or guide pivoted on the same pivot, and adapted to swing with the breech-block, the two parts forming a passage from the magazine to the chamber, a detent carried by the cover or guide and projecting into said passage, substantially as described. 6th. In a magazine fire-arm, the combination of a breech-block pivoted at its rear end, an overlying cover or guide hung on the same pivot, and adapted to swing with the breech block, the two parts forming a passage from the magazine to the chamber, a detent carried by the cover or guide and projecting into said passage, and means, substantially as described, for operating said detent. 7th. In a magazine fire-arm, the combination of a breech-block provided with rearwardly-extending arms by which it is hung in the frame, and an overlying cover or cartridge-guide hung on the same pivot, and having an enlarged rear portion, which extends between the arms of the breech-block, and which has a passage through it forming a continuation of the magazine. 8th. In a magazine fire-arm, the combination of a breech-block and an overlying cover or cartridge guide hung on a common pivot, the cover having a passage through its rear portion, and the adjacent sides of the breech-block and cover being channeled to form a continuous passage from the magazine to the chamber, substantially as described. 9th. In a magazine fire-arm, the combination of a magazine, a detent for holding and releasing cartridges in the magazine, and means, substantially as described, for operating the detent, whereby said detent is automatically tripped to release the cartridge when the gun chamber is empty and is not tripped when the arm is loaded. 10th. In a magazine fire-arm, the combination of a magazine, a detent for releasing the cartridges therein, and means for tripping said detent by the closing of the breech adapted to be thrown out of operative position by the insertion of a cartridge into the chamber by hand, substantially as described. 11th. In a magazine fire-arm, the combination of the breech block pivoted at its rear end, an overlying cover or cartridge guide hung on the same pivot and adapted to swing with the breech-block, the two parts forming a passage from the magazine to the chamber, a detent carried by the cover and projecting into said passage, and a shoulder or hook on the extractor to operate said detent, substantially as described. 12th. In a magazine fire-arm, the combination of the breech-block pivoted at its rear end, an overlying cover or cartridge guide hung on the same pivot and adapted to swing with the breech-block, the two parts forming between them a passage from the magazine to the chamber, a detent carried by the cover and projecting into said passage, a shoulder or hook on the extractor to operate said detent, and a cam on the cover to disengage the extractor from the detent, substantially as shown and described. 13th. The combination, with the pivoted and swinging breech block, and a hammer bolt carried thereby, of the guard lever having arms *ct*, *ct*, to operate the breech-block, the dog *c* mounted between said arms on the same pivot with the lever and engaging the hammer bolt, and a trigger for holding or releasing the dog, substantially as shown and described. 14th. In a breech-loading fire-arm, the combination of two pivoted extractors of unequal leverage, and a rising and falling breech-block, substantially as shown and described. 15th. In a magazine fire-arm, the combination of a breech-block provided with rearwardly-extending arms by which it is pivoted in the frame, an overlying cover or cartridge guide pivoted on the same pivot and adapted to swing with the breech-block, and having an enlargement which lies between and extends below the arms of the breech-block, and an operating lever having two pairs of arms, one pair engaging lugs or shoulders on the sides of the said enlargement, to draw parts down and open the breech, and the other pair entering recesses in the sides and serving to raise the parts, substantially as shown and described. 16th. In a magazine fire-arm, the combination, with a magazine tube, of a toothed holding-bar capable of being moved towards the magazine to project its teeth into the same, and then draw back to engage and separate the cartridges therein, substantially as and for the purpose described. 17th. In a magazine fire-arm, the combination, with a magazine tube, of a toothed holding-bar capable of being moved towards the magazine to project its teeth into the same, and then draw back to engage and separate the cartridges therein, and a pivoted lever for imparting said movements, substantially as shown and described. 18th. In a magazine fire-arm, the combination, with a magazine tube, of a toothed holding-bar capable of being moved towards the magazine to project its teeth into the same, and then draw back to engage and separate the cartridges therein, a lever pivoted in the stock to engage and actuate the holding bar, and a lever for actuating the breech mechanism, the end of which engages and actuates the first-named lever, substantially as shown and described. 19th. In a magazine fire-arm, the combination with a slotted perforated magazine tube, of a toothed holding-bar, capable of being moved towards and from the magazine to project its teeth into the same and then draw back to engage and separate the cartridges therein, a pivoted lever for imparting said movement, and a spring to actuate said lever in one direction and return the parts to normal position, substantially as and for the purpose described. 20th. In a fire-arm, the combination of an operating lever, a socket in the stock to receive the end of said lever, and a catch to retain the same therein, said catch consisting of a spring encircling

said socket, and having a tooth which projects thereinto through its walls, substantially as shown and described.

No. 27,285. Spark Arrester. (*Garde-étincelle*)

John Dockings, Hamilton, Ont., 27th July, 1887; 5 years.

Claim.—The combination, in a smoke stack, of two tubular stacks 2 jointed together at the line 3, the lower half having an internal continuation 2a, thus forming a receptacle 6, the deflector 5 having an opening in its centre and provided with a damper 10 hinged to the same and manipulated by handle 13, and conductor ring 7 braced over deflector 5, thus forming the opening 9, substantially as and for the purpose hereinbefore set forth.

No. 27,286. Electric Railway.

(*Chemin de fer électrique.*)

Theophilus P. Chandler, Jr., Philadelphia, Penn., U. S., 27th July, 1887; 5 years.

Claim.—1st. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid curved sections connecting two portions of the main rails, one of which rails acts as the positive and the other as the negative conductor of electricity, and an electric generator to supply electricity to said rails, substantially as and for the purpose specified. 2nd. In a railway, the flexible main or line rails hung upon supports arranged at different levels from the ground, in combination with rigid curved sections connecting the portions of the main rails, one of which rails acts as the positive and the other as the negative conductor of electricity, and an electric generator to supply electricity to said rails, and an electric motor having supporting wheels to run upon said rails and receive electricity therefrom, substantially as and for the purpose specified. 3rd. In a railway, the flexible main or line rails hung upon supports, and arranged at different levels from the ground, in combination with rigid curved sections connecting two portions of the main rails, in which one of the rigid curved rail sections is of greater radius than the other, to overcome the action of centrifugal force on the car in passing around said curve, substantially as and for the purpose specified. 4th. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid switch carrying sections of rails connecting two portions of the main line, and switches arranged in each of said switch-sections, the said switches being arranged one above the other, substantially as and for the purpose specified. 5th. In a railway, the flexible main or line rails hung upon supports and arranged at different levels from the ground, in combination with rigid switch carrying sections of rails connecting two portions of the main lines, and switches arranged in each of said switch-sections, and mechanism to operate both switches at the same time, substantially as and for the purpose specified. 6th. The two flexible line rails B, in combination with the rigid curved sections C, C, an electric generator, the poles of which connect with said line rails, a car and contacts to convey the electricity from said rails through the motor on the car.

No. 27,287. Electric Railway.

(*Chemin de fer électrique.*)

Theophilus P. Chandler, Jr., Philadelphia, Penn., U. S., 27th July, 1887; 5 years.

Claim.—1st. A railway consisting of two cables, each combined with one or more main take-up or tension devices, and a series of auxiliary tension devices to each of said cables, whereby the slack in the cables may be taken up and the requisite tension imparted, substantially as and for the purpose specified. 2nd. A supporting-cable, combined with a main take-up, to take up all excessive slack in said cable, and a series of auxiliary tension devices adapted to put the cable under the requisite tension, substantially as and for the purpose specified. 3rd. The main take-up, consisting of the brackets L, bolts M₁ having right and left hand screw threads and link M₂, in combination with cables A, which are supported upon suitable posts, and forming with the take-up a continuous railway for a motor, the upper portion of the cables and the frame or casing of the take-up being exposed from above and form substantially a horizontal rail over which the motor-wheels may travel in running from cable to cable, substantially as and for the purpose specified. 4th. The main take-up consisting of the brackets L, bolts M₁ having right and left hand screw-threads and link M₂, in combination with rail N and cables A, substantially as and for the purpose specified. 5th. The auxiliary tension devices, which consist of bracket P, having shoulders p and rails p₁, made of cast-iron, strap Q, screw R detachably connected to the strap, and nut R₁, in combination with cable A, substantially as and for the purpose specified. 6th. The bracket-casting P, made with two shoulders p, and the two rails p₁, substantially as and for the purpose specified. 7th. Suitable supports and two cables supported thereon at different levels from the ground, and arranged parallel to each other, in combination with trussing or bracing uniting said cables together, whereby they become more or less rigid, and are prevented from spreading in long spans, and a motor or car provided with supporting and guide wheels adapted to run both of said rails, substantially as and for the purpose specified. 8th. A cable supported over a river, and having one section thereof made extensible, by which it may be allowed to sag down into the river to allow the passage of a vessel, in combination with a drum upon which said extra cable may be wound or unwound, substantially as and for the purpose specified. 9th. A cable supported over a river, and having one section thereof made extensible, by which it may be allowed to sag down into the river to allow the passage of a vessel, in combination with a drum upon which said extra cable may be wound or unwound, substantially as and for the purpose specified. 10th. Two cables, supported at different heights, carried upon suitable supports and spanning a river, one section whereof is made extensible, so that it may be allowed to sag down under the water to allow vessels to pass over it, in combination with two winding-drums upon which the excess of the cables is wound or unwound, and gear mechanism connecting both of said drums by

which they may both be rotated simultaneously, substantially as and for the purpose specified. 11th. The combination of cable A, supports C, section of cable H, guide-wheel H₁ and binding drum I, substantially as and for the purpose specified. 12th. The combination of the brackets L, and the rail N connecting them with the ends of the cable A, and suitable take-up mechanism, consisting of right and left-handed bolts M₁, and double-ended nut M₂ located under and within said rail, and protected thereby, substantially as and for the purpose specified.

No. 27,288. Metallic Shingle.

(*Bardeau Métallique.*)

Pierre Sicard, Ottawa, Ont., 27th July, 1887; 5 years.

Claim.—1st. As a new article of manufacture, the shingle A with turned up ends G and H, in combination with strap F. 2nd. A new article of manufacture in roofing, the cap D with both sides turned down and in, as shown. 3rd. As a new article of manufacture, the combination of the shingle A with upturned ends, the cap D with turned down sides, and strips E under cap D, as shown.

No. 27,289. Tree Protector. (*Tuteur d'arbre.*)

Daniel H. Cole, Memphis, Mich., U.S., 27th July, 1887; 5 years.

Claim.—1st. An improved tree protector, consisting of a series of rafters joined together in pairs at the upper ends, and secured to the ground at their lower ends, and provided with suitable braces for holding them in position, and of horizontal wires secured to these rafters to form a support for the branches of the tree and for an outside covering in winter time, all substantially as described. 2nd. An improved tree protector consisting of a series of rafters joined together in pairs at their upper ends, and secured to the ground at their lower ends, of suitable braces for holding these rafters in position, of horizontal wires secured to these rafters, and of ventilators placed in the ends and provided with doors for controlling the admission of air into the interior, all arranged to operate substantially as and for the purpose described.

No. 27,290. Bag-Holder. (*Accroche-sac.*)

Joseph Huber, Alta Vista, Iowa, U.S., 27th July, 1887; 5 years.

Claim.—1st. The combination of the standard, the vertically movable carrier thereon, the fixed arms on the carrier, and the arms also supported by the carrier, and adapted to be elevated to engage the bag or sack, substantially as described. 2nd. In a bag-holder, the combination of a standard, a vertically-movable carrier connected thereto, and having the vertical slots, the nutted eye-bolts passing through the slots and adjustable vertically therein, and a rock-bar journaled in the eye-bolts and having the angular arms, as and for the purpose described. 3rd. In a bag-holder, the combination of a standard, a carrier connected thereto, a horizontal bar n secured to the upper end of the carrier and having the short coiled arms, and a horizontal rock-bar journaled on the carrier beneath the fixed bar, and having the angular arms extending outwardly beyond the short arms of the fixed bar, as and for the purpose described.

No. 27,291. Sash Fastener. (*Arrête-croisée.*)

Charles E. Parker, Meriden (assignee of Henry A. Bennett, New Haven), Conn., U.S., 27th July, 1887; 5 years.

Claim.—1st. The latch D having the counter-sink E, points m and n extending into the same slot p and either of the pins m and n, as described. 2nd. The lever F having the pivot e₁ turning in the base-plate A, and on its under side the cams r, s and x, as and for the purpose described. 3rd. The lever F having the pivot e₁ turning in the base-plate, and the cams r, s and x, in combination with the latch D having the counter-sink E, points m and n extending into the same, and slot g, substantially as described.

No. 27,292. Electrical Fare Box.

(*Tronc électrique pour billets.*)

Walter A. Crowds, Dallas, and Henry Exall, Lampasas, Texas, U.S., 27th July, 1887; 5 years.

Claim.—1st. The combination, with a fare box, of an electric lamp applied thereto, so as to fully illuminate the interior of the box, electric conductors for connecting the lamp to a source of electricity, and a key or switch included in the circuit and located at the side of the box accessible only to the driver or attendant, substantially as described. 2nd. In combination, a fare box, an incandescent electric lamp located in the interior of the box, electrical connections and means, substantially as described, to cause the current to flow and the lamp to glow when a fare is deposited in the box. 3rd. In combination, a fare box, an electro-magnetic call bell, electrical connections and a circuit closer, consisting of a retention device adapted to hold the fares and be under the control of the driver or attendant, which, by the weight of a fare deposited in the box, closes the circuit and causes the bell to ring as long as the fare is allowed to remain upon it. 4th. In combination, a fare box, an incandescent electric lamp, an electro-magnetic call-bell, electrical connections and means, substantially as described, for closing the circuit to cause the current to flow through the lamp and call-bell when a fare is deposited in the box. 5th. In combination, a fare box provided with two electrical terminals, an electro-magnetic call-bell located in the box, a circuit including the electro-magnet and armature, make-and-break contact, and circuit closer actuated by the fare deposited in the box, and a line including the electro-magnet and a circuit-closing push-button, substantially as and for the purpose set forth. 6th. In combination, a fare box provided with two electrical terminals, an incandescent lamp included in a line comprising a circuit-closer actuated by the fare deposited in the box between the terminals, and another line, including a circuit-closing push-button completing the lamp circuit around the fare circuit-closer, substantially as and for the purpose set forth. 7th. In combination, a fare box provided

with two electrical terminals, a circuit-closer actuated by a fare deposited in the box, a call-bell and an incandescent lamp located in the box, a line between the terminals including the call-bell and the fare circuit-closer, another line including the lamp and fare circuit-closer, and a push-button circuit-closer in a line, including the electro-magnet of the call-bell, substantially as and for the purpose set forth. 8th. In combination, a fare box provided with two electrical terminals, a call-bell, an incandescent electric lamp, a circuit-closer actuated by a fare deposited in the box, lines between the terminals including the call-bell and the lamp and fare circuit-closer common to them, and a switch in the lamp line, substantially as and for the purpose set forth. 9th. In combination, a fare box provided with two electrical terminals, a circuit-closer actuated by a fare deposited in the box, a call-bell, an incandescent electric lamp, a line including the call-bell and the fare circuit, a line including the lamp circuit-closer, a push-button and line for causing the current to flow through the call-bell only, and a push-button and line for causing the current to flow through the lamp only, substantially as set forth. 10th. In combination, a fare box provided with glass sides and slides and a hinged top, an electrical call-bell located in a receptacle at the upper end of the box, and an electric lamp located under the bell receptacle, substantially as set forth. 11th. In combination, a fare box provided with an internal chute below the slit or entrance for fares, balanced fingers extending across the lower mouth of chute and supported by a metal bar electrically connected to a terminal on the box, a bar located over the rear ends of the fingers and electrically connected to another terminal, a call-bell included in this last-mentioned circuit line and means for moving the front side of the chute away from the balanced fingers to allow fares retained by the fingers to fall therefrom, substantially as and for the purpose set forth. 12th. In combination, a fare box provided with glass sides and a glass chute below the fare slit, two electrical terminals, an incandescent electric lamp and a key or switch included in one of the lines and located at the side of the box accessible only to the driver or attendant, substantially as and for the purpose set forth. 13th. In combination, a fare box provided with a chute below the fare slit, balanced fingers supported on a bar and extending across the mouth of the chute, a bar located over the rear ends of the fingers, and an electric lamp located in the box, the circuit of which includes the fingers and bars when a fare is supported by the fingers, substantially as set forth. 14th. In a fare box, in combination, a chute below the fare slit, electrical circuit-closing fingers extending across the mouth of the chute, the front plate of the chute being pivoted and provided with means by which it may be moved away from the fingers, and a fare retention trap or traps located under the chute, substantially as set forth.

No. 27,293. Car Wheel. (*Roue de char.*)

The Peckham Car Wheel Company (assignee of Edgar Peckham), Syracuse, N.Y., U.S., 27th July, 1887; 5 years.

Claim.—1st. In combination with the axle, a metallic hub formed with an axial bearing in one piece, a cushion encompassing said hub, a metallic web mounted on said cushion, a collar on one end of the hub, and a collar detachably connected to the opposite end of the hub, and bolts for securing the detachable collar on the hub, substantially as set forth. 2nd. In a car wheel, the combination of a metallic hub and a metallic web, and a cushion tapered longitudinally and inserted endwise into the space between the eye of the web and the hub, substantially as set forth. 3rd. In a car wheel, the combination of a metallic hub, a cushion encircling said hub, a rigid collar on the end of said hub, a metallic web seated on said cushion, and the adjacent sides of said collar and web formed with interlocking projections and indentations, substantially as and for the purpose set forth. 4th. In a car wheel, the combination of a metallic hub, a rigid collar on one end of said hub, a collar detachably connected to the opposite end of the hub, a cushion encircling the said hub between the collars, a metallic web seated on the cushion, interlocking projections and indentations on the adjacent sides of the rigid collar and web, and bolts for clamping the detachable collar on the web, all constructed and combined substantially as set forth. 5th. In a car wheel, the combination of a hub, collar secured to opposite ends of said hub, and a web secured between said collars and provided on its sides with shoulders projecting over the edges of the collars, substantially as described and shown. 6th. In a car wheel, the combination of a metallic hub, collars secured to opposite ends of said hub, a cushion encircling the hub between the collars, and a metallic web seated on said cushion and provided on its sides with shoulders projecting over the edges of the collars, substantially as described and shown. 7th. In a car wheel, the combination of a metallic hub, a rigid collar on the inner end of said hub provided with projections on its outer face, a circumferential groove in the outer end of the hub, and having its shoulder bevelled, a diametrically divided collar having an eye corresponding to the aforesaid groove, a cushion encircling the hub between the two collars, a metallic web seated on said cushion and provided, at the side adjacent to the rigid collar, with recesses corresponding to the projections of said collar, and clamping bolts passing through the two collars and intervening web, all constructed and combined substantially in the manner specified and shown.

No. 27,294. Grain Binder. (*Lieuse à grain.*)

The Johnston Harvester Company (assignee of Orville Cooley, Edward Pridmore, and Homer M. Johnston), Batavia, N.Y., U.S., 27th July, 1887; 5 years.

Claim.—1st. The herein described harvester-frame made from bars of channel-steel, said bars being secured together by means of bolts, and grooved or channeled, securing plates having the central bolt holes through the same, substantially as and for the purpose hereinbefore set forth. 2nd. The upright channel-steel elevator supporting-bars, bent in the required form, in combination with the main frame of a harvester, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a harvester having the channeled-steel frame-work, of the intermediate bar-supporting posts provided with the channeled or recessed ends, made conformable with the bar against which the ends of the posts impinge, and

the securing bolt firmly uniting the parts together, substantially as and for the purpose hereinbefore set forth. 4th. The combination, in a channel-steel harvester-frame formed in the manner shown, of the bars D₃, D₅, post Y₁ having the channeled and grooved ends corresponding with the face of the bars against which the ends of the posts abut, the diagonal arm Y₂ for supporting the inner end of the finger-bar, the post securing bolt, the curved extension Y and bar D₁, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the upright bent channel-steel elevator supporting-bars, the seat supporting standards, bars D, D₁, D₂, and bar V, substantially as and for the purpose hereinbefore set forth. 6th. The combination of the upright channel-steel elevator supporting-bar G₁, the upright channel-steel bar D₆, cross-bar D₅, and brace-rod D₇, as and for the purpose hereinbefore set forth. 7th. The herein described device for vertically adjusting the ground-wheel end of a harvester, consisting of worm-wheel H₁ mounted upon shaft H, shaft I carrying sprocket-wheel L₁ and clutch-mechanism, worm-gear H₂ having sprocket-wheel J attached thereto, sprocket-wheel J₂, chain J₁, ground-wheel axle K carrying pinion K₂, rack-segments K₃, sprocket-wheel L₂ mounted upon sleeve K₁, the entire mechanism located intermediate between the front and rear bars of the harvester frame, substantially as and for the purpose hereinbefore set forth. 8th. The combination of the worm-gear and co-active raising mechanism, the worm-wheel, the shaft carrying the same, provided with the square-sided end, the crank having the square-recessed end corresponding with the square-sided part of the worm-wheel shaft, and the securing hook A, all arranged substantially as and for the purpose hereinbefore set forth. 9th. The shaft I having the half-clutch I₁ mounted thereupon, in combination with sprocket-wheel L₂ having the half-clutch I₂ upon one end of its hub, the peripheral groove I₃ upon the other end of the same, the sprocket-wheel being intermediate between the said half-clutch and groove, the shifting-fork, the right-angled stem to the same carrying the coiled springs, the shifting-fork supporting-post, the cam-lever P, pin r, rod P₁ and hand lever P₂, all arranged substantially as and for the purpose hereinbefore set forth. 10th. The combination, with the harvester frame, of the grain-wheel standard having the gibbed edges, the slide carrying the wheel having the gear-teeth upon one edge thereof, and moving within gib-grooves, the small-cam corresponding in pitch with the teeth upon the slide, and mounted upon the crank-shaft turning in suitable bearings, substantially as and for the purpose hereinbefore set forth.

No. 27,295. Steam Generator.

(*Générateur de vapeur.*)

George Jones, Chicago, Ill., U.S., 28th July, 1887; 5 years.

Claim.—1st. The combination, with a fire-pot, of a base A provided with a rim or flange B, alternating high and low radial flanges B₁ and smoke exits B₂ and A₁, substantially as described. 2nd. The combination, with a fire-pot and boiler shell, of a base A and a water chamber F₁ located above the base, and forming in connection therewith a smoke passage or chamber, substantially as described. 3rd. The base A, in combination with the ring E₁ and watershell or casing F for forming a water-chamber and fire-pot, substantially as specified. 4th. A water-chamber F₁, in combination with the tubes G, plate H and set-nuts g, g₁ for connecting the tubes and plates H, and furnishing a support for the plate with a free expansion of the tubes, substantially as and for the purpose specified. 5th. The plate H, in combination with the plate or cap I, for forming a chamber or passage I₁ to receive water, substantially as and for the purpose specified. 6th. The combination, with a water-chamber F₁, pipes G and plate H, of the cap or plate I forming a chamber I₁, substantially as and for the purpose specified. 7th. The combination, with the water-tubes G and the chamber F₁ connected with the lower ends thereof, of the secondary chamber I₂ located directly above the upper ends of the tubes for receiving the overflow, and the main steam chamber J₁ directly over said secondary chamber, and forming in connection therewith the steam dome of the boiler, substantially as described. 8th. A steam-dome consisting of three parts H, I, J, and having two chambers I₁, J₁, substantially as and for the purpose specified. 9th. The combination, with a water chamber or shell F₁, pipes G and plate H, of the caps or plates I, J, forming a steam dome with two chambers, as and for the purpose specified. 10th. The combination, with the base A, water chamber F₁, tubes G, shell M and smoke-chamber E₁ between the water-chamber and the base, of the conduit R communicating at its upper end with the interior of the shell, and at its lower end with the smoke chamber at one side of the water chamber, substantially as described.

No. 27,296. Car Coupling. (*Attelage de chars.*)

William A. Ladd, Colfax, W.T., U.S., 28th July, 1887; 5 years.

Claim.—1st. In an automatic car-coupling, the combination, with the draw-head A, carrying a pawl C, of the disk B, having a shoulder b₁ and recess b₂, and an arm or lever D mounted upon said disk, substantially as described. 2nd. In an automatic car-coupling, the combination, with a draw-head A, carrying a dog or pawl C, of a disk B journaled in said draw-head, and having a shoulder b₁ for engaging the pawl, a recess b₂ for receiving a link, a lever D mounted upon said disk, and chains c, d leading from the pawl and lever to the platform or roof of the car, substantially as set forth. 3rd. The foot or treadle lever pivoted upon the roof or platform, and carrying a chain for operating the coupling, substantially as described. 4th. The link G, having the eyes g and bevelled on its under side, as set forth.

No. 27,297. Machine for Setting Watch Springs. (*Machine pour ajuster les spiraux des montres.*)

Aristide Lachance, Quebec, Que., 28th July, 1887; 5 years.

Résumé.—1o. Dans un ajusteur de spiraux, la combinaison des cadrans A and B, tel que décrits et pour les fins indiquées. 2o. Dans un ajusteur de spiraux, la combinaison du cadran B et du demi-cadran G, tel que décrit. 3o. Dans un ajusteur de spiraux, la com-

binaison du cadran B et du demi cadran G, et de l'aiguille *a*, *at*, tel que décrit. 40. Dans un ajusteur de spiraux, la combinaison des cadrans A and B et de l'aiguille *at*, tel que décrit. 50. Dans un ajusteur de spiraux, la combinaison du spiral S et la goupille K, tel que décrit. 60. Dans un ajusteur de spiraux, les axes *g*, *g*, pourvus de spiraux S, S, aiguilles *at* et *a*, *at*, cadrans A et B et le demi cadran G, le tout arrangé tel que décrit et pour les fins designées.

No. 27,298. Dust Guard for Car Windows.

(Garde-poussière pour fenêtres de chars.)

Thomas H. Duzan, Palestine, Texas, U.S., 28th July, 1887; 5 years.

Claim.—1st. As an improved article of manufacture, a dust-guard for car windows, etc., the body of which is of concavo-convex form closed at its upper end by a transverse plate, and provided at its lower end with a contracted opening for the discharge of cinders, dust, etc., said body portion being provided with means, substantially as described, for effecting its attachment to a window-frame, for the purpose specified. 2nd. An improved dust-guard for railway cars, consisting of a metallic frame of concavo-convex form, provided with the strip *d* having the stud, substantially as described. 3rd. The combination, with the window-frame, of a car provided with an escutcheon *b*, of a guard of concavo-convex form, having its lower end inclined and made with an opening *c*₁, and its upper end closed by a transverse portion *c*, a series of holes *e* designed to receive a cushioning material, substantially as set forth.

No. 27,299. Drill for Mining and Similar Purposes. (Drille pour mines et autres fins.)

William H. Larimer, Terre-Haute, Ind., U. S., 28th July, 1887; 5 years.

Claim.—1st. A drill of the character described, having knives or blades pivoted to its opposite sides, whose corresponding edges are curved or bevelled, the same being formed with the screw-point *a* designed to operate in advance of the blades, when revolved or rotated, and shoulders *c*, *c*, limiting the spread of the knives, substantially as described. 2nd. The combination, with the drill formed with screw point *a*, designed to operate in advance of the blades when revolved or rotated, and shoulders *c*, *c*, limiting the spread of the blades, of the oppositely pivoted blades *D*, *D*, having ribs *d* on their inner faces, designed to abut against the point *a* for preventing the said blades from crossing each other when closed together, substantially as described. 3rd. The combination, with a drill of the character described, formed with lugs or shoulders *c*, *c*, and screw point *a*, and flattened as at *b*, of knives *D*, *D*, pivotally attached and formed with ribs *d* on their inner faces, substantially as set forth.

No. 27,300. Hot Air Furnace.

(Calorifère à Air.)

Frederick Clare, Preston, Ont., 28th July, 1887; 5 years.

Claim.—The mode of constructing the dome G and the radiators H, H, substantially as hereinbefore set forth.

No. 27,301. Flush Valve for Water Closets.

(Valve de lavage pour latrines.)

Thomas Campbell and James H. McPartland, Saint John, N.B., 28th July, 1887; 5 years.

Claim.—The combination in a double flush valve for water closet basins, of the shell A, with its branches A₁ and A₂, with the fore wash B composed of the guide-rod B₁, the tube C, the cylinder F₁, the leather washer G₁, the collar H₁, the piston rod I₁, the plunger J₁, the opening L₁, the cap nut M₁, the lead weight N₁, the lever W, the nut *m*, the vent hole *o*, the fly nut *n* and the after-wash valves C composed of the gland I, the leather packing J, the cylinder K, the rod M, the collar N, the gland O, the washer P, the washer Q, the lead weight R, the hollow piston T, the movable plate U, with its supports *p*, *p*, the vent screw *f* with the vent hole *g*, the uprights *b*, *b*, the opening *d*, *d*, and the nut *o*, substantially as and for the purpose hereinbefore set forth.

No. 27,302. Locomotive Spark and Smoke Conductor. (Conducteur d'étincelle et de fumée pour locomotives.)

John Howe, Providence, R.I., U.S., 28th July, 1887; 5 years.

Claim.—1st. The combination, with a locomotive smoke-stack, of a bell-mouthed tubular conductor, extending horizontally rearward from the top of said stack, and a hinged deflecting hood coupled to said stack and adapted to swing toward and into, and also from said bell-mouthed conductor, substantially as described, whereby said hood can be made to occupy either a substantially horizontal position above the stack and partially within the bell-mouth, or a substantially vertical position in front of it, as and for the purpose set forth. 2nd. The combination, with a locomotive smoke-stack, of a clamping ring embracing the stack, and an adjustable hood provided with arms hinged to said ring, substantially as described. 3rd. The combination, with a tubular smoke and spark conductor mounted above or on a car, of a tubular coupling having a head constructed in two semi-cylindrical parts mounted on hinged or flexible standards, substantially as described, whereby said heads may be opened laterally to receive the end of an adjacent tubular conductor and closed thereon, as set forth. 4th. The combination, substantially as hereinbefore described, of a tubular smoke and spark conductor mounted above or on a car, the sectional coupling composed of two semi-cylindrical parts, each mounted on a swinging standard, and an adjusting-rod accessible from the platform of the car for controlling said coupling. 5th. The combination, with the tubular spark conductor of the sectional coupling, composed of two parts, each mounted on a swinging standard, a rotative rod and cam for separat-

ing the parts of said coupling, substantially as described. 6th. The combination, with the smoke-stack, of a tubular conductor extending rearward from the top of the stack, and a cinder trap in said conductor above the tender provided with a discharge door, substantially as described, whereby solid matter collected in said trap may from time to time be discharged into the tender for use as fuel.

No. 27,303. Vehicle Heater and Lamp.

(Réchaud-lampe de voiture.)

T. Avery Long, Howard, Penn., U.S., 28th July, 1887; 5 years.

Claim.—1st. The combination, with the suspended receptacle having a hinged perforated top, of the lamp having a loosely-connected wire chimney-holder, whereby the chimney is permitted to have an independent motion to provide against shocks, substantially as specified. 2nd. The combination, with suspended receptacle, of the lamp, its loosely-connected chimney-holder, and the flame shield detachably secured to the top of said holder, substantially as specified.

No. 27,304. Broiler. (Gril de cuisine.)

Ada M. Throckmorton, Chillicothe, Ohio, U. S., 28th July, 1887; 5 years.

Claim.—A wire broiler consisting of a peripheral wire bent in elliptical shape, and braced at both ends and the sides with cross and longitudinal wires, and provided with interlacing wires or wire-mesh, the ends of the peripheral wire securely fastened together and provided with a handle, substantially as described.

No. 27,305. Pianoforte, Organ, Harmonium, etc. (Piano, orgue, harmonium, etc.)

Edward A. Locke, Manchester, Eng., 29th July, 1887; 5 years.

Claim.—1st. The combination, with the top of a pianoforte, organ, harmonium, or other similar musical instrument, of a music desk hinged to a sliding bar at the top, and fitted with props and racks or elbow-jointed levers below, so that it can be adjusted both to the proper distance from the eye and also to the required angle. 2nd. I claim the combination of an adjustable music desk, hinged to a sliding bar above, and fitted with props and racks or elbow jointed lever below, of folding doors to conceal the same, such doors being fitted in the inside with candle brackets. 3rd. I claim the combination with the top of an organ, harmonium, or other similar musical instrument, of a cabinet having three compartments enclosed with doors, the central one of which is fitted with an adjustable hinged and sliding music desk, and having candle brackets fitted to the inside of the doors thereof, all substantially in the manner and for the purposes hereinbefore particularly set forth and described.

No. 27,306. Fetlock Support for Colts.

(Support de fanon pour les poulains.)

John A. Reid, Napanee, Ont., 29th July, 1887; 5 years.

Claim.—The combination of the leather bandage A and the splint *c*, in the manner and substantially as and for the purpose hereinbefore set forth.

No. 27,307. Lath. (Tour à Tourner.)

William Chaplin, St. Catharines, Ont., 29th July, 1887; 5 years.

Claim.—1st. In a handle-turning lathe, one or more shaping knives adjustably attached to carriers fitted into slots cut in a hollow drum cast solid with the main hollow shaft of the lathe, in combination with sleeves adapted to be adjusted on the *m* in shaft, so as to move the cutting edges of knives nearer to or further from the centre of the main shaft, substantially as described and for the purpose specified. 2nd. The shaping knives I secured on carriers J having wings *h* fitting into the slots *i* in the drum F, formed on the main hollow shaft A, and having arms *k* and *l*, in combination with the sleeve G and H adapted to be adjusted longitudinally on the main shaft and having guides *m* and *n* formed therein for the reception of the carrier arms *k* and *l* respectively, substantially as and for the purpose specified. 3rd. The shaping knife I adjustably secured on carrier J by the bolt *f* and having wings *h* adapted to move in slots *i* formed in the drum F, on the main hollow shaft A, and having shoulders *g* fitted against the sides of the slot *i* in the drum F, in combination with the adjustable sleeves G and H held rigidly together by the shouldered bolts *a*, and to the sliding standard D by the V-shaped ring *e* formed on the sleeve H, and having guides for the carrier arms *k* and *l*, substantially as described and for the purpose specified. 4th. The drum F adapted to carry the shaping knives I, and cast solid with the hollow shaft A, which is supported at one end by the standard C, and at the other by the sliding standard D, in combination with the sleeves G and H held together by the shouldered bolts *a*, and to the sliding standard D by the V-shaped ring *e* formed on the sleeves H, substantially as and for the purpose specified. 5th. The drum F, adapted to carry the shaping knives I, and situated between the sleeves G and H, held to the sliding standard D by the annular projection *e* formed at one end of the sleeve H, in combination with the lever K pivoted at K₁, and adjustably connected to the cam or pattern-wheel R by the rod O, and bell-crank Q having the roller *t* adapted to revolve in the groove *u* by the motion of the eccentric pattern wheel R on the counter-shaft S, substantially as and for the purpose specified. 6th. The lever K, pivoted at K₁ and having its upper end connected to the sliding standard D at *p*, in combination with the rod O actuated by the bell crank Q, the free end of which is adapted to move in the groove *u* in the pattern wheel R, and having its threaded end fitted into the thumb screw N, which thumb-screw is screwed into the trunnion M pivoted at *q* on the lever K, substantially as and for the purpose specified. 7th. The rod O at one end, adjustably connected to the pivoted lever K, which actuates the sliding standard D, and pivoted at *r* to the bolt P, which is adjustably held in the slot W₁, formed in the bell-crank Q having roller *t* pivoted at its free end, in combination with the pattern wheel R driven by counter-shaft S and having groove *n* formed therein, sub-

stantially as described and specified. 8th. The steadying pipe U fitted into the discharging end of the shaft A, and rigidly secured to the standard C having slot *ie* formed in said pipe, in combination with the spring *v* and rings X and Y, substantially as and for the purpose specified.

No. 26,308. Boiler or Digester for Reducing Wood and other Paper Stock.
(*Marmite de Papin pour Réduire le bois ou autres Matières à Papier.*)

Henry A. Framback, Roswell P. Dark, Kaukauna, and Andrew J. Vollrath, Sheboygan, Wis., U.S., 29th July, 1887; 5 years.

Claim.—1st. In the manufacture of paper from wood or other stock by an acid or acid sulphite process, a boiler or digester composed of enamel-lined sections suitably united to form tight joints impervious to acids, substantially as and for the purpose set forth. 2nd. In the manufacture of paper from wood or other stock by an acid or acid sulphite process, a sectional boiler or digester having its metallic portions insulated by a coating of elastic and acid resistant enamel, and its joints rendered acid proof by the interposition of lead gaskets, substantially as and for the purpose set forth. 3rd. In the manufacture of paper from wood or other stock by an acid, or acid sulphite process, a boiler composed of suitable metallic sections and head plates provided with flanges, and internally lined with an acid proof enamel, in combination with lead gaskets designed to be interposed between the opposing flanges of the respective parts, substantially as and for the purpose set forth. 4th. In the manufacture of paper from wood or other stock by an acid or acid sulphite process, a boiler composed of suitable metallic sections, and head plates provided with flanges and internally lined with a coating of acid-proof enamel, in combination with lead gaskets interposed between the opposing flanges of the respective parts, and an internal heating pipe having an exterior coating of enamel and acid-proof connections with said boiler, substantially as and for the purpose set forth.

No. 27,309. Grain Binder. (Lieuse à Grain.)

George L. Phelps, Chicago, Ill., U.S., 29th July, 1887; 5 years.

Claim.—1st. In a grain-binder, the combination, substantially as hereinbefore set forth, with the holder and knottor, of a finger or projection over which the twine is laid between the bundle and the holder, and over the end of, and under which the twine is carried by the revolution of the knottor preparatory to stripping. 2nd. The combination, substantially as hereinbefore set forth, with the knottor, of a breast-plate having a stop-finger in the binder arm, slot extending thereacross and bent upward or toward the knottor out of the plane of the plate. 3rd. In a grain-binder, the combination, substantially as hereinbefore set forth, with the knottor having its normal position in the direction, or nearly so, of the line of discharge, of a finger over which the twine is laid on the way to the holder, and over the end of, and under which the twine is carried by the revolution of the knottor preparatory to stripping. 4th. The combination, substantially as hereinbefore set forth, with the knottor, of the cord-slot in the breast plate recessed on the side adjacent to the knottor, and the finger extending transversely from the other side of the slot into said recess. 5th. In a grain-binder, the combination, substantially as hereinbefore set forth, of a finger or projection extending from one side of the slot in the breast-plate across said slot towards the knottor, and a guard arranged along the upper or inner side of said finger. 6th. The combination, substantially as hereinbefore set forth, with the cord-knottor and the cord-holder, of a breast-plate having a stop-finger extending from one side of the slot beneath or slightly in advance of the knottor, along which finger the cord is carried or deflected in the revolution of the knottor, and a guard projection from the other side of the slot which directs the cord upon the base of said finger and retains it there against as it is carried laterally therealong. 7th. The combination, substantially as hereinbefore set forth, with the cord-knottor and cord-holder of a breast-plate provided with a guard projection and a stop-finger in the binder-arm slot extending across said slot opposite to each other beneath or slightly in advance of the knottor, the first being bent upward or towards the knottor at its end out of the plane of the breast-plate. 8th. The combination, substantially as hereinbefore set forth, with the knottor and the cord-holder, of a breast-plate provided with a guard projection and a stop-finger in the binder-arm slot extending a cross slot opposite to each other beneath or slightly in advance of the knottor, and both of them bent upwards or towards the knottor out of the plane of the breast-plate. 9th. The combination, substantially as hereinbefore set forth, with the knottor, of the cord-slot extending past said knottor, the stop-finger in said slot adjacent to the knottor, and along and beneath which the cord is carried by the revolution of the latter, and actuating mechanism which gives the knottor one complete revolution and stops it with its jaws trending in the direction of the extended slot. 10th. In a grain-binder, a knottor having a normal position obliquely outward, as shown, whereby the stripping and tightening of the bundle knot is effected by the discharge of the bundle alone, in combination with a cord slot extending past said knottor, and permitting the band to be carried therpast while still in grasp of the knotting jaws, and with mechanism for holding and guiding the twine and for discharging the bundle, all substantially as described. 11th. In a grain-binder, the combination, with the breast-plate provided with the cord-slot extending past the knottor, and stop-finger in said slot over the end of, and under which the twine is carried by the revolution of the knottor, of the knottor having its normal position obliquely outward across the said finger mechanism for holding and guiding the twine for operating the knottor, for cutting the twine and for discharging the bundle, all substantially as described. 12th. The combination, substantially as hereinbefore set forth, with the cord-knottor, of a breast-plate having a slot for the play of the binder-arm contracted at its outer end beyond said knottor, and mechanism which stops the knottor after forming the knot with its jaws trending in the direction of said contracted part, so that the pull of the cord as the sheaf is ejected will come in a prac-

tically straight line upon the knottor jaws. 13th. The combination, substantially as hereinbefore set forth, with the pivoted knottor-jaw, of the spring acting to close said jaw, arranged upon the supporting stock with its shank parallel to the spindle of said knottor and the fixed cam which opens said jaw. 14th. In a grain-binder, the combination, with the breast-plate provided with the cord-slot extending past the knottor, and with the stop-finger therein, of the knottor having its normal position obliquely outward across the said finger and trending lengthwise of the slot, the binder shaft, the gear and cam-wheel upon said shaft, the knottor spindle mounted in bearings upon the supporting brackets, and stop-motion mechanism revolving the knottor, a fixed cam for opening the jaws of the knottor, and a spring for closing said jaws, said spring being secured to a bearing and lying parallel with the knottor-shaft mechanism for holding the twine, for cutting the same and for discharging the bundle, all substantially as described. 15th. The combination, substantially as hereinbefore set forth, with the finger lying transversely in the cord slot, of the knottor and the laterally moving holder. 16th. The combination, substantially as hereinbefore set forth, with the knottor and with the laterally moving holder for the cord, which swings away from the binder-arm slot on the side on which the knottor is located, of a guard projection and a stop-finger in said slot beneath or slightly in advance of the knottor, which projection and finger extend from opposite sides of the slot towards each other. 17th. The combination, substantially as hereinbefore set forth, with the knottor and with the laterally moving holder for the cord, which swings away from the binder-arm slot on the side on which the knottor is located, of a guard-projection extending from said side of the slot towards the other, and beveled or inclined on that edge which meets the cord, and a stop finger extending from the other side of the slot at right angles thereto, and having its inner or receiving edge parallel with the contiguous or outer edge of the guard finger and in proximity thereto, so that the cord is first deflected upon the base of the stop-finger by the guard-finger, and is subsequently kept in contact with said stop-finger as it is carried therealong by the lateral movement of the holder. 18th. In a twine-binder, the combination, with a knottor mechanism for operating the same, and mechanism for guiding and cutting the twine, of a suspended cord-holder and mechanism for operating the same from the rotary-shaft of the machine, and for imparting to it a reciprocating motion in an oblique direction all substantially as described. 19th. The combination, substantially as hereinbefore set forth, of the cord-knottor, the slotted breast-plate, the swinging-arm carrying the holder in its free end, and mechanism, whereby said arm is moved laterally away from the cord-slot and obliquely towards and past the knottor-spindle. 20th. The combination, substantially as hereinbefore set forth, with the cord knottor and cord-holder, of a swinging arm pivoted to the shield or breast-plate which guards them, and having the holder mounted in its free end, and a cam positively actuating said swinging-arm to move it away from, and towards the slot in said shield or breast-plate at stated intervals. 21st. The combination, substantially as hereinbefore set forth, with a swinging-arm pivoted near the head of the binder-arm slot in the breast-plate, and carrying the cord-holder at its free or vibrating end, of a fixed guide or way formed upon or in the breast-plate to steady said free or vibrating end in its movement. 22nd. The combination, substantially as hereinbefore set forth, with the cord-knottor, of a swinging-arm pivoted to the breast-plate near its head on the opposite side of the slot through which the binder-arm plays from said knottor, thence extending down alongside the knottor and beneath the gear-wheel which actuates it, a cord-holder mounted in the free end of said arm beyond or outside of the knottor, and a peripheral cam-ledge ledge upon said gear-wheel, entering between lugs or rollers upon the swinging-arm, and actuating it to move away from the cord-slot immediately before the knottor comes in mesh with its driving-rack, and to return it to its normal position adjacent to said slot, immediately after said knottor passes out of mesh. 23rd. The combination, substantially as hereinbefore set forth, with the knottor and with the breast-plate, of a holder-disk or disks arranged in a plane practically perpendicular to said breast-plate, and oblique to the plane in which the band is laid, so as to trend inwardly from the cord-slot and towards the knottor. 24th. The combination, substantially as hereinbefore set forth, with the knottor, of a holder-disk or disks, arranged in a plane, parallel, or nearly parallel, with the spindle of the knottor, but trending inwardly theretowards from the plane in which the cord is laid, so as to carry the cord towards said knottor and down into position, whereby its ends may be grasped between the jaws of the knottor. 25th. The combination, substantially as hereinbefore set forth, with the knottor, of a holder-disk or disks arranged in a plane parallel, or nearly parallel, with the spindle of the knottor, but extending inwardly theretowards from the plane in which the cord is laid, and means whereby said disks are moved laterally past the knottor, as it revolves to bend the cord around it and carry it down into position to be grasped by the jaws. 26th. The combination, substantially as hereinbefore set forth, of the slotted breast-plate, a cord-holder frame adapted to move laterally from the slot in the breast-plate, and a holder-disk arranged therein in a plane practically at right angles with the breast-plate, and having hooked teeth which, when the disk is in its receiving position, project over the cord-slot and form in succession cradles in which the cord is laid by the binder arm. 27th. The combination, substantially as hereinbefore set forth, of the knottor, the swinging-arm, the holder-disks supported thereby in a plane parallel with the knottor-spindle, but trending inwardly from the plane in which the band is laid, the holder-plate and the shoe also supported thereby, the spring-dog on the shield or breast-plate, acting upon the ratchet-face of said disks to revolve them as the arm is swung laterally, and the click on said arm restraining them from movement as the arm is returned to its position. 28th. The combination, substantially as hereinbefore set forth, with the cord-knottor, of the holder-disks, the holder-plate or shoe, the swinging-arm or support for said disks and shoe, the bevelled lug fixed upon the shield or breast-plate between the knottor and the holder, the blade carried by said lug and the knife on the swinging-arm, which severs the cord against said blade on the return movement of the arm. 29th. The combination, substantially as hereinbefore set forth, with the cord-knottor, of the holder-disks, the holder plate or shoe, the swinging-arm or support for said disks and shoe,

the cord-stop fixed upon the breast-plate between said disks and the knotted, the shear-blade supported by said cord-stop, and the knife on the swinging-arm which severs the cord against said shear-blade on the return movement of the arm. 30th. The combination, substantially as hereinbefore set forth, with the cord-knotter, of the holder-disks, the holder-plate or shoe, the swinging-arm or support for said plate or shoe, the spring-dog which actuates the disks as the arm is swung away from the knotted, the fixed shear-blade between the knotted and holder, and the knife on the swinging arm which severs the strands of cord against said blade, as the arm returns towards the knotted. 31st. The combination, substantially as hereinbefore set forth, of the breast-plate, the guard-projection and stop-finger extending from opposite sides of the slot therein, the tying bill adjacent to said projection and finger, and stop-motion gear by which said tying bill is rotated, the swinging-arm pivoted near the top of the slot on the side away from the knotted, and thence passing down until its free end comes beneath the stop-motion gear, the cam-ledge on the periphery of said gear, entering between projections from said arm to positively actuate it back and forth, the rotary cord-holder disks supported in said arm, the spring-dog upon the breast-plate catching into a ratchet on the face of the outer one of said disks, to revolve them as the arm is moved away from the knotted, the click to stop them as it is returned, the fixed shear-blade between the knotted and the holder, and the knife on said arm to sever the cord as the arm is swung back and towards the tying bill.

No. 27,310. Milk-Cooler. (*Garde-lait.*)

John Potter, Plattsville, Ont., 30th July, 1887; 5 years.

Claim.—1st. A milk cooler, consisting of a disk-shaped top A, and hollow bottom C connected by pipes B, and an overflow pipe D rising from the bottom C to prevent overflow from the dish, and cause a downward circulation of water from the dish through the pipes and bottom, and return circulation through the overflow pipe, as set forth. 2nd. The combination, with a can or vessel E to contain milk to be cooled, of a cooler inserted in the milk, said cooler having a series of downward circulating water pipes, and an upward outflow above the top of the can, whereby water fed to the cooler will return and pass off outside the can after cooling the milk, as set forth.

No. 27,311. Contrivance for the Transmission of Power and Motion. (*Appareil de transmission de la force et du mouvement.*)

Michael Garland, Bay City, Mich., U.S., 30th July, 1887; 5 years.

Claim.—The combination, with a rope or cable provided with a series of transversely arranged sprocket-like or engaging devices, which project laterally of said rope, of wheels, each of which has a peripheral groove for the accommodation of said rope, and the flanges of which are toothed or notched to affect a positive engagement with the laterally-projecting portions of said engaging devices, all in substantially the manner hereinbefore set forth.

No. 27,312. Potato-Digger.

(*Scarificateur à patates.*)

Peter J. Heller, Montclair, N.J., U.S., 30th July, 1887; 5 years.

Claim.—1st. The combination, in a potato-digging machine, with the axle A, wheels B, B, and tongue D, of the slotted standards C, C, mounted upon said axle, the draft-bars I, I, playing in slots in said standard, the shovel N and handles O, secured to said draft-bars, the adjustable brace-bars P, P, connecting the rear end of the shovel to the handles, the rotating shaft R carrying the clearing-teeth S, S, at the rear end of the shovel, and the sprocket-wheels T, T, chain U, shaft F, pinion H and toothed wheel G, by which the shaft R is geared to the axle A, all substantially in the manner and for the purpose herein set forth. 2nd. The combination, with the rotating axle A and shovel N, of a potato-digger and with the shaft R and clearing-teeth S, S, mounted at the rear end of the shovel, and geared, substantially as described, to the axle A, of an auxiliary shaft W and radial teeth W₁ mounted above the shovel, and geared, substantially as described, to said shaft R to revolve in unison there-

with, substantially in the manner and for the purpose herein set forth.

No. 27,313. Cuff. (*Poignet.*)

William Kahler, Drummond, Wis., U.S., 30th July, 1887; 5 years.

Claim.—A cuff, adapted to be adjusted in the manner set forth, to a suitable tapering shape to be retained by the end of the coat sleeve independently of the shirt sleeve.

No. 27,314. Car-Coupling. (*Attelage de chars.*)

Charles E. Conrad, Hastings, Neb., U.S., 30th July, 1887; 5 years.

Claim.—In a car-coupling, the combination of the longitudinally and laterally movable draw-heads, having the hooks on opposite sides adapted to engage a similar draw-head when the cars come together, levers connected to the draw-head to move the same laterally, ratchet wheels secured to the levers and adapted to turn therewith, the pawls to normally engage the said ratchet-wheels and thereby lock the levers and the draw-head against lateral movement, the levers V adapted to disengage the pawls, and the levers M connected to the draw-head and adapted to strike the levers V, and cause the same to trip the pawls when the draw-heads move longitudinally, for the purpose set forth, substantially as described. 2nd. The combination, in a car-coupling, of the longitudinally and laterally, movable draw-head having the hooks on opposite sides thereof, for the purpose set forth, the buffer-spring to normally move the draw-head forward, the spring to normally retain the same in line with the axis of the car, the levers M connected to the draw-heads, and adapted to be operated by the longitudinal movement thereof, the hand-levers connected to the draw-head and adapted to move the same laterally, said hand levers having the ratchets R, the pawls to normally engage the said ratchets, and the levers V adapted to trip the said pawls, and having the arms W arranged in the paths of the levers M, all combined and arranged to operate substantially in the manner and for the purpose described.

No. 27,315. Mechanical Movement.

(*Embrayage à friction.*)

Sylvester B. Wilkins, Rockford, Ill., U.S., 30th July, 1887; 5 years.

Claim.—1st. A shaft B, in combination with two loose pinions thereon, and a sliding clutch which rotates with the shaft and is located between, and adapted to engage alternately with said two pinions, while both are in motion in the same direction and same rate of speed, and devices for automatically shifting the clutch, said clutch and pinions being so arranged that the clutch does not become disengaged from one pinion before it engages the other, whereby the movements of the machine are constant and without shock or interruption, substantially as and for the purposes specified. 2nd. A shaft B, in combination with two loose pinions thereon, and a sliding clutch which rotates with the shaft and is located between, and adapted to engage alternately with said two pinions, while both are in motion, devices for automatically shifting the clutch, a main gear wheel J, and a ratchet-wheel O provided with a flange having some part or parts cut away and pawl connections between the driving and ratchet-wheel for moving the latter, substantially as and for the purposes specified. 3rd. A shaft B, in combination with two loose pinions C, G, a sliding clutch which rotates with the shaft and is located between and adapted to engage alternately with said two pinions while both are in motion, a main gear-wheel J engaging with the pinion C, and quadrant engaging with the pinion G, the pitman K, the bar L and pitman N, substantially as and for the purposes specified. 4th. The combination of the shaft B, loose pinions C, G, the clutch I, fork h, levers j, k, Q, driving-pulley E provided with cams a, b, main gear-wheel J engaging with the pinion C and quadrant engaging with the pinion G and operated by the pitman K, the bar L and pitman N, substantially as and for the purposes specified. 5th. A shaft B, in combination with two loose pinions C, G, a sliding clutch which rotates with the shaft and is located between and adapted to engage alternately with said two pinions while both are in motion, a main gear-wheel, a quadrant engaging with the pinion G and operated by a pitman K, bar L and pitman N, fork h, levers j, k, Q, driving pulley E provided with two cams a, b, bar R, bar S, ratchet wheel O provided with a flange m partly cut away, lever P and pawl p, substantially as and for the purposes specified.

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

- | | |
|---|--|
| 928. G. WALSH, 2nd 5 years of No. 15,053, from the 5th day of July, 1887. Improvements in Compound Saw Dressing Tools, 4th July, 1887. | 934. O. L. HATCH, 3rd 5 years of No. 7,667, from the 17th day of July, 1887. Improvements in Bed Bottoms, 15th July, 1887. |
| 929. G. WALSH, 2nd 5 years of No. 15,054, from the 5th day of July, 1887. Improvements in Saw Jointers, 4th July, 1887. | 935. W. ROBINSON, 2nd 5 years of No. 15,136, from the 19th day of July, 1887. Improvements in Carriages and Vehicles for Railways, Tramways, etc., 18th July, 1887. |
| 930. C. SCOFIELD, 2nd 5 years of No. 15,139, from the 19th day of July, 1887. Improvements on Lounges and Sofa Beds, 7th July, 1887. | 936. W. BUELL and C. J. O'CONNOR, 2nd 5 years of No. 15,179, from the 25th day of July, 1887. Improvements on Windmills, 25th July, 1887. |
| 931. B. W. WEBB, 2nd 5 years of No. 15,118, from the 15th day of July, 1887. Improvements in Tills for the Prevention of Fraud by Persons who Receive Money in Shops and other Places, 12th July, 1887. | 937. E. R. LANGS, 3rd 5 years of No. 7,719, from the 9th day of August, 1887. Improvements on a Waggon Box, 25th July, 1887. |
| 932. W. C. BRAMWELL, 2nd 5 years of No. 15,247, from the 7th day of August, 1887. Improvements on Feeding Mechanism for Carding Engines, 12th July, 1887. | 938. W. E. BANTA, J. M. DODD and M. CROTHERS, 2nd 5 years of No. 15,259, from the 7th day of August, 1887. Improvements on Insulating and Protecting Telegraph Wires and other Electrical Conductors, 30th July, 1887. |
| 933. THE BURLINGTON SHADE ROLLER CO. (assignee), 2nd 5 years of No. 15,135, from the 19th day of July, 1887. Improvements in Planing Machines for Planing Pieces of Wood, 13th July, 1887. | |
-

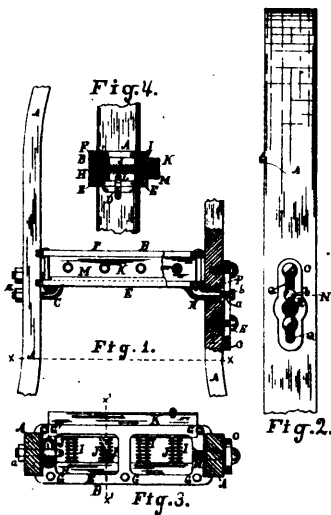
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

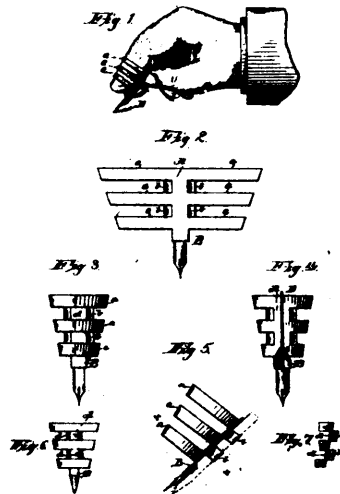
Vol. XV.

AUGUST, 1887.

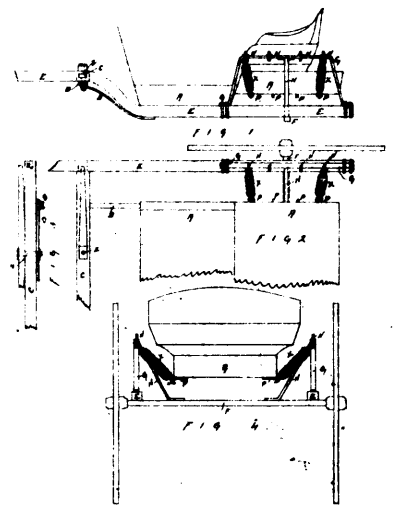
No. 8.



27094 Bishop's Animal Poke.



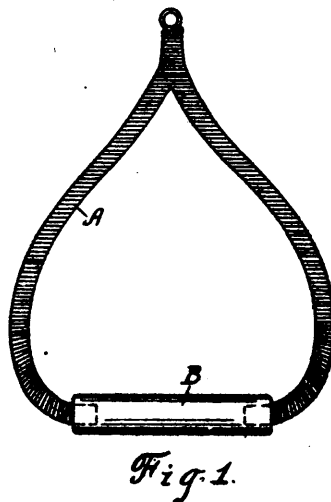
27095 Merrick's Pen or Pencil Holder.



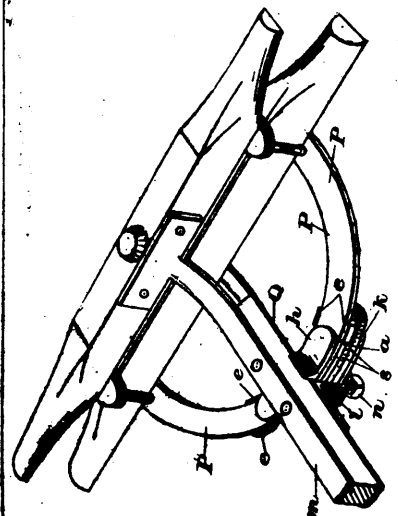
27096 Hulett's Cart.



27097 Kasper's Grain Separator.



27098 Russell's Bird Perch Swing.



27099 McLaughlin's Vehicle Gear.

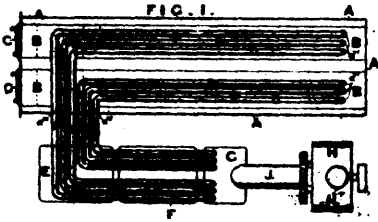


FIG. 2.

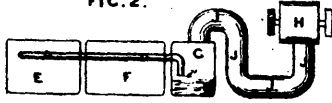
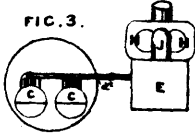


FIG. 3.



27100 Hewett's Appliance for Intensifying Combustion.

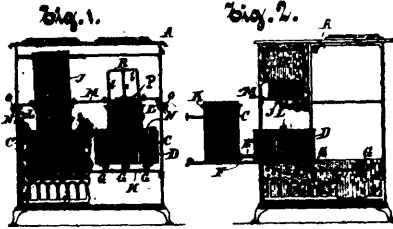
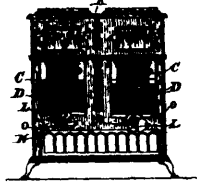


Fig. 3.



27101 Zimmerling's Oil Stove.

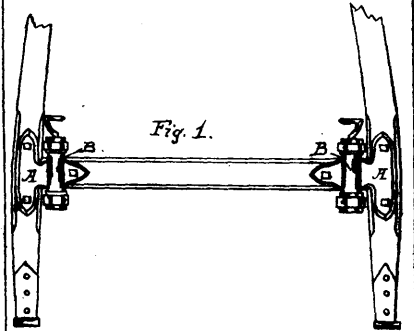


Fig. 1.

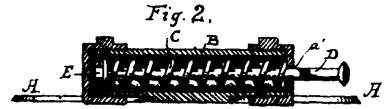
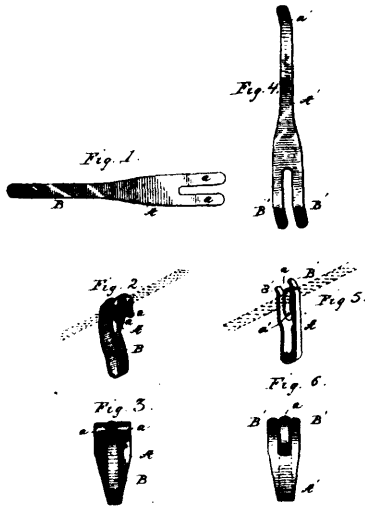
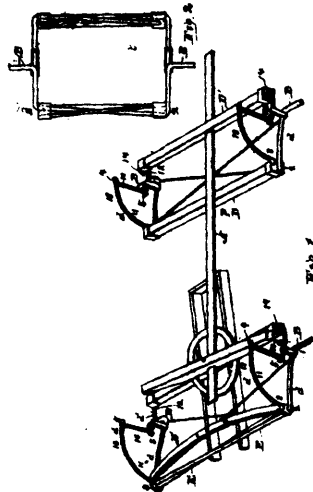


Fig. 2.

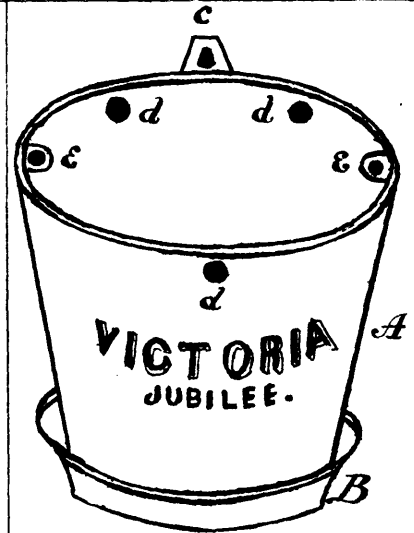
27102 Heon's Draught Hook.



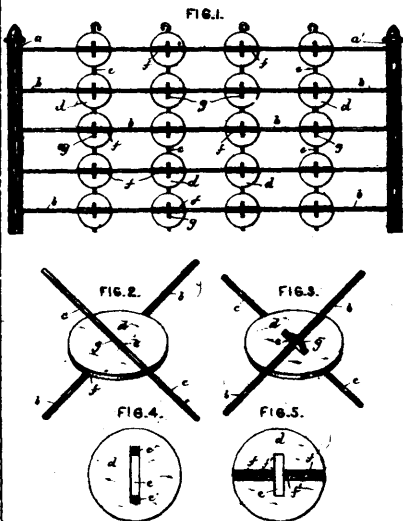
27103 Johnson & Mann's Clothes Pin.



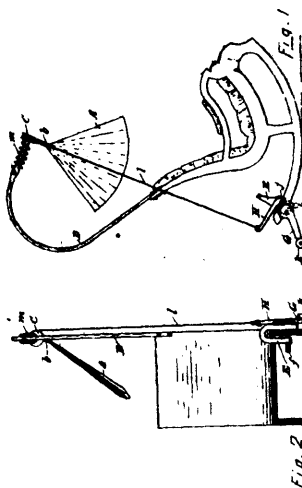
27104 Shaw's Vehicle Spring.



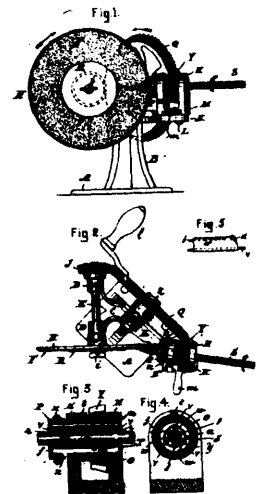
27105 Black's Flower Pot



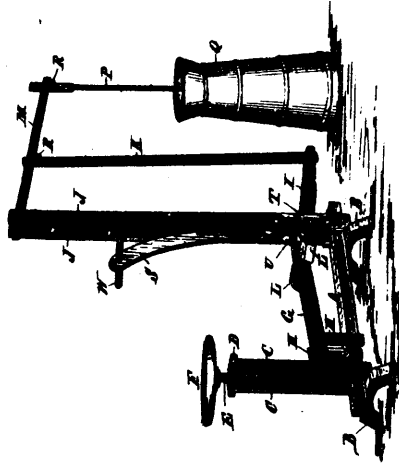
27106 Schiller's Wire Fence.



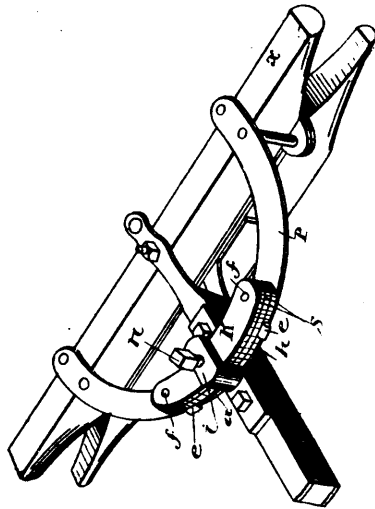
27107 Marcoux's Fan Motor.



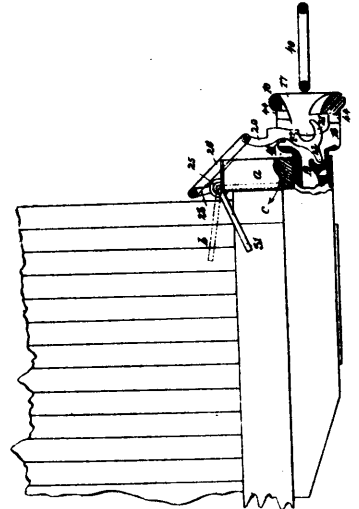
27108 Gould & Cook's Pencil Sharpener.



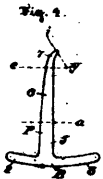
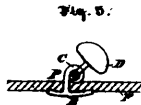
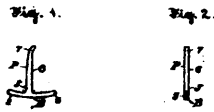
27109 Bates' Manuel Power.



27110 McLaughlin's Vehicle Fifth-Wheel.



27111 Lalime's Car-Coupler.



27112 Kempshall's Button Fastener.

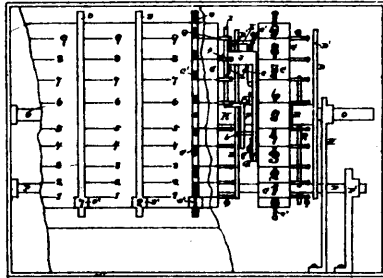


Fig. 5.

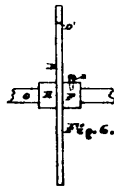
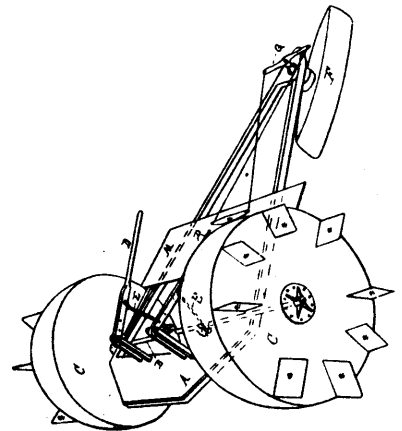
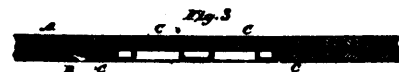
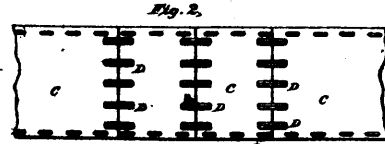
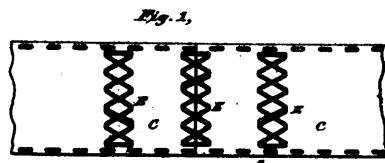


Fig. 6.

27113 Bancroft's Calculating Machine.



27114 Campau's Marine Vehicle.



27116 Kerr's Leather Belting.

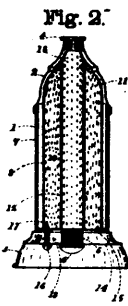
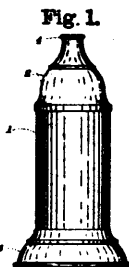
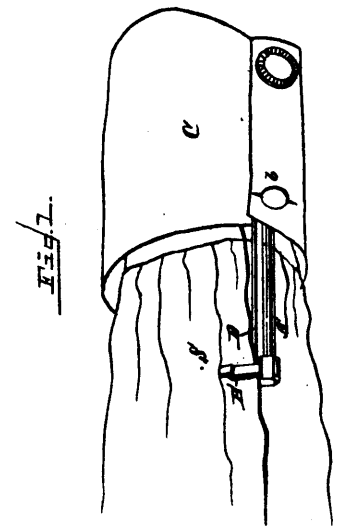


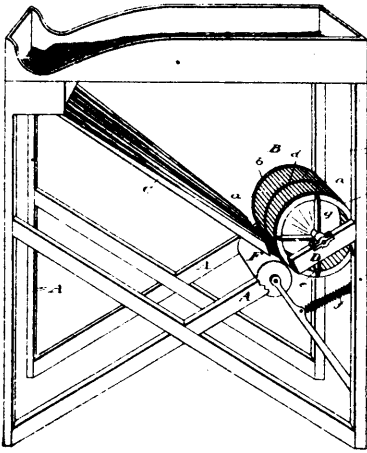
Fig. 3.



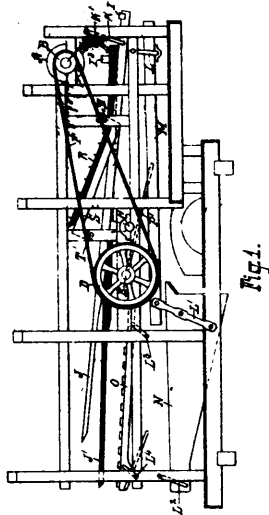
27118 Burnham's Receptacle for Medicine.



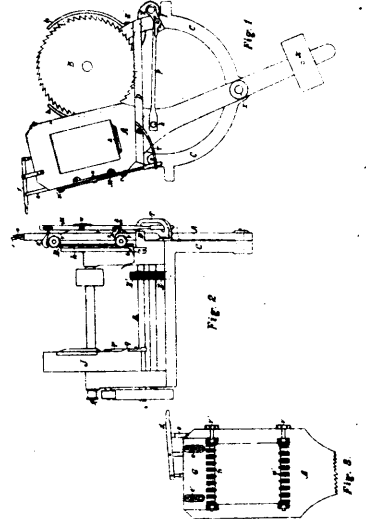
27119 Jones' Cuff-Holder.



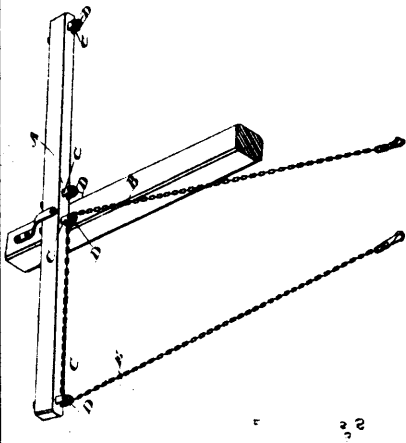
27120 Young & Green's Machine for Cutting String Beans.



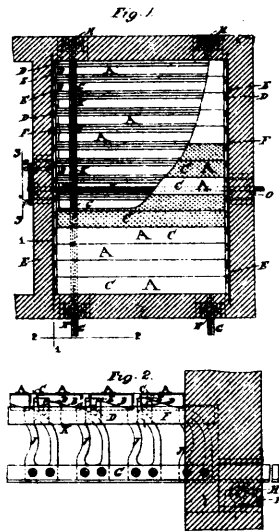
27121 Strangway & Vary's Threshing Machine.



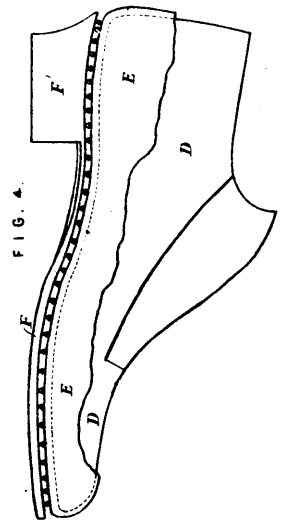
27122 Close's Shingle Sawing Machine.



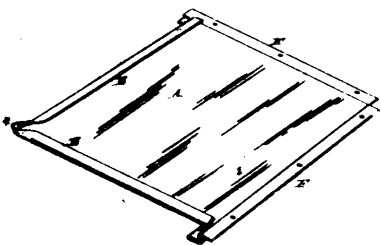
27123 Gibson's Substitute for Whiffletrees.



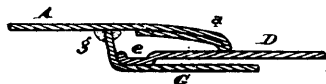
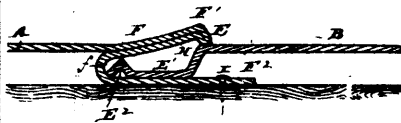
27124 Kohler & Chambers' Kiln Floor.



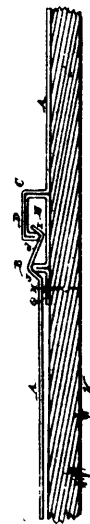
27125 Lion & Cutlan's Boots and Shoes.



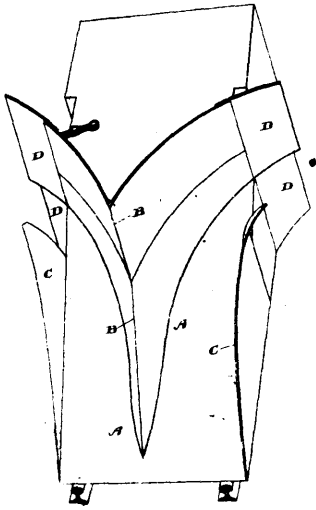
27126 Cortright's Metallic Shingle.



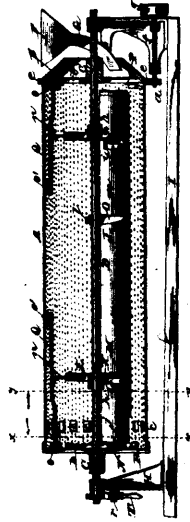
27127 Cortright's Metallic Shingle.



27128 Cortright's Metallic Shingle.



27129 Kirk's Snow Plough.



27130 Prinz's Cockle Machine.

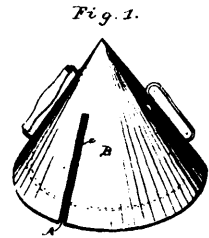
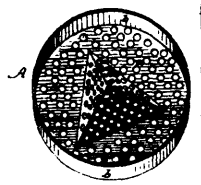
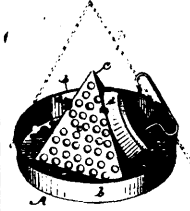
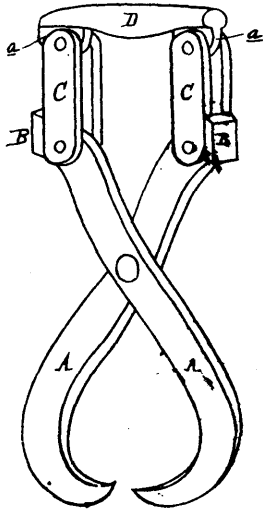


Fig 2.

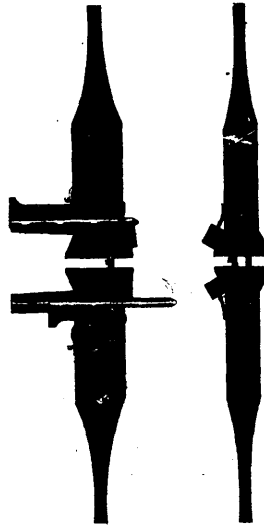
Fig. 3.



27132 Dillon's Flat Iron Heater.



27133 Wright's Ice Tongs.



27134 Herard's Car-Coupling.

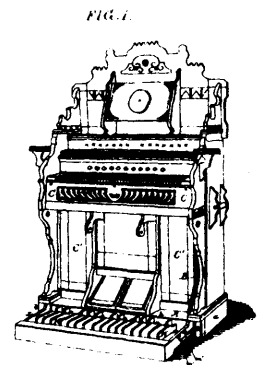
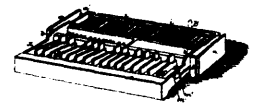


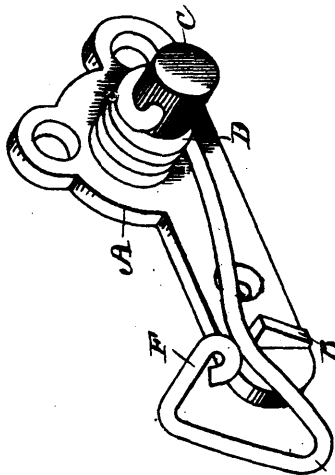
FIG. 2.



27135 Subers' Organ Pedal.



27136 Knapp's Whip.



27137 White's Door Check.

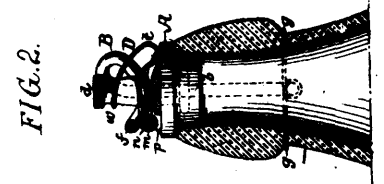


FIG. 2.

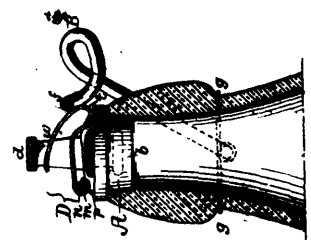
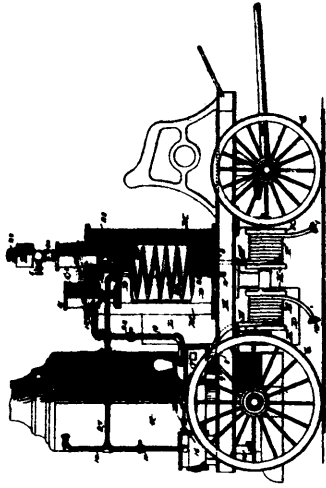
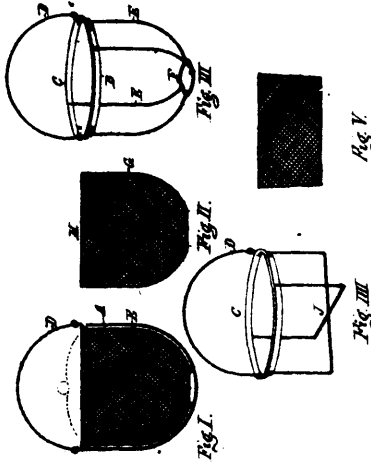


FIG. 1.

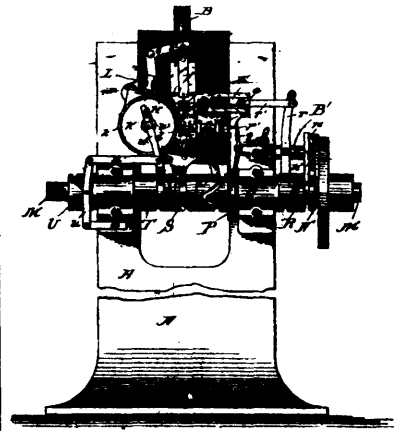
27138 Lloyd's Bottle Stopper.



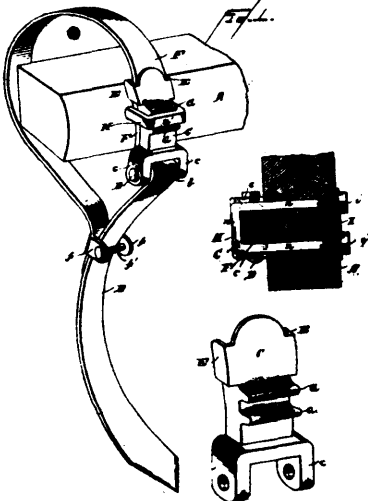
26139 Rosenfield's Disinfecting Apparatus.



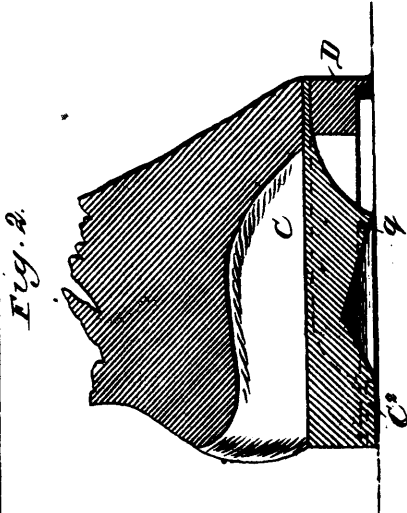
27140 Willison's Cooking Vessel.



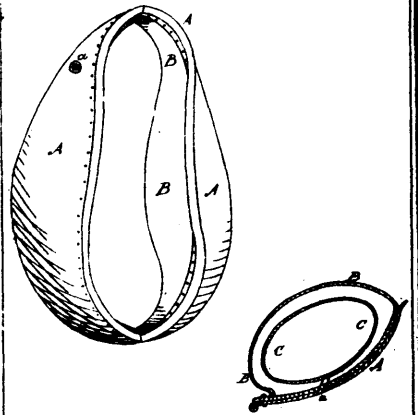
27141 Willoughby's Machine for Making Spur Wheel Fencing.



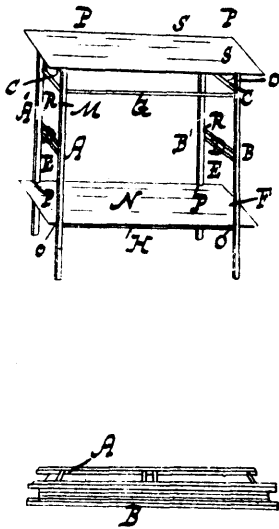
27142 McKenzie's Device for Securing Harrow and Cultivator Teeth.



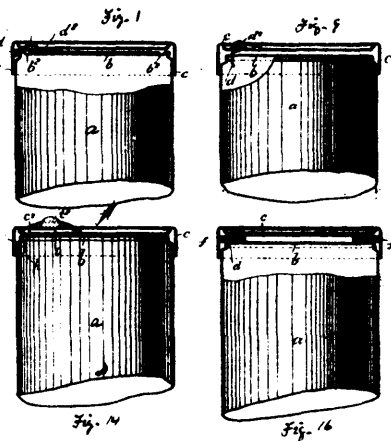
27143 Dempsey's Foot Cushion for Horses.



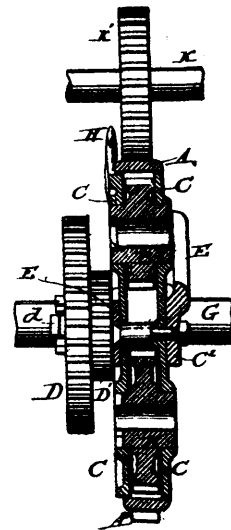
27148 Thompson's Horse Collar.



27147 Weatherley's Stand.



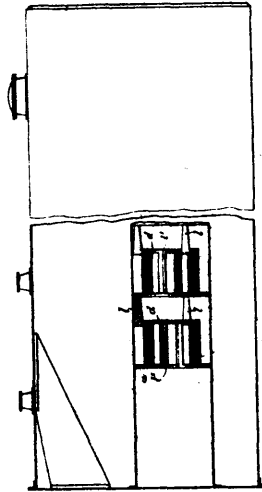
27148 Williamson's Metallic Box.



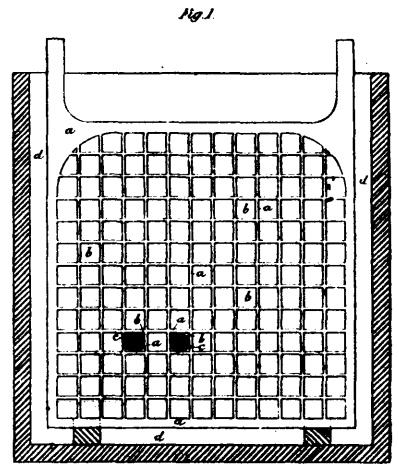
27149 Kirkpatrick & Martin's Gearing for Machinery.



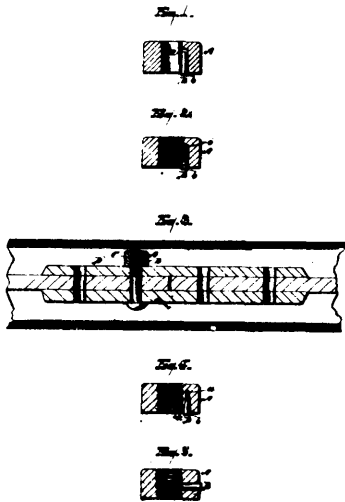
27150 Blacklock's Stocking.



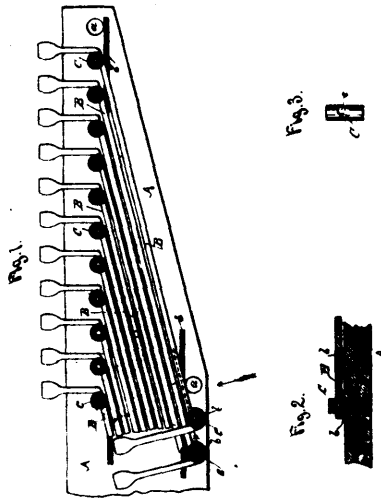
27151 Meeze's Apparatus for Heating and Cooling Fluids.



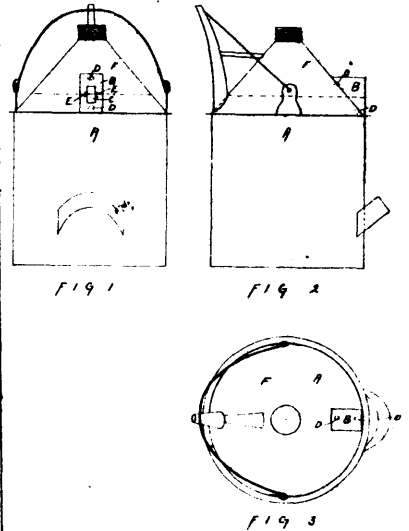
27152 Elleson's Electrical Accumulator.



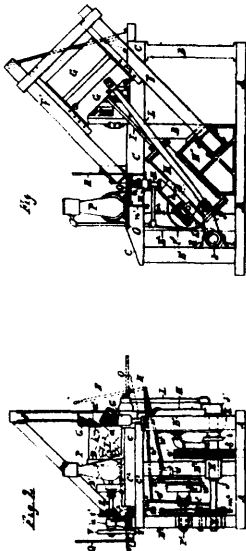
27153 Fungs' Lock Nut.



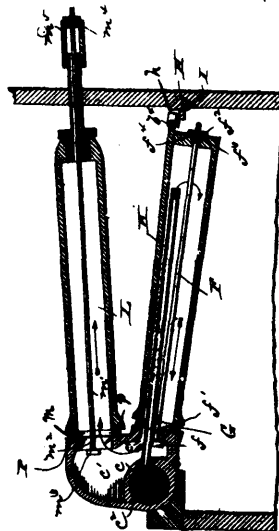
27154 Hammond's Octave Coupler.



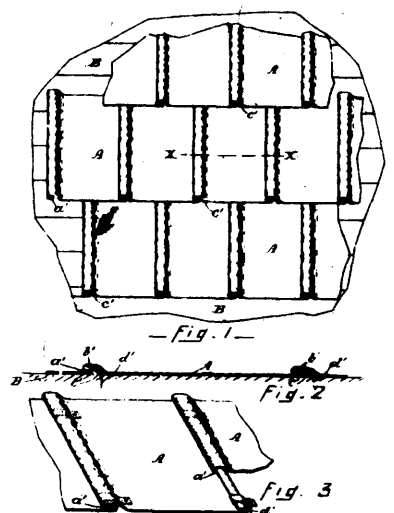
27155 Burdett's Can.



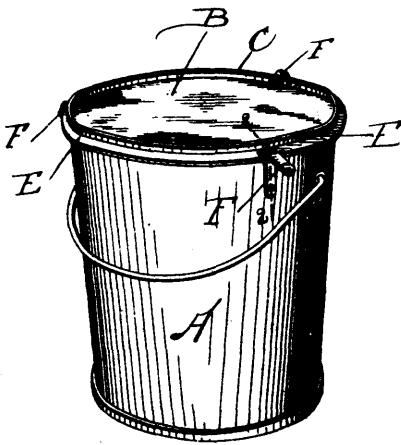
27157 Crane's Wood Cutting Machine.



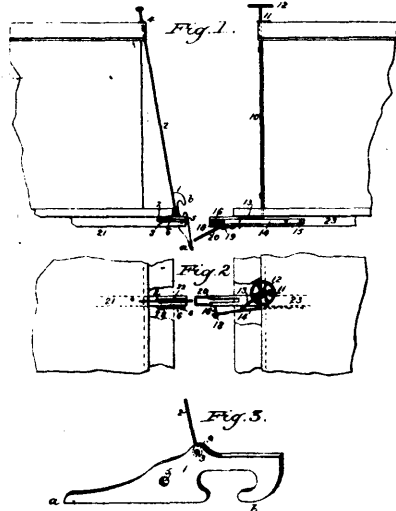
27158 Farris' Steam Generator.



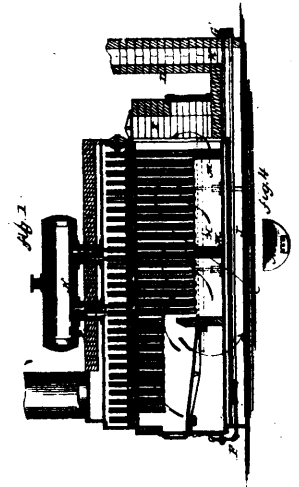
27159 McKillop's Roofing Plate.



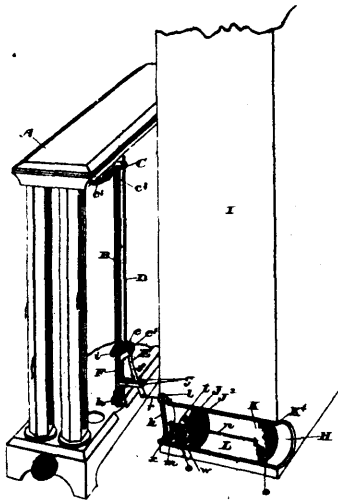
27160 McAdam's Butter Tub.



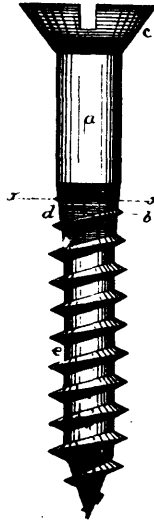
27161 Address' Car-Coupler.



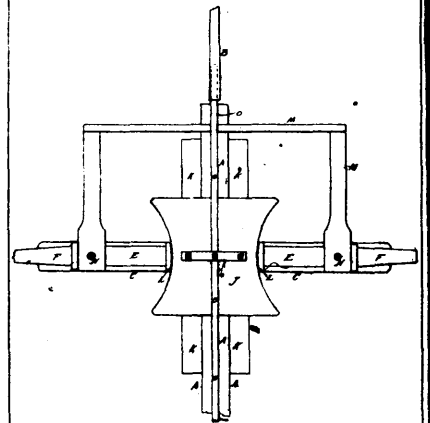
27162 Kingsley's Steam Boiler.



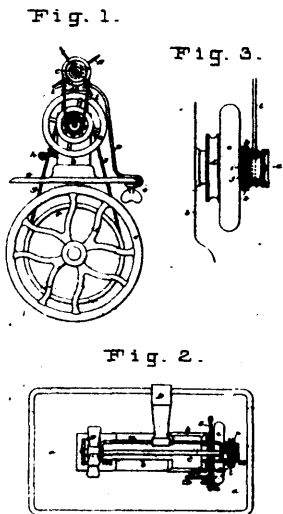
27163 Gurney's Ventilator.



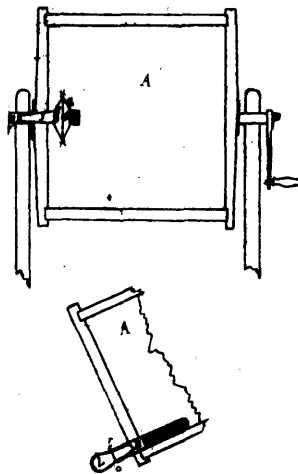
27164 Harvey's Wood Screw.



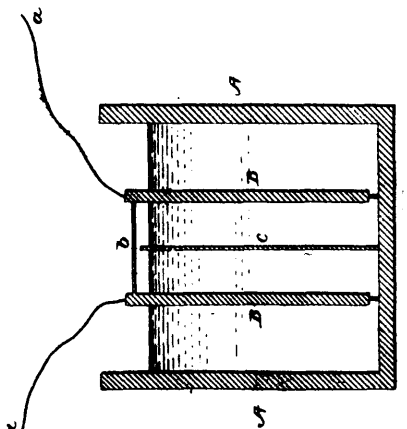
27165 Near's Waggon Gear.



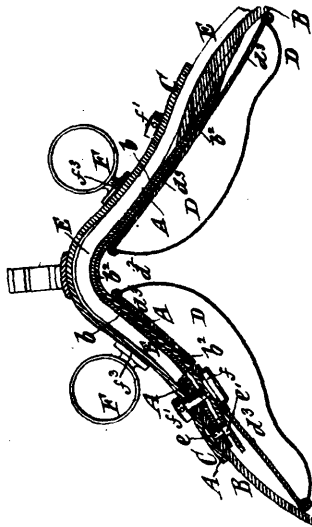
27166 Cook's Sewing Machine Fan.



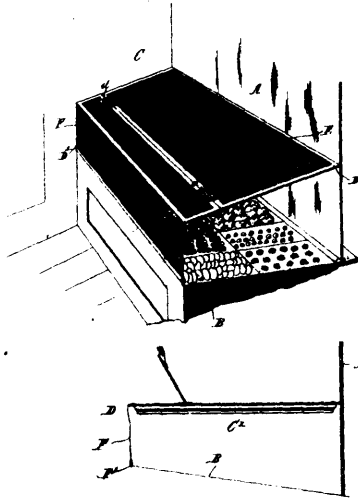
27167 Lynch's Churn.



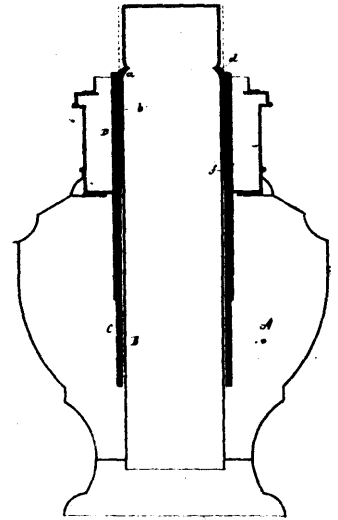
27168 Trippé's Electrodes for Secondary Batteries



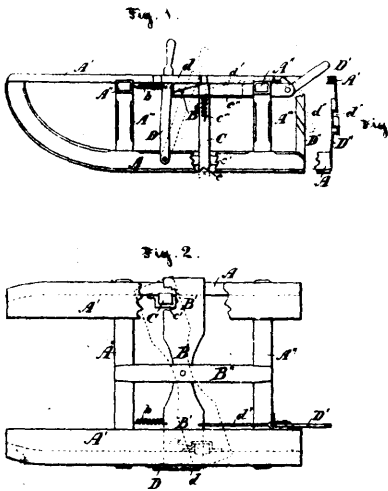
27169 Stengel's Saddle.



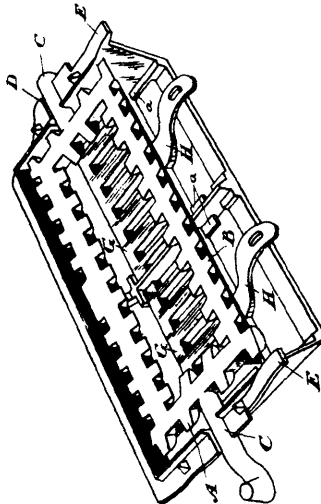
27170 Griffin's Fly Screen.



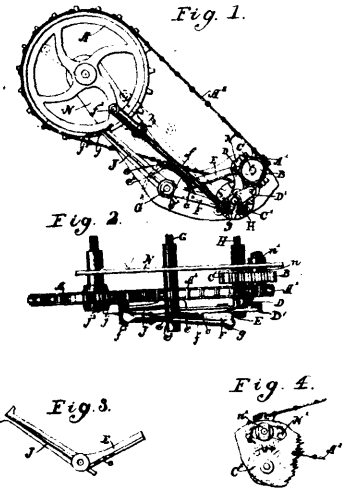
27171 Rhind's Lamp.



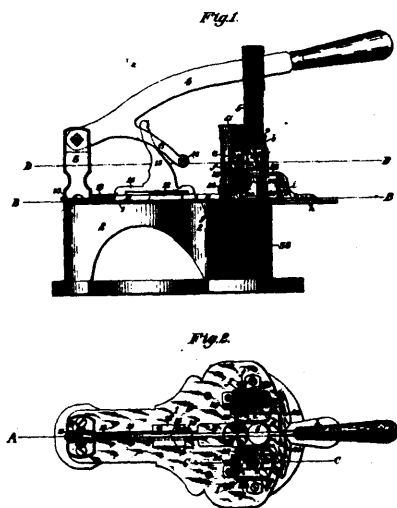
27172 Walker's Sleigh Brake.



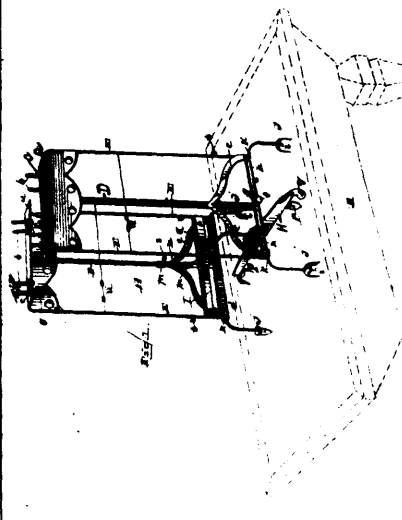
27173 Gurney's Stove Grate.



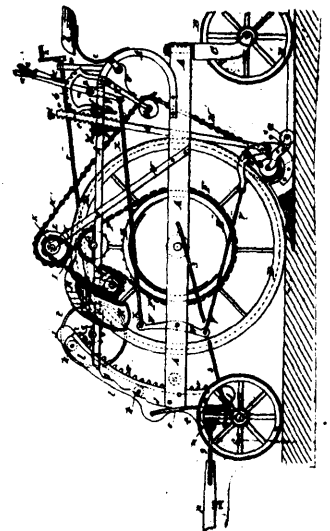
27174 Fridmore's Grain Binder.



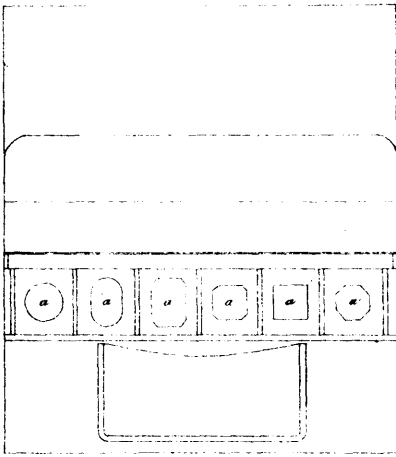
27175 Franklin's Machine for loading Cartridges.



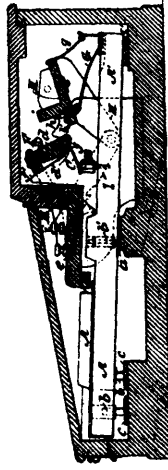
27176 Mather's Billiard and Pool Table.



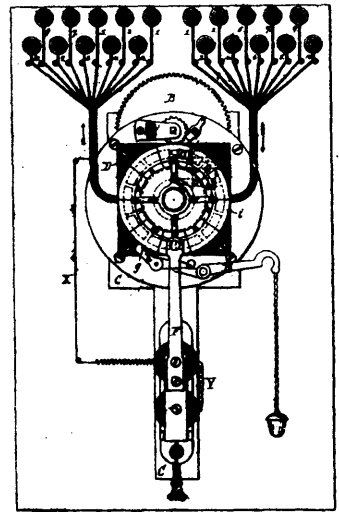
27177 Potter's Tile Ditcher.



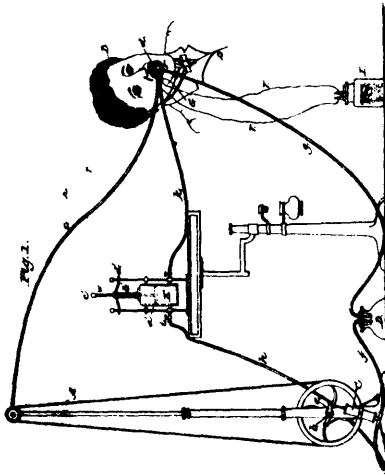
27178 Downe's Stamp Pocket for Purses, etc.



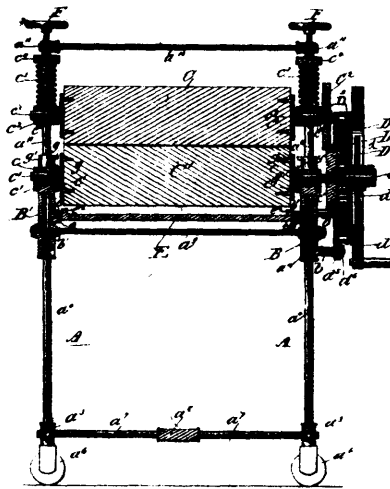
27179 Virgil's Exercising Device for Musicians.



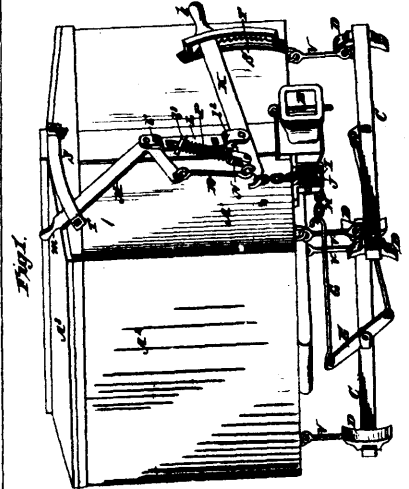
27180 Wheeler's apparatus for testing Electric Circuits.



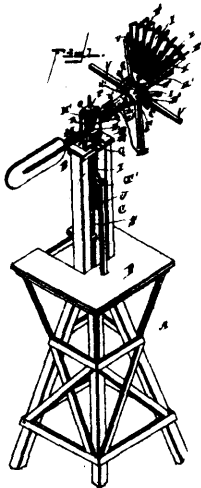
27181 Parsons' Dental apparatus.



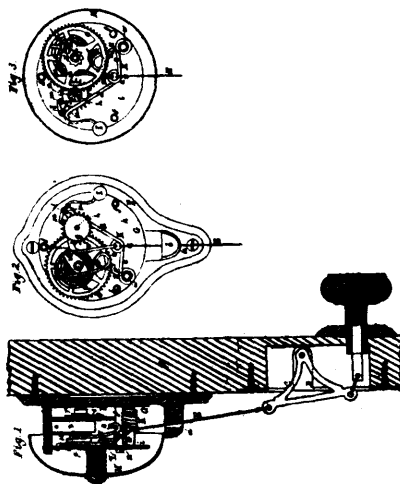
27182 Collier's Mangle and Wringer.



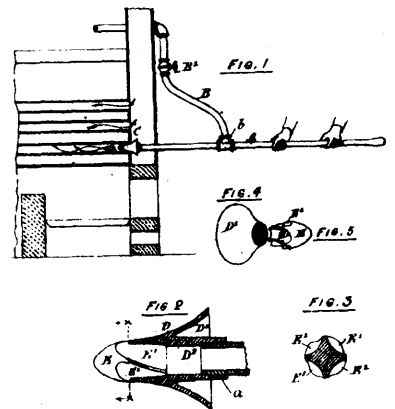
27183 Stark's Car Brake.



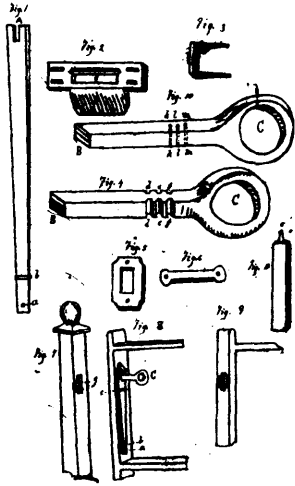
27184 Kinney's Windmill.



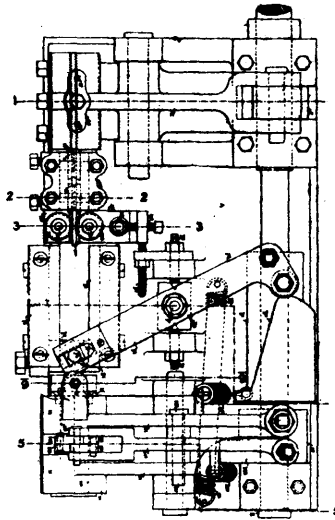
27185 Busby's Alarm for doors, etc.



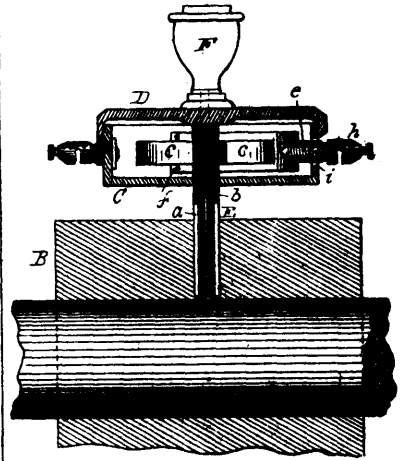
27186 Wishart's Tube Cleaner.



27188 Martin's Gate Latch.



27189 Campbell's Machinery for the Manufacture and application of Angle Clamps, etc.



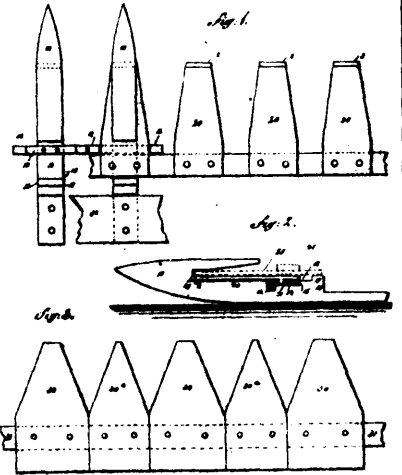
27190 Stone's Thermostat.



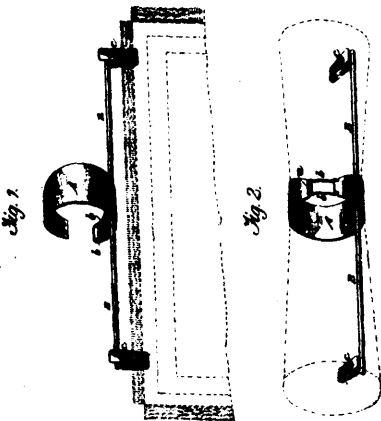
27181 Donovan, Hazlett & Johnston's Glass Blowing.



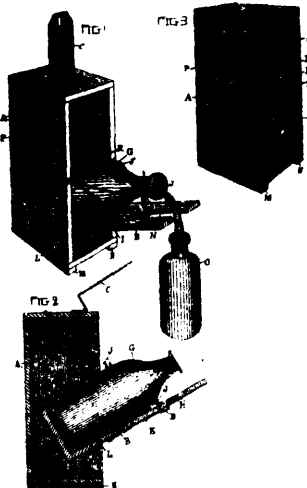
27182 Kerr's Window Sign.



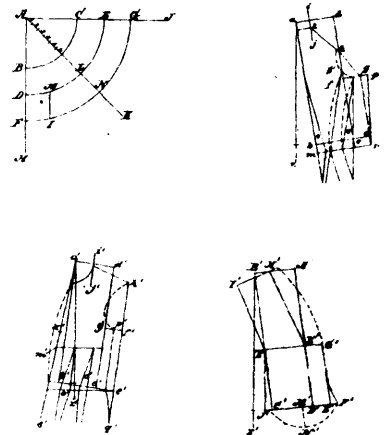
27193 Detweiler's Harvester Cutter Bar.



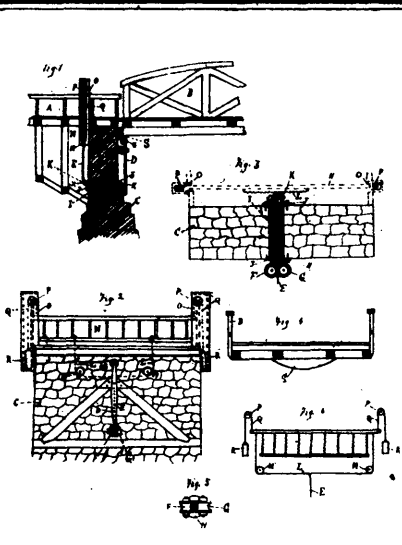
27194 Higgins' Napkin Holder and Ring.



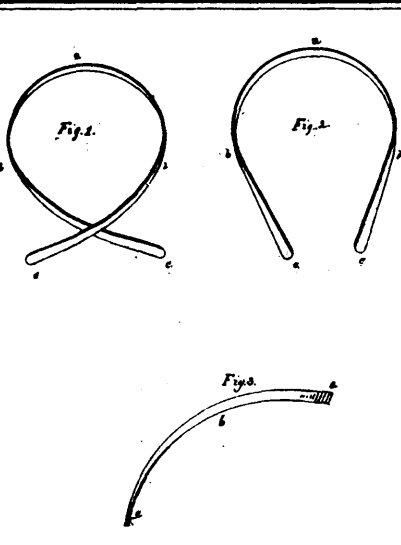
27195 Marshall's Demi-John.



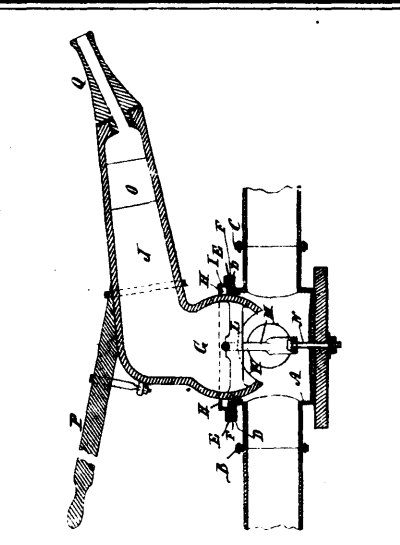
27188 Coleman's Method of Measurement for Garments.



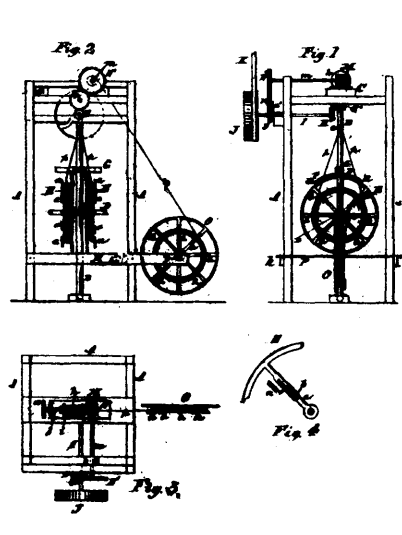
27197 Martin's Drawbridge Gate.



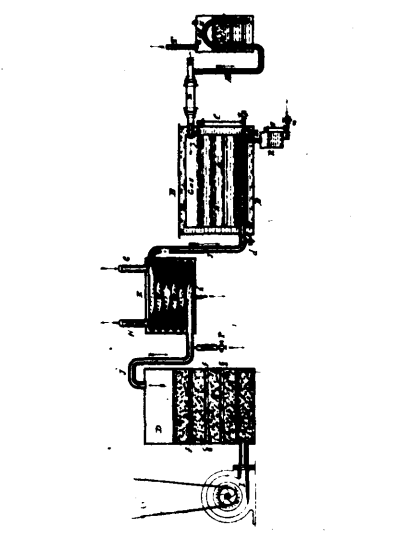
27198 Wheeler's Collar of Coat, etc.



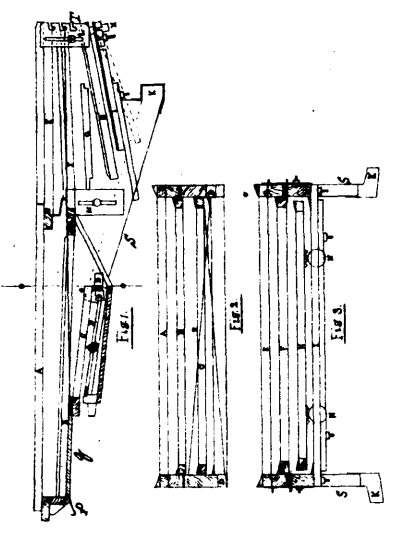
27199 Pinkerton's Hydraulic Nozzle.



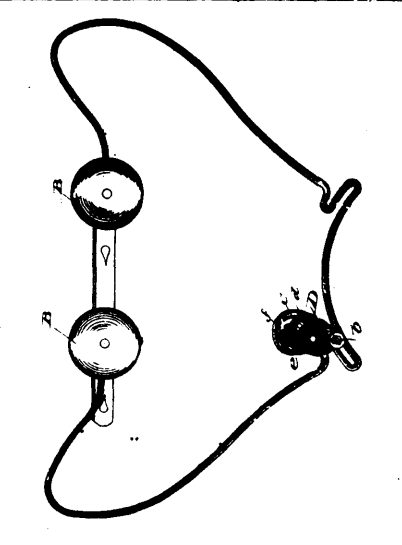
27200 Jones' Machine for twisting wire cables.



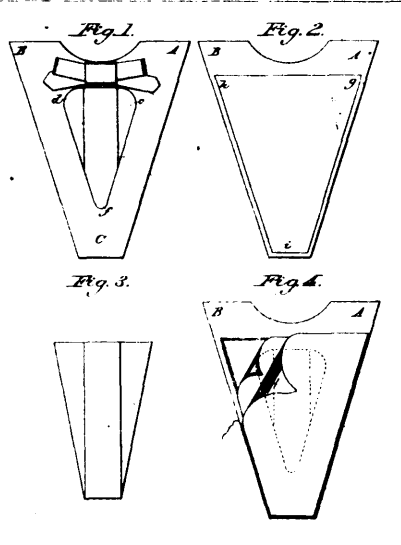
27201 Drake's method of manufacturing gas and apparatus.



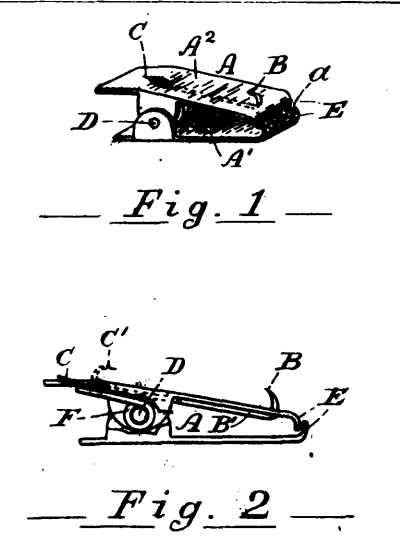
27202 Armstrong's Fanning Mill.



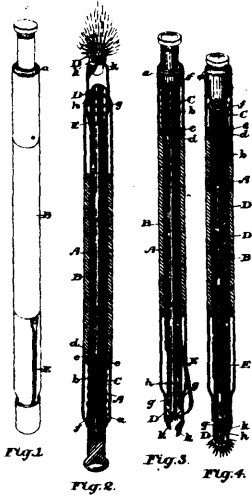
27203 Cluthe's Truss.



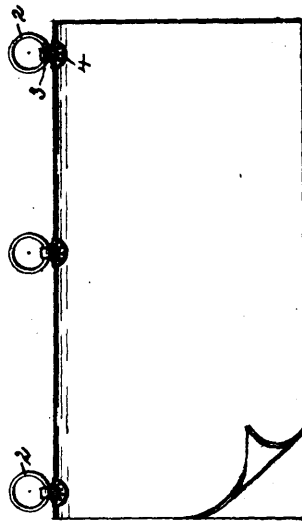
27204 Bragdon's Necktie and Shirt-front.



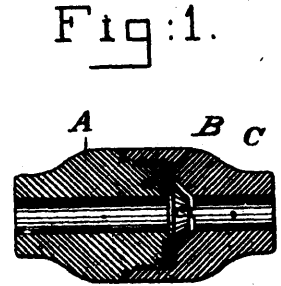
27205 Voss' Cuff holder, etc.



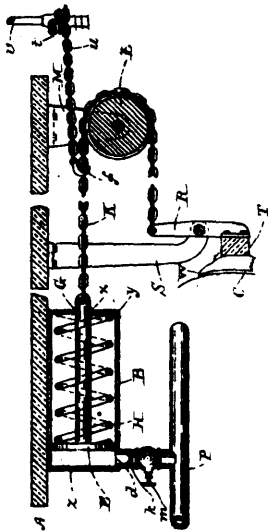
27206 Foley's Match Magazine, etc.



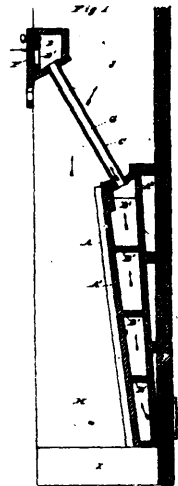
27207 Henry's Device for folding blankets



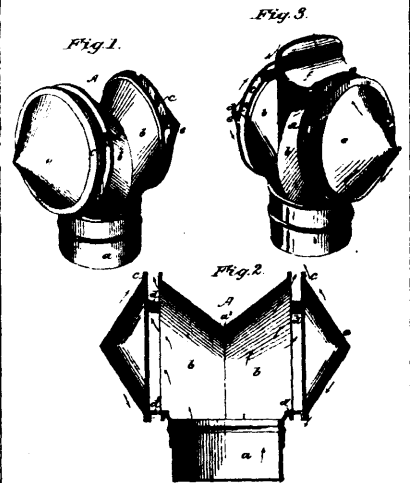
27208 Blunt's Check Valve.



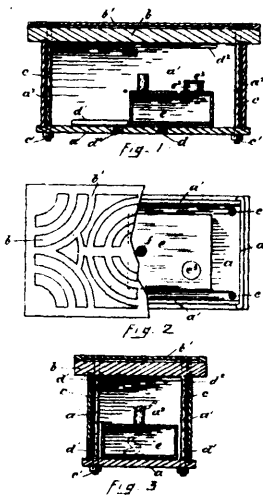
27209 Hanson's Car Brake.



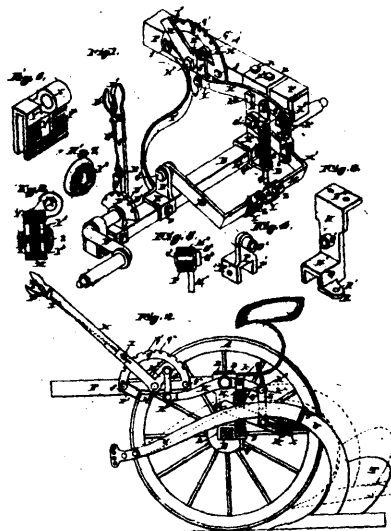
27210 Smith's Fire-place.



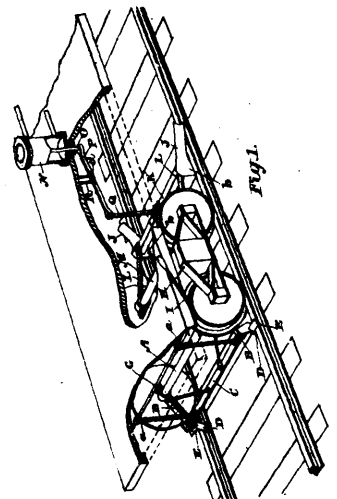
27211 Henry's Ventilating Cap.



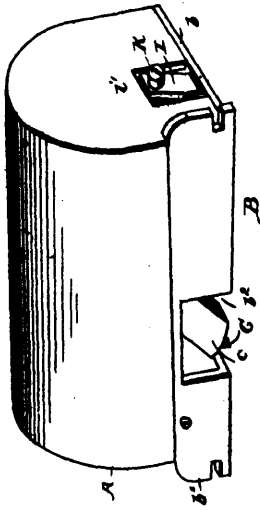
27212 Swift's Foot Warmer.



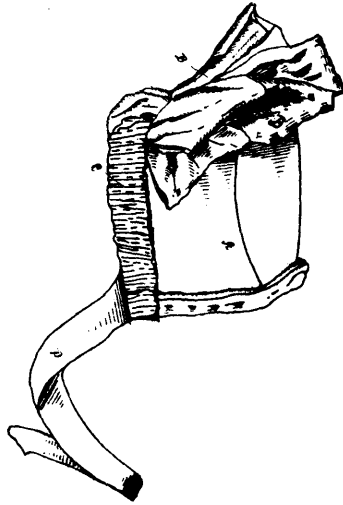
27213 Pates' Sulky Plough.



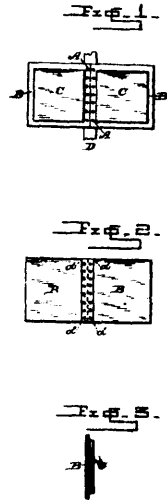
27214 Leslie's Railway Snow Plough.



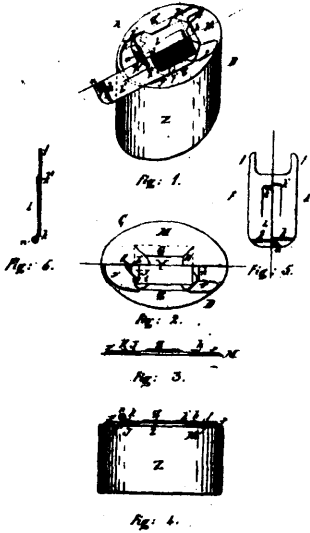
27216 Duncan's Glazier's Tool.



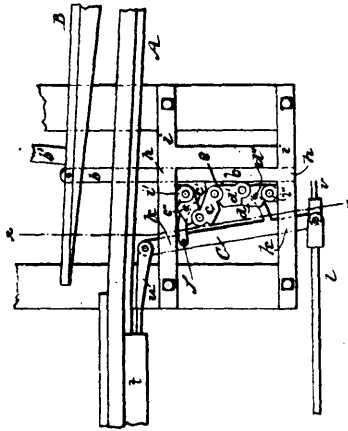
27218 Floyd's Waterproof Bonnet and Hat.



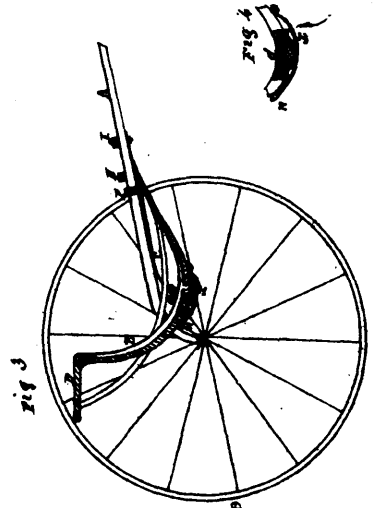
27217 Noble's Lead-Lined BOLLERS.



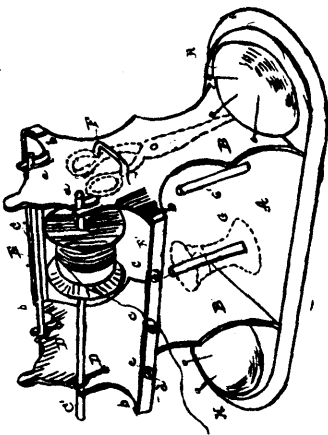
27218 Blouin's Box or Kettle.



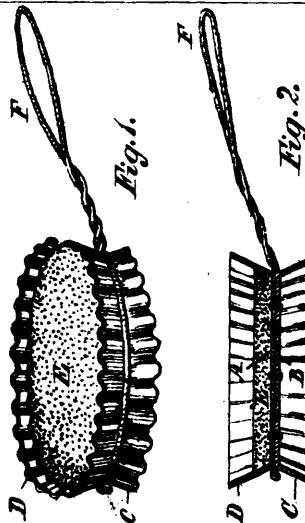
27220 Isbell's Railway Switch.



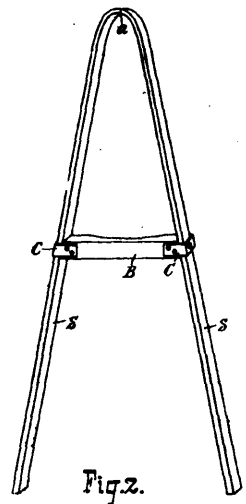
27221 Borland's Road Car.



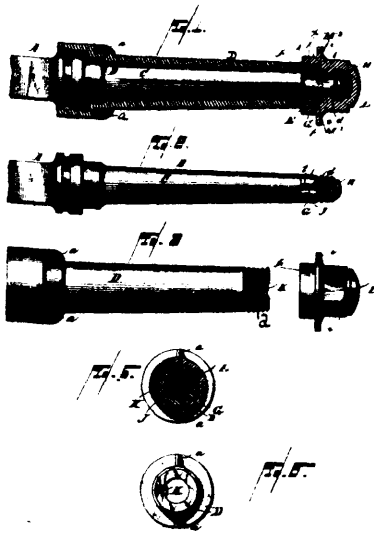
27222 Clarke's Spool Holder.



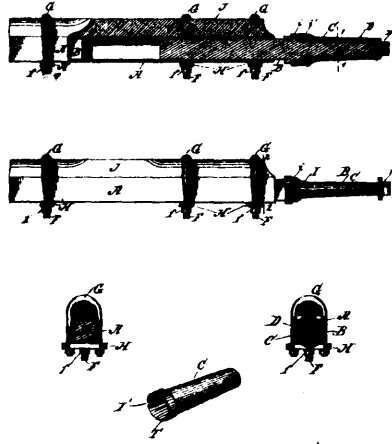
27223 Weatherbee's Stove Utensil Stand.



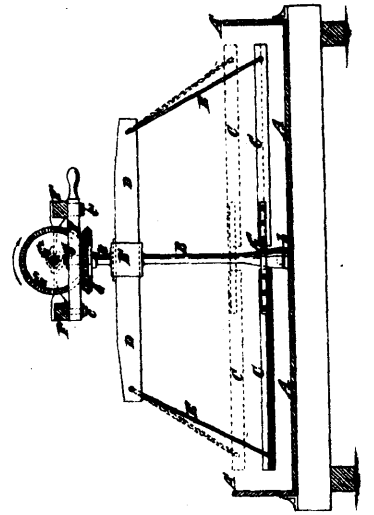
27224 Magee's Horse Poke.



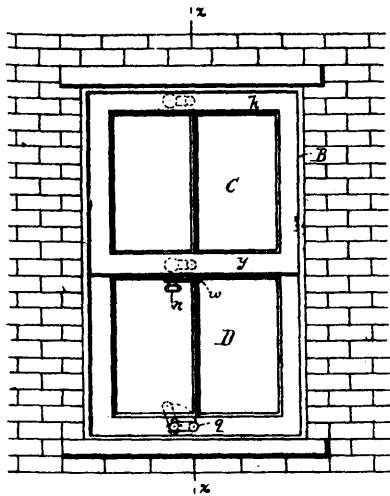
27225 Firth's Axle.



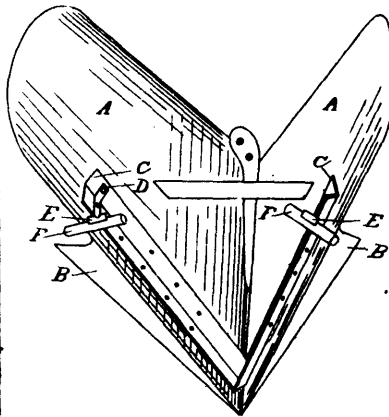
27226 Brosius' Vehicle Axle.



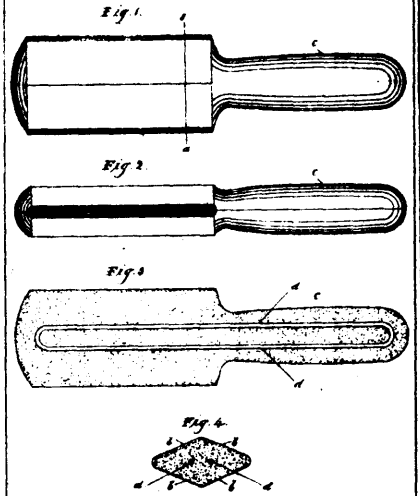
27227 Durea's Machine for Manufacturing Starob.



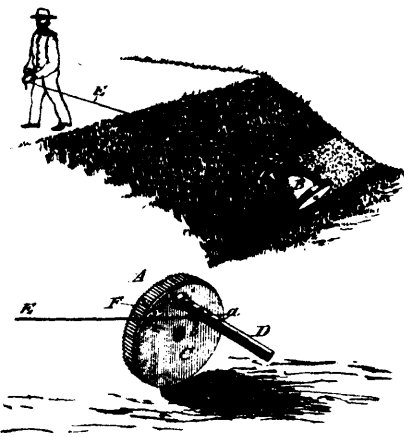
27228 Smith's Window Sash.



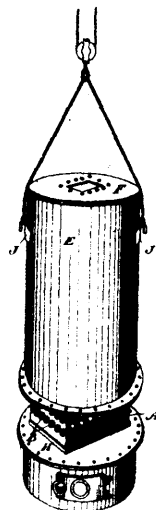
27229 Robert's Snow Plough.



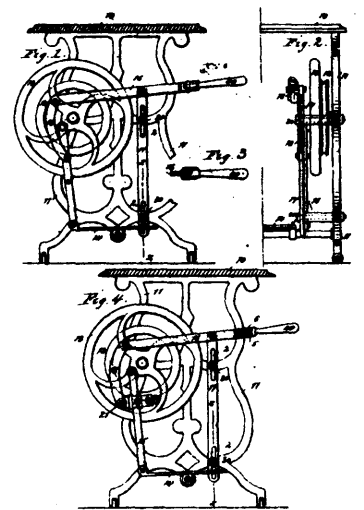
27230 Sefton's Reaper Knife Sharpener.



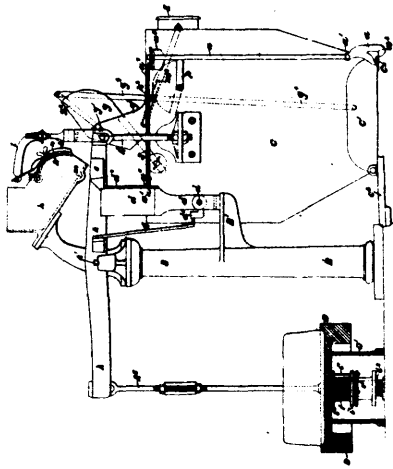
27231 Woodruff's Lawn Mower.



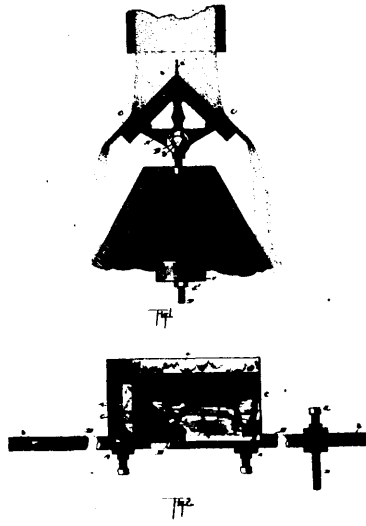
27232 Sewrey's Steam Boiler.



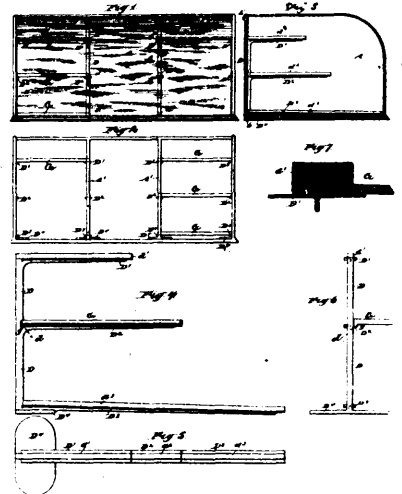
27233 McClung's Sewing Machine Attachment.



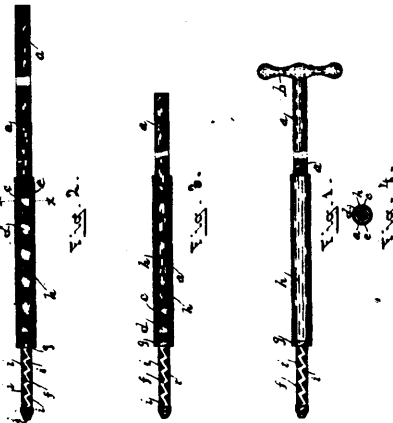
27235 Pooley's Weighing Machine.



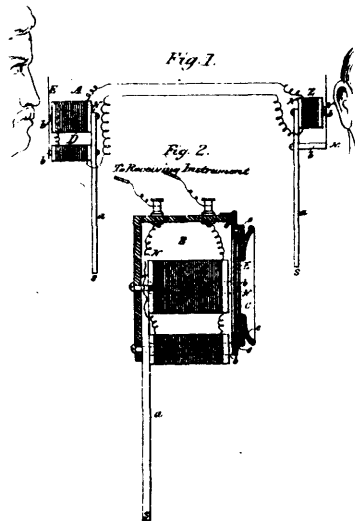
27236 Campbell's Tilting Valve.



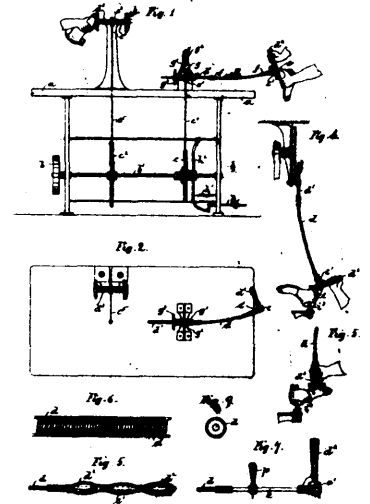
27237 Fletcher's Show Case.



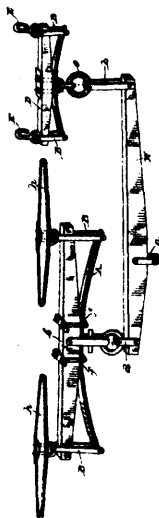
27238 Heginbottom's Gun Barrel Cleaner.



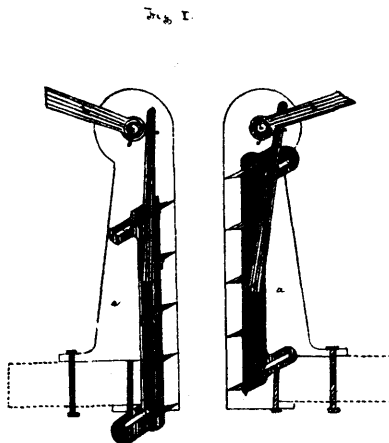
27239 Brown's Magneto-Telephone.



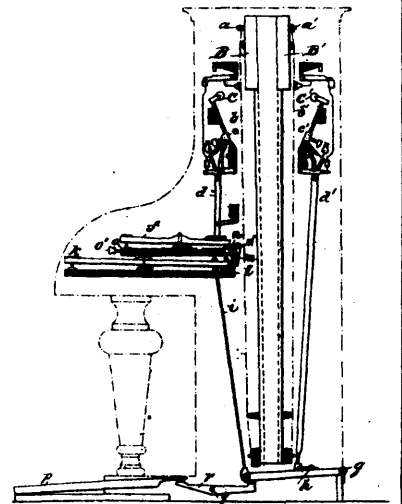
27240 Gare's Tool for Finishing Boots, etc.



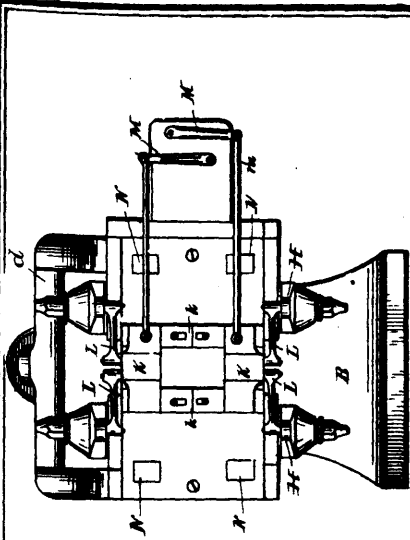
27241 Davis & Newton's Whiffletree.



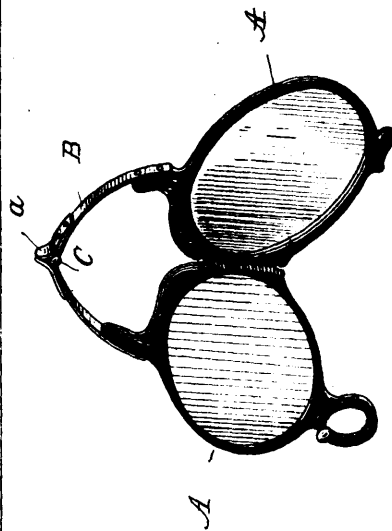
27242 Watson's Dog for Sawmills.



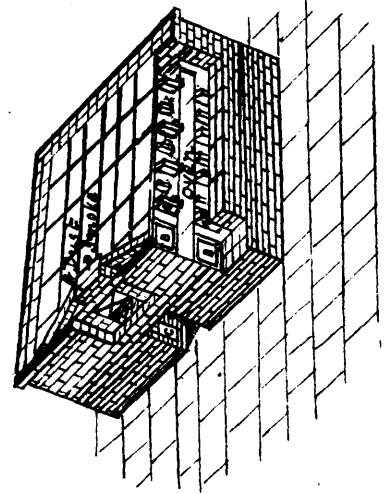
27243 Hirr's Pianoforte.



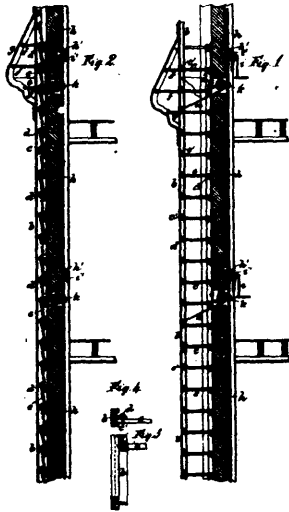
27244 Dugar's Valve Gear.



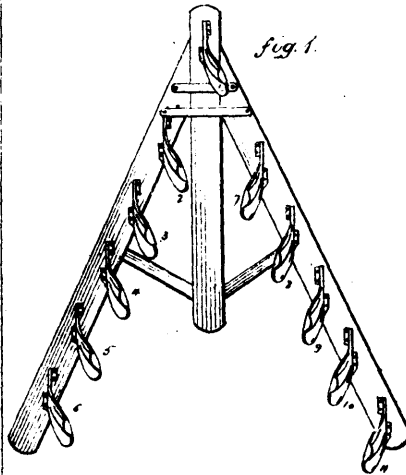
27245 White's Eye Glass.



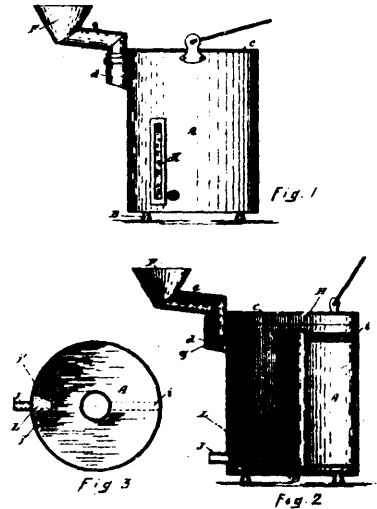
27246 Meyer's Baker's Oven.



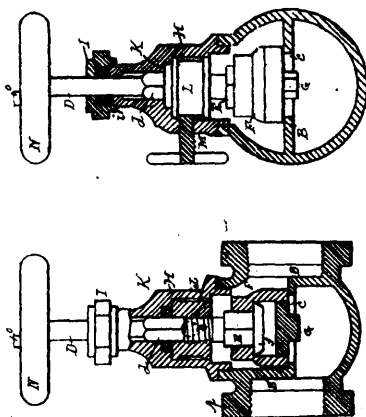
27247 Cluse's Fire-escape.



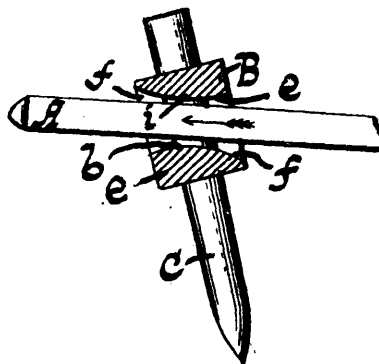
27248 Hussey's Harrow.



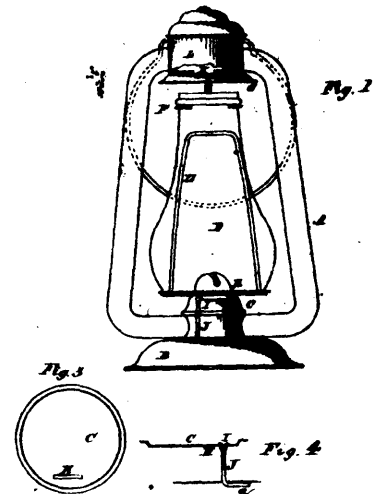
27249 Léger's Creamer.



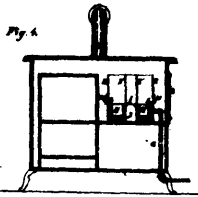
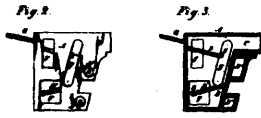
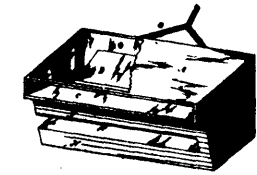
27250 Wade's Valve.



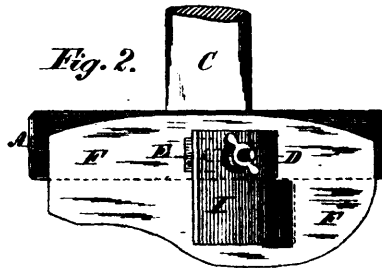
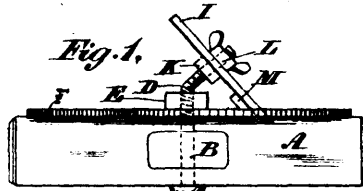
27251 Beebe's Harrow Tooth Holder.



27252 Stone's Tubular Lantern.



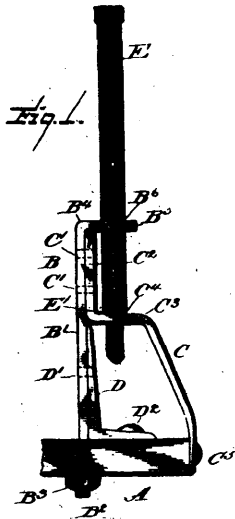
27153 Bodwell's Liquid Fuel Apparatus.



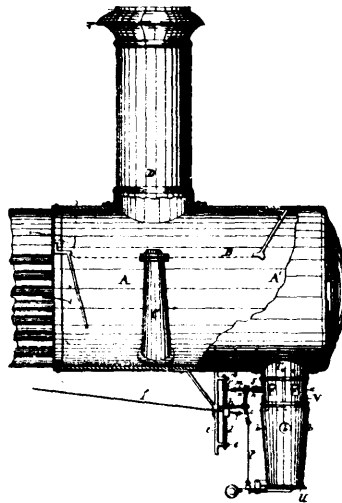
27254 Robertson's Hammer and Jointer Plane.



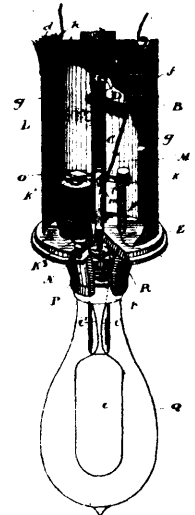
27255 Wilcox's Fire Lighter.



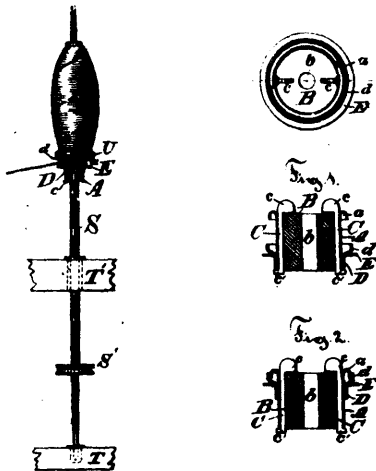
27256 Delts's Waggon Stake.



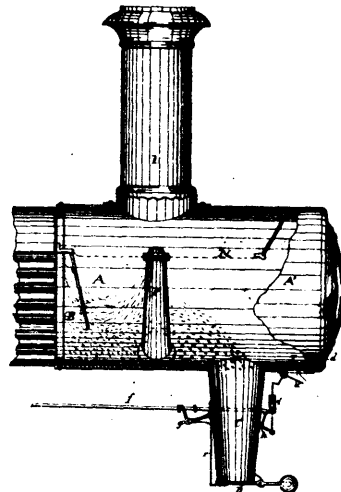
27257 Bragg's Spark Arrester.



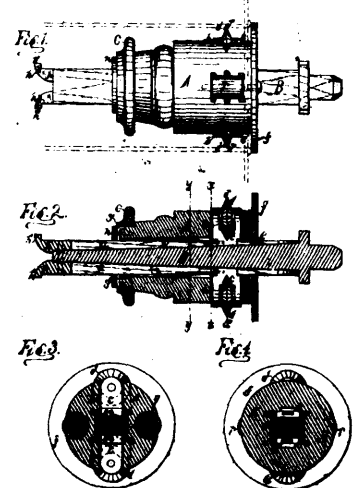
27258 Johnson's Cut-out for Electric Lamps.



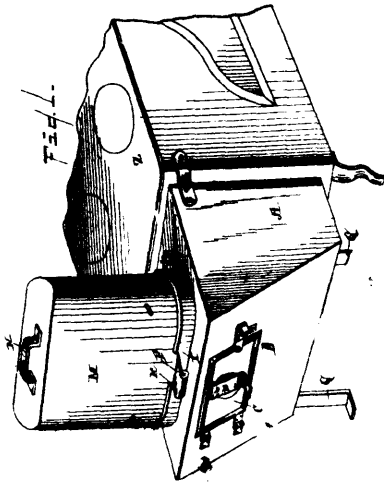
27259 Fuller's Bobbin-Holder.



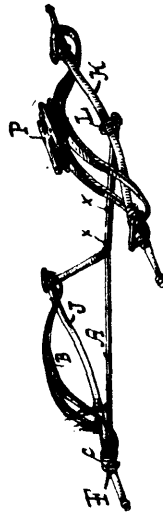
27260 Bragg's Spark Arrester.



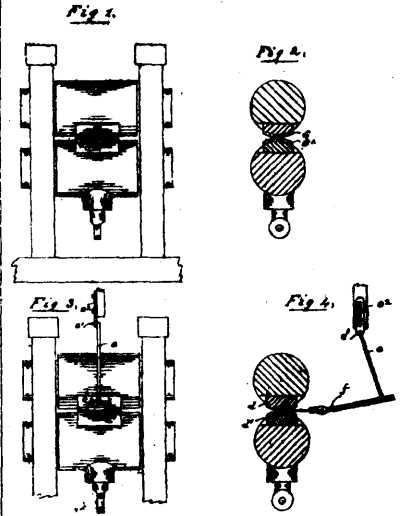
27261 Barnes' Pipe Cutter.



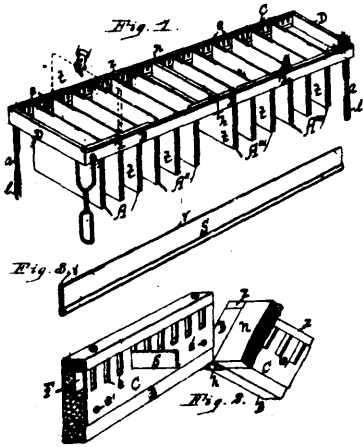
27262 Girtanner's Straw-Burning Attachment for Stoves.



27263 Saladee's Gear for Waggon.



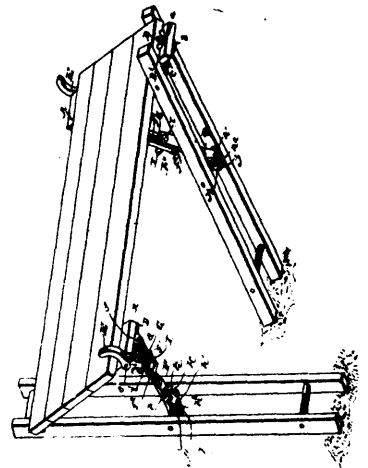
27264 Ely's Apparatus for Making Hoes.



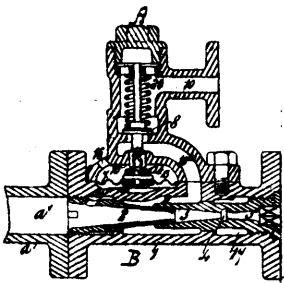
27265 O Sullivan's Rack for Tissue Paper.



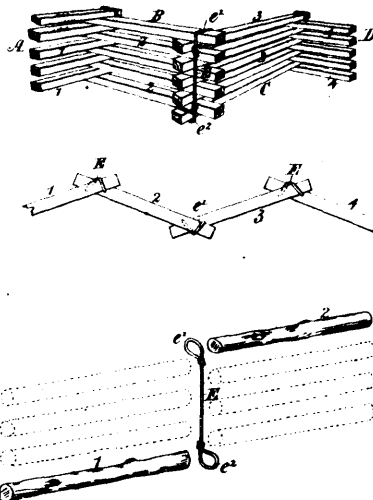
27266 Reichardt's Suture Appliance.



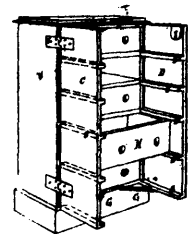
27267 Ramsay's Scaffold Bracket.



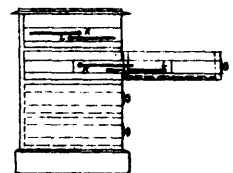
27268 Holden & Brook's Injector.

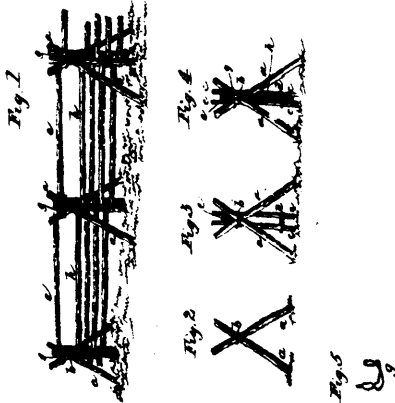


27269 Tomlinson's Fence Locking Device.

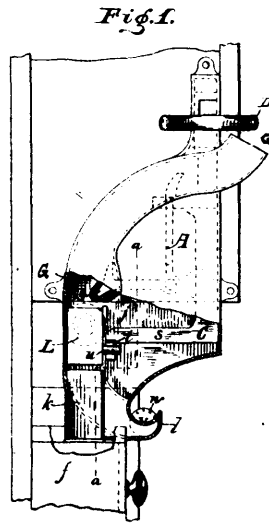


27270 Tinné's Construction of Furniture

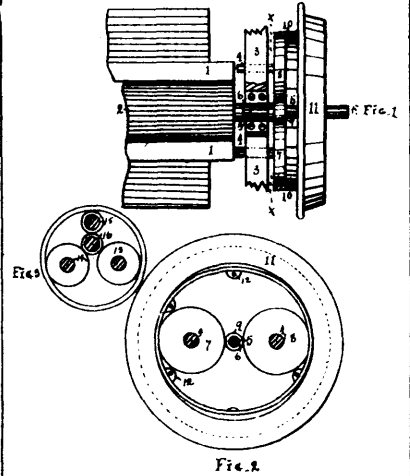




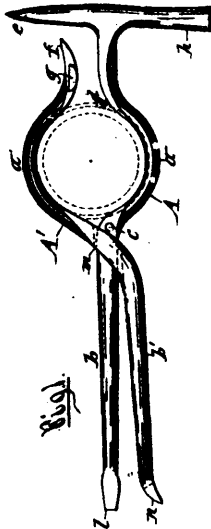
27271 Russell's Ball Fence.



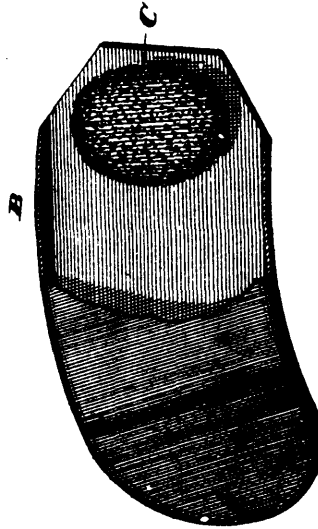
27272 Wittenberg's Telephone Toll Collector.



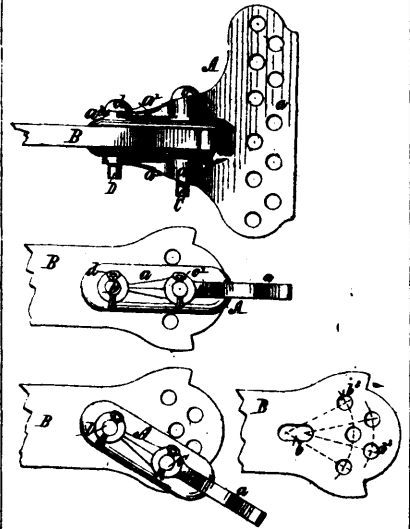
27273 Stoddard's Means for Transmitting Rotary Motion.



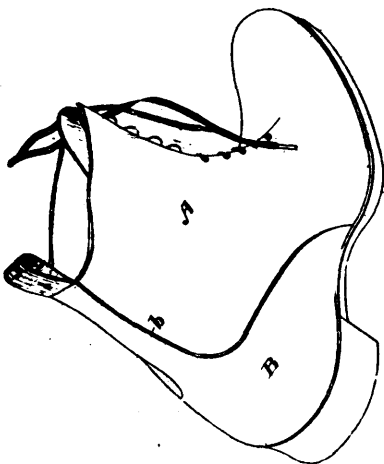
27274 Patterson's Combination Tool.



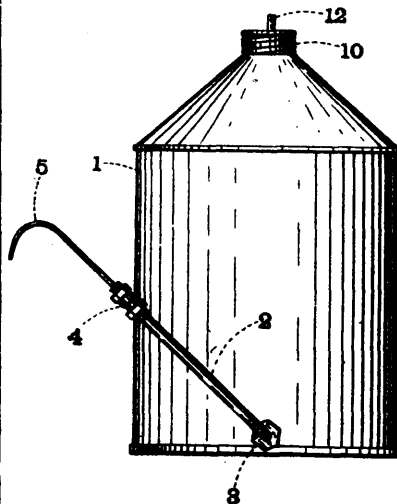
27275 Shaller's Eyeglass or Spectacle Case.



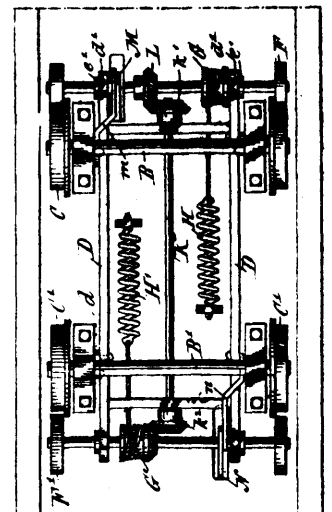
27276 Hollinghead's Plough Clevis.



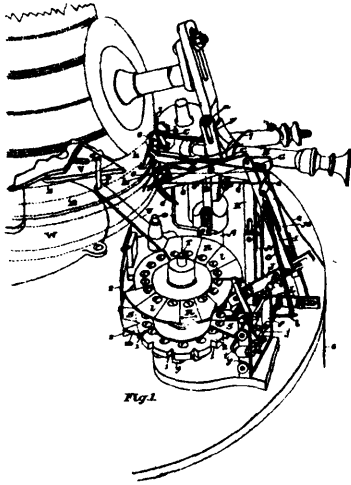
27277 Greig's Boot.



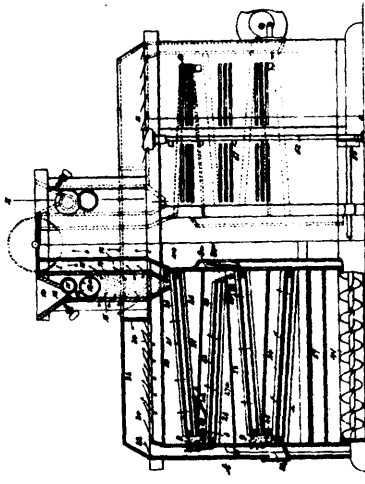
27278 Tyler's Siphon.



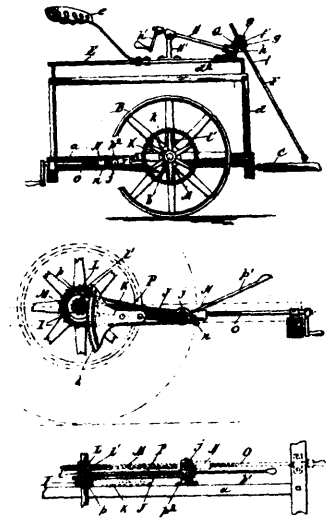
27279 Snider's Apparatus for Braking and Starting Cars.



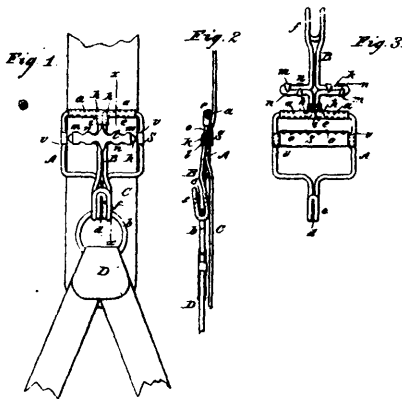
27280 Dennis' Attachment for Knitting Machine.



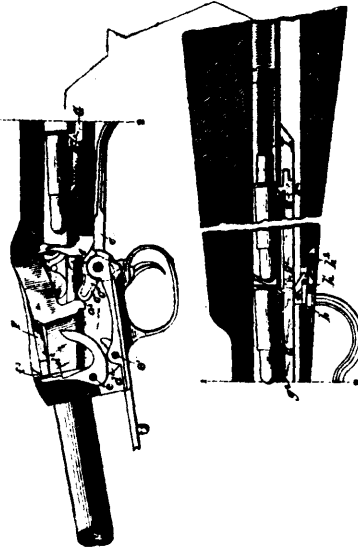
27281 Purdy's Middlings Purifier.



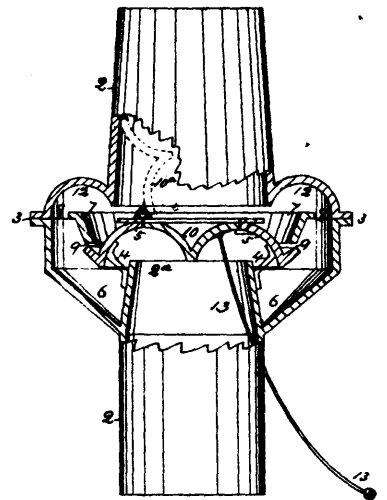
27282 Peck's Harvester.



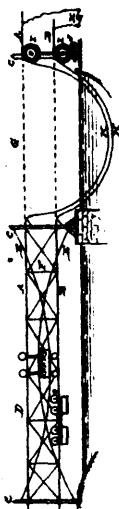
27283 Harris' Buckle.



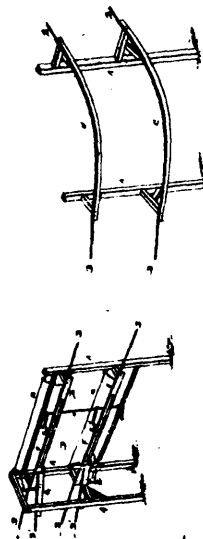
27284 Savage's Magazine Gun.



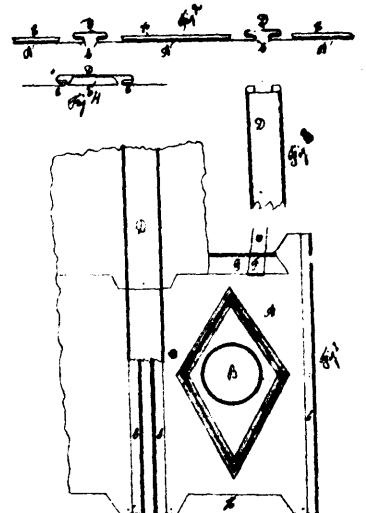
27285 Dockings' Spark Arrester.



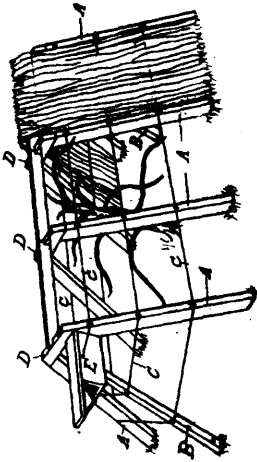
27286 Chandler's Electric Railway.



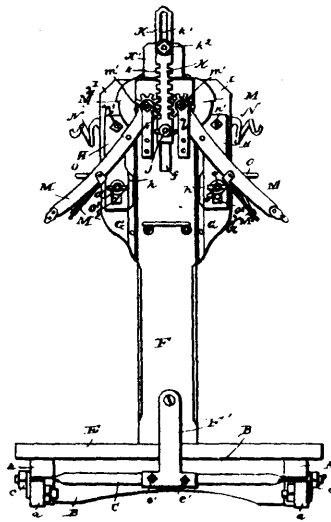
27287 Chandler's Electric Railway.



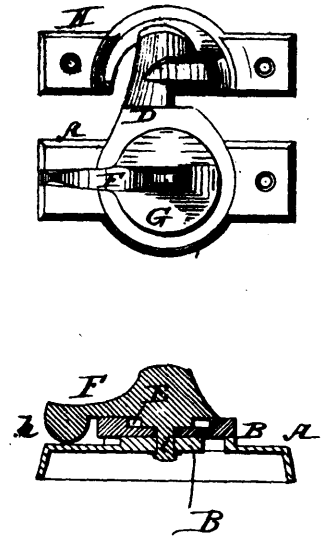
27288 Sicaard's Metallic Shingle.



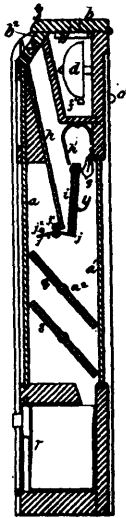
27289 Cole's Tree Protector.



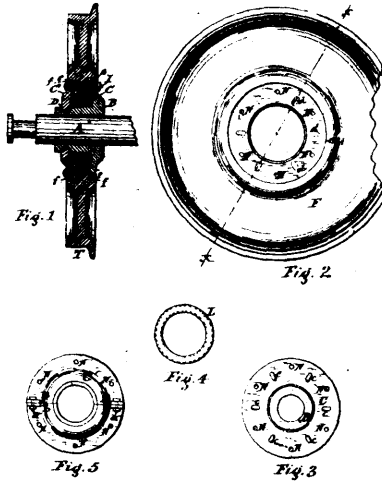
27290 Huber's Bag-Holder.



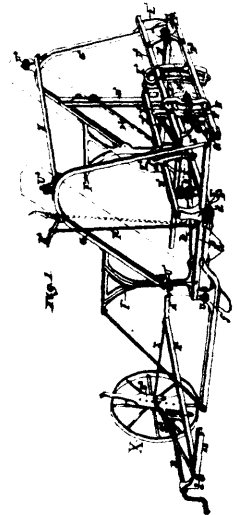
27291 Bennett's Sash-Holder.



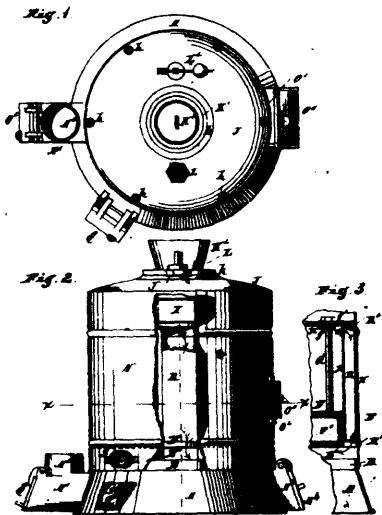
27292 Crowds' Electrical Fare Box.



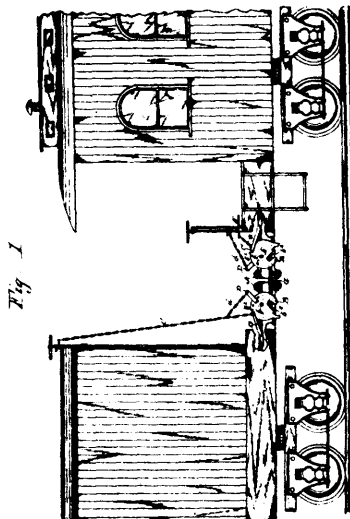
27293 Peckham's Car Wheel.



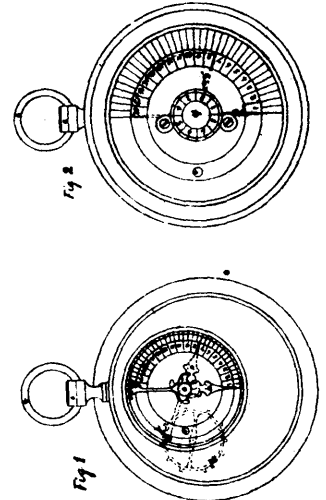
27294 Cooley, Pridmore & Johnston's Grain Binder.



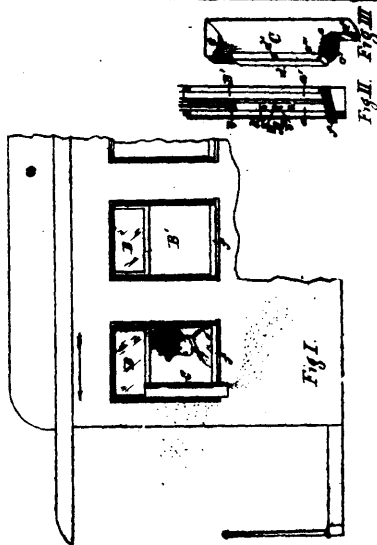
27295 Jones' Steam Generator.



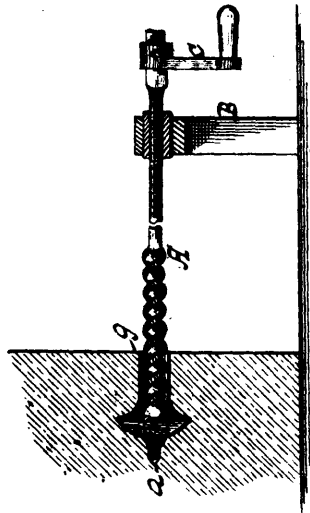
27296 Ladd's Car-Coupling.



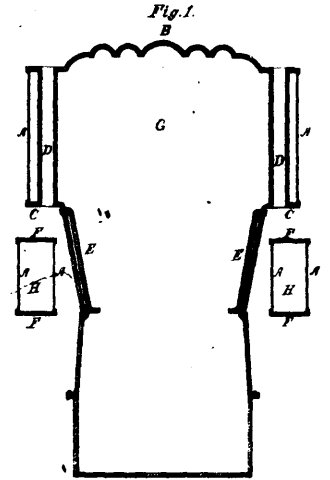
27297 Lachance's Watch Spring.



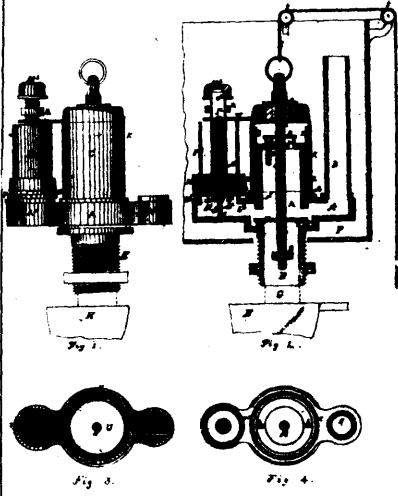
27298 Dugan's Dust Guard for Railway Car Windows.



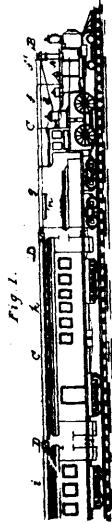
27299 Larimer's Mining Drill.



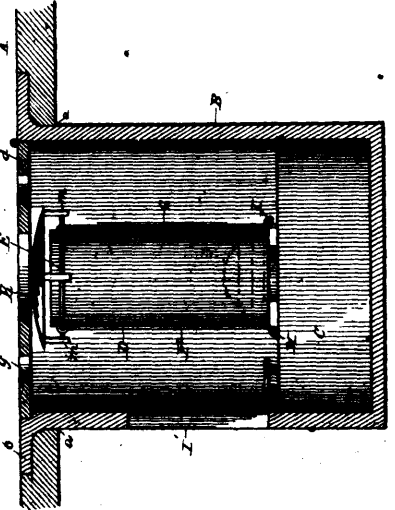
27300 Clare's Hot Air Furnace.



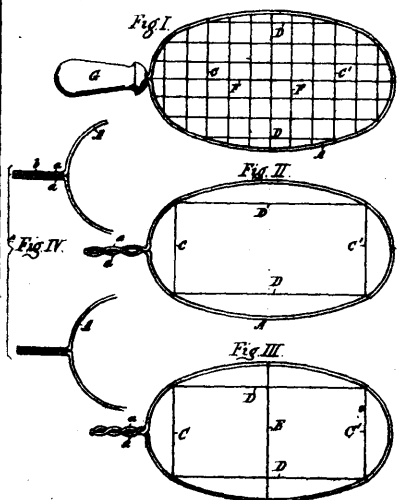
27301 Campbell & McPartland's Flush Valve.



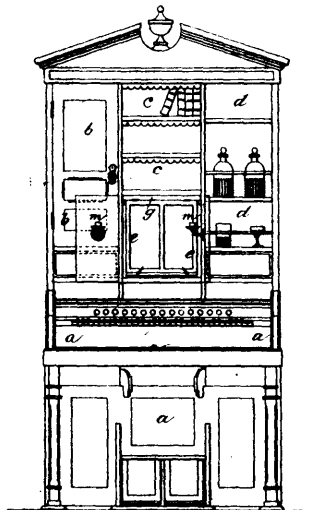
27302 Howe's Smoke and Spark Conductor.



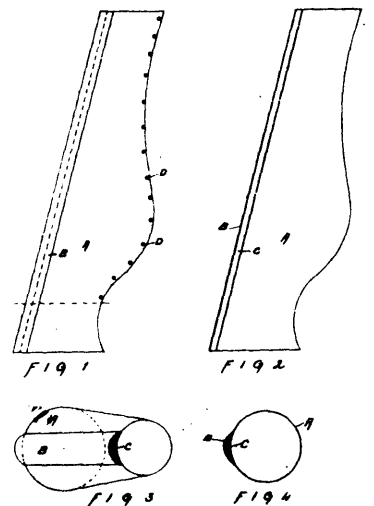
27303 Long's Vehicle Heater and Lamp.



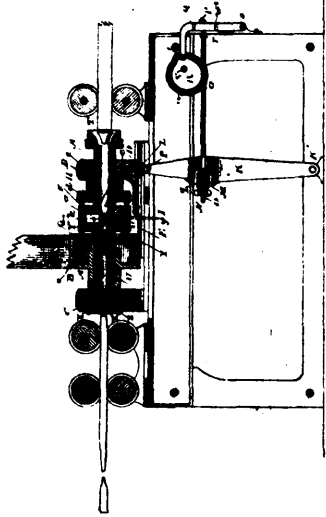
27304 Throckmorton's Broiler



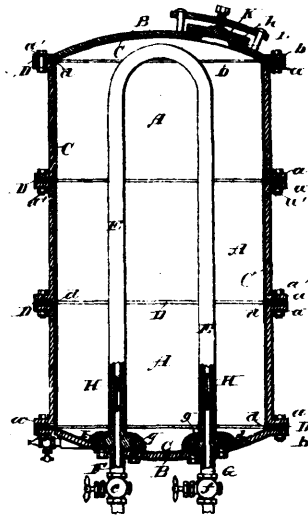
27305 Lock's Appliance for Musical Instruments



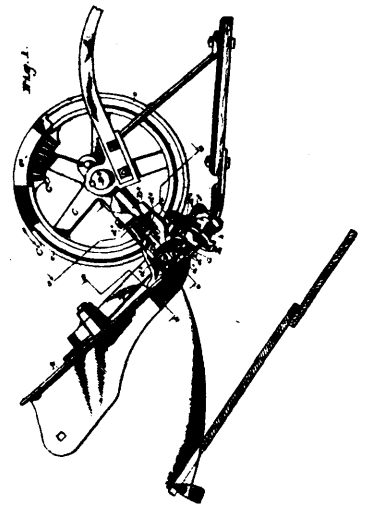
27306 Reid's Fetlock Support.



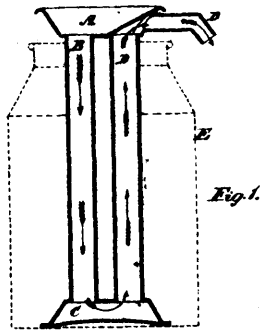
27307 Chaplin's Lathe.



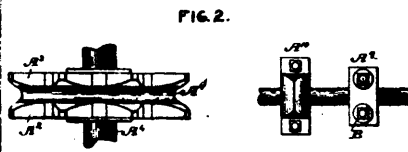
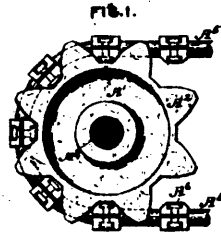
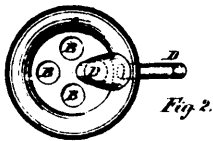
27308 Frambach, Dart & Volbrath's Boiler.



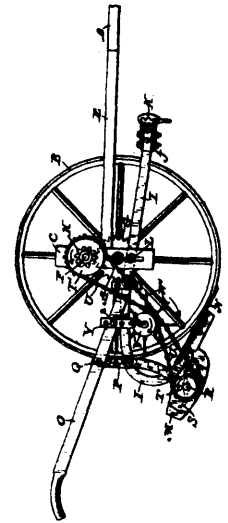
27309 Phelps' Grain Binder.



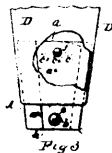
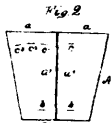
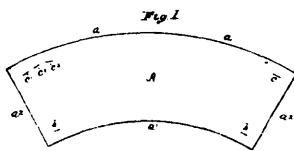
27310 Potter's Milk Cooler.



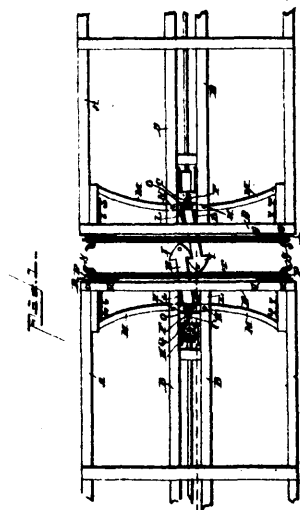
27311 Garland's Contrivance for Transmitting Power



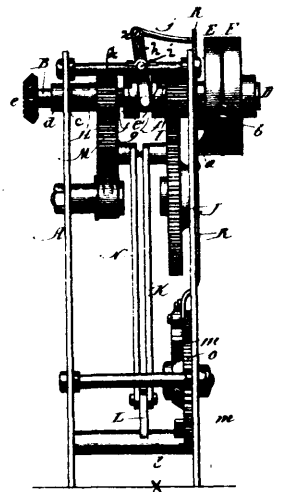
27312 Heller's Potato Digger.



27313 Kahler's Cuff.



27314 Conrad's Car-Coupling.



27315 Wilkins' Mechanical Movement.