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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. 23,291. Harness. (*Harnais*.)

David Stensley, Monticello, Wis., U.S., 1st February, 1886; 5 years.

Claim.—1st. In a device for coupling an odd number of horse's harness abreast, the combination, with a strap, of two snap-hooks near its centre adapted to engage both the bit-rings of the center horse, and other snap-hooks placed at suitable intervals and each adapted to engage one of the bit-rings of a horse on either of the central horse. 2nd. The combination of the center strap A, the bar B and snaps G, the buckles C, extension straps H and snaps G1, substantially as shown and described and for the purpose set forth. 3rd. The combination of the center strap A, the bar B and snaps G, the buckles C, extension straps H and J and snaps attached to the outer ends of said extension straps, substantially as shown and described and for the purpose set forth.

No. 23,292. Adjustable Hansom. (*Cabriolet*.)

James Stothers, London, Ont., 1st February, 1886; 5 years.

Claim.—1st. The combination of the half curved springs A, A and cranks C, C, with the spring D connecting the body B with the axle E, substantially as shown and described and for the purpose specified. 2nd. The combination of the shafts J, screw-threaded bolt H provided with nut c, spring K, brace rod L and side bar I, substantially as shown and described and for the purpose set forth. 3rd. The combination of the metallic plates b1, b2, blocks a1, a2 and clips G, G, substantially as shown and described and for the purpose specified. 4th. The combination of the half curved springs A, A, cranks C, C and spring D, with the sliding seat N, body B and axle E, substantially as shown and described and for the purpose specified.

No. 23,293. Manufacture of Ornamental Surfaces of Combined Metal and Glass, etc. (*Fabrication de Surfaces d'Ornement en Métal et Verre, etc., Combinées*.)

Alfred Swan, Low Fell, Eng., 1st February, 1886; 5 years.

Claim.—The manufacture of ornamental surfaces of combined metal or glass or the like, by forming the metal with projections, grooves or irregularities, and moulding, casting or pressing the glass or the like there around, substantially as and for the purpose hereinbefore described.

No. 23,294. Adjustable Trough for Feeding and Watering Live Stock on R. R. Cars. (*Auge Mobile pour Nourrir et Abreuver les Bestiaux sur les Chars de Chemin de Fer*.)

Genova Armstrong, Elmira, N.Y., U.S., 1st February, 1886; 5 years.

Claim.—1st. In a stock car, the swinging troughs suspended outside the car by suitable levers connected together and operated at each end of said car, in combination with the funnel and branch pipes for supplying said troughs with water, as set forth. 2nd. In a stock car, the movable troughs and their operating levers, in combination with the grooved guide brackets extending outwardly from

each side of the car door, for the purpose of guiding one end of the troughs, as set forth. 3rd. In a stock car, the movable troughs and their operating levers, in combination with the brackets E and guide plates d arranged to guide both ends of the troughs, in the manner set forth. 4th. In a stock car, provided with outwardly extending side doors and side openings a, the combination, with the suspended and movable troughs, the levers for operating them and the guide brackets, and guide plates adapted to cause the troughs to pass through the space a to the interior of the car when lowered and be drawn therefrom when raised, substantially as set forth.

No. 23,295. Boot and Shoe Protector.

(*Protecteur de Chaussure*.)

Thomas Gribble, Red Jacket, Mich., U.S., 1st February, 1886; 5 years.

Claim.—1st. The malleable metal upper and sole protector A, consisting of a bottom plate having studs in its bottom surface, and formed with side and toe flanges b, interrupted at intervals by the cuts c, whereby when applied to a boot or shoe the said flanges may be bent inward to close the sole edge, and the lower portion of the upper, substantially as set forth. 2nd. In a minor's boot, the combination, with the metallic studded upper and sole protector A having upwardly projecting flanges b, of the metallic shank protector C having upwardly projecting side flanges in pivoted or articulated connection at their forward ends with the rear ends of the flanges b, as shown at d, substantially as specified.

No. 23,296. Floor Mop. (*Torchon à Plancher*.)

George A. Keene, Lynn, and Charles H. Brook, Boston, Mass., U.S., 1st February, 1886; 5 years.

Claim.—1st. In a floor-mop, the combination, of a fixed jaw provided with a handle, a pivoted jaw and suitable operating rods to move the said jaw towards and from the fixed jaw, a mop-rag composed of sponge or other flexible material and supporting a block therefor suspended between the two jaws, substantially as described. 2nd. In a floor-mop, the combination of a fixed jaw provided with a handle, a pivoted jaw operating rods for said jaw to or from the fixed jaw, a mop-rag composed of sponge or other flexible material, a supporting block therefor suspended between the two jaws, and a locking device, substantially as described, for holding the movable jaw in an open or closed position, substantially as described. 3rd. In a floor-mop, the combination, with the jaws thereof, of a scraper secured to one of the jaws and projecting below the edge of the same, the mop-rag or sponge, the supporting block therefor and operating jaws adapted to move the mop within the edges of the jaws, whereby the scraper is permitted to come into action, substantially as described. 4th. In a mop, the combination of the jaws H and A, an intermediate mop-rag and the cleats or strips n, n, substantially as described. 5th. In a mop and in combination, the jaws H and A and intermediate mop-rag K, said jaws being provided with the cleats or strips n, n, and having the openings t for the escape of water, substantially as described. 6th. A floor-mop composed essentially of the handle B1, the block A having extensions a, a, the block H pivoted to swing in said extensions, the intermediate mop-rag K and operating rods for opening and closing the movable jaw H, substantially as described and shown. 7th. In a mop of substantially the construction described, the combination of handle B, the block A secured to said handle and provided with extension frame a, a the block H pivoted to swing in said extension and provided with upwardly extended arm e, said arm being jointed to a rod f, a rod G connecting with the rod f and extended along the handle B, and the mop-rag K attached to a supporting block P and suspended by arm s from the toggle joint 4, all substantially as described.

No. 23,297. Apparatus for Pulverizing Ores, etc. (*Appareil pour Broyer les Minerais, etc.*)

Lyman F. Holman, (assignee of Frederic A. Luckinback,) New York, N.Y., U.S., 1st February, 1885; 5 years.

Claim.—1st. The combination, in a pulverizer, of the chamber D, nozzle O and wearing pipe E having flange E1, constructed and arranged substantially as described. 2nd. The combination, in a pul-

verizer, of the chamber D, nozzle O, wearing pipe E and bushing H, substantially as described. 3rd. The combination, in a pulverizer, of the chamber F, chambers D, nozzles O, wearing pipes E, E and bushings H, H, substantially as described. 4th. The combination, in a pulverizer, of the chamber F, wearing pipes E, E, having flanges E and chambers D, D, substantially as described. 5th. The combination, in a pulverizer, of the chamber F, wearing tubes E, E, chamber D, D, and adjustable steam nozzles O, O, substantially as described. 6th. The combination, in a pulverizer, of the chambers D and F communicating with each other, and an adjustable steam nozzle O, substantially as described. 7th. The combination, in a pulverizer, of the steam nozzle O, with removable reduced opening G, the tapering chamber D and pulverizing chamber F, substantially as described. 8th. The combination, in a pulverizer, of the chamber D, steam pipe A and adjustable steam nozzle O, substantially as described. 9th. In a pulverizer and in combination with the pulverizing chamber F, the chamber D, the steam nozzle O and the jet exhaust apparatus, constructed and arranged to draw the pulverized material, exhaust steam, etc., from said chamber. 10th. The combination, in a pulverizer, of the removable bushings H, H and wearing pipes E, E, substantially as described.

NO. 23,298. Belt Coupling. (*Joint de Courroie.*)

Isaac E. McGiohan, New York, N.Y., U.S., 1st February, 1885; 5 years.

Claim.—As an article of manufacture, a double-ended gimlet-pointed screw provided with a suitable thread running its entire length, and adapted to be applied to a belt, substantially as described.

NO. 23,299. Ash Sifter. (*Crible à Cendres.*)

George W. Millner, Charlottetown, P.E.I., 1st February, 1886; 5 years.

Claim.—An ash sifter consisting of the box provided with drawers 3, 4 and inclined chute 5, the single inclined sieve 6 and the removable upper 9 having a cover 10 and removable bottom 11, provided with chain 12, whereon to gather the ashes and be subsequently replaced to dump them on to the sieve, as set forth.

NO. 23,300. Electric Battery Telephone.

(*Téléphone à Batterie Electrique.*)

The Bell Telephone Company, Montreal, Que., (assignee of Thomas D. Lockwood, Malden, Mass., U.S.), 1st February, 1886; 5 years.

Claim.—1st. A telephone apparatus comprising an outer case, a transmitter in one end thereof, and a hermetically closed liquid battery which substantially fills the space between the walls of said case and is secured thereto, as and for the purposes set forth. 2nd. The combination, in a hand telephone, of an electric battery, a variable resistance telephone and a circuit controller, whereby the circuit of the battery is completed through the transmitting telephone only when the instrument is grasped for use, substantially as described.

NO. 23,301. Drag Saw. (*Scie de Travers.*)

George A. Haggitt, Milbrook, (assignee of James H. Hulbert, Blanchard, Mich., U.S.), 1st February, 1886; 5 years.

Claim.—1st. In a wood-sawing machine, the combination, with a suitable frame, of a double crank shaft, a pivoted arm having a reciprocating slide, a pivoted rod connecting the said slide with the lower end of a swinging arm, toggle bars connecting the said swinging arm with pitman mounted upon the crank-shaft and a saw secured to the reciprocating slide, substantially as and for the purpose set forth. 2nd. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating slide carrying the saw-operating mechanism for the said slide, and upright having a series of ratchets, a lever having a tooth engaging the same, and a rope or chain passing over a pulley at the upper end of the said upright, and connecting the said lever with the pivoted saw-carrying arm, which may thereby be raised to and retained at any desired elevation, substantially as and for the purpose set forth. 3rd. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating saw carrying slide mechanism for raising and retaining the said arm, a pivoted rod connecting the slide adjustably with the lower end of a swinging arm or bar, adjustable toggle arms connecting the said swinging bar with the ends of pitman mounted upon a double-crank shaft, toggle bars connecting the said pitman with the ends of a lever pivoted at the front end of the frame of the machine and hand wheels or other mechanism for driving the said shaft, substantially as and for the purpose set forth.

NO. 23,302. Saw Swage. (*Etampe à Scie.*)

Thomas W. Smirle, Norwood, and James Chapman, Rockland, Ont., 1st February, 1886; 5 years.

Claim.—1st. In a saw-swage, the roller C journaled in the jaws A, provided with the cam projections a and rotated by the hand lever f, so as to draw out and widen a saw tooth placed between said cam projections and the anvil B, substantially as shown and described. 2nd. In a saw swage, the herein described brace composed of the rods i and j, held respectively, or vice-versa, by right and left-hand screw threads in the sleeves k, the block m and hand lever D, arranged to operate as shown and for the purpose set forth. 3rd. In a saw swage, provided with the roller C having the cams a, and operated by the hand lever f, the holding loop g attached to the lower ends of the jaws A, as herein described and for the purpose stated.

NO. 23,303. Rat Trap. (*Ratière.*)

William F. Brock, Toronto, Ont., 1st February, 1886; 5 years.

Claim.—A rat trap, composed of two rings A, D hinged together as shown, the upper ring D being drawn to the lower ring A by the action of a spiral spring e attached to a bar B, the act of closing of the

said rings together being controlled by a swinging bait block C, which releases a lug F attached to the upper ring A, all arranged and operating substantially as and for the purpose specified.

NO. 23,304. Car Heater. (*Calorifere de Char.*)

J. W. Johnson, Kansas, Mo. (Assignee of John E. Thoroughgood, Des Moines, Iowa), U. S., 1st February, 1886; 5 years.

Claim.—1st. The combination of the square metal frame B, the four metal sides C having flanges at their edges, the bottom or furnace support G, the furnace sides C11 having continuous flanges, extending outward from their edges, and vertical corrugations on their inside faces, the fixed top d, the hinged cover d', and the plate K adapted to form a chamber under the grate, substantially as and for the purposes specified. 2nd. A sliding drawer having blowers S, S, and a chamber at its front end, in combination with a furnace suspended from a car floor and provided with a chamber under the furnace grate adapted to receive the sliding drawer, for the purposes set forth. 3rd. The drawer R, R', having a slot R1 and the slide M, in combination with the box C, C1 and the furnace bottom K, to operate in the manner set forth for the purposes specified. 4th. A car-heating apparatus, composed of the following elements, to wit: a box suspended from the car floor, and provided with a register at its top, a covered furnace inclosed in the suspended box to produce a concentric chamber adapted to inclose a portion of a continuous tube, a case surrounding the suspended box to produce a concentric cold air chamber outside of the box, a slide or register for admitting air under and within the furnace, a blower for forcing cold air to the furnace fire when the car is in motion, and a steam-generating and heat-distributing tube partially coiled around the furnace and within the suspended box and partially within the car, to operate in the manner set forth. 5th. In a car-heating apparatus, the combination of a box pendant from the floor of a car, and enveloped by a cold air chamber by means of a case, a furnace inclosed within the pendant box and a steam generating and heat-radiating tube partially coiled around the furnace and within the pendant box to heat cold air and discharge it into the car, and also to radiate heat within the car for the purpose of maintaining pure, warm air and oven temperature within the car.

NO. 23,305. Nut Lock. (*Arrête-Ecrou.*)

Lyman C. Learned, Pittsfield, Mass. (Assignee of Almon Ross, Southport, Ct.), U.S., 1st February, 1886; 15 years.

Claim.—1st. A bolt C, with double thread a and b crossing each other, as shown in Fig. 1, to allow a right-hand nut to pass over a thread adapted to a left-hand nut, and vice-versa, as specified. 2nd. The combination of the screws c, with the nuts A, B, and screw-bolt C, substantially as described for the purpose specified.

NO. 23,306. Boot. (*Botte.*)

George Valiant, Toronto, Ont., 1st February, 1886; (Re-issue of Patent No. 17,896.)

Claim.—1st. A boot, having its fly or flap B partly cut away, substantially as set forth, and provided with a narrow button-hole strip of stronger material firmly attached thereto, substantially as described. 2nd. A boot, having the edge of its fly or flap cut, so as to receive a button hole strip and to leave a point or lip b, in combination with the button-hole strip A made of a single thickness of stronger material, substantially as described. 3rd. A boot, having the edge of the fly or flap of its upper serrated or scalloped, in combination with a piece of material sewed to the said edge, and having eyelets or button-holes stamped out of it, substantially as and for the purpose specified.

NO. 23,307. Centrifugal Dish Washing Machine. (*Machine Centrifuge pour Laver la Vaisselle.*)

Allen G. Ingalls, Granby, Que., 1st February, 1886; 5 years.

Claim.—1st. A dish washing machine, constructed substantially as herein shown and described, and consisting of a dish-water tank, a rotary rinsing water bucket having transverse partitions and discharge pipes, a basket to receive the dishes, pumps to discharge water over the dishes, lamp-heated flues and an operating mechanism, as set forth. 2nd. In a dish-washing machine, the combination of the tank A having flanges 11, the heating flues 7 having flanges 10, the basket G having flanges P, Q, R, the main shaft L and a driving mechanism with the upright bars H, the curved wings O and the cap tube N carrying the said wings and attached to the said shaft, substantially as herein shown and described, whereby the dish-receiving basket will be rotated, and currents of water will be directed against the dishes as they are carried around by the said basket, as set forth. 3rd. In a dish washing machine, the combination of the tank A, the rotary dish-receiving basket G, and a driving mechanism with the pumpshafts e, the guard tubes u, the cap tubes W having spiral flanges z and their casings y having discharge nozzles l at their upper ends, substantially as herein shown and described, whereby water will be discharged over the dishes as they are carried around in the said basket, as set forth. 4th. In a dish washing machine, the combination of the tank A provided with an internally toothed stationary gear wheel m at its top, the rotary basket G and the main shaft L, with the bucket S having transverse partitions 1 and discharge pipes V, the spindle J journaled to the said main shaft L and the gear wheels H, i, j, carried by the spider attached to the upright bars carrying the basket, substantially as herein shown and described, whereby the said bucket will be rotated to discharge its water by the revolving of the said basket and main shaft, as set forth. 5th. In a dish washing machine, the combination of the tank A, the rotary basket G carrying the dishes and the bucket S carrying the rinsing water, with the annular perforated plate 25 attached to the said tank, substantially as herein shown and described, whereby the water discharged from the said bucket will be distributed over the dishes, as set forth. 6th. In a dish-washing machine, the combination of the tank A and the bucket S, with the spiral flues 7, the cap plate 8, the lamp flues 5, the lamps 2 and a supporting mechanism, substantially

as herein shown and described, whereby the water in the said tank and bucket is heated and kept hot, as set forth. 7th. In a dish-washing machine, the combination of the tank A, the lamps 2 and the lamp flues 5, with the hinged brackets 3 and the hangers 4, substantially as herein shown and described, whereby the said lamps can be readily swung beneath or away from the said flues, as set forth. 8th. In a dish-washing machine, the heating flues 5, 7, made substantially as herein shown and described, with shoulders 9, and with their upper parts spiral, whereby any water that may spatter into the said flues will be vaporized before it can reach the lamps, as set forth. 9th. In a dish washing machine, the combination of the vertical shafts having spiral grooves and their guard tubes, with the oil saturated wooden packing, substantially as herein shown and described, whereby the said shafts will be kept lubricated, as set forth. 10th. In a dish-washing machine, the combination of the main shaft L and the drive shaft Y, with the gear wheels 12, 13, the plate Q, the spirally bent pivoted bars 14, the plate 15 pivoted to the said bars, the vertical rods 16 attached to the said plate, the lazy tongs 18, the fulcrum bracket 19 and the stop 21, substantially as herein shown and described, whereby the shaft basket and bucket can be readily raised or lowered and the pumps thrown into and out of gear, as set forth.

No. 23,308. Suspending and Detaching Device. (*Machine à Accrocher et Décrocher.*)

Martin Kauth, Buffalo, N.Y., U.S., 2nd February, 1886; 5 years.

Claim.—1st. A suspending and detaching device, consisting of two sets of prongs c, c¹, c² and c³, each provided at its end with the fork e, and having the apices d, d¹ and d² between the prongs, the whole mounted upon a pole or staff, substantially as shown and described. 2nd. A suspending and detaching device, having its two sets of prongs c, c¹ and c², each provided at its end with the fork e, and the arm f secured to the base a and having at its outer end an auxiliary set of prongs, substantially as and for the purpose stated. 3rd. A suspending and detaching device, having its two sets of forked prongs c, c¹, and c², arranged in an inclined plane, substantially as and for the purpose stated. 4th. A suspending and detaching device, consisting of the arm f secured at or near the upper end of a pole or staff, and provided at its outer end with two sets of forked prongs, substantially as and for the purpose stated. 5th. A suspending and detaching device, consisting of the two sets of forked prongs c¹ and c², such prongs being covered with leather or other suitable material, substantially as and for the purpose stated.

No. 23,309. Combined Car Wheel and Axle. (*Roue et Essieu de Char Combinés.*)

William Malam, Edgemoor, Del., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The combination of an axle, having a wheel hub formed integral therewith, and presenting a projecting flange with one or more body plates bearing against the seat or seats formed by said flange, and with bolts, whereby the securing of said body plate or plates to the flange is effected, all substantially as set forth. 2nd. An axle having a wheel hub integral therewith, said hub having a projecting flange presenting two seats for the reception of the central portions of inner and outer plates constituting the body of a car wheel, all substantially as specified. 3rd. An axle having a wheel hub formed integral therewith, and presenting two outwardly facing seats for the reception of the inner portions of the plates of a wheel body, as specified. 4th. The combination of the axle having a wheel hub formed integral therewith, and presenting two outwardly facing seats, as described, with the wheel, the body of which consists of annular plates adapted to said outwardly facing seats, as specified.

No. 23,310. Starch Gloss for Laundry Use. (*Empoi Lustré pour le Linge.*)

Joseph Hébert and Mary Hébert, Port Arthur, Ont., 2nd February, 1886; 5 years.

Claim.—A starch gloss, consisting of starch, spermaceti, white wax, singlass, gum scacia, alcohol and water, compounded in the manner substantially as set forth and in about the proportions stated.

No. 23,311. Apparatus for Laying Submarine Tunnels and Tubes. (*Appareil pour Poser les Tunnels et Tubes Sous-Marins.*)

Haydon H. Hall, New Hamburg, N.Y., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The herein described apparatus for constructing submarine tunnels, consisting of a caisson provided with a prow, and means for attaching a draft chain or cable at one end, and with a neck for receiving the end of the tunnel tube at the opposite end, substantially as set forth. 2nd. A caisson, provided with the clevis B having a series of notches b¹, substantially as herein shown and described. 3rd. The combination, with a caisson having a neck for receiving the end of the tunnel tube, of a packing placed between the neck and the end of the tunnel tube, and a packing placed on the outer surface of the neck and the outer surface of the tunnel tube, substantially as herein shown and described. 4th. The combination, with a caisson, of a neck for receiving the end of the tunnel tube, the outer and inner edges of which neck are arranged eccentrically, so that the neck will be thicker or wider at the top than at the bottom, substantially as herein shown and described. 5th. The combination, with a caisson having a neck adapted to receive the end of the tunnel tube, of an eccentric packing placed around the tunnel tube between the outer surface of tunnel tube and the inner surface of the neck, substantially as herein shown and described. 6th. The combination, with a movable caisson, of a plate hinged to the same, so that the free end of the plate will be towards the rear end of the caisson, and of means for raising or lowering the free end of the said hinged plate, substantially as herein shown and described. 7th. The combination, with a movable caisson, of a plate hinged to the same, so that the free end of the plate will be towards the rear end of the caisson, and of a screw shaft m for raising or lowering the free end of the said plate, substantially as herein shown and described.

No. 23,312. Apparatus and Method of Winding or Spooling Rolls of Paper Web. (*Méthode d'Enroulage du Papier de Tenture et Appareil pour cet objet.*)

John J. Manning, Great Barrington, Mass., U.S., 2nd February, 1886; 5 years.

Claim.—1st. In apparatus for winding or spooling rolls of paper, the combination, with the spool shafts, of an equalizing mechanism disposed between pairs of said shafts, in such a manner as to run and equalize the motion of two shafts simultaneously, substantially as set forth. 2nd. In an apparatus for winding or spooling rolls of paper, the spool drive shafts arranged in pairs, in combination with an equalizing mechanism, constructed substantially as described, and adapted to engage and operate the drive wheels of said shafts through power applied to shaft of the equalizing device. 3rd. In apparatus for winding or spooling rolls of paper, a device for equalizing the speed of the spools, consisting essentially of a hub fixed upon the drive shaft, a cone pinion with a counterpoise, means, substantially as described, for locking or fixing said cone pinion upon its journal, and the compound cog wheels engaging the cone pinion and adapted also to engage the drive wheels which impart rotary motion to the spool shafts, substantially as set forth. 4th. In apparatus for winding or spooling rolls of paper, the combination of the shafts which impart rotary motion to the spools, the equalizing mechanism, constructed and arranged substantially as described, and the friction or brake mechanism, whereby the speed of any one of the said shafts may be retarded when it is desired to "lock out" one or more of the spools, substantially as set forth. 5th. The hereinbefore-described method of automatically equalizing the tension upon the spools in an apparatus for winding webs of paper into rolls, which consists in running the spools by an equalizing device located between pairs of spools and adapted to equalize the tension upon said spools, so as to wind the web upon them with equal tightness, substantially as set forth. 6th. The hereinbefore-described method of automatically equalizing the tension upon the spools in an apparatus for winding webs of paper into rolls, which consists in equalizing the speed of the primary shafts which drive the spools from a common equalizing pulley upon the main drive-shaft, and equalizing automatically the tension upon the spool shafts by an equalizing device located between pairs of spools and adapted to equalize the tension upon said spools, so as to wind the web upon them with equal tightness, substantially as set forth.

No. 23,313. Nail-Holding Hammer. (*Marteau Perte-Clou.*)

Henry H. Warron, Coto St. Paul, Que., 2nd February, 1886; 5 years.

Claim.—The combination of the hammer head A projections B, B, having inclined plain surfaces C, C, the whole constructed and arranged substantially as shown and described.

No. 23,314. Broom Cover. (*Serre-Balais.*)

William Perry and James A. Prince, Indianapolis, Ind., U.S., 2nd February, 1886; 5 years.

Claim.—1st. A cover for brooms consisting of an open ended sack adapted to be slipped over said brooms, and provided with one or more draw-strings, whereby it may be drawn in around the broom straw and the brooms thus protected. 2nd. A cover for brooms consisting of an open-ended sack, its upper and lower edges being turned in or reinforced with perforations at one or both edges, and draw strings passing through said perforations, whereby said sack is adapted to be drawn in around the brooms at the bottom or bottom, and top, substantially as set forth. 3rd. A cover for brooms consisting of a sack open at both ends, and provided with draw-strings at each end, substantially as described and for the purposes specified.

No. 23,315. Overflow and Discharge Valve for Baths. (*Valve de Décharge pour Baignoires.*)

John Demarest, New York, N.Y., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The combination, with the overflow pipe D having perforations and a lug a on one side, of a sustaining arm E and ring f having grooves or slots at 1, 2 and 3, substantially as and for the purposes set forth. 2nd. In combination, with the bath or basin and the discharge pipe thereof, a separate removable tubular overflow having perforations near the lower end to form a strainer, and a valve around such tube above the perforations for closing tightly the discharge pipe, when such overflow pipe is inserted therein, a stationary guide for the upper part of the overflow pipe, and means for suspending the overflow pipe with the valve above the discharge pipe and the strainer within such discharge pipe, substantially as set forth.

No. 23,316. Nut Lock. (*Arrête-Ecrou.*)

Frank G Stark, New York, N.Y., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The combination, with a nut having radial recesses upon its inner faces arranged at approximate right angles with the bore of the nut, and with a slotted bolt, a shown, of a spring key having an arm to engage one of said recesses upon one face of the nut, and an arm to engage the opposite or outer face of the nut and limit the inward movement of the key, as set forth. 2nd. The combination, with a nut having radial recesses B¹ upon one face, and corresponding marks or recesses B² upon the other face, of a slotted bolt and a key having a branch with opposing inclines as D₁, D₂ to engage opposite recesses upon both faces of the nut, as set forth. 3rd. The combination, with the nut B, having recesses B¹ arranged upon one face around the bore of the nut and with the bolt A, having slot a, of the spring key having branches D₁, D₂, and the latter provided with arms or inclines D₃, D₄ arranged to engage the nut upon opposite faces simultaneously, as set forth.

No. 23,317. Manufacture of Frame or Horn Plates for Rolling Stock. (*Fabrication des Plaques de Garde pour Matériel Roulant.*)

Samson, Fox, Harrogate, Eng., 2nd February, 1886; 5 years.

Claim.—1st. The mode or process of manufacturing frame or horn plates for rolling stock, which consists in first cutting a suitable plate to approximately the form of the intended frame or horn plate, afterwards heating the said plate, then pressing or forcing it by means of a male die into and through a female die, thereby imparting to it the desired form and flanging it and afterwards causing it to be held between pressers or holders to prevent warping or buckling, substantially as described. 2nd. As a new article of manufacture, a flanged frame or horn plate for rolling stock formed of a single plate by pressing or stamping, substantially as described.

No. 23,318. Apparatus for the Manufacture of Horn Plates for Rolling Stock. (*Appareil pour la Fabrication des Plaques de Garde pour Matériel Roulant.*)

Samson Fox, Harrogate, Eng., 2nd February, 1886; 5 years.

Claim.—1st. A machine or apparatus for the manufacture of frame or horn plates for rolling stock comprising a male die, a female die and means for operating one or both of said dies so as to force a plate into and through the female die, in such manner as to impart the required form to such plate and to flange the same, substantially as hereinabove described and illustrated. 2nd. In a machine or apparatus for the manufacture of frame or horn plates for rolling stock, the combination of a male die, a female die, means for operating one or both of said dies so as to force a heated plate into and through the female die, in such manner as to impart the required form to such plate and to flange the same, and means for receiving the flanged plate and holding with a sufficient grip or squeeze to prevent warping or buckling whilst admitting of the contraction due to cooling, substantially as described. 3rd. In a machine or apparatus for the manufacture of frame or horn plates for rolling stock, the combination of a male die *a*, a female die or matrix *b* and means for operating one or both of such dies, as described. 4th. The holding or gripping blocks or plates *d*, *d'* and *f*, *f'*, with anti-friction balls between them, substantially as described and for the purpose specified.

No. 23,319. Pulverizing Machine. (*Machine à Broyer.*)

John B. Waring, New York, N.Y., U.S., 2nd February, 1886; 5 years.

Claim.—1st. In a pulverizing machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing rollers, a carrier and rollers journaled in the carrier and serving to propel the pulverizing rollers, substantially as specified. 2nd. In a pulverizing machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing rollers, a carrier, rollers journaled in the carrier and guards comprised in the carrier for preventing the loose rollers from dropping from the top to the bottom, substantially as specified. 3rd. In a pulverizing machine, the combination of a chamber having concave interior surface for receiving the material to be pulverized, loose pulverizing rollers having a convex periphery corresponding to the concave interior surface of the chamber, a carrier and rollers having a concave periphery corresponding to the convex surface of the pulverizing rollers, substantially as specified. 4th. In a pulverizing machine, the combination of a chamber into which the material to be pulverized is introduced, loose pulverizing rollers, a carrier, rollers journaled in the carrier and guards and a disk attached to the carrier, substantially as specified. 5th. In a pulverizing machine, the combination of a rotary chamber into which the material to be pulverized is introduced, pulverizing rollers arranged within the chamber, and adapted to revolve in the same direction as that in which the chamber rotates. 6th. In a pulverizing machine, the combination of a rotary chamber into which the material to be pulverized is introduced, pulverizing rollers arranged within the chamber, all the said rollers being adapted to revolve in the same direction in which the chamber rotates, substantially as specified. 7th. In a pulverizing machine, the combination of a rotary chamber into which the material to be pulverized is introduced, pulverizing rollers arranged within the chamber, a carrier for the pulverizing rollers, a belt from the chamber to a pulley on a shaft, and a belt from another pulley on the shaft to a shaft on which the said carrier is mounted, substantially as specified. 8th. The combination of the rings *a*, *a'*, the ring *ab* and the bolts *a*, substantially as specified. 9th. In a pulverizing machine, the combination, with a horizontally rotating chamber, of hollow trunnions on said chamber upon which said chamber rotates, and through which materials to be pulverized may be received and discharged. 10th. In a pulverizing machine, the combination, with a horizontally rotating chamber, of trunnions on said chamber upon which said chamber rotates, and through which material to be pulverized may be received and discharged, as described.

No. 23,320. Fuse Cutter. (*Cisailles à Fusées.*)

John M. Martin, San Francisco, Cal., U.S., 2nd February, 1885; 5 years.

Claim.—The combination implement described, comprising the levers A, B pivoted together at one end, the levers A having the punch G at its free end, the cutting blade C located adjacent to its pivoted end, and the part E located just below the cutting blade, and the lever B having the cutting portion K to receive the knife C, and the part F located below the same and adapted to register with part E, and the blade D located in the lower end of the lever B, as set forth.

No. 23,321. Horse Shoe. (*Fer à Cheval.*)

James H. Jackson, Keady, Ont., 2nd February, 1886; 5 years.

Claim.—1st. A horse shoe having its cross section substantially in the form of an oblong diamond, and shaped so as to fit closely to the hoof, the inner side of the shoe flaring outwardly, substantially as and for the purpose specified. 2nd. A horse shoe having its cross section substantially in the form of an oblong diamond, and shaped so as to fit closely to the hoof, the inner side of the shoe flaring outwardly as also the heel calks *a* and toe calks *b*, substantially as and for the purpose specified.

No. 23,322. Sheep Rack. (*Râtelier de Bergerie.*)

Edgar A. Legate, Charlemont, Mass., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The combination, with the frame A, of the platform B, provided with longitudinal flanges, hinged racks for long feed, and grain troughs C, substantially as set forth. 2nd. A rack for feeding sheep composed of the frame A provided with openings in its longitudinal sides, and sliding doors for closing said openings simultaneously, one side at a time, hinged racks, an elevated platform provided with longitudinal flanges to serve as stops to the said racks, and grain troughs arranged on opposite sides of the said elevated platform, all arranged substantially as and for the purposes set forth.

No. 23,323. Window Screen Roller. (*Rouleau de Rideau de Fenêtre.*)

Simon N. Tarnoy, Auburn, Ind., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The combination of the strip at the screen, the concave roller C, having ratchet D, bearing E and pawl, substantially as described. 2nd. The screen and roller, the lever *d*, having a lip or projection *d'*, in combination with the ratchet D, bearing E, having shoulders at right angles to its main portion, the pawl E, having the projection E', pivoted to said shoulder, and the hub *h*, substantially as described. 3rd. The combination of the concave roller C, the lever *d*, provided with a catching projection *d'* integral therewith, the ratchet D, pawl E, and hub *h*, substantially as described and specified and for the purpose set forth.

No. 23,324. Grate Bar. (*Barreau de Grille.*)

William Solt, Sr., and William D. Klin, Freeland, Penn., U.S., 2nd February, 1886; 5 years.

Claim.—1st. The ventilating bar A, having side walls B, B, slots or ventilating openings *a*, and mortises *b* between the slots, in combination with the perforated plate grate sections having depending flanges F, extensions or projections *f*, and tenions *g*, as set forth. 2nd. The ventilating bar A, having side walls B, B, slots or openings *a*, mortises *b*, between the slots, and bearing plates C, at the end of the bar, all cast in one piece, said plates having a ledge *e*, provided with blocks or lugs *f*, and the integral middle finger D, in combination with the perforated plate, grate sections having depending flanges F, projections or extensions *f*, and recesses *h*, in the underside of the end grate sections, as set forth. 3rd. The ventilating bar A, U-shaped in cross section comprising two side walls or flanges B, and having its top open facing the slot *a*, and mortises *b*, braces or cross pieces connecting the side walls, as set forth. 4th. The ventilating bar A, in combination with the bearing plates C, extending transversely across the ends of the bar, and of greater length than the width of said bar, and recesses or depressions provided in the underside of the bearing plates on each side of the point of juncture with the said bar, as set forth.

No. 23,325. Belt for Pulleys. (*Courroie de Poulie.*)

Walter H. Avis, York, Ont., 2nd February, 1886; 5 years.

Claim.—1st. A belt, composed of a series of cords woven together, substantially as specified. 2nd. A woven belt, in which the warp is composed of a series of cords, and the weft of a metal wire, substantially as and for the purpose specified.

No. 23,326. Rein and Strap Supporter. (*Porte-Rêne et Porte-Courroie.*)

David Mitchell, Burlington, Vt., U.S., 3rd February, 1886; 5 years.

Claim.—A rein or strap supporter, consisting of a base plate A having means of fastening to a leather B, and fingers *a*, *a'* inwardly curved from near the ends of the plate, substantially as set forth.

No. 23,327. Pruning Shears. (*Ciseaux de Jardinier.*)

Isaac M. McKay, Rocklin, Cal., U.S., 3rd February, 1886; 5 years.

Claim.—Shear levers *a*, *b*, having extension arms *a'*, *b'*, blade *d* pivoted positively to lever *b*, back of pivot *c*, and also pivoted movably to end of arm *a'*, and blade *e* pivoted positively to end of arm *b'*, and also pivoted movably to lever *a*, back of pivot *c*, whereby said blades have reverse shear motion, substantially as described.

No. 23,328. Apparatus for Manufacturing Water Gas for Illuminating and Heating Purposes. (*Appareil de Fabrication du Gas à l'eau pour l'Éclairage et le Chauffage.*)

James C. Duffield, London, Ont., 3rd February, 1886; 5 years.

Claim.—1st. The above described arrangement for dividing the fuel bed by means of two or more generators connected with each other, whereby the same amount of fuel is separated, instead of be-

ing heated in one mass, substantially as and for the purpose shown and described. 2nd. In a gas generator, the introduction of steam at top of the fuel, instead of below, substantially as shown and specified.

No. 23,329. Governor for Steam Engines.

(Gouverneur pour Machines à Vapeur.)

Marshall R. Godins, Portland, Mo., U. S., 3rd February, 1886; 5 years.

Claim.—1st. In a centrifugal governor, the valve stem composed of the parts L, D, E, and O, made and applied substantially as set forth, and operated as described, to open or close, more or less, the valve of said governor by a duplex movement, directly through the rise and fall of the centrifugal parts or balls K, and indirectly through the changing automatically of the length of the stem while the governor is in motion, all being substantially as shown and specified. 2nd. In a centrifugal speed governor, the longitudinal adjustable parts L, D, of the valve stem L, D, E, O, in combination with the set screw e, whereby the valve stem may be so adjusted as to maintain a required speed under varying conditions of load on the engine, substantially as described and shown. 3rd. The combination of the clutch D, internally screw-threaded as described, and arranged to operate with the gears J and H, engaging with the driving gear I, as represented, with the valve stem, separate parts L, and E, arranged with, and screwed, as shown into said clutch, such part E being movable only vertically and fixed to the part O, and such part L being arranged with the spindle M of the balls K, and connected as described with the levers of such balls, all being essentially and to operate in manner and for the objects as specified. 4th. The combination of the stop F, fixed to the rod O, and adapted to slide on the post P, extending upward from the frame base b, with the speed regulator, substantially as described, consisting of the frame A, rod O, screw-threaded tube E, internally screw-threaded clutch D, screw-threaded rod L, tubular spindle M, shaft B, gears H, I and J, ring C, weighted lever R and the spool or connection U, arranged and to operate, substantially as set forth.

No. 23,330. Button Fastener Setting Machine. (Machine à Assujétir les Queues des Boutons.)

The American Button Fastener Company, New Britain, Ct. (Assignee of Francis H. Richards, Springfield, Mass.), U. S., 3rd February, 1886; 5 years.

Claim.—1st. In a button fastener setting machine, a setting die having a fixed position therein, a presser slide, substantially as described, adapted to hold leather or fabric against said die, and having a driver channel, substantially as described, and a lateral opening through which button fasteners may be introduced into said channel above a driver, a magazine extending into said lateral opening, and adapted to deliver button fasteners one at a time into said channel above a driver, and a driver adapted to drive said fasteners through said channel and said leather or fabric against said die, in combination, substantially as set forth. 2nd. In a button fastener setting machine, a setting die having a fixed position therein, a movable presser-slide, substantially as described, adapted to hold leather or fabric against said die, and having a driver channel and a lateral opening to receive the end of a magazine, and a passage for a driver channel cover, a fixed magazine extending into said opening, and a driver channel cover adapted to close the variable portion of said lateral opening which is above said magazine, in combination substantially as described. 3rd. In a button fastener setting machine, the die E, the slide S, substantially as described, having channel D, the magazine M and the driver D, in combination substantially as described. 4th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D, the magazine M, the driver D, and lever L provided with connecting gearing, substantially as described, and the stop S₅, substantially as set forth. 5th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D, the magazine M, the driver D, and lever L, provided with connecting gearing, substantially as described, and the stop S₅ and stop S₆, substantially as set forth. 6th. In a button-fastener setting machine, the combination of the die E, the slide S, having channel D, the magazine M, the driver D, and lever L, provided with connecting gearing, substantially as described, the stop S₅ and stop S₆, substantially as set forth. 7th. In a button-fastener setting machine, a frame adapted to carry the die E and slide S, the die E, the slide S, the spring S₂ adapted to press said slide against said die, the driver D, and the stop S₃ on said slide, whereby said driver may act to force the same away from said die through a distance determined by the position of said stop, in combination, substantially as described. 8th. In a button-fastener setting machine, slide S, having stop S₃, spring S₂, driver D, rod T, connecting mechanism, substantially as described, intermediate to said rod and driver, and spring B, in combination substantially as set forth. 9th. In a button-fastener setting machine, slide S, having stop S₃, spring S₂, driver D, rod T, connecting mechanism, substantially as described, intermediate to said rod and driver, spring B, stop S₅ and stop S₆, in combination substantially as set forth. 10th. The magazine M, having the spiral section M₅, substantially as and for the purpose described. 11th. A button-fastener magazine, consisting of a rod having a straight groove M₄ and a spiral groove M₅, in combination with a case enclosing said spiral groove, substantially as described. 12th. A button-fastener magazine, consisting of a rod having groove M₄, and having spiral groove M₅ inclosed by a case, in combination with a follower adapted to invert the fasteners by pushing them from said groove M₄ through said spiral groove, substantially as described. 13th. In combination, a magazine having groove M₄, and magazine lock M₃, substantially as and for the purpose described. 14th. In combination, magazine M, having groove M₄, magazine lock M₃ and follower N, having tongue N₃ and projection N₄, substantially as and for the purpose described. 15th. In combination, magazine M, having groove M₄, magazine lock M₃ and follower N, having tongue N₃ and catch N₅, substantially as described. 16th. In combination, magazine M, having groove M₄ and stop N₂, magazine lock M₃ and follower N, having tongue N₃, pro-

jection N₄ and catch N₅, substantially as described. 17th. In combination, a part, as A₂, having formed therein the setting die E, and provided with the lip J, and a spring having the similar lip J₂, substantially as and for the purpose described. 18th. Slide S, having mortise H, and groove G, magazine M, having tongue T and cover C, having tongue T₂ and groove G₂, in combination, substantially as described.

No. 23,331. Manufacturing Iron and Steel.

(Fabrication du Fer et de l'Acier.)

Benjamin Bayliss, Jr., Beltzhoover, Penn., U. S., 3rd February, 1886; 5 years.

Claim.—1st. In the manufacture of crude iron into iron of higher grade, or steel, the process herein described, which consists in introducing fuel to the converter through a suitable inlet, when the annular tuyer chamber is at the bottom, then inverting the vessel, subsequently admitting an air-blast, maintaining this conductor until the pressure of the flame inside exceeds that of the atmosphere air surrounding the said inlet, cutting off the air-blast, then inverting the vessel to allow the automatic exit of the fuel through the same aperture to yield the entire space for the metal, reversing the angle of the vessel, charging the liquid metal, with or without the addition of heated scrap iron, again admitting the air blast, again inverting the vessel, so that the metal comes in contact with the tuyeres, maintaining this condition until the color of the flame evidences the completion of the blowing operation, charging any desired alloy, again admitting the air blast, inverting the vessel several times to secure perfect commixture, finally inclining the vessel, and discharging the mass therefrom, so that in its course to the pig-bed, or casting-molds it shall travel perpendicular paths, for the purpose specified. 2nd. The sections A, C, provided both with flanges at their respective ends, in combination with the section B, having flanges on both ends, projecting in either direction from the shell, for the purpose set forth. 3rd. The section B, lined, so as to form a central contracted area, as shown, having flanges a, a, a₁, a₁, for the purpose set forth, and provided with rim d₂ and recess c, in combination with the section A, having air-chamber b₂. 4th. The section C, having mouth o₁, surrounded by wall g₂, from which lugs h, h, project, and flanges a, a, in combination with the runner I and sections A, B. 5th. The chamber F, composed of counter-part halves, having projection f₁ fitting in groove f₂ formed by two annular collars around the trunnions, in combination with the section B having annular rim d₂ sliding in groove d₁ in the chamber F and pipe G. 6th. The runner J, with lugs h₁, h₁, and perpendicular outlet i₁, in combination with connections h₂, h₂, and lugs h, h. 7th. The section A, having flanges at both ends, and provided with annular tuyero chambers b₂, in combination with the section B, having flanges at both ends projecting in either direction beyond the shell, having a contracted central area, and trunnions d, d radiating from its surface section C, having flanges at either end, and a mouth o₁ and standards D, D, forming bearings for the trunnions. 8th. The standards D, D, constituting bearings for the converter, in combination with the section B having flanges a, a, a₁, a₁ on both ends projecting beyond the shell in either direction, provided with trunnions d, d, on one of which are two annular collars, forming a groove f₂ between them and the end of the other serving, for the reception of rotary motion from suitable mechanical media, chamber F, pipe G, passages c, c, and chamber b₂, the whole co-operating in the manner shown and for the purpose specified.

NO. 23,332. Covering for Feed Rolls of Machinery. (Enveloppe des Rouleaux d'Alimentation de Machinerie.)

Samuel Bergstessor, Philadelphia, Penn., U. S., 3rd February, 1886; 5 years.

Claim.—1st. The within described covering for feed rolls of machinery, said covering consisting of a filled tubular fabric, having a paint or filling compound applied to the outer face, as set forth. 2nd. A feed roll for machinery, having applied to the core or body of the same, a covering, consisting of a filled tubular fabric with a paint or filling composition on the surface, as set forth.

No. 23,333. Apparatus for Manufacturing Flexible Roofing Material. (Appareil de Fabrication du Matériel à Toiture Flexible.)

Longley L. Sagendorph, Cincinnati, Ohio, U. S., 3rd February 1886; 5 years.

Claim.—1st. The combination of the tank, guide B, and roller E, located at or near the foot of the guide B, substantially as and for the purposes specified. 2nd. The combination of the tank, guide B, rollers E, and H, substantially as and for the purposes specified. 3rd. An apparatus for removing the surplus of composition, consisting of two lips, one fixed and the other removable, the working edges of said lips being opposite one another, substantially as and for the purposes specified. 4th. The tank A, provided with guide B, rollers E and H, arms D and F, and scrapers M and R, substantially as and for the purposes set forth. 5th. The guard box B, located in the tank, substantially as and for the purposes set forth. 6th. The improved apparatus for preparing flexible materials, consisting of the tank, A, constructed substantially as described, and drying apparatus separated from said tank and consisting of series of racks O, substantially as and for the purposes described. 7th. The guard box B, provided with lip, and located in the front end of the tank, substantially as and for the purposes specified. 8th. The guard box B, and the depressing rollers and their supporting arms, and guides, substantially as and for the purposes described. 9th. In the tank, the combination of guard box B and roller E, and arms D, and guide ways, substantially as and for the purposes specified. 10th. The roller E and arms D sliding in guideways C, and provided with handle, and a setting device, for securing the roller at any desired height, located at the front portion of the tank, substan-

tially as and for the purposes specified. 11th. In a tank for imparting a composition to flexible material, the roller H, arms E, and guides B, substantially as and for the purposes set forth. 12th. In a tank for imparting a composition to flexible material, the roller H and arms F, guides B, and device for adjusting the distance of the roller from the bottom of the tank, and securing the rollers at a given point, substantially as and for the purposes described.

No. 23,334. Sewing Machine.

(Machine à Coudre.)

John W. Post, New York, N.Y., U.S., 3rd February, 1886; 6 years.

Claim.—1st. In a sewing machine, a stand having detachable drawers, as set forth. 2nd. In a sewing machine, the combination, with the stand and the operating mechanism supported therefrom, of a cover or casing having transparent panels, substantially as and for the purpose specified. 3rd. In a sewing machine, the combination, with the legs of the stand having perforated bearings, and the brace E detachably secured to the upper ends of the said legs, and having screw-threaded bearings at lower ends of the treadle and treadle bar, and the bearing screws and check and adjustable nuts *f*, said parts being arranged for operation as described for the purpose specified. 4th. In a sewing machine, the combination, with the drive wheel and the stand of the guard C, composed of a screw piece of wire screwed or riveted to the stand, for the purpose set forth. 5th. In a sewing machine, the combination, with a bracket arm having a conical bearing, of a needle lever having a conical fulcrum stud formed integral therewith, said stud being slightly shorter than said bearing, and means arranged on the side of said bracket arm opposite to the said lever for securing and adjusting said stud in said bearing, substantially as described. 6th. The bracket arm I provided with a conical bearing, in combination with the needle lever V, having a conical fulcrum stud *o* formed integral with said lever, said stud being slightly shorter than said bearing, and the securing and adjusting screw *e* arranged on the side of said bracket arm opposite to the said lever, substantially as described. 7th. The overhanging arm provided with a conical bearing and the needle operating lever V, provided with a conical fulcrum stud formed integral therewith, said stud being slightly shorter than the said bearing, of the adjusting screw *e* and the locking screw V₂, substantially as and for the purpose specified. 8th. The combination, with the head I₂ having a slot, of the needle and presser bars provided with pins entering said slot, and a single and adjustable device for compensating for the wear of said pins in said slot, substantially as described. 9th. The combination, with the head I₂, having a slot, of the needle and presser bars having pins entering said slot, and the adjustable and removable plate *e*₂, substantially as and for the purposes set forth. 10th. In a sewing machine, the combination, with the head of the overhanging arm, having a groove *i*, the presser bar and its coiled spring *m*, of a pointed and conical screw projecting into said groove *i*, and forming one of the bearings for the coiled spring, as described for the purpose specified. 11th. In a sewing machine, the combination, with the head, of the overhanging arm having a groove *i*, the presser bar, its coiled spring and a pointed screw *m*₂ projecting into said groove *i*, of the lifting lever O, substantially as and for the purpose specified. 12th. In a sewing machine, the combination, with the needle bar, of an operating lever connected thereto and adjustable vertically thereon, and means for compensating for the wear of the surfaces of the connection, substantially as described. 13th. In a sewing machine, the combination, with the lower driving shaft, of a feed bar mounted on and operated from said shaft, and for taking up the wear of the operating surfaces of said parts, substantially as described. 14th. The combination, with the bracket arm I and head I₂, of the tension spring S₁ bearing on the top of said head, and having a bent portion provided with a concave seat or socket fitting said arm, and the securing and adjusting screw *e*₁ passing through said spring into said arm, substantially as and for the purpose set forth. 15th. The combination, with the head I₂, of the check tension spring S₂ secured to the front face thereof, the screw *i*₂ for holding and adjusting said spring, and the pins *i*₃, *i*₃ arranged on opposite sides of the free end of said spring for steadying the same, substantially as set forth. 16th. The combination, with the head I₂, of the check tension spring S₁ secured to the front face thereof, the screw *i*₂ for holding and adjusting said spring, and the pins *i*₃, *i*₃ arranged on opposite sides of the free end of said spring for in different vertical planes, whereby said pins are adapted to steady said spring, and to serve as thread guides, substantially as set forth. 17th. In a sewing machine, a tension mechanism arranged on the head of the machine and consisting of the plates P, P₁, the screw Q and spring *q*, said parts being constructed for operation substantially as and for the purpose specified. 18th. In a sewing machine, the combination, with the needle, bar and needle, of a thread check R consisting of a notched tubular pin or stud *r*, a spring actuated plunger *r*₁ and a set screw *r*₂, arranged for operation substantially as and for the purpose specified. 19th. In a sewing machine, the combination, with the overhanging arm, the needle bar having thread guide *f*, and guide or curl *t*, etc., the needle of the tension devices P, P₁, Q and the thread check R, substantially as and for the purpose specified.

No. 23,335. Form of Building Material.

(Forme de Matériel de Construction.)

John S. Armstrong, St. John, N.B., 3rd February, 1886; 5 years.

Claim.—1st. The reversely-curved or zig zag form of building blocks *a*, *a*, substantially as hereinbefore set forth. 2nd. The combination of the whole blocks *a*, *a*, with part blocks *a*₁, *a*₁, in a wall, as described. 3rd. The combination of the slabs *b*, *b*, with a wall composed of the blocks *a*, *a*, substantially as described. 4th. A wall composed of the blocks *a*, *a*, united and secured by the catches *c*, *c*, as shown and described.

No. 23,336. Fishing Hook. (Hameçon.)

James Scotland and François Gordon, St. Pierre Miquelon, and 3rd February, 1886; 5 years.

Claim.—1st. The combination, with a fishing hook having one or

more pointed prongs, of a means of emitting light from such hook, such being for use substantially as set forth. 2nd. The combination, with the fishing hook, having a shank, and one or more pointed prongs extending therefrom, of a glass tube applied to, or encompassing the shank, and containing phosphorus, or a light giving emitting material, such tube at its ends being sealed or water-tight, and all being substantially as set forth. 3rd. The fishing hook implement, substantially as described, consisting of the shouldered shank and its series of curved and pointed prongs, and screw threaded stem the head screwed upon such stem, and the glass tube surrounding the stem, and containing a charge of phosphorus or a light giving material all being arranged essentially, and for use as set forth.

No. 23,337. Middlings Purifier.

(Epurateur des Gruaux.)

The George T. Smith, Middlings Purifier Company, Stratford, Ont. (Assignee of Charles A. Smith, Jackson, Mich., U.S., 4th February, 1886; 5 years.

Claim.—1st. The combination, with the front wall, of the feed hopper, the roller E and the pressure board D₂, of the vibrating gate, having the upward projecting arm E₂, the link *d*₁ connecting the lower end of the pressure board with the arm and a spring arranged between the arm and the feed hopper and adapted to pull the arm towards the feed hopper, substantially as set forth. 2nd. The combination, with the front wall D of the hopper, the roller E and the pressure board D₂, of the vibrating gate having the upward projecting arm E₂, the link *d*₁ connecting the lower end of the pressure board with the lower end of the arm, the spring *d*₁ and link *d*₂ arranged between the upper end of the arm and the front wall of the hopper, and the thumb nut *d*₃ on the end of the link *d*₂ and engaging with the outer face of the arm, substantially as set forth. 3rd. In a middlings purifier, the combination, with the casing above the shaker, of the partition B₄ and the transverse partitions, which divide the space between partition B₄ and the shaker into main air chambers, the transverse partitions which divide the space between the partition B₄ and the deck into supplemental air chambers, the throats between the main air chambers and the supplemental air chambers, the wind trunk and the throats between the supplemental air chambers and the wind trunk, the fan and the dampers extending substantially the entire width of the air trunk, substantially as set forth. 4th. In a middlings purifier, the combination, with the shaker, an air chamber above the shaker, and a fan for producing an air current upward through the bolt cloth and the air chamber, of a removable dust box adapted to collect material taken from the middlings by the air chamber above the shaker, a fan adapted to produce an air current, substantially as set forth. 5th. In a middlings purifier, the combination, with the shaker, an air chamber above the shaker and a fan adapted to produce an air current upward through the shaker and the air chamber, of a dust box adapted to be removed through an opening in the casing of the machine, the sides of the opening fitting closely the sides of the dust box, substantially as set forth. 6th. In a middlings purifier, the combination, with the shaker, of an air chamber above the shaker, a fan adapted to produce an air current upward through the shaker and the air chamber, of a series of dust boxes adapted to be removed through openings upon opposite sides of the casing of the machine, substantially as set forth. 7th. In a middlings purifier, the combination, with the shaker, an air chamber above the shaker, and a fan adapted to produce an air current through the shaker and the air chamber, of a dust box arranged transversely of the shaker, and cleats connecting the dust box with a partition of the air chamber, whereby the dust box is adapted to slide through the casing of a machine path in a transverse to the shaker, substantially as set forth. 8th. In a middlings purifier, the combination, with the bolt cloth a series of air chambers above the bolt cloth, and a series of supplemental air chambers, of the dust boxes supported below the partition B₄, and made removable through the openings in the side wall of the machine, substantially as set forth. 9th. In a middlings purifier, the combination, with the brush ways and the brush shafts, and their bearings, of the plate O provided with the inward projecting shelf O₁, substantially as set forth. 10th. In a middlings purifier, the combination, with the brush ways, the brush shaft, of the plate O provided with the inward projecting shelf O₁ and the bearing P₁ adapted to slide on the shelf, substantially as set forth. 11th. In a middlings purifier, the combination, with the brush ways and the brush shaft, of the plate O and the inward projecting shelf, of the bearings sliding on the shelf and means for adjusting the bearings, substantially as set forth. 12th. In a middlings purifier, the combination, with the brush ways and the brush shaft, of the plate O provided with the inward projecting shelf, of the bearing provided with the inward projecting shelf, of the bearing provided on its front side with a socket, and the adjusting bolt having its rear end seated in the socket, substantially as set forth.

No. 23,338. Middlings Purifier.

(Epurateur des Gruaux.)

The George T. Smith Middlings Purifier Company, Stratford, Ont., (assignee of George F. Sherwood, Jackson, Mich., U.S.) 4th February, 1886; 5 years.

Claim.—1st. In a middlings purifier, the combination of the brush-ways, the vertical posts or standards by the sides of the brush-way, and devices for supporting and adjusting the brush-ways upon the vertical standards, substantially as set forth. 2nd. In a middlings purifier, the combination of the brush-ways, the slotted vertical posts or standards by the sides of the brush-ways, the carriers interposed between the brush-ways, and the vertical standards and devices adjustably supporting the brush-ways on the vertical standards, substantially as set forth. 3rd. In a middlings purifier, the combination of the brush-ways, the slotted vertical standards and the carriers interposed between the brush-ways and the vertical posts, and engaging with the outer and inner faces of the slotted posts, substantially as set forth. 4th. In a middlings purifier, the combination, with the brush-ways of the vertical posts, the carriers and the screw-threaded bolts and nuts connecting the brush-ways, and the carriers with the vertical standards, substantially as set forth. 5th. In a middlings purifier, the combination, with the brush-ways of the

shaft n, the forked hangers, the bearings surrounding the shafts and pivoted in the forked ends of the hangers, substantially as set forth. 6th. In a middlings purifier, the combination of the brush-ways, the shaft, the forked hangers, the bearings surrounding the shaft and pivoted in the hangers, and adjusting devices connecting the hangers with the brush-ways, substantially as set forth. 7th. In a middlings purifier, the combination, with the brush-ways and belts, of the shafts o, the sleeves surrounding the shaft and provided with parti-spherical bearings, of the arm T having rings adapted to receive the parti-spherical bearings, substantially as set forth. 8th. In a middlings purifier, the combination, with the brush-ways and belts or chains of the shaft o, the sleeves provided with parti-spherical bearings, the arms T having the rings adapted to receive the sleeve bearings, and adjustable connections between the arms and the frame of the machine, substantially as set forth. 9th. In a middlings purifier, the combination, with brush-ways and belts or chains of the brush shaft n, the hangers, and the yielding bearings interposed between the brush shaft and the hangers, substantially as set forth. 10th. In a middlings purifier, the combination, with the main frame, of the brush-ways, the belts or chains, the shaft o and yielding bearings supported upon the main frame, substantially as set forth.

No. 23,339. Wire Tubular Bearing for Suspender ends. (*Boutonniers en Fil de Fer pour Bretelles.*)

George F. Atwood Swanton, Vt., and Jedediah D. Beeman, Moriah, N. Y., U.S., 4th February, 1886; 5 years.

Claim.—1st. A cord-loop for suspenders, having the coiled-wire tubular bearing D for the cord, substantially as specified. 2nd. A cord-loop for suspenders, having the spirally-coiled tubular bearing for the cord, and an attaching loop formed entire from a single piece of wire, substantially as specified.

No. 23,340. Suspender Buckle. (*Boucle de Bretelle.*)

George F. Atwood, London, Vt., and Jedediah D. Beeman, Moriah, N. Y., U.S., 4th February, 1886; 5 years.

Claim.—As an improved article of manufacture, the suspender-buckle herein described, consisting of a single piece of wire formed with parallel loops A, B, the loop B having its ends forming the arms C, C carried straight to the plane of the buckle and at a relatively great distance from the cross-bars E, to increase the leverage or biting-power, and the said branches having terminal teeth D, D bent rearwardly, substantially as shown and described.

No. 23,341. Steam Boiler. (*Chaudière à Vapeur.*)

William Cooke, Orr Lake, John T. Lennox and Archibald Simpson, Barrie, Ont., 4th February, 1886; 5 years.

Claim.—1st. A steam boiler, consisting of a tube-chamber, B containing a number of horizontal tubes C located above a furnace A, and communicating with a water-space a, which leads into a steam space H, substantially as and for the purpose specified. 2nd. A steam boiler, consisting of a tube-chamber B containing a number of horizontal tubes C located above a furnace A, and communicating with the water space a which leads into a steam space A, in combination with the smoke-pipes D connecting the tube-chamber B with the smoke-box E, and passing through the steam space H, substantially as and for the purpose specified.

No. 23,342. Hose Connection. (*Joint de Boyau.*)

James A. McNairn, (assignee of James Findlay,) Toronto, Ont., 4th February, 1886; 5 years.

Claim.—The combination of the contracted nut A and wire coil B, with hose C and attachment D, as and for the purpose set forth.

No. 23,343. Carpet-Cleaning Machine. (*Machine à Nettoyer les Tapis.*)

Samuel T. Joll, Cleveland, and Daniel J. C. Arnold, New London, Ohio, U.S., 4th February, 1886; 5 years.

Claim.—1st. In a carpet-cleaning machine, the eight-sided cage G consisting of the heads, having radial spokes H joined to disks J, provided with the journals, and having the slotted panels I, the eight sides containing hinged panels M and provided with the tapering shelves N, alternately arranged as shown, and the cylindrical case A provided with door B in one side, and also having opening a at the bottom for discharge of the dust, in combination with the driving shaft F having pulleys A, & connected by belts K to the cage, the boxes for the journals of said cage and shaft supported on the posts C, C, all constructed and operating substantially as described and for the purpose specified.

No. 23,344. Crane for Loading Cotton Bales, etc., upon Waggon, etc. (*Grue pour Charger les Ballots de Coton, etc., sur les Wagons, etc.*)

Joseph Hollingsworth, Kilbourne, and Simon Witkowski, Calodonia, La., U.S., 4th February, 1886; 5 years.

Claim.—1st. In a crane, the combination of the base beams, crossing each other and mortised together, the upright post mounted at the intersection of said base beams and having a shoulder near its lower end and a spindle in its upper end, the detachable braces and brace-rods, the detachable cap-beams mounted upon the upper end, of the upright post, a bracket mounted upon the shoulder of said post, and having an inclined brace connected detachably with the

cap-beam, a winding-drum journaled in said bracket, and suitable pulleys and tackle, all arranged and combined, substantially as and for the purpose set forth. 2nd. The combination of the base beams, crossing each other and connected detachably the attachable upright post, the inclined braces fitted in mortises in the said post and in the rear end of the base beams, and a flanged collar fitted upon the upright post over the upper ends of the said braces, substantially as and for the purpose set forth. 3rd. The combination with the base beams, etc., the upright post having a spindle at its upper end, a sleeve fitted upon said spindle and provided with lugs, brace rods pivoted between said lugs and having their lower ends connected detachably to the rear ends of the base-beams and the cap-beam journaled upon said sleeve, substantially as and for the purpose set forth. 4th. The combination, with a crane constructed substantially as herein described, and equipped with the tackle, as set forth, of a steel-yard attached to said tackle, for the purpose of ascertaining the weight of the load that is lifted and to assist as a lever in manipulating the same, substantially as and for the purpose set forth.

No. 23,345. Steam Pipe Covering.

(*Envelope de Tuyau de Vapeur.*)

Charles Lambkin and Charles F. Torrance, Batavia, N. Y., U.S., 4th February, 1886; 5 years.

Claim.—The combination of the mineral wood, the intended wrapper, the re-enforce paper and the non-combustible paper, secured between the inner ends of the outer wrapping and the re-enforce paper, substantially as described and for the purpose set forth.

No. 23,346. Process of Making Lactose or Milk Sugar. (*Procédé de Production de la Lactine ou Sucre de Lait.*)

The American Milk Sugar Company, (assignee of Aloah H. Sabin,) Burlington, Vt., U.S., 4th February, 1886; 5 years.

Claim.—1st. The described process of obtaining milk sugar from whey, consisting preliminarily purifying the whey by boiling or heating and then filtering it, subsequently evaporating the filtered liquid barely to dryness, and then cooling and washing the curds, crystallized sugar resulting from the evaporating operation, as and for the purposes hereinbefore set forth. 2nd. The method of removing impurities from the curd milk sugar, consisting in reducing the sugar to a coarse powder and washing the same with cold water during or subsequently to the reducing operation, as and for the purposes hereinbefore set forth. 3rd. The method of preliminarily purifying the whey by subjecting it to the action of rennet of acid and heat, and then filtering it, substantially as hereinbefore set forth. 4th. In the manufacture of milk sugars from whey, I claim subjecting the whey to the action of heated or dried air during the operation of evaporating said whey, the air being passed over or through the liquid, substantially as and for the purposes hereinbefore set forth.

No. 23,347. Crate For Picking and Shipping Fruit. (*Manne pour Cueillir et Transporter les Fruits.*)

George Wilkin and Cyrus C. Harvey, Dundee, N. Y., U.S., 4th February, 1886; 5 years.

Claim.—1st. A crate having a raised portion F on one side and a recess or groove e to receive the corresponding portion F of another crate, substantially as described. 2nd. A crate having a raised portion on one side and an opening or recess e in its opposite side, in combination with spring-actuated hooks with apertures below the springs of the hooks, for the reception of the hooks of another crate, substantially as shown and described. 3rd. A crate having a raised portion F and dovels r, r or their equivalent, in combination with a crate having a recess or opening e to receive such raised portion, whereby lateral movement is prevented, when so arranged together in the manner substantially as described. 4th. In combination with a crate having the raised portion F, and recess e underneath it, the cover H having the opening e through it, substantially as described. 5th. In a crate, the lid H having projecting pieces f, f and an opening e through it, in combination with spring-actuated hooks with apertures below the springs of the hooks for the reception of the hooks of another crate, substantially as set forth and described.

No. 23,348. Straw Cutter. (*Coupe-Paille.*)

Thomas Hendry, Seaforth, Ont., 5th February, 1886; 5 years.

Claim.—1st. In a straw cutter, the above described attachment for reversing the feed, the same consisting of the double pinion N or pair of gear wheels, cast or otherwise fastened together and sliding on shaft B, so as to engage with bevel wheel M, substantially as shown and described. 2nd. In combination with the double pinion N, the carriage or gear slipper O sliding on shaft B and having lugs or jaws R cast or otherwise formed on its outer face, substantially as shown and specified. 3rd. In combination with the double pinion N and gear slipper O, having lugs R, the bevel P and fulcrum Q, so arranged as to be self-locking, substantially as shown and specified.

No. 23,349. Water Elevator.

(*Machine à Epuisement.*)

Abram R. Nellis, Glenn's Ferry, Idaho, U.S., 5th February, 1886; 5 years.

Claim.—1st. In a water-elevator, the frame having a current wheel mounted therein, and a deflecting wall extending up-stream and at an angle to the current, and another portion which extends up to and overhangs, the embankment of the stream, the rollers mounted the one in the upper end of the overhanging portion and the other in the frame proper, the belt, and the bucket secured thereto.

No. 23,350. Oil Stove. (Poêle à Huile.)

Charles O. Schwartz, Milwaukee, Wis., U.S., 5th February, 1886; 5 years.

Claim.—1st. The combination of a stand provided with ways, a plate having burner cones rigidly connected to said stand, a sliding frame mounted in the ways of the stand, and wick tubes connected to said frame and extending upward to the underside of the cone plate, said tubes being surrounded by air spaces and an independent reservoir connected by pipes to said tubes and supported on the said frame, as and for the purpose set forth. 2nd. The combination of a stand provided with ways, a plate having burner-cones rigidly connected to said stand, a sliding frame mounted in the ways of the stand, and wick-tubes connected to said frame and extending upward to the underside of the cone plate said sliding frame being provided on its underside with a reservoir and pipes connecting the reservoir and wick-tubes, as and for the purposes set forth. 3rd. In an oil stove, in combination with the feed tube *f*, and the wick tubes *F*, having slots *f*, and the wicks *F*, the adjusting frame *f*, having the endless chains *f*, to carry the prong plate *g*, and the hook-jointed rod *f*, to operate the same, substantially as shown and described and for the purposes set forth.

No. 23,351. Water Gauge for Steam Generators. (Indicateur d'Eau pour Machines à Vapeur.)

William Young, Easton, Pa., U.S., 5th February, 1886; 5 years.

Claim.—1st. A water-gauge consisting of two concentric glass tubes C, D having a space I between them, the inner one C communicating only with the steam-passages, substantially as herein shown and described. 2nd. In a water-gauge, the boxes H, for securing the inner tube to the elbows E, formed with cups *h*, in combination with the outer tube D, and huts J, arranged substantially as and for the purposes set forth.

No. 23,352. Stove Pipe. (Tuyau de Poêle.)

Daniel R. Clark, Rochester, N.Y., U.S., 5th February, 1886; 5 years.

Claim.—1st. A stove pipe having tubes extending through the same, the entrances of the tubes being upon different sides of the pipes, substantially as and for the purpose specified. 2nd. The within described stove pipe A, having tubes B, B, extending across the interior of the pipe at an angle, substantially as and for the purpose specified.

No. 23,353. Automatic Car-Coupler.

(Attelage de Chars Automatique)

Nell's W. Hawkinson, Litchfield, Minn., U.S., 5th February, 1886; 5 years.

Claim.—1st. In an automatic car-coupler, a link-lifter comprising a spring buffer with arms pivoted thereto, and a stationary inclined surface, whereby as said buffer is pushed back the forward end of the arms are raised, substantially as described. 2nd. In a car-coupler, the spring buffer E, carrying the pivoted arms F, the wheel G, and the stationary inclined surface K, substantially as described and for the purpose set forth. 3rd. In a car-coupler the casing D, having slots I, and having the incline K, in combination with the spring buffer E, pivoted arms F, having the curved forward ends, and the rear ends extending through the slots I, and the wheel G, all substantially as described. 4th. The combination with the drawhead A, of the spring buffer E, carrying the pivoted link-lifting arms F, and means for raising the forward ends of said arms as the buffer is pushed back, substantially as described and for the purposes set forth. 5th. The combination in a car-coupler, with the drawhead A, of the pin-lifter L, pivoted beneath said drawhead and extending across the top thereof, the projections M, on said pin-lifter having the diagonal slots I, the coupling pin B and a pin passing through said pin and through said diagonal slots, all substantially as described and for the purpose set forth. 6th. The combination, in a car-coupler, with the spring buffer E, having the projections N, of the pin-lifter and holder L, having the wings O, and means for raising the said pin-lifter, all substantially as described, and for the purpose set forth.

No. 23,354. Rubber and Rubber Boots and Shoes. (Caoutchouc et Chaussures en Caoutchouc.)

George B. Farmer, Perth, Ont., 5th February, 1886; 5 years.

Claim.—The combination of the electric conductor *b*, *b*, *b*, made any shape and of any material which will act as a conductor, with the ordinary rubber, rubber boot, rubber shoe, or boot and shoe with rubber sole *a*, *a*, *a*, substantially as and for the purpose hereinbefore set forth.

No. 23,355. Cooking Utensil.

(Ustensile de Cuisine.)

Frank P. Keefer and Alfred Tee, Toronto, Ont., 5th February, 1886; 5 years.

Claim.—As a new article of manufacture, the boiler G, having flange H, and tube L, arranged substantially as and for the purpose hereinbefore set forth.

No. 23,356. Machine for Degerminating and Scouring Wheat. (Machine pour faire la Castrature du Blé.)

Wells E. Sergeant, Minneapolis, Minn., U.S., 5th February, 1886; 5 years.

Claim.—1st. In a wheat scouring machine, two vertical shafts,

provided with overlapping scouring disks, in combination with a surrounding case or jacket, and internal flanges, whereby the grain is caused to pass over the surface of all the disks in succession. 2nd. The combination, of the two upright shafts, the scouring disks mounted thereon, the encircling jacket in the form of two cylindrical segments, and the segmental flanges attached to the inner surface of the jacket and overlapping the respective disks. 3rd. The two upright shafts and their overlapping disks, in combination with the upright perforated jacket encircling the disks, as shown and described, the close body encircling the jacket, and the fan arranged to produce a draft outward through the jacket from all sides, as shown. 4th. In a wheat scouring machine, rotary scouring disks, having depending peripheral studs, substantially such as shown and described, in combination with an encircling jacket having flanges extending inward over the edges of the disks, substantially as described and shown. 5th. In a machine for removing the end portions of the wheat berry, the combination of a series of horizontal revolving disks, a perforated jacket enclosing the same, flanges extending inward from the jacket and overlapping the edges of the disks, an impervious body surrounding the jacket a wheat spout at the base, a hopper O, at the top, an air passage or conductor connecting said hopper with the delivery spout, and an exhaust fan communicating with the hopper, the air passage, and the space around the perforated jacket, and arranged to produce an upward draft, as described and shown.

No. 23,357. Gravity Railway, or Artificial Coasting or Toboggan Course. (Chemin de Fer en Plan Incliné ou Montagne Russe.)

Joshua Pusey, Philadelphia, Pa., U.S., 5th February, 1886; 5 years.

Claim.—1st. A gravity railway consisting of a series of longitudinal trackways, each of the series being made up of two continuous inclined ways, ascending in opposite directions from their junction, and connected at the adjacent summits by common platforms, in combination with the mechanism for carrying the cars or vehicles up to the summits, the latter being of substantially the same height as specified. 2nd. In combination, with a gravity railway consisting of a series of trackways, each of the series being composed of two continuous ways ascending in opposite directions from their junction, means, substantially as described, for conveying the cars or vehicles on up beyond the point to which they are carried by the momentum acquired in descending the opposite incline to the summits of the trackways, substantially as set forth. 3rd. In combination with the trackways, the chains or belts provided with the projections *l*, together with a suitable motor for imparting motion to said chains, and the cars provided with the pivoted pawl *p* adapted to swing past said projections when the car is moving forward over the same, and to be engaged by one of said projections, substantially as and for the purpose set forth. 4th. The combination of the longitudinal trackways, arranged to form inclines ascending in opposite directions, the end platforms of substantially the same altitude or in the same horizontal plane, the cars or coasting-vehicles, and means for preventing the same from running backward down the inclines, all substantially as and for the purpose set forth. 5th. The combination of the longitudinal double trackway arranged to form inclines ascending in opposite directions, the end platforms, the cars and automatic stop devices, all constructed and adapted to operate substantially as and for the purposes set forth. 6th. In combination, with a railway having inclines ascending in opposite directions, the hand-rails C, substantially as and for the purpose specified. 7th. The combination, with a coasting trackway, of the car or vehicle and the inclined box or boxes and ball or balls contained therein, all constructed and adapted to operate substantially as and for the purpose recited. 8th. In combination with the car, the pivoted tender-arms E, constructed and adapted to operate substantially as and for the purpose specified.

No. 23,358. Artificial Toboggan or Sled-ding Course. (Montagne-Russe.)

Joshua Pusey, Philadelphia, Pa., U.S., 5th February, 1886; 5 years.

Claim.—1st. In combination with a toboggan-course consisting of a series of trackways, each of the series consisting of two continuous ways ascending in opposite directions from their junction, endless moving belts or carriers located at alternate ends of the several series, whereby the toboggans are adapted to run directly upon said belts by the momentum acquired in descending the one incline, and by which belts the toboggans are conveyed on up to the top of the opposite incline of the series, substantially as and for the purpose stated. 2nd. In combination with an artificial toboggan course or hill, an inclined moving belt or carrier arranged with relation to said hill, so that the toboggans are adapted to run upon said belt after having descended the hill, and be retained thereon by friction and carried up thereby, substantially as and for the purpose described. 3rd. In an artificial toboggan-course composed of a series of continuous double hills, inclined endless belts or carriers at and near the alternate ends of each of the several series, the upper sides of said belts being practically a continuation of the hill together with suitable motive power for imparting motion to said belts, substantially as and for the purpose recited. 4th. The combination, with the toboggan-course, of the endless belts, the sprocket wheels, the cross bars secured to said belts and the guide-ways in which said bars slide, all constructed and operating in the manner and for the purpose substantially as described. 5th. The combination of the toboggan hills, the elevators and the inclines I, substantially as and for the purpose described. 6th. The combination, with the toboggan hills provided with the endless belts or carriers, of the lateral footways L separated from or elevated above the main tracks and communicating with the summits of the hills, substantially as and for the purpose set forth. 7th. In combination with a toboggan-course provided with the endless belts or carriers, as described, a toboggan or sledding vehicle provided with automatic devices, substantially as shown, for preventing the sled from running backward under the circumstances mentioned, as and for the purpose set forth. 8th.

The combination, with the toboggan or sledding vehicle, of the tapering box *r*, ball *u* and wheels *v*, substantially as and for the purpose recited. 9th. In combination with the toboggan provided with the turn-wheel and steering-bar, the opening *O* in front of said bar, substantially as and for the purpose specified. 10th. In combination with the artificial toboggan-course, the wheeled vehicle having rubber-tired wheels, and means, substantially as described, for preventing said wheels from running backward, substantially as and for the purposes set forth. 11th. The combination, with a toboggan or sledding vehicle, of a gravity operated trip-registering device attached thereto, constructed and adapted to operate substantially as described. 12th. The combination, with a toboggan or sled, of the ratchet or dial wheel, the swinging pendant having a pawl *p*, *p* adapted to engage with the teeth of said wheel, and to actuate the same at intervals, as stated, all constructed and operating substantially as and for the purpose set forth. 13th. The combination, with the toboggan or sled, of the ratchet counter-wheel pawl *p*, swinging pendant *J*, pawl *p*, and lateral stops *l*, substantially as and for the purposes specified.

No. 23,350. Boot. (Dette)

George Valiant, Toronto, Ont., 5th February, 1886; 5 years.

Claim.—1st. A button-hole strip *A* made of a single thickness of material, provided with a series of button or eyelet holes and having a series of notches *B* made in its inner or attaching edge, substantially as and for the purpose specified. 2nd. A button-hole strip *A*, made substantially as described, and having a series of button or eyelet holes *a*, with a series of notches *B* made in its edge and connecting with the button-hole *a*. 3rd. In a boot or shoe, the fly or flap *C* provided with a projection or lip *b*, so that the strip *A* may be sewed to it without any stitches passing through them being necessarily carried through the vamp *B*, as set forth. 4th. A button-hole or eyelet strip *A* made of stronger material than the fly or flap *C* to which it is attached, and reduced in thickness between the button-holes in order to make it pliable, as specified.

No. 23,360. Fountain Pen. (Plume-Fontaine)

Paul E. Wert, Bloomsburg, Pa., U.S., 5th February, 1886; 15 years.

Claim.—1st. In a fountain-pen, the combination, with the ink-reservoir, of the nozzle fitted thereto and carrying the pen, the rubber shaft extending through the nozzle in the space between the inner face of the latter and the upper face of the pen, and held within the nozzle at an intermediate point of its length one end of the shaft extending beyond the nozzle into the ink reservoir, so as to draw the ink downward from the same, while the other end lies over the pen, so that when the latter is pressed upward in writing it comes in contact with the shaft, so as to produce capillary attraction and cause the feeding of the ink downward upon the pen, as set forth. 2nd. In a fountain-pen, the combination, with the ink-reservoir, of the nozzle detachably fitted to one end of the same, the pen attached to the nozzle and the rubber-shaft provided with an enlargement to hold it in place in the nozzle, one end of the shaft extending to the ink-reservoir and the other end lying over the pen, as set forth. 3rd. In a fountain-pen, the combination, with the ink-reservoir, of the nozzle detachably fitted to one end of the same and formed with a recess at its inner end, a pen attached to the nozzle and having its inner end arranged to communicate with the ink which accumulates in the recess, and the rubber shaft formed with an enlargement fitting with the recess, the rear end of the shaft extending into the reservoir while the front lies over the pen, as set forth. 4th. In a fountain-pen, the combination, with the handle or ink-reservoir, of the nozzle fitted thereto and carrying the pen, a recess at the inner end of the nozzle and a rubber-shaft held within the nozzle at an intermediate point of its length, one of the shaft extending beyond the nozzle into the ink-reservoir, so as to draw the ink downward into the recess, while the other end lies over the pen, so that when the latter is pressed upward in writing it comes in contact with the shaft to produce capillary attraction and cause the feeding of the ink from the recess upon the pen, as set forth. 5th. In a fountain-pen, the combination, with the ink-reservoir, of the nozzle fitted to one end thereof and carrying the pen, a recess at the inner end of the nozzle, a perforated partition or disc fitted in the inner end of the recess, and a rubber shaft passing through the nozzle and disc arranged and operating, as and for the purpose set forth. 6th. In a fountain-pen the combination, with the handle case or reservoir, of the nozzle fitted thereto and carrying the pen, and a shaft located above the pen and communicating with the ink-reservoir, so as to draw the ink downward by capillary attraction, as set forth. 7th. In a fountain-pen, the combination, with the handle case or ink-reservoir, and the nozzle fitted thereto and carrying the pen, of the ink-conducting shaft passing through the nozzle and having one end lying over the upper face or back of the pen and the other end projecting into the ink-reservoir, and shaft being hinged, pivoted, or otherwise held within the nozzle at an intermediate point of its length, whereby pressing of the nibs upward in writing causes the shaft to play loosely within the nozzle, its rear end within the reservoir also having a slight movement to produce capillary attraction and draw the ink downward upon the nibs of the pen, as set forth. 8th. In a fountain-pen, the combination, with the handle case or reservoir and the nozzle fitted thereto and carrying the pen, said nozzle having a chamber or compartment at its rear end of the ink-conducting shaft passing through the chamber into the ink-reservoir, arranged and operating substantially as and for the purpose set forth. 9th. In a fountain-pen, the combination, with the handle case or reservoir and the nozzle fitted thereto and carrying the pen, said nozzle having a partially closed chamber at its inner rear end for the accumulation of the ink-reservoir, of the ink-conducting shaft for drawing or feeding the ink downward upon the back of the pen, as set forth. 10th. In a fountain-pen the combination, with the handle case or ink reservoir and the nozzle fitted thereto and carrying the pen, of two or more discs, buttons or partitions located within the inner end of the nozzle to subdivide the opening of the latter into one or more chambers or compartments, for the accumulation of ink drawn downward from the reservoir and the ink-conducting shaft passing through the

nozzle, substantially as and for the purpose set forth. 11th. In a fountain-pen, the combination, with the handle case or ink-reservoir and the nozzle fitted thereto and carrying the pen, the rear inner end of the nozzle being partitioned off into a compartment of chamber for the accumulation of ink drawn downward from the reservoir, of the ink-conducting shaft passing through the chamber or compartment, arranged and operating substantially as and for the purpose set forth. 12th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, of two or more perforated or notched discs or buttons or partitions located within the nozzle to subdivide the latter into one or more chambers or compartments for the accumulation of ink drawn downward from the reservoir and the ink-conducting shaft, the perforations or holes in the discs or partitions allowing the passage of air upward into the ink-reservoir to fill the vacuum left by the withdrawal of the ink while writing, as and for the purpose set forth. 13th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, of a chamber or compartment provided at the inner or rear end of the nozzle, and the ink-conducting shaft arranged loosely above the pen passing through the nozzle and its chamber and projecting into the ink-reservoir, said shaft being hinged or pivoted at an intermediate point of its length within the nozzle arranged and operating as and for the purpose set forth. 14th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, the chamber or compartment at the inner or rear end of the nozzle, and the funnel-shaped or enlarged mouth at the front end of the ink-conducting shaft, arranged and operating as and for the purpose set forth. 15th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, the chamber or compartment at the inner end of the nozzle, of the ink-conducting shaft having its rear end hinged or pivoted at an intermediate point of its length within the nozzle, a portion of the shaft working or playing loosely within a groove in the inner face of the nozzle, as and for the purpose set forth. 16th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, of the partitions or discs at the inner end of the nozzle forming the chamber or compartment for the accumulation of ink from the reservoir, and the ink-conducting shaft pivoted or hinged to the partitions or discs, as and for the purposes set forth. 17th. In a fountain-pen, the combination, with the handle or ink-reservoir and the nozzle fitted thereto and carrying the pen, the partitions or discs at the inner end of the nozzle forming the chamber or compartment, a notch in one of the partitions and the ink-conducting shaft having its rear end notched to catch over the bottom wall of the notch in the partition, as set forth. 18th. In a fountain-pen, the combination, with the barrel or reservoir and the nozzle carrying the pen, of the ink-conducting shaft arranged above the pen and having the front end adapted to leave a space or chamber between it and the pen for the ink to accumulate in, for the purpose set forth. 19th. In a fountain-pen, the combination, with the barrel or reservoir and the pen-section or nozzle, of the ink-conducting shaft held at an intermediate point of its length within the pen-section or nozzle, the rear end extending into the ink-reservoir or barrel, and the front end arranged above the pen so as to leave a space or chamber between the parts, arranged and operating whereby when the pen is pressed upward in writing, the action of the nibs causes the said space or chamber to be increased or decreased according to the stroke given thereto, for the purpose set forth. 20th. In a fountain-pen, the combination, with the barrel or reservoir and the pen-section or nozzle, of the ink-conducting shaft extending through the nozzle and having its front portion arranged to leave a space or chamber between it and the pen, the extreme front end resting on the nibs thereof so that the shaft will be operated to increase the width of the space or chamber according to the degree of stroke, as set forth. 21st. In a fountain-pen, the combination, with the barrel or reservoir and the pen-section or nozzle, of the ink-conducting shaft extending through the latter and resting at an intermediate point on the rear end of the pen, the front portion being arranged to leave a space between it and the pen, the extreme point or front end resting upon the nibs thereof, arranged and operating so that the space between the intermediate point and the extreme front end may be increased in width according to the stroke given to the pen, as set forth. 22nd. In a fountain-pen, the combination, with the barrel or reservoir and the pen-section or nozzle, of the ink-conducting shaft comprising the main portion *a*, the depress portion *b*, the chambered portion *d* and the front bearing edge *c*, the latter resting on the nibs of the pen, for the purpose set forth. 23rd. In a fountain-pen the combination, with the barrel or reservoir and the pen-section or nozzle, the ink-conducting shaft passing through the latter, and the pen fitted in the nozzle below the shaft and comprising two flat nibs set at an angle to each other and rounding shank or body, as set forth. 24th. In a fountain-pen, the combination, with the barrel or reservoir and the pen comprising the rest-angular shank or body, the flat nibs set at an angle to each other and extending back and forming part of the body, the latter commencing to assume rounding shape from the point where the nibs terminate, for the purpose set forth. 25th. In a fountain-pen, the combination, with the barrel or reservoir and the pen-section or nozzle, of the ink-conducting shaft and the pen comprising the shank or body and two flat nibs set at an angle to each other and extending back and forming part of the body as set forth. 26th. In a fountain-pen, the combination, with the nozzle, of the herein described cap having an interior passage therein, the front or closed end of the passage being reduced, while the rear or open end is enlarged, for the purpose set forth. 27th. In a fountain-pen, the combination, with the nozzle or the pen section, of the herein-described cap made hollow or bored out to provide an interior passage, one end of which is reduced in diameter to receive the front end of the nozzle and fit closely around the sides thereof, as set forth. 28th. In a fountain-pen, the combination, with the nozzle or pen-section, of the herein-described cap provided with an interior passage, one portion of which fits closely around the nozzle at the front end, so as to hermetically seal the connection, and an air-vent provided in the cap below this connection, as set forth. 29th. In a fountain-pen, the combination, with the nozzle thereof, of the herein-described cap-hollow or bored out to fit over the nozzle, the inner

walls of the interior passage being arranged to fit the sides of the nozzle closely, to prevent the entrance of air and an air-vent provided through the cap below the nozzle, as set forth. 30th. In a fountain-pen, the ink-conducting shaft arranged above the pen, and adapted to leave a space or chamber between it, and the pen in which chamber the ink accumulates and is drawn down upon the nibs as required, as set forth.

No. 23,361. Hood or Cap for Piles.

(*Couronne de Piles.*)

William T. Casgrain, Milwaukee, Wis., U. S., 6th February, 1886, 5 years.

Claim.—1st. A hood or cap for piles, consisting of a metallic casting, having a recessed lower portion, and end grooves bevelled at their tops, substantially as and for the purpose set forth. 2nd. A hood or cap for piles, consisting of a metallic casting having recessed upper and lower portions, and end grooves bevelled at their top, substantially as and for the purpose specified. 3rd. A hood or cap for piles, consisting of a metallic casting having bevelled recesses in its upper and lower portions, and bevelled grooves at its ends, substantially as set forth. 4th. A hood or cap for piles, consisting of a metallic casting, having bevelled recesses in its upper and lower portions, bevelled grooves at its ends, and perforations in its sides at an angle to its horizontal plane, substantially as set forth. 5th. A hood or cap for piles, consisting of a metallic casting having recesses in its upper and lower portions, grooves at its ends and perforations in its sides, in combination with a short timber or cushion designed to fit the upper recessed portion of said hood or cap, and means, substantially as described, for connecting the latter with the monkey or rammer of a pile-driver, substantially as set forth.

No. 23,362. Whip Core. (*Manche de Fouet.*)

Henry Mullen and James Noble, Jr., Westfield, Mass., U. S., 6th February, 1886; 5 years.

Claim.—An improved compound whip-core, substantially as described, composed of a whalebone raw-hide and a suitable cement for the latter, the bone constituting the centre of the core and the raw-hide the covering thereof, said covering being cemented upon and wrapped around said bone, the outer edge thereof being lapped and cemented upon the covering, substantially as set forth.

No. 23,363. Automatic Regulator of Clocks and Apparatus Therefor. (*Manière de régler les Horloges et Appareil pour cet objet.*)

John B. Everall, Montreal, Que., 6th February, 1886; 5 years.

Claim.—1st. The art of regulating clocks from a standard, by sending from a disc mounted on the arbor of such standard clock at regular intervals, electrical impulses to an electro-magnet in connection with each clock to be regulated, such electro-magnet acting through suitable means to move the minute hand in either direction and make it correspond with that of standard, all substantially as herein described. 2nd. The combination, in a standard clock, of suitable battery and connections, a disc mounted on the arbor and having recess in its periphery, and a pivoted lever acting when its point falls into such recess to transmit electrical impulses, as and for the purposes set forth. 3rd. The combination, in a clock to be regulated, of notched discs mounted on the canon pinion, and an electro-magnet operating a lever held normally out of contact with such discs, all as and for the purposes set forth.

No. 23,364. Machine for Purifying Middlings. (*Machine à Epurer les Gruaux.*)

Alfred E. Ensign, Embro, Ont., 6th February, 1886; 5 years.

Claim.—1st. The combination of the driving shafts K, K, and the rotating cylinder Z, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the rotary cylinder Z, the air spaces R, R, the air chambers U, O, O, and the air passages V, V, V, substantially as and for the purpose hereinbefore set forth.

No. 23,365. Patten. (*Socque.*)

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

Claim.—1st. In a patten, the body A provided with the frame-work H, R, straps D, E, heel-piece B, toe-piece C and suitable adjustable calks, substantially as described. 2nd. In a patten, the screw-calks k provided with means for locking said calks in any desired position, substantially as set forth. 3rd. In a patten, the frame-work H provided with the bar J, screw-calks k, locking-bar N and screw t, in combination with the body A and straps or means for securing the patten to the foot of the wearer, substantially as described. 4th. In a patten, the frame-work k provided with the bar J, screw-calks k, bar N and screw t, in combination with the body A, and straps or means for securing the patten to the feet of the wearer, substantially as set forth. 5th. In a patten, the bar N provided with the flanges r and screw t for securing the screws k in any desired position in the bar J, substantially as described. 6th. In a patten, the combination of the body straps or means for securing the patten to the foot of the wearer, suitable heel and toe pieces, a frame-work secured to the under side of the heel portion of the body adjustable calks, and suitable means for locking or securing the calks in any desired position, substantially as set forth.

No. 23,366. Fire Screen and Ventilator Combined. (*Ecran et Ventilateur Combinés.*)

Albert E. French, East Tawas, Mich., U. S., 5th February, 1886; 5 years.

Claim.—The combination in a combined screen and ventilator, etc., of the case or body composed of a screen portion A, sides A' and rear

A', the parts being contracted toward their mouth, a pipe section B connecting with said contracted portion and having an elbow B', a damper C and connecting with stove-pipe, substantially as shown and described.

No. 23,367. Planer Knife Grinder.

(*Remouleur de Burin de Raboteuse.*)

George H. Mills, Concord, N.H., U. S., 5th February, 1886; 5 years.

Claim.—In a device for holding planer knives while grinding, the combination of a knife rest having a T-groove running longitudinally in its lower face adapted to receive the heads of bolts for clamping, a knife thereon, suitable lugs carrying adjusting screws adapted to bear against the back edge of a knife, arms projecting from its lower edge, near either end thereof, and a rod upon which the outer ends of said arms are mounted and rendered capable of reciprocal and rotative motion by the hand of an operator, with a suitable bed-plate having elevated bearings in which said rod is mounted, and mechanism, substantially as described, for adjusting the height of said knife-rest relative to the axis of a grindstone, consisting of a curvilinear arm projecting from the lower edge of said knife-rest about midway from either end thereof toward a grindstone, and carrying a screw resting upon a suitable slide-rest adapted to move upon a finished raised surface, provided for the purpose upon said bed-plate, whereby said knife-rest may be supported at an angle of about forty-five degrees, as and for the purpose set forth.

No. 23,368. Syringe. (*Seringue.*)

Benjamin F. Sutton, Brooklyn, N. Y., U. S., 8th February, 1886; 5 years.

Claim.—1st. A syringe, having a self-collapsible or self-contracting discharge tube, substantially as herein described. 2nd. A syringe tube of such corrugated or flattened form in its normal condition, as to be capable of having its calibre enlarged by the separation and spreading apart of its folded or corrugated parts, when pressure is applied to liquid within it, and which is capable of self-collapse when relieved of material pressure, substantially as herein described. 3rd. The combination, in a syringe, of a hollow bulb, a self-collapsible discharge tube, and an interposed eduction valve, substantially as herein described. 4th. The combination, with a self-collapsible syringe tube, of a spirally wound thread contained therein, substantially as herein described. 5th. The combination, with a nozzle N having a plain inner end n, of an elastic discharge tube socket, containing a metal ring n, substantially as and for the purpose herein set forth. 6th. The combination, with the suction tube of a syringe, of a sinker inclosed and protected, substantially as herein described.

No. 23,369. Heating Stove. (*Poêle de Chauffage.*)

John Milno, Hamilton, Ont., 8th February, 1886; 5 years.

Claim.—1st. In a self-feeder heating stove, the cold air ducts F, in connection with the flumes D, feed pot C and hot air chamber B, as described. 2nd. The circular damper J and pipe L, in connection with the hot air chamber B, ducts F, flume D and feed pot C, as set forth. 3rd. The gas pipe M and ducts N, in connection with the cylinder A and stove pipe O, as described, and all operating substantially as and for the purposes herein described.

No. 23,370. Telephone Transmitter.

(*Transmetteur Téléphonique.*)

Henry E. Waite, New York, N.Y., U.S., 8th February, 1886; 5 years.

Claim.—1st. A telephone transmitter, consisting of a case having a front perforated plate provided with a recess or ledge, a diaphragm supported in said recess, a spring-finger secured to said plate and holding the diaphragm in position, and bearing upon its free end one of the electrodes, and an adjustable spring also secured to the plate and supporting the other electrode in contact with the first, substantially as described. 2nd. The combination, with a recessed plate, of a diaphragm in said recess and a spring-finger secured to said plate, one face of its free end bearing upon and supporting and damping the diaphragm, and the other face carrying an electrode, substantially as described. 3rd. The combination, with the case of a telephone transmitter, of the sound board B, the retaining spring C provided with the carbon button c electro-plated upon one side and soldered to the free end of said spring C, the spring D provided at its free end with a point or spur d resting in contact with the button c, and means for adjusting the pressure of said point on said button, all substantially as described. 4th. The combination, with the case, of a diaphragm, to the edges of which are secured the spring damping finger, carrying one electrode, and the adjustable spring, carrying the other electrode, substantially as described.

No. 23,371. Car-Coupler. (*Attelage de Chars.*)

Sanders F. McCallister, San Marcos, Texas, U. S., 8th February, 1886; 5 years.

Claim.—1st. The combination, of the draw-head, having therein a trip-bar, and rearwardly a spiral spring, the said trip-bar C so disposed as to be projected forward by the action of the said spring, sufficiently to hold the pin out of the draw-bar with the said pin a-J link and the spring I, substantially as herein set forth. 2nd. The combination of the draw-bar A, the opening B, the trip-bar C, the spiral spring D, the pin F and the system of levers F' to operate the pin and spring I, the whole arranged as and for the purposes substantially as herein set forth.

No. 23,372. Railway. (*Chemin de Fer.*)

John T. Campbell, Mason City, Ill., U. S., 8th February, 1886; 5 years.

Claim.—1st. The combination of the sleepers, having the vertically depending flanges B on their under faces at the sides, and the rec-

angular projections C extending beyond one end of the sleepers, between the flanges and below the upper edge of the base portion of the said sleepers, the projection of one section fitting within the space between the flanges of the other section, so that the upper face of the two sleepers will be flush and in line with each other, as set forth. 2nd. The combination, with the sleepers, having the vertically depending flanges B, B, on their under faces near the side edges of the sleepers, and the projections C at one end thereof, the projection of one sleeper fitting neatly between the flanges of the adjoining sleeper, the flanges D, D, extending along the middle portions of their upper faces, but not to the ends of the rail, having its web enclosed by the flanges D, D, bolts and nuts for holding the rail in place, and rail-joints or connecting the several sections, the fish-plates K of said joints occupying the space on the sleepers left by the flanges D, D, as and for the purpose set forth.

No. 23,373. Manufacture of Shoes and Slippers. (*Fabrication des Souliers et Pantouffles.*)

Charles H. Buchanan, Philadelphia, Penn., U.S., 8th February, 1886; 5 years.

Claim—1st. A shoe or slipper upper, consisting of strands or strips of straw braid, or equivalent material, united to each other in overlapping courses, substantially as shown and described. 2nd. A shoe or slipper upper, composed of a guide-strip or band A, having a curve at or about its middle, and a line of stitching on or near its inner edge, which secures said curve, with overlapping courses of material secured to said guide-strip and to each other, substantially as shown and described. 3rd. As a new article of manufacture, a shoe or slipper, consisting of a sole, or leather, or equivalent material, and an upper secured thereto, said upper consisting of overlapping courses of straw braid, either real or imitation, united by stitching to each other, substantially as shown and described. 4th. The process herein described, for forming a shoe or slipper upper, consisting in the following steps: first, forming a guide-strip, or foundation piece by running a line of stitching on the inner edge of a piece of material, and flaring such material while so stitching it, in order to produce a curve therein, and, second, stitching successive strands, or a continuous piece of material, in overlapping courses to the foundation piece or guide and to each other, substantially as shown and described.

No. 23,374. Friction Bearing. (*Coussinet à Frottement.*)

George W. Shoemaker, Dalton, Penn., U.S., 8th February, 1886; 5 years.

Claim—1st. The combination, with the untapered case hardened axle, having threaded ends and collars grooved in their opposite faces, of the case hardened rollers I having tapered ends, and the rollers B having the helical springs H and untapered ends, the helical spring J in a seat J in the axle, the case hardened sleeve G and the spring nut L, substantially as described. 2nd. The axle, in combination with the rollers B, having the helical springs H mounted thereon, the end coils of the springs being drawn tight around the rollers, as set forth.

No. 23,375. Railway Van.

(*Fourgon de Chemin de Fer.*)

Robert Gray, Bristol, Eng., 8th February, 1886; 5 years.

Claim—1st. The van V, V, (Fig. 2), separate and detached, made to form a combination with the truck T, T, (Fig. 3), substantially as and for the purpose hereinbefore set forth. 2nd. The truck T, T, (Fig. 3) separate and detached, made to form a combination with the van V, V, (Fig. 2), substantially as and for the purpose hereinbefore set forth. 3rd. The combination (Fig. 1), of the van V, V, with the truck T, T, substantially as and for the purposes hereinbefore set forth.

No. 23,376. Combined Letter Box Opening and Illuminated Door Plate with Letter B X. (*Ouverture de Boîte à Lettre et Plaque de Porte Illuminées avec Boîte à Lettres Cx binées.*)

George H. Meakins, Hamilton, Ont., 8th February, 1886; 5 years.

Claim—1st. The combination of the letter-box opening, and name-plate frame, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the letter-box opening, and name-plate frame, and transparent name plate, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the letter-box opening and name-plate frame, transparent name-plate and wire gauze letter-box, substantially as and for the purpose hereinbefore set forth.

No. 23,377. Washing Machine. (*Laveuse.*)

William R. Gannon (assignee of Samuel Martin), Hartland, Mich., U.S., 8th February, 1886; 5 years.

Claim—1st. In a washing machine, the combination of the rollers V journaled between the disks K, with the rollers N journaled in the frame D, substantially as and for the purpose hereinbefore set forth. 2nd. In a washing machine, the combination, with the ribs S and the rollers P, of the belt O to drive said rollers, and to operate as and for the purpose hereinbefore set forth and described. 3rd. In a washing machine, the combination of the frame L pivoted to the tub or box, with the rollers N and belt O, constructed and arranged as described, substantially as and for the purpose hereinbefore set forth.

No. 23,378. Composition of Drugs for the Cure of Piles. (*Mélange de Drogues pour les Hémorroïdes.*)

John W. Goodson and William A. Nisbett, Morrisburgh, Ont., 8th February, 1886; 5 years.

Claim—A composition, composed of sweet oil, oil of cedar, opium and tincture of arnica, substantially in the proportions and for the purposes set forth.

No. 23,379. Device for Cutting the Runners of Strawberry Plants. (*Appareil pour Couper les Rejets des Fraisiers.*)

William M. Mason, Wansoon, and Ebenezer Ross, Toledo, Ohio, U.S., 8th February, 1886; 5 years.

Claim—1st. In a device, for the purposes set forth, the combination of the handle, the cutting disc journaled thereon and adapted to penetrate the soil, of a guard attached to the handle extending along the side and in advance of said wheel, as and for the purposes specified. 2nd. The combination of the handle B, the cutting disc A pivotally attached thereto, the guard c pivoted at e to the handle, and the means for adjusting the guard, as and for the purposes specified.

No. 23,380. Lock. (*Serrure.*)

Robert S. Robertson and Pamela W. Wright, Toronto, Ont., 8th February, 1886; 5 years.

Claim—1st. In a door lock, a single bolt constructed with a frame located in the case, said frame slotted to receive the reciprocatory tumbler, substantially as shown and described. 2nd. In a door lock, a bolt constructed with a frame located in the case, said frame extended to the sides of the case and provided with arms for the engagement of the spindle socket, and springs to throw forward said bolt, said frame recessed to receive a reciprocatory tumbler, substantially as shown and described. 3rd. In a door lock, a bolt constructed with a frame located in the case, a spindle socket arranged to retract said frame, springs for throwing said frame forward, said frame recessed to receive a reciprocating tumbler, substantially as described. 4th. In a door lock, a bolt constructed with a recessed frame arranged to be retracted by a spindle socket, a tumbler recessed, as shown and described, made reciprocatory in said frame, said case provided with a stud a₃, all arranged substantially as and in the manner described. 5th. The combination, with a bolt constructed with a recessed frame located in the case, of a tumbler recessed, as shown and described, made reciprocatory in said frame, said tumbler provided with one or more keepers having a pivotal connection therewith at one end, and provided with shoulders e₁, e₂ at the opposite end, said case provided with a stud a₃, all arranged substantially as and in the manner specified. 6th. The combination, with a bolt provided with a frame located in the case, and arranged to be retracted by a spindle socket, of a reciprocatory tumbler recessed to afford a key-way, and one or more keepers pivotally engaged with said tumbler at one end and provided with shoulders e₁, e₂ at the opposite end, the construction being such that to unlock the device, the keeper must be first thrown to permit the reciprocation of the tumbler, substantially as described. 7th. The combination, with a bolt constructed with a frame, of a reciprocatory tumbler recessed to afford a key-way and to receive a stud upon the case, one or more keepers constructed with shoulders at one end and pivotally engaged with a tumbler at the opposite end, and one or more springs bearing upon said keepers toward its shoulder end, all substantially as and for the purposes described. 8th. In a door lock, a bolt provided with a frame provided with recesses, a tumbler made reciprocatory in said recesses, one or more keepers pivotally engaged with a tumbler at one end, and provided with shoulders e₁, e₂ at the opposite end and one or more springs bearing upon the movable end of said keepers, the construction being such that when the tumbler is thrown in one direction the spring will force one of said shoulders against an adjacent edge of the frame, and, if thrown too far in the opposite direction, the opposite shoulder will have contact with the adjacent edge of the frame and check the movement of the tumbler, substantially as and in the manner described.

No. 23,381. Bottle Stopper.

(*Bouchon de Boutelle.*)

Charles M. Taylor and Anthony P. Turner, London, Eng., 8th February, 1886; 5 years.

Claim—1st. An improved stopper for closing bottles having screw necks, consisting of a hollow cylinder having projections on its periphery adapted to fit into the screw of the bottle neck, and having an annular flange b on the end of said cylinder adapted to fit over the mouth of the bottle, and a plug of cork or other suitable elastic material tightly enclosed within said cylinder all, substantially as shown and described. 2nd. An improved stopper for closing bottles having screw necks, consisting of a hollow cylinder having projections on its periphery adapted to fit into the screw of the bottle neck, a washer c interposed between said cylinder and bottle neck, and having an annular flange b on the end of said cylinder adapted to fit over the mouth of the bottle, and a plug of cork or other suitable elastic material tightly enclosed within said cylinder, all substantially as shown and described. 3rd. An improved stopper for closing bottles, having screw necks, consisting of a hollow cylinder having male and female screw threads, an annular flange b on the end of said cylinder, and a plug of cork or other suitable elastic material, tightly enclosed within and filling up the female screw threads of the cylinder, all substantially as shown and described. 4th. The manufacture and use of a cylinder a, and flange b in a bottle stopper, substantially as and for the purpose herein described.

No. 23,382. Chemical Fire Extinguisher.*(Extincteur d'Incendie Chimique.)*

Arthur B. Harrison, Baltimore, Md., U.S., 8th February, 1886; 5 years.

Claim.—1st. A chemical fire extinguisher, consisting of a cylinder having a sealed exit, an interior piston, a sealed rear end and a removable piston rod or handle, as set forth. 2nd. In combination, the piston rod, the flexible disk, the two oppositely concaved metal disks of different diameters, the screw and nut, the card board disk and the wax seal, as set forth.

No. 23,383. Sand Band for Vehicle Wheels.*(Garde-Sable pour Roues de Voitures.)*

James R. Clark, Watson, N.Y., U.S., 8th February, 1886; 5 years.

Claim.—1st. The combination, with the axle and hub of a vehicle, of a band constructed to receive said hub, and having cut-away portion, as shown, and a shank to embrace the axle and detachably secured thereto, substantially as and for the purpose specified. 2nd. The combination, with the axle and hub of a vehicle, of a sand-band engaging said hub, and provided with a cut-away portion, as shown, and an open-sided shank or extension to receive the axle and a clip adapted to embrace said axle and shank, whereby said band is removably secured in place, substantially as described. 3rd. As an improved article of manufacture, the sand-band described consisting essentially of the disk B, the outwardly projecting flange C, said disk being cut away, as at a, and said flange cut away coincident therewith, and the open-sided shank or extension F, the open side of said shank being coincident with the cut-away portion of the disk and flange, substantially as described.

No. 23,384. Machine for Baking Sugar Water Cakes, etc. (Machine à Cuire les Gâteaux.)

George S. Baker, London, Eng., 8th February, 1886; 5 years.

Claim.—1st. In an apparatus, such as described, the formation of the forms or tongs into an endless chain, for the purpose specified. 2nd. In an apparatus, such as described, the method of automatically opening and closing the lids B, substantially as specified. 3rd. In an apparatus, such as described, the intermittent driving mechanism consisting of two pawl-driven ratchet wheels Q and P, the latter working within a collar, such as Q', which revolves with the wheel Q and a portion whereof is removed, for the purpose specified. 4th. In an apparatus, such as described, the combination, with the lid B, of a button S adapted to be automatically turned so as to release or secure said lid B as it travels, substantially as specified.

No. 23,385. Flushing Siphon.*(Siphon de Nettoyage.)*

Harris C. Lawrie, Denver, Col., U.S., 8th February, 1886; 15 years.

Claim.—1st. The combination, with a siphon, of a tapering valve seat within the short leg of the siphon, a valve ball capable of wedging itself into said valve seat, and an inclined raceway for said ball extending from the top of the short leg across the top of the long leg of the siphon, substantially as described, whereby said ball operating as a valve is enabled to resist the passage of liquid through the siphon until a sufficient pressure is obtained to force said ball from its seat and lift it to and roll it upon said raceway, and after siphonage ceases enabling said ball to roll downward on its raceway fall into the short leg of the siphon and again wedge itself into its valve seat, as set forth. 2nd. The combination, with the short leg of a siphon, of a flexible tapered valve-seat, a recess or chamber at the rear of said valve-seat accessible to liquid, and a ball capable of wedging itself in said valve-seat, substantially as described. 3rd. The combination with a siphon and a ball of a raceway for said ball which extends from the top of the short leg across the top of the long leg of the siphon and is inclined longitudinally and laterally, substantially as described. 4th. The combination of a ball, a tapered valve-seat capable of receiving and frictionally retaining said ball, and a lifting spindle for releasing said ball from said seat, substantially as described. 5th. The combination of a tank or shaft, a ball, a tapered valve-seat capable of receiving and frictionally retaining said ball, a lifting spindle for said ball, and a float for automatically controlling the spindle, substantially as described. 6th. The combination, with a sewer tank or shaft, a siphon and a cone centered basin located beneath the surface of the bottom of the shaft and containing the mouth of the short leg of the siphon, whereby siphonage can continue until the contents of the tank are particularly discharged but affording a water seal to the mouth of the siphon. 7th. The combination, with a tank or shaft, a siphon and a cone centered basin located below the bottom of the shaft containing the mouth of the siphon, and having an overhanging annular edge, substantially as described. 8th. The combination, with a sewer flushing valve, of a lever for tripping said valve, a casing for inclosing said lever and protecting it from solid matters, and a float for lifting said lever and tripping said valve, substantially as described.

No. 23,386. Railway Snow Plough.*(Charrue à Neige de Chemin de Fer.)*

Asa G. Dailey, Detroit, Mich., U.S., 8th February, 1886; 5 years.

Claim.—1st. The combination of a track-clearer, and pneumatic appliances for operating the same, substantially as shown and described. 2nd. In combination, with a snow-plough hung on a pivoted support, a cylinder and piston connected with said support, and operated by power from any suitable source, substantially as and for the purposes set forth. 3rd. In combination with the car A, the snow-plough P, pivoted beam B, cylinder E, piston and rod G, connecting rods H, I and levers D, D', substantially as shown and described.

No. 23,387. Dust Collector.*(Aspirateur de Poussière.)*

John E. Wilson, Galt, Ont., 8th February, 1886; 5 years.

Claim.—1st. A dust collector composed of two independent frames, each containing a series of cloth-covered dust chambers, in combination with air chambers and automatically-operating mechanism, arranged to alternately agitate each frame during the period that its chamber is cut off from the blast chamber, substantially as and for the purposes specified. 2nd. A frame A carrying a series of cloth-covered chambers a, and supported over the a' chamber H, the frame B, carrying a series of cloth-covered dust chambers a, and supported over the air chamber I, the blast chamber C located between the chambers H and I and communicating therewith, in combination with the valve E arranged to alternately close the apertures connecting the chambers H and I with the blast chamber C. 3rd. A frame A carrying a series of cloth-covered dust chambers a, and supported over the air chamber H, the frame B carrying a series of cloth-covered dust chambers a and supported over the air chamber I, the blast chamber C located between the chambers H and I and communicating therewith, in combination with the valve E connected to the shaft F, the crank J connected to the said shaft and with bars K, L, M, which connect, as described, respectively with the gear wheel N, the lifting-rod O and the lifting-rod P, the whole operating as described, so that the chambers H and I shall be alternately closed, and the lifting-rod O and P alternately brought into connection with their respective cams Q and S, substantially as and for the purpose specified. 4th. In a double dust collector, constructed substantially as described, the chambers H and I communicating with the chambers C, in combination with the pivoted valve E and shelves G, arranged substantially as and for the purpose specified. 5th. In a double dust collector, constructed substantially as described, the chambers H and I communicating with the chamber C, the valve E connected to the shaft F, the lifting rods O and P provided with the wrist-pins e and / to fit into the slots made in the bars L and M, in combination with the spur wheel N connected to the crank J by the bars K, the cams Q and S, the whole being arranged and operating substantially as and for the purpose specified.

No. 23,388. Envelope. (Envelope.)

Joseph T. Dunham, Brooklyn, N.Y., U.S., 8th February, 1886; 5 years.

Claim.—1st. An envelope having a flap C provided with a reinforced hole a, and having a similar hole c in the front-ply of its body, and the said holes constructed to register or coincide when the flap C is folded down, whereby the end of the back-ply b of the envelope body is clamped and secured, substantially as shown and described. 2nd. An envelope having a flap C provided with a reinforced hole a, and having a similar hole c in the front-ply of its body, the said hole constructed to register a' coincide when the flap C is folded down, substantially as described, and the envelope having also a back-ply b that extends entirely across the latter, and a bottom flap d left unsealed in the process of manufacture, all substantially as and for the purposes set forth. 3rd. A mailing and tag-envelope having a flap C folded over on, and secured down to the inner face of the front ply of the body, and said flap being also constructed to take over the free end of the back-ply of the body, as shown, whereby the mouth of the envelope covered by said flap C is secured against accidental opening, substantially as and for the purposes set forth.

No. 23,389. Ship-Steering Device.*(Appareil pour Gouverner les Navires.)*

Joseph Léveillé, Montreal, Que., 8th February, 1886; 5 years.

Claim.—In a ship's stem A, the second or additional rudder D having a post F provided with an eye H fitted in the aperture E, whereby additional force is added to the steering device of the ship, and whereby said ship will be more under control than heretofore, the whole in combination with the ordinary rudder B and ship stem A, as above described and for the purpose set forth.

No. 23,390. Dust Collector.*(Aspirateur de Poussière.)*

The George T. Smith Middlings Purifier Company, Stratford, Ont., (assignee of Noah W. Holt, Jackson, Mich., U.S.) 8th February, 1886; 5 years.

Claim.—1st. The combination, with the moving filter cloth of a dust collector, of means for isolating successively sections of the filter, and a fan which forces an air blast through the isolated section of the filter-cloth, in a direction the reverse of that in which the dust-laden air current is drawn. 2nd. The combination with a moving filter-cloth, of a dust-collector, of a hollow cut-off which isolates successively sections of the filter-cloth, a fan which moves the dust-laden air current through the sections of the filter-cloth which are not isolated, and an air tube connecting the hollow cut-off with a fan which forces an air blast through the isolated section of the filter-cloth in a direction the reverse of that in which the dust-laden air current is drawn. 3rd. The combination, with a moving filter-cloth, of a hollow cut-off which isolates successively sections of the filter-cloth, and a fan which forces an air blast through the isolated section of the filter-cloth, and a dust cleaner arranged opposite to the isolated section of cloth, substantially as set forth. 4th. The combination, with a middlings purifier of a filter-cloth arranged above the shaker, and having zigzag planes which are interposed between the shaker and the section fan of the cloth-cleaning mechanism, and means for moving moving the filter-cloth past the cloth-cleaning mechanism, substantially as set forth. 5th. The combination, with a moving filtering-cloth and the enclosing casing around, the same adapted to direct the dust-laden air current against the outer surface of the filter-cloth, a section fan adapted to exhaust air from within the filter-cloth and air chamber arranged within the filter-cloth, and a blast pipe connecting said air-tube with a fan, whereby when the machine is in operation the back draught is forced

through the filtering-cloth by the blast action of the fan, substantially as set forth. 6th. In a dust collector, the combination of the series of rollers *d, d', d'', d'''*, arranged on parallel lines, the driving roller *e* and the roller *g*, arranged above the rollers *d, a*, the filter-cloth supported upon the rollers and having its lower portion arranged in zigzag planes, and the casing provided with openings between the rollers *d, d', e, g*, for the exit of the air, substantially as set forth. 7th. In a dust-collector, the combination, with the rollers *d, d', e, g* and the filtering-cloth *D*, of the casing, the fan and the air trunk *q*, substantially as set forth. 8th. The combination, with the shaker and the casing surrounding the shaker and forming an air chamber above it, the rollers *d, d', e, g* and the filter-cloth supported on the rollers *d, d'* in zigzag planes of the top plate *c*, provided at each end with openings for the passage of the filter-cloth, a fan within the casing and a spout leading from the fan through the casing of the machine, substantially as set forth. 9th. The combination, with the shaker and the casing surrounding the shaker and forming an air chamber above it, the rollers *d, d', e, g* and the filter-cloth supported on the rollers *d, d'* in zigzag planes, of the top plate *c* provided at each end with openings for the passage of the filter-cloth, a fan, an air trunk *q* connecting the fan with the space in-closed between the filter-cloth and the casing, and valves to regulate the passage of air through the air spout to the fan, substantially as set forth. 10th. The combination, with a passage or chamber through which the air charged with dust moves, and a travelling filter-cloth, of a fan *C* provided with a blast pipe *p*, air-chamber *o* and an air-spout *q* for connecting said air chamber with the blast-pipe of the fan, substantially as set forth.

No. 23,391. Treatment of Auriferous and Auro-argentiferous Minerals.
(*Traitement des Mineraux Auriferes et Auro-argentiferes.*)

Jules Weirich, Beriers, France, 10th February, 1886; 5 years.

Claim.—1st. The process, substantially as above described, having for its object the almost complete extraction of gold and auro-argentiferous compounds contained in minerals, and consisting in the combination of operations following: pounding the mineral to the state of very fine powder, and returning to the pounding apparatus all the matter which has not been brought to the requisite degree of fineness, amalgamation of the gold and auro-argentiferous products progressively brought into contact with mercury in the sorting which takes place by the free fall of the minerals in the midst of a limited quantity of water renewed only at the end of operations, systematic washing of the residues and distillation of the amalgam. 2nd. The special arrangement of the amalgamating vessel, with the agitator, as above described and represented in the drawing.

No. 23,392. Traction Engine.
(*Machine Locomotive.*)

Loyal C. Taber, Syracuse, N.Y., U.S., 10th February, 1885; 5 years.

Claim.—1st. In a traction engine, the combination with the four carrying wheels and their axles, of two compensating gears, one for each pair of carrying wheels, an oscillatory counter-shaft supported at its oscillatory end in a bearing mounted on the forward or steering axle, and a train of gears extending from the driving shaft to the two compensating gears, all combined to transmit to all the carrying wheels propelling power respondent to the various speeds of motion required of the several wheels in travelling around curves, substantially as set forth. 2nd. The combination, with the forward carrying wheels and their axle, of a compensating gear on said axle, an oscillatory counter-shaft carried at its oscillatory end by a bearing mounted on said axle, a laterally movable gear on the counter-shaft meshing in the compensating gear, and gears for transmitting motion from the driving shaft to the counter-shaft, substantially as described and shown. 3rd. In combination, with the driving shaft pivoted axle and traction wheels on the latter, a gear mounted on said axle, a flexible counter-shaft composed of a section carried parallel with the axle, a section carried parallel with the driving shaft, and an intermediate section coupled to the other sections by universal joints, and gears for transmitting motion from the driving shaft to the gear on the axle through the medium of the counter-shaft, substantially as set forth and shown. 4th. In combination with the driving shaft, pivoted axle and traction wheels on the latter, a gear mounted on said axle, a flexible counter-shaft having its joint remote from the pivot of the axle, and gears on said counter-shaft engaging with the gear on the axle and with gears interposed between the driving shaft and counter-shaft, substantially as set forth. 5th. In combination with the driving shaft, pivoted axle and traction wheels on the latter, a gear mounted on said axle, a flexible counter-shaft carried by a support on the axle to follow the same in its oscillatory movement, a gear sliding on the counter-shaft and held in engagement with the gear on the axle, and a gear on the counter-shaft engaging with gears interposed between the driving shaft and counter-shaft, substantially as and for the purpose set forth.

No. 23,393. Bee-Hive. (*Ruche.*)

John M. Shuck, Des Moines, Iowa, U.S., 10th February, 1886; 5 years.

Claim.—1st. A bee-feeder, consisting of a rectangular frame having a narrow bottom at one end, and a corresponding narrow cover at the same end, provided with one or more openings to admit liquid food, and a food receptacle of smaller dimensions and less depth than the said frame fixed within the frame, to extend over the said narrow bottom and under the said narrow cover, in combination with the top or bottom of a hive, in the manner set forth for the purposes stated. 2nd. The bee-feeding device, composed of the wall *a, b*, hard-ridg *a* fixed bottom section *d*, and a fixed cover-section *d'*, provided with openings *d''* and screens *d'''*, and wooden pieces *c* having parallel troughs *c'* and openings through the partitions between the troughs, to allow liquid food introduced through the openings *d''* to flow into the combined series of troughs. 3rd. An invertible surplus

box for the hives, composed of two mating sections that are open at their tops and bottoms, and have coinciding transverso partitions and projecting strips fixed in the top edges of the upper section and on the bottom edges of the lower section, and fastening devices attached to the outside faces of the two sections, to operate in the manner set forth for the purposes stated. 4th. The honey surplus-box, composed of the sections *g* having fastening devices *g''* on their outside and fixed partitions *g'''* on their insides, and strips *h* fixed on the edges of the partitions, substantially as and for the purposes specified.

No. 23,394. Wind-Mill. (*Moulin à Vent.*)

Amos C. Ellsworth, Jay, Vt., U.S., 11th February, 1886; 5 years.

Claim.—1st. The combination, with the shaft *B*, the transverso shafts *G* journaled therein, and having the wings arranged at right angles to each other and opposite ends of the shafts *G*, and having the tappet arms *I* and the canways *E* adapted to cause the shafts *G* to rotate through a quarter of a circle, as the shaft *B* revolves, for the purpose set forth, substantially as described. 2nd. The combination of the shaft *B*, the transverso shafts *G* journaled therein, and having the wings arranged at right angles to each other on opposite ends of the shafts *G*, and having the tappet arms *I*, the collars *C* swivelled on the shaft *B*, and having the canways engaging with the tappet arms and the vanes secured to the collars, substantially as described.

No. 23,395. Two Furrow Plough.
(*Charrue Navette.*)

George McSherry, Ingersoll, Ont., 11th February, 1886; 5 years.

Claim.—1st. A clovis formed in two parts *C, C'*, each part being provided with duplicate perforations *C, C'* and bolt and nut *F*, substantially as shown and described and for the purpose set forth. 2nd. A cross-bar *E*, formed with a socket or sockets *G, G'* in combination with a standard or standards *H, H'*, and with one or both wheels *J* and *J'*, and a set screw or set screws *I, I'*, or their equivalent, substantially as shown and described and for the purpose specified. 3rd. A share *B*, provided with an extension or shoe *k*, substantially as shown and described and for the purpose specified. 4th. An arm *L* and wheel *N*, in combination with a lever *P*, spring dog *S*, cog-segment *T* and connecting rod *R*, substantially as shown and described and for the purpose set forth.

No. 23,396. Car Brake. (*Frein de Char.*)

Joseph Meier, Newark, N.J., U.S., 11th February, 1886; 5 years.

Claim.—1st. In combination in a car brake, the half sections *f, f'* bolted together around the car axle, the bolts *h* and springs *i*, all said parts being arranged and operating substantially as and for the purposes set forth and shown. 2nd. In combination with the railway or trainway car axle, the conical section *b*, and co-operating sections *f* and retractile springs all said parts being arranged and operating substantially as set forth. 3rd. In combination, the traction wheel axle, conical section, co-operating section, retractile spring or springs, centre bar, arms connecting said bar to the said co-operating sections, the coil spring and brake bar, all said parts being arranged and operating substantially as herein set forth. 4th. The sliding half sections, having dowels or tongues in one, and corresponding recesses or grooves in the other, to hold the said sections separably together, said half sections being in combination with the car axle and co-operating frictional sections, as set forth. 5th. The combination, with the car axle, conical half-sections secured thereon and together, and reciprocally-inclined half-sections connected together and engaging with said sections on said axle, all substantially as and for the purposes set forth.

No. 23,397. Hot Air Flue Attachment.
(*Poêle Sourd à Courant d'Air Chaud.*)

William Church, Essex Centre, Ont. (Assignee of George Davis, Detroit, Mich., U.S.), 12th February, 1886; 5 years.

Claim.—1st. A hot air flue attachment for stores, provided with an outside chamber for the passage of the smoke and gases, and having an inside chamber for the passage of the air, substantially as herein specified. 2nd. A hot air flue attachment for stores, provided with a telescopic feature, whereby the pipe may be lengthened or shortened to accommodate itself to the height of chimney holes, as herein described. 3rd. A hot air flue attachment for stores, being provided with a locking device, said locking device consisting of two or more small strips of iron secured near the edges or seams of the lower end of the upper or outer pipe, and provided with a small screw or bolt for drawing the edge of the outer pipe more firmly to the inner one, as herein set forth. 4th. In hot air flue attachments, the inner pipes so arranged that it passes on a true angle from the top to the lower end of the outer pipe, having its lower compressed in such a manner as to convey it to one side of the smoke flue, thereby securing a straight draught and admitting of the opening in the lower end of the inner pipe coming out to one side of the stove collar, as shown. 5th. A stove pipe collar for hot air flue attachments, constructed from flexible metal and being provided with a flange that can be compressed to fit the various size stove collars, and having an opening therein for the reception of the lower end of the hot air flue attachment, as shown, all substantially as and for the purposes herein specified.

No. 23,398. Seed Planter. (*Semoir.*)

John H. Shaw, Berwick, N.S., Samuel S. Young, Somerville, Mass., U.S., Frederic S. Ellis, Waterville, N.S., and James W. Young, Somerville, Mass., U.S., 12th February, 1886; 5 years.

Claim.—1st. In a seed planter, the combination of the following instrumentalities, to wit: a hand-beam, a seed-hopper, a rotary brush disposed in said hopper, a seed spout having its lower end ad-

anted to form a furrow in the ground and its upper end connected with said hopper, a roller for pressing the earth down onto the seed, a driving or supporting wheel, a crank-shaft for the driving wheel, a crank-shaft for the brush, an oscillating pitman connecting said crank-shafts, a stud or fulcrum for the pitman disposed between said crank-shafts and a standard or standards, substantially as set forth. 2nd. In a seed planter, the bars N provided with the stub-beam M and pin Z, or other suitable means for adjustably mounting the wheel E on the standards B, in combination with the wheel E, standards B, crank-shaft Y, pitman J, stud S, crank-shaft O and hopper C, substantially as described. 3rd. In a seed planter, the hopper C arranged at an obtuse angle to the spout D, to form the pocket e, substantially as and for the purpose set forth. 4th. In a seed planter, the sliding bottom, so provided with the opening p, in combination with the hopper C and spout D, said slide being so arranged with respect to said hopper and spout that said spout or a portion thereof will act to close or partially close the opening in said bottom, and thereby serve as a gauge to regulate the quantity of seed discharged into the spout, substantially as described. 5th. In a seed planter, a seed spout provided with a glazed opening to enable the workman or operator to see the seed as it falls from the hopper through said spout on its way to the ground, substantially as set forth. 6th. In a seed planter, the arms K, in combination with the standards B, beam A, spout D, frame-work R and roller H, substantially as set forth. 7th. The improved seed planter herein described, the same consisting of the standards B, bars N, stub beam M, pin Z, wheel E, crank-shaft Y, pitman J, stud S, crank-shaft O, brush a, hopper C, beam A, spout D, arms K, frame-work R and roller H, constructed, combined and arranged to operate substantially as described.

No. 23,399. Manufacture of Maple Syrup.

(Fabrication du Sirop d'Erable.)

Charles McLean and Daniel W. McDonald, Boston, Mass., U.S., 12th February, 1886; 5 years.

Claim.—1st. The described process of manufacturing maple syrup by synthesis, consisting of preparing by steaming or boiling an aqueous extract of flavoring matter from the maple, deparfuming it of tannin, and mingling the same with crystallizable or amorphous sugars previously deprived of their peculiar flavors, substantially as described. 2nd. As a sub-process in the manufacture of maple syrup, the deodorizing of sorghum and glucose by the use of lime, substantially in the manner described. 3rd. As a sub-process in the manufacture of maple syrup by synthesis, the ozonification from tannin of the watery extract by colloid isinglass, substantially as described. 4th. As a sub-process in the manufacture of maple syrup by synthesis, the addition of alcohol to the watery solution for the purpose of avoiding change in transportation, and the subsequent removal of added alcohol by distillation before mingling the extract with the saccharine ingredients, substantially as described.

No. 23,400. Vehicle Spring.

(Resort de Voiture.)

John B. Armstrong, Guilph, Ont., 12th February, 1886; 5 years.

Claim.—1st. A buggy or carriage spring composed of two or more plates or leaves, the main plate being tapered in thickness from a point at or near each end of the auxiliary or adjacent plate, substantially as and for the purposes specified. 2nd. A buggy or carriage spring composed of a main and an auxiliary plate, both of said plates being tapered in thickness for one-half more or less of the distance between the centre for supporting point and ends of said plates, substantially as and for the purposes specified. 3rd. In a buggy or carriage spring, connecting the main and superposed plates by annular bosses, fitting into suitable recesses, and held in position by a bolt or rivet, substantially as described and for the purposes specified. 4th. An elliptic buggy or carriage spring, composed of two or more plates, the main plate being tapered and formed in a cyma reverse or O G shape, substantially operating as and for the purpose specified and described.

No. 23,401. Car Truck. (Châssis de Char.)

John Turner, Detroit, Mich., U.S., 12th February, 1886; 5 years.

Claims.—1st. In a railway car truck, a hollow cylindrical shaped beam having the trusses secured at each end thereof, which carry the axle boxes, substantially as described. 2nd. In a car truck and in combination with a hollow cylindrical beam, a spring or nest of springs located in the interior center of such beam, in combination with a pivoted block resting upon the top of such spring or springs, substantially as and for the purposes specified. 3rd. In a car truck, a hollow cylindrical shaped beam having secured to its ends the necessary trusses which carry the car axle boxes, and having an interior central spring support carrying the pivot block, in combination with bearing studs projecting through the wall of said beam near each end, and resting upon springs concealed within said beam, substantially as and for the purposes set forth. 4th. In a railway car truck, a hollow cylindrical beam, constructed substantially as described, and having ears cast upon either side thereof or secured thereto for the purpose of supporting inside brakes, substantially as described.

No. 23,402. Air Brake for Railway Cars.

(Frein Atmosphérique pour Chars de Chemins de Fer.)

Herman Hollerith, St. Louis, Mo., U.S., 12th February, 1886; 15 years.

Claim.—1st. In an air brake system, a pair of valves arranged in the lines of communication from a power chamber to a brake cylinder and from the latter to the external air, in combination with electro magnets in separate circuits, or branches with the apparatus for making and breaking such separate circuits or branches, or as to shift such valves either simultaneously or independently, whereby either of said valves may be held open or closed or both held closed or both open, substantially as described. 2nd. In an air

brake system, the combination, with the air supply or power chamber and the brake cylinder, of independent valves for controlling the admission of air to the brake cylinder and the exhaustion of air from said cylinder, and electrical apparatus for independently operating said valves, whereby the brakes are enabled to be applied with any desired degree of force, and the pressure upon them is enabled to be augmented or diminished without producing a rise and fall of pressure in the main air pipe and auxiliary reservoir. 3rd. In an air brake system, the combination, with a main air pipe and a series of brake cylinders arranged in different cars having pistons connected with the brakes thereof respectively, of a series of valves arranged to connect said cylinders through suitable connections with the main air pipe, and another series of valves arranged to connect said cylinders with the external air, of two series of electro magnets, each arranged to operate one series of valves, substantially as described, whereby independent control is given of each series of valves throughout the train and the simultaneous operation of all the valves of either series insured. 4th. The combination, with the main air pipe, of an air brake system and a series of auxiliary reservoir and brake cylinders arranged in different cars, of a series of valves arranged to connect said cylinders with the auxiliary reservoirs, and another series of valves arranged to connect said cylinders with the external air, and two series of electro magnets each arranged to operate one series of valves independently of the other series of valves, substantially as described. 5th. In an air brake system, the combination, with an air supply or power chamber and a brake cylinder, of an intermediate valve chamber interposed between the air supply or power chamber and the brake cylinder, and having passages leading from the power chamber to the brake cylinder, and from the latter to the external air, and containing two independent valves for controlling said passages, and electro magnets one for each valve arranged in separate circuits or in different branches of the same circuits, substantially as described. 6th. The combination, with the valve casings having the independent upper chambers in communication with the compressed air supply and the external air respectively, and having the lower chamber in communication with the brake cylinder of the tubular inlet and exhaust valves having their ends opening into the upper and lower chambers, as described, the armatures for co-operating with said valves and the electro magnets by which said armatures are controlled, substantially as described. 7th. In an air brake system, the combination, with a main air pipe, a series of brake cylinders arranged one on each car, and connected mediately or immediately to the main air pipe of a series of valves arranged to put the brake cylinders in connection with the air supply, and another series of independent valves arranged to connect said cylinders with the external air, two series of electro magnets each arranged to control one series of valves, and circuit conductors extending throughout the train and adapted when separated or broken to operate the electro magnets in a manner to apply the brake, substantially as described. 8th. In an air brake system, the combination, of a main air pipe extending throughout the train, the brake cylinders on the several cars, connections between said cylinders and the main air pipe valves for controlling the inlet and exhaust of air to and from the cylinders, electro magnets for controlling said valves, an electric valve circuit extending throughout the train, and one or more pistons with circuit breaking devices connected thereto controlled by the pressure in the main air pipe, and adapted when such pressure falls below a predetermined point to break the electric valve circuit and cause the brakes to be applied, substantially as described. 9th. In the herein-described air brake system, and in combination with the main air pipe and the electric valve circuit, of a piston and valve located in the main pipe and a circuit breaker connected to and operated by the piston to open the electric valve circuit when the pressure in the air pipe is below a predetermined point, and to open said circuit and at the same time hold back the pressure in the main air reservoir when a break or opening of the main air pipe occurs, substantially as described. 10th. The combination, with the main air pipe, of the valve casing interposed therein having the upper and lower compartments, the valve stem carrying the piston at its upper end and the valve and circuit breaking device at its lower end, and communicating ports leading from the lower compartment and from the upper and lower portions of the upper compartment and the three-way cock, substantially as described. 11th. In an air brake system, the combination, with a valve arranged in the line of communication from the power chamber to the brake cylinder, and another independent valve arranged in the line of communication from the brake cylinder to the external air, of a main electric circuit having magnets for separately controlling the said independent valves, and switching device operated by a reversal of the current to cut out the electro magnet, which controls the valve in the line of communication from the brake cylinder to the external air, substantially as described. 12th. In an air brake system for railway trains, the combination on each car, of an air supply or power chamber, a brake cylinder and brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake cylinder and the exhaustion of pressure therefrom, with an electric extending throughout the train and having arranged therein a series of electro magnets for controlling the exhaust valves, and a switching device operated by reversal of the current to cut out the electro magnets which control the exhaust valves, substantially as described. 13th. In an air brake system for railway trains, the combination on each car, of an air supply or power chamber, a brake cylinder, brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake cylinder and the exhaustion of pressure therefrom, with an electric circuit having arranged therein an electro magnet for controlling the inlet valve, another independent electro magnet for controlling the exhaust valve, a switching device operated by the reversal of the current to cut out the electro magnet which controls the exhaust valve, and relays for cutting out or putting in both valve magnets when the main circuit is broken or established, substantially as described. 14th. In an air brake system for railway trains, the combination on each car, of an air supply or power chamber, a brake cylinder and brakes operated thereby, and separate inlet and exhaust valves for controlling the admission of pressure to the brake cylinder, and the exhaustion therefrom, with an electric circuit extending throughout the train, and having arranged therein a series

of electro magnets for controlling the inlet valves, and another series of electro magnets for controlling the exhaust valves, a switching device operated by reversal of the current to cut out the electro magnets which control the exhaust valves, and a switch under the control of the engineer for establishing, breaking or reversing the current in the main circuit, substantially as described. 15th. In an air brake system, the combination, substantially as herein described of the main air pipe, auxiliary reservoir, brake cylinder, intermediate valve casing, independent inlet and exhaust valve, the main electric circuit and branch circuits T and V, the former including the electro magnet which operates the inlet valve, the polarized relay and the armatures of the relays or of magnets in the main circuit, and the latter including the magnet which controls the exhaust valve and the armature of the polarized magnet, the whole constructed and arranged substantially as described. 16th. In an air brake system, the combination, of the valves which control the air pressure in the brake cylinders, and a local circuit on each car containing an electro magnet or magnets for operating said valves, with a main circuit extending throughout the train, and containing electro magnetic switching devices for manipulating all the local circuits, so as to cause the simultaneous application or release of all the brakes, substantially as described. 17th. In an air brake system for railway trains, the combination, with separate inlet and exhaust valves for controlling the admission of pressure to the brake cylinder and the exhaustion of pressure therefrom, of a local circuit on each car including an electro magnet for controlling the inlet valve, and an independent electro magnet for controlling the exhaust valve, a main circuit extending throughout the train, and switch devices operated by the manipulation of the current in the main circuit for cutting in or out either or both of the valve magnets, substantially as described. 18th. In an air brake system, such as is described, the combination, with the inlet valves for controlling the admission of compressed air from the air supply or power chamber, the brake cylinders, and with independent exhaust valves for controlling the exhaustion of air from the brake cylinders into the atmosphere, of separate electro magnets for operating said inlet and exhaust valves, switching devices for cutting out or putting in said valve magnets or either of them, from or into local circuits, a main circuit extending throughout the train, electro magnets in said main circuit for actuating the switching devices and means for opening and closing the main circuit, substantially as described. 19th. In an air brake system, substantially such as described, the combination, with the separate inlet and exhaust valves, of the local circuits including in separate branches, electro magnets for controlling the said inlet and exhaust valves, the main circuit extending through the train and containing the relays for controlling the inlet valve magnets, and the polarized relays for controlling the exhaust valve magnets, and switching devices for making or breaking or reversing the current on the main circuit, as set forth.

No. 23,403. Process for Manufacturing Illuminating Gas. (*Procédé de Fabrication du Gaz d'Eclairage.*)

Byron Sloper, New York, N.Y., U.S., 12th February, 1885; 5 years.

Claim.—1st. The process herein described of automatically generating gas, which consists in simultaneously subjecting a body of metallic scraps or turnings, and a body of carbonate of lime to the action of dilute acid in a close chamber. 2nd. The process herein described of automatically generating illuminating gas, which consists in first producing water gas by simultaneously subjecting metallic scraps or turnings and carbonate of lime to the action of dilute acid, and second carburating the resulting gas with hydrocarbon vapor.

No. 23,404. Fanning Mill. (*Tarare-Cribleur.*)

Hubert T. Chalifoux, St. Hyacinthe, Que., 12th February, 1885; 5 years.

Claim.—1st. A fanning mill having a crank formed on, or attached to each end of its fan-shaft, for giving motion to the shaker, substantially as herein shown and described. 2nd. In a fanning mill, the combination of duplicate mechanism placed on both sides of the mill, for operating the shaker with the fan-shaft. 3rd. In the herein shown and described fanning mill, the two pulleys A pivoted on the brackets B, the belts C, rods D, cranks E, and shaker F, substantially as arranged and for the purpose set forth.

No. 23,405. Corn House. (*Grener à Blé.*)

James H. Bailey, Leading Creek, W.V., U.S., 12th February, 1886; 5 years.

Claim.—1st. An elevated corn house, having a stairway pivoted at its upper end, a counter-weighted cord connected thereto, and pulleys G, H, substantially as described. 2nd. A corn house having a slotted floor and supported upon uprights, a pair of stairs hinged at its upper end to the floor of said house, and a counter-weighted cord connected to said stairs and extending over supporting pulleys, substantially as described. 3rd. A corn house supported upon uprights, and having an open slotted floor braces or struts d, transverse rods E bearing in the braces, a pair of stairs hinged to the floor, a cord connected to said stairs and having a counterweight and supporting-pulleys G, H, over which cord passes, as set forth. 4th. A corn-house having a slotted floor and supported upon uprights above the ground, so that a fire may be built, or heating devices arranged under the house to cause the smoke or heat to pass into the latter through the flooring, as set forth.

No. 23,406. Stove Door. (*Porte de Poêle.*)

James H. Herrick, London, Ont., 12th February, 1886; 5 years.

Claim.—1st. In combination with a door and its frame, of a stove, a lever pivotally secured in the edge of the door and arranged to engage with a recess in the corresponding edge of the frame, substantially in the manner and for the purposes set forth. 2nd. In a stove

door, the combination of the door A, provided with a lever C, the short arm of which is dovetailed in one or more of its sections, with the frame B provided with a dovetail recess a, with which the lever C engages when the door is closed, substantially as and for the purposes described.

No. 23,407. Machinery for the Manufacture of Starch. (*Appareil pour la Fabrication de l'Amidon.*)

Sigmond Spitzer, Chicago, Ill., U.S., 12th February, 1886; 5 years.

Claim.—1st. The combination of the crushing rollers and the machine for separating the starch from the bran, sago, etc., with the machine having a perforated drum in a receptacle for separating the gummy substances from the refuse, in the manner herein shown and set forth. 2nd. The combination of the crushing rollers A and B, the machine consisting of the vessel C, perforated lining D having shafts d provided with beaters e, and the apparatus herein shown, consisting of the perforated drum E arranged in the receptacle F, all arranged substantially as and for the purpose hereinbefore set forth.

No. 23,408. Curtain Fixture.

(*Bâton de Rideau.*)

Wallace C. Kelly, Hastings, Mich., U.S., 13th February, 1886; 5 years.

Claim.—1st. In a curtain roller, a hanger or support for one end of such roller, provided with an elongated opening in which the journal of such roller has a lateral movement, substantially as and for the purpose set forth. 2nd. In a curtain roller, a hanger support for one end of such roller, provided with an elongated opening in which the journal of such roller has a lateral movement, such elongated opening being provided with a detent which acts in combination with a notched or separated hub of the outer disk, substantially as and for the purposes described. 3rd. In a curtain roller, the combination of the disks D and E, the latter being provided with locking mechanism for preventing its rolling but in one direction, with a cylindrical spring interposed between such disks, substantially as and for the purposes specified.

No. 23,409. Package and Art or Process of Storing and Transporting Fruit, Vegetables, Eggs, Butter, etc. (*Art ou Procédé d'Emmagasiner et de Transporter des Fruits, des Légumes, des Oeufs, du Beurre, etc., et Vaisseau pour cet objet.*)

John F. Torrance, Montreal, Que., 13th February, 1886; 5 years.

Claim.—1st. The combination of a wooden fruit case A, fitted with inside battens B, blocks on the bottom C with one or more trays D to fit inside of these battens and rest upon these blocks, so as to leave a vacant space S on all sides between these trays and the case. 2nd. The combination of a wooden fruit case A, fitted with blocks C in the bottom, with one or more trays D fitted with handles E projecting at least one inch from each of the four sides of the tray, so as to leave a clear space S all around the trays for filling with infusorial or foraminiferous earth. 3rd. The process of lining boxes barrels and other packages, with pockets, bags, or mattresses of cloth, felt or paper, filled with infusorial or foraminiferous earth. 4th. The process of surrounding fruit, vegetables, eggs, butter and other food, with a sufficient layer of infusorial or foraminiferous earth, to arrest or prevent decay, by preventing all circulation of air and keeping the produce at an approximately uniform temperature and uniform degree of humidity while stored or in transit, substantially as described.

No. 23,410. Electric Gas Lighting Burner.

(*Alumneur Electrique pour Bec à Gaz.*)

David Rousseau, Mott Haven, N.Y., U.S., 13th February, 1886; 5 years.

Claim.—1st. The combination, with a gas-burner and sparking electrodes thereon, of the double-faced poppet valve d arranged to contact one face with a seat when forced inward, and thus shut off the gas, and to contact the opposite face with a seat around the stem when forced outward, and thus prevent leakage around the stem, together with a manipulating device or lever operatively connected with said sparking electrode and said valve, and a pendant pull for operating said parts by downward strokes of the hand, whereby said valve works without packing or friction, and therefore subjects the burner or fixture to slight downward strains through the actions of the pendant pull, substantially as herein set forth. 2nd. The combination in a gas-burner, with a gas-passageway extending through the body thereof and a valve chamber and seat therein, with the double-faced poppet valve d and perforated plug e through which the valve stem passes, arranged and operating substantially as herein shown and described. 3rd. The combination, with a gas-burner, of a reciprocating poppet valve moving in a chamber in the body of the burner and controlling the gas passage thereof, with a sparking lever mounted on the burner, a manipulating device for operating said lever, and a direct positive operative connection between said lever and said reciprocating valve arranged and operating substantially as herein set forth. 4th. The combination, with a gas-burner, of a reciprocating poppet valve moving therein and controlling the gas passage thereof, with the operating lever f pivoted on the burner and provided with the cam groove r, and with a second lever connected with the stem of said valve and engaged with the said groove in the lever f, and with means, substantially as set forth, for moving said lever f back or forth and holding it in either of its positions, substantially as herein shown and described. 5th. The combination, with a gas-burner, of a lever f pivoted on the burner, and a valve controlling the flow of gas through the burner, with a positive operative connection between said valve and lever, with the pawl-lever m pivoted on the lever f having one arm projecting outwardly and the opposite

arm projecting inwardly, and arranged to engage a stop or projection *k*, with a manipulating cord or its equivalent extending from the respective arms of the said pawl lever, substantially as herein shown and described. 6th. The combination, with a gas-burner and a valve therein for controlling the flow of gas, with a lever mounted on the burner and operatively connected with the valve, a spring tending constantly to move the lever back and close the valve, with a pawl lever pivoted on the lever and adapted to engage a stop when the lever is moved over to hold the valve open, with a manipulating cord arranged to pull the said lever or levers over into the position to open the valve and a second cord arranged to release the pawl and allow the levers to fly back to close the valve, one of said cords passing through a loop on the other cord, substantially as and for the purpose set forth. 7th. The combination, with a gas-burner, with a valve to control the flow of gas, of the sparking lever *f* operatively connected with said valve, and having a rotating spring *l* with the pawl lever *m*, *n* pivoted to said sparking lever, and having a limited play thereon and the locking projection *k* with which said pawl engages, arranged and operating substantially as and for the purpose set forth.

No. 23,411. Non-Interfering Street Box for Fire Alarm Telegraph System.
(Boîte à Commutateur pour Système de Télégraphie à Tocsin.)

Alexander Anderson, Toronto, Ont., 13th February, 1886; 5 years

Claim.—1st. In fire alarm boxes in which the striking mechanism is wound for action when the starting hook is pulled upon, the combination of mechanism placed within each box, and so connected with the fire alarm telegraphic circuit that the opening of a box, while any other box in the circuit is striking, disconnects the winding mechanism from the starting-hook, substantially as and for the purpose specified. 2nd. A pivoted hanging bar *G* having a push-bar *I* and armature *H* attached to it, in combination with the electro magnet *F* connected to the fire alarm telegraphic circuit, so that the opening of the box shall charge the magnet *F*, substantially as and for the purpose specified. 3rd. The pivoted hanging bar *G* provided with push-bar *I* and armature *H*, an electro magnet *F* connected to the fire alarm telegraphic circuit, as specified, in combination with the finger *J* attached to the door *K*, substantially as and for the purpose specified. 4th. The pivoted hanging bar *G* provided with push-bar *I* and armature *H*, an electro magnet *F* connected to the fire alarm telegraphic circuit, as specified, a finger *J* connected to the door *K*, in combination with the hanger *L* provided with the adjusting set-screw *e*, substantially as and for the purpose specified. 5th. The pawl *B* pivoted in the slide *C*, in combination with the spring *f* and stop *g*, substantially as and for the purpose specified.

No. 23,412. Mechanism for Supporting the Reel of a Harvesting Machine.
(Mécanisme pour Supporter le Râteau d'une Faucheuse-Moissonneuse.)

The Massey Manufacturing Company, Toronto, Ont., (assignee of Matthew Garvin, William J. Clokey, Toronto, Ont., and James G. Clokey, Wolsloy, Ass.) 13th February, 1886; 5 years.

Claim.—1st. The frame *B* arranged to support the reel *A*, and pivotally connected to the post *G*, which is itself pivoted, in combination with gearing arranged to the convey motion to the reel *A*, in such a manner that the motion of the reel *A* need not be stopped while the frame or post is being angled. 2nd. The bracket *W* arranged to support the spindle *F* on which the frame *B* is pivoted, and pivoted on the end of the post *G*, substantially as and for the purpose specified. 3rd. A frame *B* arranged to support the spindle of the reel *A*, and pivoted in the spindle *F*, a handle *H* provided with a spring-bolt arranged to engage with the notched quadrant *I* fixed to the post *G*, in combination with the post *G* pivoted on the spindle *J* and provided with a notched quadrant *K* arranged to engage with the spring-bolt *L*, the whole being arranged and operating substantially as and for the purpose specified. 4th. The sprocket wheel *C* fixed to the spindle of the reel *A* and suitably connected to the pinion *E* fixed to the spindle *F*, which has a bevelled pinion *T* fixed to it, and arranged to engage with the bevelled pinion *S* fixed to the spindle *R*, in combination with the bevelled pinion *Q* fixed to the spindle *R* and engaging with the bevelled pinion *P*, which is fixed to the spindle *J*, and derives its motion from the main driving gear of the machine. 5th. The spindle *J* geared to the shaft *N*, as specified, and having a crank *V*, in combination with the butter *U*, substantially as shown and described.

No. 23,413. Butter Worker. (Batte à Beurre.)

Samuel H. Waters and Wardsworth S. Waters, Johnson, Vt., U.S., 13th February, 1886; 5 years.

Claim.—1st. In a butter-worker, the sliding rack *G* having catches *E, E'* attached to its extremities, one of which has its top piece *g* pivoted, in combination with the fixed guides *H, H'* secured to the frame *A*, for the purpose of firmly holding the tray, substantially as described. 2nd. In a butter-worker, the catches *E, E'* which consist of the bottom piece *f*, adapted to be adjustably secured to the top and at either end of the rack slide *G*, the interior ends of which piece are designed to enter corresponding recesses in the bottom of the tray, and the top pieces *g* being made to fit the ends of the tray, so as to rigidly hold the tray, one of said top pieces being pivoted to the bottom piece *f*, substantially as described. 3rd. In a butter-worker, the combination of the frame *A* having a reciprocating trough *T*, a rack slide *G* held between guides *H, H'*, shaft *k* having the gear pinion *Z* adapted to intermesh with the segment *s*, and to be rotated by the pinion *L* in bearings *m, n*, substantially as described. 4th. The vertical standards *M, N*, vertically adjustably attached to the sides of the frame *A* by means of bolts passing through elongated slots *V*, the latter being transversely cut through the bearing *m*, and having its top *v* secured to it by a vertically adjustable hinge and

spring latch, substantially as described and for the purpose set forth. 5th. In a butter worker, the trough *T* arranged so as to be moved longitudinally on the frame *A*, in combination with the traversing tray *D*, substantially as and for the purpose set forth. 6th. In a butter-worker, the shaft *k* journalled in bearings *n*, on the under side of the guide *H* and *m* in the lower part of the standard *N*, in combination with the gear pinion *Z* and gear wheel *L* rotated by the crank pinion *P*, substantially as and for the purpose described. 7th. In a butter-worker, in combination with the vertical standard *N*, the cap piece *Z* hinged to one edge of the standard, and having a spring latch *y* to hold it firmly to the top of the standard, the hinge and latch being vertically adjustable by means of a bolt passing through elongated slots in each, substantially as and for the purpose described. 8th. In a butter-worker, the vertical standard *M* having a lever so pivoted on its exterior face as to be adapted to be inserted into a circumferential groove in the projecting end of the shaft of the roller *R*, to keep the latter in place when in operation, substantially as described. 9th. In a butter-roller, the frame *A* having adjustable standards *M, N* attached midway its sides, the former having a pivoted lever to hold the roller shaft in place, and the latter the adjustable hinged and latched cap-piece *Z*, substantially as described and for the purpose set forth. 10th. In a butter-worker, the solid wooden roller *R* having concaved longitudinal grooves, and convex flutes corresponding, formed on its surface and integrally with it, substantially as and for the purpose described. 11th. In combination with a butter-worker, the stamping and pressing device consisting of a lever *S* having a shaft adapted to fit into the bearings *m, n*, in the standards *M, N*, and provided with printing moulds *W*, or other suitable pressing devices attached to its under side near its shaft, substantially as and for the purpose described.

No. 23,414. Lock or Fastening for Milk Can Hoops. (Agrafe Cercle pour Bidons à Lait.)

The Burn and Robinson Manufacturing Company (Assignee of John O'Neill), Hamilton, Ont., 13th February, 1886; 5 years.

Claim.—1st. The combination, in a milk can hoop, of a lock-plate formed with wings *a, a*, made to enter vertical slots *B, B*, in the ends of the hoop, and clinched on the inside, substantially as and for the purpose described. 2nd. The combination, in a milk can hoop, of the lock-plate *D* formed with wings *a, a*, the slots *B, B* in the hoop, and recesses *C, C*, all constructed and arranged substantially as and for the purpose specified. 3rd. The combination, in a milk can hoop, of a lock-plate with wings or lugs formed on the underside, and made to pass through slots *B* in the hoop *A* and clinched in the recesses *C* of the inside of the hoop, and at top and bottom, substantially as and for the purpose specified.

No. 23,415. Wall Paper Trimmer.

(Paroir de Papier de Tenture.)

James C. Van Horn, Livmore, Cal., U. S., 13th February, 1886; 5 years.

Claim.—A straight-edge or guide provided with a slot *H*, and having a frame tongued or flanged to travel upon it, in combination with a block sliding in a vertical channel in said frame, with a threaded stem and nuts for adjusting it up or down, and a circular sharp-edged disk journalled in the adjustable block, substantially as herein described.

No. 23,416. Machine for Forming Pails from Wood or Paper Pulp. (Machine à Façonner les Seaux en Bois ou en Pâte à Papier.)

Henry R. Butterfield, Waterville, Me., U. S., 13th February, 1886; 5 years.

Claim.—1st. In a machine for forming pails, or other tapering articles, from paper pulp, the perforated former *A* surrounded by the contractible and expandable metal band *G*, combined with the female die or cylinder *G*, with its projecting head *G1* and means for raising and lowering the same, substantially as described. 2nd. In a machine for forming pails, or other tapering articles, from paper pulp, a porous or perforated inverted former encircled by an overlapping and tempered metal band, between which and the former the pulp is introduced, and which is compressed about the former by the descending open bottomed female die carrying a head adapted to forming the bottom of the pail, substantially as shown. 3rd. In a machine for forming pails from paper pulp, the annular bands with overlapping ends for compressing the formed pulp, in combination with a cylinder which shuts down over them and presses them against the sides of the formed pail, substantially as shown.

No. 23,417. Twin Boat. (Bateau-Jumeau.)

Francis Paterson, Kingston, Ont., 13th February, 1886; 5 years.

Claim.—1st. The combination of the tubular twin hulls *A, A*, cylindrical in cross section, tapered at both ends, and having stanchions *B*, carrying a main deck *C* and provided with valved inlet *H*, air tube *K*, pump *L*, as and for the purpose set forth. 2nd. The combination, with the twin hulls *A, A*, of the rudders *D* pivoted to the side of one of the hulls fore and aft, and a steering gear *G* operating both rudders simultaneously at converging angles, as set forth. 3rd. The twin hulls *A, A*, having a heel *M*, for the purpose set forth.

No. 23,418. Gas Machine. (Appareil à Gaz.)

Ellsworth S. Bryant, Alexander W. Finlayson and George R. Couls, Detroit, Mich., U.S., 13th February, 1886; 5 years.

Claim.—1st. In combination, a gas washing chamber, a purifying chamber and a gas holder, constructed and arranged with relation to each other, and operating substantially as and for the purposes described. 2nd. A gas retort adapted to be used in the combustion

chamber of a cook stove having a flange formed on its end, a cover hinged thereto, a locking bar engaging with loops and a tightening screw, substantially as specified. 3rd. In a gas making machine, and in combination with a pipe x leading from a rotort to a gas holder, a branch pipe leading into a flue, and a two-way valve, as and for the purposes set forth. 4th. In combination, a rotort in the combustion chamber of a stove or range, a pipe leading from such rotort to a washing chamber, a purifying chamber above said washing chamber and communicating therewith, a gas holder above said purifying chamber and communicating therewith, and a branch discharge pipe communicating with the pipe leading from the rotort, the parts being constructed and arranged with relation to each other, and operating, substantially as described.

No. 23,419. Stem Winding Watch.

(*Montre à Remontoir.*)

Edward F. Hafferman, Toronto, Ont., 13th February, 1886; 5 years.

Claim.—1st. In a stem-winding watch, the stem A having grooves a and b made in it, in combination with the spring catch E inserted in the centre D, and arranged to operate substantially as and for the purpose specified. 2nd. In a stem-winding watch, the stem A fixed to the cap or crown B and having grooves a and b made in it, in combination with the spring catch E, arranged substantially as and for the purpose specified. 3rd. In a stem-winding watch, the stem A having grooves a and b separated by a bevelled collar d, in combination with the spring catch E, substantially as and for the purpose specified. 4th. In a stem-winding watch, the stem A having grooves a and b made in it, in combination with the forked spring catch E held in the centre D, and actuated by the expanding screw F, substantially as and for the purpose specified.

No. 23,420. Parcel Carrier. (Coulisse à Paquets.)

Lucien A. Smith, Detroit, Mich., U.S., 13th February, 1886; 5 years.

Claim.—1st. In a parcel carrier between two stations, and in combination with a curved standard, a sliding bracket embracing said standard and having a buffer box and a spring buffer, and an anchor screw between the two ends of the connecting wire between the two stations, constructed and arranged to tighten the same without changing the position of the support, substantially as and for the purposes specified. 2nd. In a parcel carrier between two stations, the curved standard and the lifting bracket, in combination with a counterbalance weight, and the means, substantially as described, for elevating and lowering said sliding bracket, substantially as and for the purposes specified. 3rd. The combination, with the standard A having a rib formed integral therewith, of the vertical sliding bracket B embracing said standard, and provided with grooved rollers C running on said rib, substantially as and for the purposes specified. 4th. In a parcel carrier between two stations, a standard and a sliding bracket embracing said standard and adapted to slide thereon, and provided with buffers E, as shown, in combination with stops or collars on said standard to limit the travel of said sliding bracket, substantially as described. 5th. In a parcel carrier between two stations, a carrier frame provided with travellers adapted to run upon a wire connecting said stations, said frame having hangers Q, carrying rollers G, in combination with the basket P and the flexible cords A passing over said rollers, and having both their ends attached to said basket, substantially as described. 6th. In a parcel carrier, the combination, with a standard and a sliding bracket, of a collar S, carrying rollers T and U, of the cord W, one end secured to said bracket and the other passing over said roller T and carrying a weight and the cord V, one end attached to the bracket and passing over the roller U and connected with the hoisting cord, substantially as and for the purpose specified. 7th. In a parcel carrier between two stations, a curved hollow standard, in combination with a sliding bracket, and the means, substantially as described, for elevating and lowering said bracket, in combination with an articulated counter weight travelling within the bore of the standard and connected with such sliding bracket, substantially as and for the purposes described. 8th. In a parcel carrier between two stations, a curved standard and sliding bracket, in combination with an adjustable bracket embracing and secured to said standard near its upper end, and having a stop for the purpose of tripping the spring latch of said sliding bracket, substantially as and for the purposes specified. 9th. In a parcel carrier between two stations, frame L, constructed substantially as described, and pivotally secured to a proper support, and having a buffer-box, spring-buffer, spring-latch and a suitable screw for the purpose of securing the end of the wire connection between such stations, the opposite end of the wire being secured to a sliding bracket traversing a curved standard, substantially as and for the purpose described. 10th. In a parcel carrier between two stations, a post or standard A, a sliding bracket B having anti-friction rollers C, rubber buffers E and buffer-box E, buffer G, buffer-spring p and wire track II, one end of which is secured to an anchor screw I, spring-latch K, frame L, spring-buffer M, spring-latch N and a turn-buckle e, by means of which the opposite end of the wire track is secured, in combination with a carrier frame O provided with travellers and carrying a basket P, such carrier frame having hooks at either end thereof, the adjustable collar-bracket S and adjustable stop-collar D, the parts being constructed, combined and operating, substantially as and for the purposes set forth. 11th. In a parcel carrier between two stations, and in combination with a curved standard, having a sliding bracket travelling thereon, and the stops to limit the travel of such bracket, the pulleys U, V, cord W, hoisting cord Z and lowering cord A, substantially as and for the purposes set forth. 12th. In a parcel carrier between two stations, a vertical hollow standard and a lifting bracket, in combination with a counter balance weight travelling within, said standard and the means, substantially as described, for elevating and lowering said bracket, as and for the purpose specified.

No. 23,421. Prescription File.

(*Porte-Préscription.*)

Branch H. Colby, Detroit, Mich., U.S., 13th February, 1886; 5 years.

Claim.—1st. A prescription file consisting of a series of leaves, both faces of which are provided with pockets serially numbered, substantially in the manner and for the purpose set forth. 2nd. In a prescription file made in book form, the leaves of which are made of cloth, or cloth and paper, with exactly one hundred pockets upon each page, the pockets being arranged in ten horizontal and ten vertical rows, with numbers at the top and left hand corner and left hand side of each page, the numbers forming an index to each pocket, the precise number of each pocket being determined by its relative position in reference to the aforesaid numbers, all as herein described.

No. 23,422. Tailor and Dressmaker's Square. (Equerre de Tailleur et de Couturière.)

William Smith, Toronto, Ont., 13th February, 1886; 5 years.

Claim.—A square for cutting garments having on one leg two more or less subdivided inches, and the other twenty-one more or less subdivided inches at the outer edge, a curve A at the inner angle provided with a figured scale, a figured scale B along the inner edge of the long leg and curved a, C, a slot D having a figured scale E and a series of figured perforations H in alignment and parallel to said slot and in continuation thereof, a figured scale G at the outer edge, a slot I having a figured and a figured scale I, and the reverse side of the square having tables in figured columns K, E, W, D, V, as set forth for the purpose described.

No. 23,423. Compound Wire for Electrical Purposes. (Fil Composé pour des Fins Electriques.)

William Paul, Thomas J. Wood, Ansonia, and Felix Chillingworth, New Haven, Ct., U.S., 13th February, 1886; 5 years.

Claim.—1st. As an article of manufacture, a compound wire having a non-cylindrical core, substantially as shown and described. 2nd. As an article of manufacture, a compound wire consisting of a conducting envelope or covering surrounding a strengthening core of non-cylindrical shape, substantially as shown and described. 3rd. As an article of manufacture, a compound wire consisting of a non-cylindrical iron or steel core surrounded by copper, substantially as shown and described. 4th. As an article of manufacture, a compound wire having a non-cylindrical core and a cylindrical envelope, substantially as shown and described.

No. 23,424. Fire Ladder and Truck.

(*Echelle et Chariot à Incendie.*)

Levi Harris, Kalamazoo, and Andrew J. Sutherland, Battle Creek, Mich., U.S., 15th February, 1886; 5 years.

Claim.—1st. The combination of a ladder which is supported on its edge in a horizontal position, a foundation support, a foot-block hinged to the foot of the ladder, the end of said block being connected with the support by a hinge-fulcrum, whereby when the ladder is raised edgewise to a vertical position the foot-block forms a horizontal extension to the support admitting of laterally tilting of the ladder on its hinges, at its foot, substantially as set forth. 2nd. A fire truck provided with a ladder resting on its edge in transit, and having a hinge-fulcrum at its foot on which it is raised in an edgewise position, and a counterbalancing weight beyond said fulcrum to assist in raising the ladder, substantially as set forth. 3rd. The combination of a truck having a suitable ladder-foundation with a foot-block hinged thereto, and provided with a weighted end beyond the hinge-fulcrum and a ladder hinged to the foot-block at its lower end, substantially as set forth. 4th. The combination of a ladder-foundation, a ladder connected thereto at its base by a hinge-fulcrum, and a suitable spring between its foundation, and ladder to assist in raising the ladder and to cushion its fall, substantially as set forth. 5th. The combination of a truck provided with the capstans, reel gear connections and a ladder-foundation, a ladder connected thereto at its base by a hinge-fulcrum, a weight beyond the fulcrum and a rope connecting the ladder and reel, substantially as set forth. 6th. A ladder and an extensible part provided with means of extending said part, and the automatic ladder-lock consisting of the shaft, end-lever and spring and elbow rests, all adapted substantially as set forth. 7th. The combination of a truck provided with a ladder-foundation, a box having an open top, the rear opening and recessed bottom, a weighted foot-block connected to said foundation at the end by a hinge-fulcrum, an extensible ladder hinged to the foot-block in a manner to be transported and raised edgewise and tilted laterally, and the forked hinged ladder-guide on top of the box to receive the rising ladder and sustain it in an upright position, substantially as set forth. 8th. The combination of a fire truck provided with a suitable ladder-foundation, a ladder hinge fulcrum at its base in a manner to rise edgewise hinged to tilt laterally, and pivoted to turn in different position. 9th. The combination of a truck provided with a ladder box having a platform at the top, an open top bounded by said platform and an opening in the rear side of the box, and a ladder hinge fulcrum at its base, in a manner to rise through the opening into said box hinged to tilt laterally and pivoted or swivelled at its lower end, whereby the ladder may be pushed around the inner supporting edge of the box-platform, substantially as set forth. 10th. The combination of a fire ladder truck provided with a ladder-box having an elevated platform bounding the open top of said box, side platform, steps leading therefrom to the box-platform and a ladder centrally and horizontally resting in the truck on its edge and hinged-fulcrum at its base adapting it to be raised edgewise into said box, substantially as set forth. 11th. The combination of a ladder-box having a series of holes at the upper edge, a ladder adapted to tilt laterally in said box and provided with staples or equivalents, and brace-rods for detachable connection with said holes and staples to stay the ladder at different angles, substantially as set forth.

No. 23,425. Paint Composition.*(Composition à Peinture.)*

The Ferronite Manufacturing Company, New York, (assignee of Louis Brown, Rye, N.Y., U.S., 15th February, 1886; 5 years.

Claim.—1st. As a new article of manufacture, the powdered product obtained by reducing magnetite ore to pulverulent form, all substantially as and for the purposes described. 2nd. A pigment made from magnetite ore roasted or calcined, and ground or pulverized either before or after roasting or calcination, all substantially as and for the purpose described. 3rd. A pigment made from magnetite ore treated with sulphuric acid or other chemical agent, roasted or calcined and reduced to pulverulent form by grinding or pulverizing either before or after it is roasted or calcined, all substantially as and for the purposes described. 4th. A paint composition made of powdered magnetite ore of the character herein specified, and a vehicle with or without suitable coloring or additional filling matter, substantially as and for the purposes described. 5th. The art of surfacing or protecting wood, metal or other material with magnetic black oxide of iron by means of a plastic composition of powdered magnetic ore and a suitable vehicle, all substantially as described.

No. 23,426. Compensating Spring Balance.*(Balance à Ressort de Compensation.)*

Reuben Clark, Daniel McFarlane and John G. Darling, Toronto, Ont., 15th February, 1886; 5 years.

Claim.—1st. A compensating spring balance consisting of the arm C, pivoted at one end to the movable body and at its other end to the pivoted lever D, in combination with the spring E arranged to act on the lever D, substantially as and for the purpose specified. 2nd. A compensating spring balance consisting of the arm C, pivoted at one end to the movable body and at its other end to the pivoted levers D, in combination with a spring E arranged to act on the levers D, substantially as and for the purpose specified.

No. 23,427. Process of Making Metallic Screening Material.*(Mode de Fabrication des Matériaux de Tamis Métalliques.)*

John F. Golding, Chicago, Ill., U.S., 15th February, 1886; 5 years.

Claim.—1st. In the art of making screening from slashed metallic plates or sheets, the improvement of bending the strands flatwise, line after line of strands successively, in forming the meshes and setting the strands, substantially as before set forth, so that the strands will be disposed edgewise in the thickness of the finished screening. 2nd. The process herein shown for making slashed metallic screening, which consists as follows: making a series of rows of incisions or cuts throughout the metal, and between these incisions or cuts leaving uncut spaces, each uncut space being alongside of and between two incisions or cuts and at or near the centre of said cuts, the incision or cuts of each row of incisions or cuts made alternate with the uncut spaces throughout the entire piece of metal, opening the incisions or cuts in a manner to cause the cut edges to be passed by each other, all in the same direction perpendicular to the original plane of the metal, thus bending each strand in opposite directions at points at or near the uncut spaces sufficiently to set the metal and maintain the mesh, the metal being so expanded that the several strands have their greatest extension in the direction of or near a right angle to the original plane of the metal, and a less movement of the ends toward the centre, thus expanding the metal.

No. 23,428. Carriage Top Bolt Head.*(Tête de Boulon de Couverture de Voiture.)*

Ernesto Rothlisberger, Cincinnati, Ohio, U.S., 16th February, 1886, 5 years.

Claim.—1st. A bolt head for carriage tops, combining in its structure a shank A having the head a, the disc D resting on the head, the covering C upon the disc and the moulding B overlying the edge of the covering and secured to the head, substantially as described. 2nd. A bolt head for carriage tops consisting of the following elements, to wit: the shank A having the circular head a, the concavo-convex disc D resting at its edge on the head, the flexible covering C on the disc and the moulding B having the flanges b overlying the covering, and the flange c underlying the head, substantially as described.

No. 23,429. Rotary Harrow.*(Herse Tournante.)*

Halsey H. Munroe, Thomaston, Me., U.S., 16th February, 1886, 5 years.

Claim.—1st. In combination, a frame, a pair of rotary harrows straddling the row fitted to turn between the rows, and pivoted under the frame, mechanism for causing the harrows to rotate, a seed dropping mechanism located on the frame, and furrow openers in line therewith, all substantially as described. 2nd. In combination, a frame, a pair of rotary harrows straddling the row fitted to turn between the rows, and pivoted under the frame, mechanism for causing the harrows to rotate, a seed dropping mechanism located on the frame, furrow openers and wheels in line with the openers, all substantially as described. 3rd. In combination, a frame, a pair of rotary harrows pivoted under said frame and fitted to mark between the rows, and having space between adapting them to straddle a row, a seed dropping mechanism and furrow openers N, N, on a hinged bar, the rod C and hand lever, all substantially as described. 4th. In combination, a frame, a pair of rotary harrows pivoted under said frame fitted to straddle one row and work between it and the adjacent rows, a seed dropping mechanism, a shaft n and wheels M, M and shaft k connected thereto by bevelled gears, and the wrist r connecting with the rods of the seed dropping valves, all substantially as described. 5th. In combination, a frame, a pair of rotary harrows pivoted under said frame fitted to straddle one row and work between it and the adjacent rows, and a shaft r extending across the rear of

the frame provided with a series of teeth s set at right angles to each other, all substantially as described. 6th. In the described machine, in combination with the axle n and its wheels M, M, the shaft k connected to the axle by bevelled gears and to the seed valve rods by wrist pine, the seed valve mechanism and the openers on a pivoted bar and the connections 9 and 6 to the lever 3, substantially as described. 7th. In combination with the frame and harrows and the seed dropping mechanism, the vertically adjustable shaft n and the horizontally adjustable wheels M, M mounted on said shaft, substantially as described. 8th. In combination, the side pieces A, A, suitably connected harrows B, B, arms carrying the wheels G, G, the king bolts, brackets F, on the arms, and the frame F affixed to said brackets, whereby the harrows are prevented from tipping, all substantially as described. 9th. In the described machine and in combination, the harrows B, B, beams a, a, king bolts s, s, arms C, C and supplementary arms c, c, hinged to the arms C, C, wheels G, G and connections, as described, between the arms c, c and the frame F, all as set forth. 10th. The detachable structure consisting of the arms C, C, and the supplemental arms c, c, hinged to the arms C, C, wheels G, G, brackets and frame F attached thereto, and screws I, I, in combination with side pieces A, A and harrows B, B, and king bolts, all substantially as described. 11th. In combination with the frame of a rotary harrow, an axle and supporting wheels combined with vertically adjustable bearings, substantially as described. 12th. The combination, with the frame F secured to the brackets E, which are supported by the arms C of the screws I passing through the frame F to a block k on the supplemental arms c, and the spring 10 upon the screw bearing on the block i, substantially as set forth. 13th. In a double harrow, the rigid bar or frame, the screws I, I, the arms c, c, the wheels that bear on the harrows, and the grooved blocks fitted to allow lateral movement of the ends of said screws, the parts being constructed to operate, substantially as described.

No. 23,430. Apparatus For Treating Ores.*(Appareil de Traitement des Minerais.)*

Jacob C. Wiswell, Medford, and Addison A. Reavo, Boston Mass., U.S., 16th February, 1886; 5 years.

Claim.—1st. The combination, in an amalgamating and ore crushing machine, of a bed for holding the ore and mercury, a rotating frame over said bed, metallic parts moving with said frame and projecting constantly into the pulp or mixture of ore and mercury in the bed, and electrical connection through the bed and moving metallic parts, whereby the former becomes a cathode and the latter anodes, and the electric circuit is continuous through the ore and mercury between the anodes and cathodes and crushing rolls, either constituting said anodes, or made independent thereof, whereby the ore upon the bed is crushed while being subjected to the action of the current, as set forth. 2nd. The combination, in an amalgamating and ore crushing machine, of a bed for holding the ore and mercury, a shaft having radiating arms or journals crushing rolls upon said arms working directly upon the ore and mercury in the bed, and electrical connections through said bed and rollers whereby the former becomes a cathode, and the latter, anodes, and the electric circuit is continuous through the ore and mercury between the anodes and cathodes.

No. 23,431. Electrotype Plate.*(Planche Electrotype.)*

The American Press Association, Chicago, Ill., (assignee of Albert W. Marshall, Indianapolis, Ind., U.S., 16th February, 1886; 5 years.

Claim.—1st. A flexible electrotype shell without the usual backing, in combination with a base or block having a plain upper surface, supporting the shell at the required height for printing therefrom, substantially as described. 2nd. A shell having edges made of the same material and integral therewith, the said edges extending out beyond the line bounding the printing surface, a suitable distance to form flanges, whereby the shell may be adapted to a block for the purpose of printing therefrom, substantially as described.

No. 23,432. Door Check. (Arrête-Porte.)

Gilbert R. Elliot, New York, N.Y., U.S., 15th February, 1886; 5 years.

Claim.—1st. The combination, substantially as described, of a cylinder open at one end and having an air aperture at the other, a piston adapted to reciprocate in the cylinder, and a spring friction hinge upon which the rod is mounted, as set forth. 2nd. The combination of the spring disc for expanding the packing, the washer made of leather fitting around said disc, and suitable securing devices with the piston head, substantially as described.

No. 23,433. Liniment for Rheumatism, etc.*(Liniment pour le Rhumatisme, etc.)*

Thomas F. Dwyer, Cornwallis, N.S., 16th February, 1886; 5 years.

Claim.—A compound consisting of oil of cedar, oil of hemlock, oil of spike, ammonia, camphor and alcohol in the proportions and substantially as described.

No. 23,434. Manufacture of Algin, etc., from Seaweeds. (Fabrication de l'Algin, etc., avec des Plantes Marines.)

Edward C. C. Stanford, Dalnair, Scotland, 16th February, 1886, 5 years.

Claim.—1st. The improved process for obtaining algin from seaweeds, and consisting principally in treating fresh or more or less dried seaweed directly with carbonate of soda, substantially as before described. 2nd. The modified process in which the seaweed is bleached or treated with chlorine before being treated with carbonate of soda, substantially as hereinbefore described. 3rd. The

combination of processes for obtaining useful products from seaweeds, in which the algin is first separated by treatment with carbonate of soda and precipitation by a suitable acid or salt, and the other constituents are subsequently separated by suitable known processes, substantially as hereinbefore described. 4th. The obtaining of useful products or compound having algin obtained from seaweeds as a constituent, by means of a double decomposition of alginate of soda, with metallic or other salts, substantially as hereinbefore described. 5th. The obtaining of useful products or compounds having algin obtained from seaweeds as a constituent, by mixing a soluble alginate with an ammoniacal solution of shellac or other resin, or with a soluble silicate, substantially as hereinbefore described.

No. 23,435. Combined Wooden and Wire Fence. (*Clture de Bois et de Fil de Fer Combinés.*)

Day L. Dickerson, Stark, Mich., U.S., 16th February, 1886; 5 years.

Claim.—In combined wood and wire fence, the combination of the corner posts intermediate posts and wooden braces and wire ties to support such corner posts, with pairs of horizontal wires stretched between such corner posts near the top and near the bottom thereof, and wooden pickets interwoven into said horizontal wires, substantially as and for the purposes described.

No. 23 436. Sulphuric Acid Tower.

(*Appareil à Acide Sulphurique.*)

George H. Nichols, William H. Nichols and John B. F. Herreshoff, Brooklyn, N.Y., U.S. 16th February, 1886; 5 years.

Claim.—1st. In a sulphuric acid tower the acid resisting filling E, combined with a surrounding lining D of loose reduced acid resisting material, substantially as described. 2nd. In a sulphuric acid tower, the combination of the inner acid resisting filling C with the surrounding lining D, of loose reduced acid resisting material and with the lead sheathing A and outer wall B all arranged to maintain the loose lining D in position, as specified. 3rd. The combination of the central filling C, with the layer d of coarsely ground quartz, and the outer layer c of finely ground quartz and with the sheathing A, substantially as herein shown and described. 4th. In a sulphuric acid tower, the combination of the quartz posts E and upper blocks H and H' of quartz, with the quartz fitting C, all contained within the sheathing, as specified.

No. 23,437. Manufacture of Wire Netting and Apparatus therefor. (*Fabrication de Tamis Métallique et Appareil pour cet objet.*)

William F. Dennis, London, Eng., 16th February, 1886; 5 years.

Claim.—1st. The improved method of manufacturing wire netting by a continuous process, from wires carried or reels or bobbins, these being mounted in the outer periphery of a disc and the inner periphery of a circumscribing ring, and being operated separately from mechanism engaged in alternately twisting each two adjacent wires with each other and with their laterally contiguous wires, substantially as described. 2nd. In a machine for making wire netting, in which each two adjacent wires are alternately twisted with each other and with their laterally contiguous wires, the combination, with mechanism for automatically changing the individual wires and twisting the several pairs of wires together, of automatically acting mechanism for imparting corresponding movements to the wire carrying reels, these being mounted in the outer periphery of a disc and the inner periphery of a circumscribing ring, substantially as set forth. 3rd. In an automatic machine for making wire netting of the kind described, in the last preceding claim, mounting two series of half bobbin spindles provided with reels or bobbins respectively in the outer periphery of a disc, and the inner periphery of a circumscribing ring, one of these bodies partaking of to and fro rotative motions, each successive motion bringing the bobbin spindles carried in the disc or ring opposite their severally next adjacent bobbin spindles carried in the ring or disc, substantially as described. 4th. In a machine for making wire netting from reel-carried wires, the use of a crank and slotted connecting rod intermittently rotating the bobbin spindles, or the twisting spindles in each direction alternately, substantially as and for the purposes described. 5th. In a machine for making wire netting from reel-carried wires, the combination of mechanism for imparting to and polar and rotative motions to the body carrying one of the series of bobbin spindles, or for imparting similar lateral movements to the twisting spindles, substantially as set forth, said combination consisting of a face cam with double loop grooves operating a crescent-shaped sliding piece mounted on and imparting motion to a reciprocating bar or vibrating lever in connection with the movable spindle bearings. 6th. In a wire netting machine, the means, substantially as described, for operating the feed roller and gathering drum from the same cam, the motion imparted to the former being of a positive character and that to the latter permissive. 7th. In a machine for making wire netting from reel-carried wires, mounting two series of semi-cylindrical spindles respectively in the contiguous and parallel faces of two bodies, of which one partakes of to and fro lateral or rotative motions, the other being stationary, the series of spindles mounted in the stationary body being furnished with bobbins, whilst the other series is mounted in the movable body is traversed longitudinally by wires led from reels carried in a supplementary fixed frame, substantially as described with reference to Fig. 7 and 8. 8th. In a machine for making wire netting from reel-carried wires, arranging two or more series of bobbin spindles in concentric or parallel rows, substantially as described, with reference to Fig. 9 and 10. 9th. The improved method of manufacturing wire netting by a continuous process, whereby each body wire is caused to travel diagonally across the netting from selvage to selvage, and whereby selvage netting is produced having the wires forming the body thereof, twisted together a complete instead of an odd half number of times, substantially as herein described. 10th. In a machine for

making diagonally wired netting, the use of bi-part twisting spindles or bobbin spindles mounted in bi-part sleeves carrying split pinions, the sleeves engaging with and operating the spindles through clutches, the spindles appropriating to the selvage wires being unprovided with clutch spurs making half a revolution less than their surrounding sleeves, substantially as herein described. 11th. The improved manufacture of machine-made wire netting, substantially as described and illustrated in Fig. 17, comprising body wires and selvage wires, the former travelling diagonally across the netting from selvage to selvage and then gradually returning whilst the latter which may be special in character retain their position at the opposite margin of the fabric.

No. 23,438. Washing Machine. (*Laveuse.*)

Marshall N. Ensley, Drain, Oregon, U.S., 16th February, 1886; 5 years.

Claim.—In a washing machine, the combination of a receptacle having supporting legs and key blocks, with a rubber having roller supporting frame and a roller journaled therein, a shaft passing through the slotted parallel bars thence to the sides of the receptacle, and journaled in key blocks secured to the outside of the receptacle, substantially as described.

No. 23,439. Electrical Synchronous Telegraphic and other Systems. (*Système de Télégraphie Synchronique Electrique et autre.*)

Patrick B. Dolany, New York, N. Y., U. S., 16th February, 1886; 15 years.

Claim.—1st. The combination, substantially as set forth, of a vibrator, means for automatically independently actuating it, and correcting magnetic coils for correcting the motion of the vibrator. 2nd. The combination, substantially as set forth, of a vibrator, a local circuit and vibrator magnet, means for adjusting or varying the attraction of such magnet, an electric circuit and magnetic correcting coils, which act on the vibrator. 3rd. The combination, substantially as set forth, of the table of contacts, the trailing arm or circuit completer, the correcting magnetic coils and the correcting contacts in the table with which said coils are connected, the vibrator, means for actuating it, the motor circuit and magnet and the armature disk. 4th. The combination, substantially as set forth, of the trailing finger or circuit completer, the correcting contacts, the battery to which some of said contacts are connected, and the correcting coils or magnet with which others of said contacts are connected. 5th. The combination, substantially as set forth, of the trailing finger or circuit completer, the correcting contacts connected with a battery, the correcting coils or magnet, and the correcting contacts connected therewith, the latter contacts being extended toward the adjoining contacts, which correspond to position with the contacts at the other station connected with the correcting battery. 6th. The combination, substantially as set forth, of electrically-connected stations, the trailing fingers or circuit interrupters, the correcting contacts connected with the correcting coils, and a vibrator at each station regulated by said coils. 7th. The combination of electrically connected stations, rotary apparatus at each station, and means for driving it, the circuit completers, the contacts, the correcting batteries connected with some of said contacts, and the correcting coils or magnet connected with other correcting contacts, which coils control or regulate the speed of rotation of the apparatus at either station whenever it runs out of time with that at the other station. 8th. The combination, substantially as set forth, of two electrically connected stations at each station, an independently-actuated vibrator rotary apparatus, a motor for driving it controlled by the vibrator correcting contacts, a circuit completer, a correcting battery, with which some of the correcting contacts are connected, and a correcting magnet which regulates the vibrator, with which other correcting contacts are connected. 9th. The combination, substantially as set forth, at two electrically connected stations, of continuously vibrating, independently actuated vibrators, with correcting mechanism which automatically corrects the movement of either vibrator, when it vibrates at a different rate from the other vibrator, whereby the synchronism of the apparatus is maintained. 10th. The combination, substantially as set forth, of a continuously actuated vibrator, its local circuit and vibrator magnet, an electric circuit and correcting coils which control the vibrator. 11th. The combination, substantially as set forth, of two electrically connected stations, table of contacts, circuit completers actuating apparatus, and correcting coils or magnets, with the correcting contacts 9 and 10, the alternate 9's, at one station being connected to a correcting battery, and the remaining ones unconnected and the alternate 10's being connected to the correcting coils, and the remaining ones unconnected at one station, the arrangement of the connected and unconnected 9's and 10's at the other station being reversed. 12th. The combination, substantially as set forth, at electrically connected stations, of mechanism at each station for successively completing and breaking the line circuit through a contact or series of contacts, apparatus for continuously actuating such mechanism, and devices for automatically sending correcting impulses into the line from one station to the other, only when variations in movement occur to maintain the synchronous movement of the apparatus at both stations. 13th. The combination, substantially as set forth, of a main line, apparatus connected therewith having a contact or series of contacts, means for successively placing the line in connection with each of said contacts, apparatus for continuously actuating such circuit, completing devices and means for automatically acting primarily on the driving or actuating devices or apparatus, by correcting impulses of electricity, whereby the speed of the driven apparatus may be controlled and corrected. 14th. The combination, substantially as set forth, at electrically connected stations, of mechanism at each station for successively completing and breaking the line circuit through a contact or series of contacts, apparatus for continuously actuating such mechanism, means for sending impulses of electricity from one station to the other to correct the speed of said actuating apparatus, and an electro-magnet or helix, which acts electro-magnetically upon said

actuating apparatus, to control or correct its speed. 15th. The combination, substantially as set forth, at electrically connected stations, of mechanism at each station for successively completing and breaking the line circuit through a contact or series of contacts, apparatus for continuously actuating such mechanism means for automatically sending correcting impulses of electricity from one station to the other, and an electro-magnet or helix, which acts directly on said actuating apparatus to control or correct its speed. 16th. The combination, substantially as set forth, at electrically connected stations, of apparatus at each station, which is continuously actuated or rotated, mechanism for continuously actuating such apparatus, and means for automatically reciprocally correcting the movement of the apparatus at either of the stations, whenever it moves out of time with that at the other, by an impulse of electricity received from the distant station. 17th. The combination, substantially as set forth, of a vibrator, an electro-magnet and its circuit placed to act on the outside of said vibrator to actuate it, and an electro-magnet or coil placed to act on the same side of the vibrator, the coil of the latter magnet being placed in a circuit over which correcting impulses of electricity may be received to retard the rate of vibration of said vibrator. 18th. The combination of two electrically connected stations, the vibrators, motors and rotating fingers or circuit completers at both stations, the battery at one station with which some of the contacts are electrically connected, contacts at the other stations electrically connected with correctors or controllers for governing the rate of vibration of the vibrator at that station, and a sounder or synchronous tell-tale connected with one of the contacts at said station. 19th. The combination of a main line, apparatus connected therewith, having two or more correcting contacts for sending correcting impulses into the line placed about a centre of motion, a rotary circuit completer connected with the line which traverses said contacts, and at a distant station similar apparatus having a corresponding number of contacts to receive the transmitted correcting impulses, whereby the variation of speed of the rotator at the corrected station is corrected at different points in the circle of rotation. 20th. The combination, substantially as set forth, of a main line apparatus connected therewith, having two or more correcting contacts for sending correcting impulses of electricity into the line to a distant station, a rotating circuit completer connected with the main line which traverses said contacts, and a correcting battery line or circuit in which all of said contacts are included. 21st. The combination of an electric circuit actuated apparatus connected therewith at different stations, means for insuring the synchronous movement of said apparatus, and a tell-tale or sounder connected therewith to indicate when the apparatus is running synchronously. 22nd. The combination, substantially as set forth, of a vibrator, means for independently actuating it, a main electric circuit, a motor controlled by said vibrator, a circuit completer actuated by the motor, a series of correcting contacts through which the circuit is completed, and an accelerating magnet for correcting the speed of the vibrator. 23rd. The combination of the two electrically connected stations, the independently actuated vibrators at each station, the motor circuits and magnets, the rotating trailing fingers or circuit completers, the tables of contacts, the contacts at one station electrically connected to each other and to a correcting battery, and the correcting contact at the other station, which is connected with the ground through the coils of an accelerating magnet. 24th. The combination of independently actuated vibrators placed at electrically connected stations, with apparatus, substantially as described, for automatically retarding or accelerating the vibrator at one station when it tends to move faster or slower than that at the other station. 25th. The combination, substantially as set forth, of two electrically connected stations, an independently actuated vibrator at each station and mechanism for actuating it, the motor circuits and magnets, the travelling circuit completers actuated by the motors, the table of contacts, the correcting contacts connected with a battery at one station, and the correcting contacts connected with accelerating and deterring magnets, which act on the vibrator at the other station. 26th. The combination, substantially as set forth, of two electrically connected stations, an independently rotated circuit completer at each station, mechanism for actuating them, tables of contacts, a correcting battery connected to some of said contacts at one station, and accelerating and retarding magnets connected to some of the contacts at the other station. 27th. The combination, substantially as set forth, of electrically connected stations, the tables of contacts, a rotary circuit completer at each station, the motor magnets and circuits, the independently vibrated vibrators, which make and break the motor circuit, a correcting battery electrically connected with a given number of contacts on the circular table, of contacts at one station only, another series of contacts on the table at that station, which are thrown out, or not, in electrical connection in any circuit, and at the other station a series of connected contacts corresponding to those thrown out at the first station, which are electrically connected through the coils of a correcting magnet to ground. 28th. The combination, substantially as set forth, of electrically connected stations, the tables of contacts, the rotary trailing finger or circuit completers, the series of insulated contacts on the tables which are divided into series or sets of equal number, the corresponding contacts in each series, say the 9's and 10's, which are devoted to maintaining the synchronous movement of the apparatus, the 9's at one station only being connected to a correcting battery, and the 10's thrown out or unconnected with any circuit, and the 10's at the distant station connected together and through the coils of a deterring magnet. 29th. The combination, substantially as set forth, of two electrically connected stations, an automatic independently operated vibrator at each station, motor circuits and magnets, the rotating armature disks and trailing fingers, the stationary tables of contacts, the contacts thereon divided into independent series or sets of equal numbers, corresponding contacts, say the 9's and 10's, in each series being devoted to maintaining the synchronous movement of the apparatus, the correcting battery to which the 9 contacts are connected at one station, the 10 contacts at that station being thrown out or unconnected with any circuit, the deterring magnet at the other station which operates upon the automatic vibrator at that station, and is electrically connected with the 10's in the circle of contacts, the 10's thrown out or unconnected 9's at said station and a sounder or relay electrically connected with one of said 9's. 30th. The combination,

substantially as set forth, of two electrically connected stations, an automatic independently operated vibrator at each station, motor circuits and magnets, the rotating armature disks and trailing fingers, the stationary tables of contacts, contacts therein divided into independent series or sets of equal numbers, corresponding contacts, say the 9's and 10's, in each series being devoted to maintaining the synchronous movement of the apparatus, the correcting battery to which the 9 contacts are connected at one station, the 10 contacts at that station being thrown out or unconnected with any circuit at that station being thrown out or unconnected with any circuit at the distant station, the deterring magnet which operates upon the automatic vibrator at the other station, and is electrically connected with the 10's in the circle of contacts, the 10's thrown out or unconnected 9's at said station, a sounder or relay electrically connected with one of said 9's, and an extra contact placed between the sounder 9 and the adjoining 8 and electrically connected to the coils of an accelerating magnet, which also acts upon the automatic vibrator at that station. 31st. The combination, substantially as set forth, of two tables of contacts and circuit completers, mechanism for actuating the circuit completers, a main line, the contacts connected with a battery at one station only, and the correcting contacts at the other station extended toward the adjacent unconnected contacts and connected with the correcting mechanism, which regulates the speed of the mechanism that actuates the circuit completer. 32nd. The combination, substantially as set forth, at electrically connected stations, of apparatus at each station, which is continuously actuated or rotated to make and break the line circuit, electrically controlled mechanism for actuating such apparatus, and means for automatically correcting the movement of said electrically controlled actuating mechanism at one station by impulses of acceleration or retardation, according as said apparatus moves too fast or too slow caused by impulses of electricity transmitted from the distant station. 33rd. The combination, substantially as set forth, at electrically connected stations, of apparatus at each station, which is continuously actuated or rotated to make and break the line connection, with a series of independent contacts, electrically controlled mechanism for continuously actuating such apparatus, and means for automatically controlling the movement of said electrically controlled actuating mechanism at one of the stations by retarding or accelerating impulses of electricity from the other to maintain the synchronous movement of the apparatus at each station. 34th. The combination, substantially as set forth, of a vibratory fork vibrator magnet for vibrating it, the poles of which act on the outsides of the tines of the fork, an electro-magnet, the poles of which are placed on the outside of the tines of the fork, an electro-circuit in which the coils of said magnet are placed, and over which impulses of electricity may be received to energize the magnet and retard the vibration of the fork, an electro-magnet interposed between the tines of the fork and its circuit, over which impulses of electricity to accelerate the vibration of the fork, may be received. 35th. The combination, substantially as set forth, of a vibrator, an electro-magnet acting on one side of the vibrator for automatically vibrating it, a second electro-magnet placed to act on the same side of the vibrator for retarding the rate of vibration, and a third magnet placed to act on the opposite side of the vibrator to accelerate its rate of vibration. 36th. The combination, substantially as set forth, of a vibrator, an electro-magnet, and its circuit operating upon one side of the vibrator to vibrate it, and an electro-magnet or coil acting on the opposite side of the vibrator, the coil of said magnet being placed in a circuit over which correcting impulses of electricity may be received to accelerate the vibration of the vibrator. 37th. The combination, substantially as set forth, of electrically controlled synchronous apparatus, with means for automatically changing the resistance of the circuit, which controls the movement of said apparatus, whenever a correcting impulse of electricity is received. 38th. The combination, substantially as set forth, of synchronously actuated apparatus, a correcting battery at one station, means for transmitting a correcting impulse of electricity to a distant station, whenever the apparatus at said distant station runs out of time with that at the first station, and an indicator or sounder placed in the correcting battery circuit at the first station to indicate when correcting impulses of electricity are sent from that battery. 39th. The combination, substantially as set forth, with synchronous electrically actuated and controlled apparatus, of devices for indicating when controlling or correcting impulses of electricity are received from a distant station, and also when correcting impulses of electricity are transmitted to a distant station. 40th. The combination, substantially as set forth, of electrically controlled synchronous apparatus, means for automatically correcting the speed of said apparatus at one station by a correcting impulse of electricity, when it runs out of time with that at a distant station, and a relay worked by the correcting impulses which make such connecting impulses effective upon the apparatus to be corrected, when the relay armature leaves its back stop. 41st. The combination, substantially as set forth, of electrically controlled synchronous apparatus, means for automatically changing the resistance of the circuit which controls the movement of said apparatus, whenever a correcting impulse of electricity is received, and a relay which permits such correcting impulse to become effective when the relay armature leaves its back stop. 42nd. The combination of two electrically connected stations, a vibrator at each station, the motor circuits and magnets, the table of contacts, the trailing fingers or circuit completers, the connected correcting contacts at one stations built out or extended toward the adjoining unconnected contacts, the connected contacts at the other station which correspond to the unconnected ones at the first station and are built out or extended toward the adjoining unconnected contacts, which correspond to the connected contacts at the other station, the correcting battery with which the extended contacts at one station are connected and the controlling magnet or regulator connected with the extended contacts at the other stations. 43rd. The combination, substantially as set forth, at electrically connected stations, of tables, of correcting contact circuit completers, the connected correcting contact at one station extended toward the adjoining unconnected contact, the connected contact at the other station which corresponds with the unconnected one at the first station extended toward the adjoining unconnected contact which corresponds with the connected contact at the other station, a correcting battery with which the extended contact at one station is connected and

from which correcting impulses are sent into the line through said contact, and devices connected with the extended correcting contact at the other station for correcting the speed of the apparatus. 44th. The combination, substantially as set forth, at electrically connected stations, of independently actuated vibrators, vibrating mechanism for each vibrator, means for adjusting such mechanism, so that a tendency to acceleration may be imparted to the vibrator at one station, with means for automatically retarding the rate of vibration of said vibrator to maintain its synchronous movement with the vibrator at the other station. 45th. The combination, substantially as set forth, at electrically connected stations of apparatus for making and breaking the main line circuit at each station, mechanism for continuously actuating or rotating such apparatus, said mechanism at one station being set to run at a slightly different speed from that at the other, and means for automatically constantly correcting the speed of said actuating mechanism at one station by impulses of electricity received from the distant station to maintain the synchronous movement of the circuit breaking apparatus at the stations. 46th. The combination of the vibrator, the vibrator magnet, the loose pole piece which is normally drawn away from the vibrator, and mechanism for automatically moving the pole piece toward the vibrator to regulate its speed of vibration, whenever a correcting impulse of electricity is received over the line. 47th. The combination, substantially as set forth, of the vibrator, the vibrator magnet, its loose pole piece, the pivoted armature lever and its controlling magnet which is energized by correcting impulses of electricity received over the line. 48th. The combination, substantially as set forth, of the vibrator, the vibrator magnet, its loose pole piece, means for holding it in its normal position, an electric circuit and mechanism for automatically moving the pole piece relatively to the vibrator whenever a correcting impulse of electricity is received, over the circuit. 49th. The combination, substantially as set forth, at electrically connected stations, of synchronously moving apparatus, mechanism for transmitting correcting impulses of electricity from one station to the other, and means for correcting the movement of the apparatus at the latter station, whenever a correcting impulse is received by changing the position of a controlling magnet pole. 50th. The combination, substantially as set forth, of synchronously moving apparatus, the vibrator, its local circuit battery and magnet which actuate such apparatus, and an adjustable rheostat in the local circuit for regulating the rate of vibration of the vibrator, and the consequent speed of the synchronously moving apparatus. 51st. The combination, substantially as set forth, of the vibrating fork, its local circuit battery and vibrator magnet, the adjustable pole pieces on the poles of the vibrator magnet and an adjustable rheostat in the local circuit. 52nd. The combination, substantially as set forth, of an electric magnet, its circuit, a circuit breaker actuated by said magnet, a second circuit which is made and broken by the circuit breaker apparatus actuated thereby, and an adjustable resistance in the circuit which actuates the circuit breaker, whereby the speed of the driven apparatus may be varied. 53rd. The combination, substantially as set forth, of a main line stations connected therewith electrically actuated apparatus and its local circuit at each station for making and breaking the line circuit, a non-vibrator circuit breaker at each station for interrupting said local circuit, and means for correction impulses of electricity received over the main line. 54th. The combination, substantially as set forth, of a main line, continuously actuated apparatus for making and breaking the line circuit through a series of contacts, electrical mechanism and its local circuit for actuating such apparatus, a non-vibratory circuit breaker for interrupting said local circuit, and means for automatically correcting the speed of said circuit breaker by impulses of electricity received over the main line. 55th. The combination, substantially as set forth, of a main line, continuously electrically actuated apparatus connected therewith for making and breaking the main line circuit, electric mechanism for actuating such apparatus, a non-vibratory circuit breaker which controls the speed of said electric actuating mechanism, mechanism for operating said circuit breaker, and means for correcting the speed of said circuit breaker by impulses of electricity received over the main line. 56th. The combination, substantially as set forth, of a motor circuit, a battery and magnet, a rotating armature disk, a trailing finger or circuit completer, and a rotary circuit breaker actuated by the rotation of the disk for interrupting the motor circuit. 57th. The combination, substantially as set forth, of a motor circuit battery and magnet, a rotating armature disk, a trailing finger or circuit completer, a stationary table of insulated contact pieces over which the circuit completer traverses, and a rotary circuit breaker actuated by the armature disk for automatically interrupting the motor circuit. 58th. The combination, substantially as set forth, of a motor circuit battery and magnet, a rotating armature disk, a trailing finger or circuit completer, a stationary table of insulated contacts over which the circuit completer travels, a rotary circuit breaker actuated by the rotating armature disk for automatically interrupting the motor circuit, a correcting battery to which some of the contacts on the stationary table are connected, and magnetic correcting coils acting on the armature disk connected with other contacts on the stationary table. 59th. The combination, substantially as set forth, of two electrically connected stations independently electrically rotated apparatus at each station, the motor circuits, circuit breakers actuated by the rotary apparatus for automatically interrupting the motor circuits, the tables of contacts, the circuit completers which traverse the tables of contacts, and mechanism, substantially as described, for automatically maintaining the synchronous movement of the apparatus by acting on the circuit breakers. 60th. The combination, substantially as set forth, of two electrically connected stations, the motor circuits, magnets and batteries, the rotating armature disks, the trailing fingers or circuit completers actuated by the armature disks, the tables of contacts rotary circuit breakers for automatically interrupting the motor circuits, a correcting battery at each station connected to some of the contacts, and correcting coils at each station connected to other of the contacts. 61st. The combination, substantially as set forth, of the trailing finger, the table of contacts, the motor magnets, the rotating armature disk, the break wheel mounted on the shaft of the disk, the contact fingers and means for adjusting the motor magnet to or from the armature disk to vary the speed of rotation. 62nd. The combi-

nation, with the rotary armature disk of the line, the correcting magnet and means for adjusting it to and from the disk and sidewise relatively thereby, to vary the effect of the correcting impulses received from the line. 63rd. The combination, substantially as set forth, of a main line, the independently actuated armature disk, means for actuating it, and the independent correcting coil which acts directly upon the armature disk to correct its speed of rotation independently of the actuating devices, when a correcting impulse of electricity is received from the main line. 64th. The combination, substantially as set forth, of a toothed armature disk, a motor circuit and magnet for driving it, and the independent correcting coil which acts directly upon the armature disk, to correct its speed of rotation independently of the motor devices. 65th. The combination, substantially as set forth, of a motor circuit battery and magnet, an armature disk, a table of contacts, the circuit completer actuated by the armature disk and a correcting magnet which acts directly upon the armature disk. 66th. The combination, substantially as set forth, of electrically connected stations, motor circuits, magnets and batteries, armature disks, tables of contacts, traversing circuit completers, circuit breakers for automatically interrupting the motor circuits, a correcting battery at each station connected with some of the contacts on the table, and a correcting magnet at each station connected with others of the contacts and acting directly on the armature disk to regulate the speed. 67th. The combination, substantially as set forth, at electrically connected stations, of mechanism at each station for successively completing and breaking the line circuit, apparatus for continuously operating such mechanism, means for automatically sending correcting impulses of electricity from one station to the other, and a coil which acts electro-magnetically directly on the driven mechanism which successively makes and breaks the main line circuit. 68th. The combination, substantially as set forth, at electrically connected stations, of a series of contacts connected in independent groups, so that the circuit of each group includes a number of contacts placed at intervals in the series, mechanism at each station for successively completing and breaking the line circuit through said contacts, telegraphic instruments in the circuit of each group of contacts, continuously actuated circuit completing mechanism, and means for automatically independently connecting the speed of such mechanism. 69th. The combination, substantially as set forth, at electrically connected stations, of two or more branch lines at each station containing telegraphic instruments, means for rapidly successively placing the branch lines in communication with the main line, so that each branch line receives a sufficient number of independent connections per second, with the main line to give each branch line a circuit and current practically continuous for telegraphic purposes, mechanism for continuously actuating the apparatus at each station and means for correcting the speed of such apparatus to maintain their synchronous movement. 70th. The combination, substantially as set forth, at electrically connected stations, of branch lines at each station, rotary apparatus for successively placing the branch lines in connection with the main line several times in each revolution, mechanism for actuating the apparatus at both stations, and means for independently correcting the speed of the apparatus to maintain their synchronous movement, so that the corresponding branch lines at the two stations will be successively placed in communication several times in each revolution of the apparatus. 71st. The combination, substantially as set forth, of telegraphic stations connected by a main line, a table of insulated contact pieces at each station, telegraphic instruments at each station, each connected in independent circuit with some of the insulated contact pieces, a trailing finger or circuit completer at each station which moves over the table of contacts, and with which the main line is connected, electrical apparatus for continuously rotating the trailing finger at each station the correcting insulated contacts at each station connected together and to a battery, and the other correcting contacts connected together and through the coils of the correcting magnets, at each station for correcting the movement of the electrical apparatus which rotates the trailing circuit completers. 72nd. The combination, substantially as set forth, of telegraphic stations, the main line, a rotating trailing finger or circuit completer at each station, electrical apparatus for independently, automatically and continuously rotating, said circuit completers, the circular tables of insulated contacts over which the trailing fingers move said contacts being divided into series of equal numbers, telegraphic instruments each connected in independent circuit with some of the contacts in each series, correcting batteries connected with other of the contacts, and correcting coils for maintaining the synchronous movement of the apparatus connected to other contacts and so arranged that when the instrument at one station runs out of time with that at the other station, an impulse of electricity will be transmitted from that station through the battery, connected contacts over the line and through the correcting coil, connected contacts at the other station through said coils as set forth. 73rd. The combination of telegraphic stations, the main line connecting them, a rotating circuit completer at each station, electrical apparatus for automatically and continuously rotating, said circuit completer, circular tables of contacts over which the circuit completers travel, telegraphic instruments, each connected in independent circuit with some of said contacts, correcting batteries, and magnets each connected with some of the remaining contacts for maintaining the synchronous movement of the apparatus, and an indicator or supplementary telegraphic instrument placed in the circuit of each of the first mentioned telegraph instruments, between those instruments and the table of contacts, substantially as set forth. 74th. The combination of telegraph stations, the main line connecting them, a rotating circuit completer at each station, electrical apparatus for automatically and continuously rotating said circuit completer, a circular table of contacts over which the circuit completer at each station travels telegraphic instruments, each connected in independent circuit with some of said contacts, correcting batteries and magnets, each connected with some of the remaining contacts for maintaining the synchronous movement of the apparatus, an indicator or supplementary telegraphic instrument placed in the circuit of each of the first mentioned telegraph instruments between those instrument and the table of contacts, and a ticker or sounder connected with one of the contacts devoted to the correction of the apparatus, substantially

as set forth. 75th. The combination, substantially as set forth, of two independently rotated instruments, a main line connecting them, apparatus for independently actuating the instruments, correcting coils or magnets for correcting the motion of such apparatus by direct electro magnetic action, the tables of contacts, telegraphic instruments, the contacts with which they are connected, the correcting contact connected with the correcting coils and batteries and circuit completers. 76th. The combination, substantially as set forth, of the independently rotated instruments, a main line connecting them, electrically controlled apparatus for independently and continuously rotating the instruments, tables of contacts, telegraphic instruments the contacts with which they are connected, circuit completers, and means for automatically correcting the speed of the electrically controlled primary actuating apparatus to insure the synchronous movement of the instruments. 77th. The combination, substantially as set forth, of the table of contacts, an electric circuit or line, a circuit completer, telegraphic instruments electrically connected with contacts on the table, and indicators placed in the lines between the telegraphic instruments and said said contacts. 78th. The combination, substantially as set forth, of two electrically connected stations, a vibrator at each station motor circuits and magnets and rotary circuit completers driven thereby, circular tables of contacts, some of the contacts thereon being apportioned into circuits for the transmission of electrical impulses for any purpose, other contacts thereon arranged in connection with suitable batteries for sending electrical impulses to maintain the synchronous movement of the apparatus at the two stations, regulating magnets through which electrical impulses are sent to correct the speed of the vibrators and static discharge contact placed between each of the contacts on the tables of contacts and connected to the ground. 79th. The combination of a main line, a series of like contacts electrically connected in independent groups, so that each contact is connected in a different group from the adjoining contacts, means for successively completing the line circuit through said contacts, and a series of line discharge contacts electrically connected with the ground placed between the first named contacts, so that the line is discharged to earth before the completion of the circuit through each of the first-mentioned contacts. 80th. The combination, substantially as set forth, of a main line, a series of like contacts arranged in a circle and electrically connected in independent groups, so that the circuit of each group is connected with a number of contacts placed at intervals around the circle, a circuit-completer which traverses the circle and successively and rapidly makes and breaks the line circuit through each of the contacts, whereby the circuit of each group of contacts is placed in connection with the main line, a number of times to each traverse of the circuit completer, and a series of line discharge contacts connected with the ground placed alternately between the first-mentioned contacts, so as to alternately make the main line circuit through each of the first named contacts and discharge the line to ground through each of the discharge contacts. 81st. The combination, substantially as set forth, at electrically connected stations, of a series of contacts at each station, some of which are connected for use, as described, and others of which are devoted to maintaining the synchronous movement of the apparatus, mechanism at each station for successively making and breaking the line connection with said contacts, electrically controlled apparatus for continuously actuating such mechanism, means for automatically correcting the speed of said circuit-breaking mechanisms reciprocally from one station to the other, whenever they run out of time by impulses of electricity received from the distant station through the correcting contacts, and a series of line-discharge contacts connected with the ground through which the line is discharged before its connection with each of said first-named contacts. 82nd. The combination, substantially as set forth, of the main line, the split battery, the vibrating transmitting lever, or actuator, which alternately puts the opposite poles of the battery to the main line, a relay which is not included in the main line, and when such transmitting impulses of electricity are sent into it, and means for momentarily including the relay in the main line circuit after each impulse from the battery is sent into the line. 83rd. The combination, substantially as set forth, of the main line, the split battery, the vibrating transmitting lever or key connected with the main line which alternately puts the opposite pole of the battery to the line, a relay, which is not included in the line when transmitting impulses are sent into the line, and a yielding contact connected with the ground, which normally projects into the path of movement of the transmitting lever, and is struck by the lever as it passes from one pole of the battery to the other, and momentarily puts the line to ground through the relay.

No. 23,440. Pinch Bar for Removing Railway Cars. (Lemer pour Déplacer les Chars de Chemin de Fer.)

Mark A. Sheldon, Corry, Pa., U.S., 16th February, 1886; 3 years.

Claim.—1st. The combination, with the handle portion A, of a fulcrum portion C pivoted at its rear end to the handle portion, and provided at its under side with a fulcrum adapted to rest on the rail, substantially as set forth. 2nd. The combination, with the handle portion A, provided with a working nose a, of a fulcrum portion C pivoted to the handle portion and provided with a working nose f, both noses being adapted to bear against the wheel simultaneously, substantially as set forth. 3rd. The combination, with the handle portion A, provided with a working nose a, of the fulcrum portion C provided with a working nose f, and rearwardly-extending arm i straddling the nose a, and pivoted to the handle portion above said nose, substantially as set forth. 4th. The combination, with the handle portion A, provided with a working nose a, and lugs or ears h, of the fulcrum portion C pivoted to the handle portion A and adapted to be supported by said cars, substantially as set forth. 5th. The combination, with the handle portion A, having a working nose a, provided with a removable wear plate b, of the fulcrum portion C pivoted to the handle portion A, and having a working nose f provided with a removable wear plate g, substantially as set forth.

No. 23,441. Automatic Electric Gas Lighting Burner. (Bec a Gas à Allumage Electrique.)

David Rousseau, New York, N. Y., U. S., 16th February, 1886; 5 years.

Claim.—1st. The combination, with a gas burner having a double seating poppet valve moving therein, with its stem protruding loosely therefrom, of the armature l connected to said valve-stem, and the magnet k arranged to attract said armature, with the pawl armature o arranged when retracted to hold said valve armature in its attracted position, and the magnet i acting on said pawl armature, substantially as shown and described. 2nd. The combination, with the gas burner, of the double-acting poppet-valve f moving therein, with its stem projecting loosely, with the gravitating armature l connected to said valve stem, the magnet k arranged to lift said armature and close said valve, the normally retracted pawl armature o, arranged to hold said armature in its attracted position, and the magnet i arranged to attract said pawl armature and allow the gravitating armature to fall and open the valve, substantially as shown and described. 3rd. In a gas burner, the combination, with the poppet valve f working within the burner, with its stem f projecting therefrom, with the bail or yoke a connected to said stem, and the armature l connected to said yoke, and a magnet k acting on said armature, substantially as shown and described. 4th. The combination of the gas-burner, with the passage d and valve seat or chamber e, and perforated seat plug g, with the double-faced poppet-valve f, with its stem f projecting through said plug, the bail a connected to said stem, armature l connected to said bail and magnet k acting on said armature. 5th. The combination, with the gas burner having the valve chamber e and perforated seat plug g, of the valve f arranged as shown with the bail a, armature l, magnet k and armature o, p, with magnet i and retractor q arranged and operating, substantially as shown and described. 6th. In an electric gas burner, the combination, with the fixed sparking point e and the lighting magnet i, of the armature o acted on by said magnet, and the movable sparking point f pivoted on said armature and having a play slot engaged with a pin or projection p on the armature, substantially as set forth for the purpose set forth. 7th. The combination, with the gas burner, of the fixed sparking point a and magnet i, with the armature o and retracting spring q, with the sparking lever r pivoted on said armature pressed by spring u, and having a slotted arm engaged with a pin v on the armature, substantially as set forth for the purpose set forth. 8th. The combination, with a gas burner, of the fixed sparking point a with the armature o, spring q and magnet i, the slotted sparking lever r pivoted on said armature, the spring u and pin v, the pawl p, the magnet k and its armature l engaged by said pawl and a gas-valve connected to said armature, arranged and operating substantially as shown and described.

No. 23,442. Link for Chains, etc.

(Mailon de Chaines, etc.)

James P. Preston, Bisbee, Arizona, U. S., 16th February, 1886; 5 years.

Claim.—1st. A link made in two longitudinal sections having arms curved and tapered in the direction of their length, and provided with teeth c, the arms and teeth of one link section fitting the arms and passing through the recesses of the fellow section and lying flush with the side bars thereof, substantially as described. 2nd. A chain link made of two longitudinal sections, having arms at each end curved toward each other and tapered in the direction of the length, the outer end of each arm being pointed and provided with a tooth e and shoulders s, and the side bar of the link section having a tapered seat d, d' and a recess c, whereby when the sections are fitted together, the shoulders e and teeth c fit the sockets d, d' and recess c of the fellow section, and the curved tapered arms fit flush with the side bars, substantially as described. 3rd. A link made in two longitudinal sections, each of which consists of a side bar having a curved tapering arm at each end, a tooth arm having a shoulder e and a tooth c at its outer end, and a seat d and socket c' at its juncture with the side bar of the link section, as set forth.

No. 23,443. Snow Clearer.

(Charrue à Neige.)

William A. Greenleaf, Ottawa, Ill., U. S., 16th February, 1886; 5 years.

Claim.—1st. The combination, with the table D having recess l and the deflectors K, K, arranged as shown, and having recess l, of the removable inclined cutter L, all arranged and serving as and for the purposes set forth. 2nd. In a snow-clearer, substantially as described, the combination, with the table D provided with the vertical cutters B and the braces b, and means F, F, G, J, etc., for adjusting it at will, of the reach-frame E having platform E', the bolt i segment M, pinion rope or chain O, standard P and dog Q, all arranged and operating as and for the purposes set forth.

No. 23,444. Safe Grip for Railway Rails.

(Bride de Sûreté pour Rails de Chemin de Fer.)

Peter DeGuerra, Toronto, Ont., 16th February, 1886; 5 years.

Claim.—1st. The post B, d, substantially as and for the purpose hereinbefore set forth. 2nd. The key E, with its guard I and rising piece F, substantially as and for the purpose hereinbefore set forth. 3rd. The ribs B and legs p, substantially as and for the purpose hereinbefore set forth.

No. 23,445. Telegraphy, (Télégraphique)

Patrick B. Delaney, New York, N. Y., U. S., 18th February, 1886; 5 years.

Claim.—1st. The improvement in the art of multiple transmission, which consists in rapidly and independently making and breaking

connection between the main line and the lines containing transmitting and receiving apparatus at the stations at unequal speeds, and then transmitting messages, as set forth, or each interrupted circuit. 2nd. The combination of a main line, the branch or transmitting and receiving lines at each station and a circuit breaker at each station, which automatically and successively makes and breaks the main line circuit through each of the branch circuits, the circuit breaker at one station acting to make and break the circuit more rapidly than that at the other station, for the purpose set forth. 3rd. The combination of a main line, the branch or transmitting and receiving lines at each end of the main line, telegraphic apparatus in said branch lines, and a circuit breaker at each station interposed between the main line and branch lines, so as to successively and rapidly make and break the circuit with said lines, the circuit breaker at one station acting to make and break the circuit more rapidly than that at the other station, for the purpose set forth. 4th. The combination of a main line, branch, or transmitting and receiving lines at each station, a circuit-breaker at each station interposed between the main line and the branch lines, the circuit-breaker at one station being actuated more rapidly than that at the other station, and the telegraphic receiving apparatus, transmitting apparatus and a battery in each of the branch lines, the two batteries at each station being arranged with upright poles to the line, for the purpose set forth. 5th. The combination of a main line, branch, or transmitting and receiving lines at each end of the main line, a vibratory circuit-breaker at each station interposed between the main line and the branch lines, and means for vibrating the circuit-breakers at different speeds, for the purpose set forth. 6th. The combination of a main line, branch, or transmitting and receiving lines at each station, a vibrating fork at each station with a local battery circuit, and magnet for automatically vibrating it, which fork rapidly makes and breaks the circuit through each of the branch lines, the fork at one station being vibrated more rapidly than that at the other station. 7th. The combination of a main line, branch lines at each station, a circuit-breaker at each station, which makes and breaks the main line circuit with each of the branch lines, and a battery in each branch line, the two batteries at each end of the line being arranged with opposite poles to the line. 8th. The combination of a main line, branch lines at each end of the main line, circuit breakers at each station which rapidly make and break the main line circuit with each of the branch lines, the circuit-breaker at one station acting more rapidly than that at the other station, a relay or relays at each station in one or both of the branch lines, and means for preventing chattering on the sounder liable to be caused by the vibratory current. 9th. The combination of a main line, branch, or transmitting and receiving lines at each end of the main line, a circuit-breaker interposed between the main and branch lines at each station, that at one station being actuated more rapidly than that at the other in one or both of the branch lines at each station and a relay having a solenoid sounder and split battery in its local circuit and a transmitting key or keys at each station. 10th. The combination, substantially as set forth, of a main line, branch, or transmitting and receiving lines at each station, circuit breakers actuated at different speeds, interposed between the ends of the main line and the branch lines, a transmitting key battery and relay in each of the branch lines, and a polarized sounder local circuit and split battery for each relay. 11th. The combination of the main line, the branch, or transmitting and receiving lines at each end of the main line, telegraphic apparatus in said branch lines, a circuit-breaker at each station interposed between the main line and branch lines, so as to successively and rapidly make and break the circuit with said lines, the circuit-breakers at one station acting to make and break the circuit more rapidly than that at the other station, and condensers connected in the branch lines, for the purpose set forth. 12th. The combination, with a system of telegraphy, in which each signal or impulse is made up of fine vibrations or impulses, of an arrangement of relays and sounders in which the stroke on the sounder is given when the relay armature leaves its back stop. 13th. A sounder, the armature of which is attracted a... which gives its reading stroke by the force of a spring, when its local circuit is open. 14th. The method of working sounders, by shunting the local circuit from the sounder coil, substantially as illustrated.

No. 23,446. Fac-Simile or Autographic Telegraphy. (*Télégraphe Autographique.*)

Patrick B. Delany, New York, N.Y., U.S., 18th February, 1886: 5 years.

Claim.—1st. In a fac-simile or autographic system, a combination of a single main line conductor, a series of corresponding terminal lines at each end of the main line, devices by which the circuits of the pairs of corresponding terminal lines are successively completed through the common main line, and a contact finger or stylus connected with each of said lines. 2nd. The combination of a main line, a series of insulated contacts at each end of the main line, synchronously actuated circuit completors which traverse said contacts and momentarily place them in communication with the main line, a series of independent lines at each end of the main line, each of said lines being connected with one or more of the contacts on the table of contacts, the corresponding lines at the two stations being connected with corresponding contacts, as described, and the fingers or styluses, for automatic transmissions connected in said lines. 3rd. The combination of a main line, a series of insulated contacts at each end of the main line, synchronously actuated circuit completors which traverse said contacts and momentarily place them in communication with the main line, some of said contacts being devoted to maintaining the synchronous movement of the apparatus, a number of independent lines at each station among which the remainder of the contacts are distributed, the corresponding lines at the two stations being connected with corresponding contacts, and the fingers or styluses for automatic transmission connected in said lines. 4th. The combination of a main line, a series of insulated contacts at each end of the main line, synchronously actuated circuit completors which traverse said contacts and momentarily place them in communication with the main line, a number of independent lines in each of which some of said contacts are connected, the corresponding lines at the two stations being connected with corresponding con-

ducts, fac-simile telegraphic transmitting and receiving devices, contact fingers connected in each of said lines, a relay in each of said lines, and a local circuit which is completed through each of said fingers in response to the action of the relay to reproduce the transmitting characters at the receiving station, as described. 5th. In a fac-simile or telegraphic system, the combination of a single main line conductor, a series of corresponding terminal lines at each end of the main line, the circuit of each pair of corresponding terminal lines being completed through the common main line, mechanism by which the circuit between said corresponding terminals is successively independently completed, electric devices for automatic transmission by which an impulse of electricity is sent into the line only when a character or portion of a character is being transmitted, and receiving devices for receiving and recording said impulses. 6th. The combination of a main line, a series of insulated contacts at each end of the main line, synchronously actuated circuit completors which traverse said contacts and momentarily place them in communication with the main line, a series of independent lines at each end of the main line, each of said independent lines being connected with one or more of the contacts on the table of contacts, the corresponding lines at the two stations being connected with corresponding contacts, the contact fingers or styluses for automatic transmission connected in said lines, devices for sending a transmitting impulse into the line only when a character or portion of a character is to be transmitted, and receiving devices. 7th. The combination of a main line, a series of insulated contacts at each end of the main line, synchronously actuated circuit completors which traverse said contacts and momentarily place them in communication with the main line, a series of independent lines at each end of the main line, each of said lines being connected with one or more of the contacts on the table of contacts, the corresponding lines at the two stations being connected with corresponding contacts, the fingers or styluses connected in said lines, the plates C over which the styluses traverse the relays R and S, the main batteries, the local batteries, their circuits and connections and the switches.

No. 23,447. Stock Car. (*Char à Bastiaux.*)

Harrison Arms, Toledo, Ohio, U.S., 18th February, 1886: 5 years.

Claim.—1st. In a stock car, the combination of the partition C and castings H and J, substantially as and for the purpose described. 2nd. In a stock car, the combination of the partition C, castings H and J and latch I, substantially as and for the purpose specified. 3rd. In a stock car, the partition C hinged to the bolt or pin D, combined with castings H and J, latch I and pivoted casting K, all substantially as and for the purpose specified.

No. 23,448. Stock Car. (*Char à Bastiaux.*)

Harrison Arms, Toledo, Ohio, U.S., 18th February, 1886: 5 years.

Claim.—In a stock car, a series of metallic slats A having outwardly turned flanges a and sockets at, in combination with the connecting bar C, lever D and the bars B having pins b, substantially as set forth.

No. 23,449. Sheet Metal Conductor Pipe. (*Tuyau Conducteur du Métal en Feuille.*)

John Leadley, Detroit, Mich., U.S., 18th February, 1886: 5 years.

Claim.—1st. A sheet metal conductor pipe, substantially rectangular in cross section, with its sides and ends inwardly curved and its corners concave, chamfered substantially as and for the purposes set forth. 2nd. As a new article of manufacture, a sheet metal conductor pipe A provided with the inwardly curved sides and ends a, b, respectively concave, chamfered corners c, and longitudinal ribs d, substantially as set forth. 3rd. As an improved article of manufacture, an octagonal sheet metal conductor pipe, each side of which is bent inward, and each two adjacent sides forming two sides of a triangle, substantially as and for the purposes specified.

No. 23,450. Cross Spring Bolt for Waggon.

(*Boulon de Ressort en T pour Waggon.*)

Samuel Collings, Cobourg, Ont., 18th February, 1886: 5 years.

Claim.—The combination, with crossed springs, as shown, of the bolt C having heads B, lip D and nut G rivolted thereon, as shown and described for the purposes set forth.

No. 23,451. Method of Slatting Roofs.

(*Mode de Couvrir les Toits en Ardoise.*)

James B. Blaikie, Auckland, N.Z., 19th February, 1886: 5 years.

Claim.—Affixing the slates diagonally on their supporting battens or close boards, such slates having short butt joints which are covered by the "lap" or "bond", and such bond or lap running either way diagonally at an angle of about forty-five degrees to the line of the battens, substantially as herein described.

No. 23,452. Telephone. (*Téléphone.*)

Marcus C. Wright and Francis A. Peacock, Toronto, Ont., 18th February, 1886: 5 years.

Claim.—1st. A receiving instrument provided with a local battery, the current of which passes through either a microphone or other transmitter, deriving a vibratory motion from the undulatory current of a telephonic circuit, substantially as and for the purpose specified. 2nd. A receiving and repeating instrument consisting of a microphone or other transmitter in circuit, with a local battery and primary of an induction coil, the microphone or other transmitter deriving a vibratory motion from the undulatory current of a telephonic circuit, substantially as and for the purpose specified.

No. 23,453. Apparatus for Digging Post Holes, etc. (*Appareil pour Faire les Trous des Pieux, etc.*)

Thomas S. Diston, Philadelphia, Pa., U.S., 18th February, 1886. 5 years.

Claim.—1st. The combination of the inwardly tending spring blades, of a post-hole digging implement, with devices for forcing the blades apart, substantially as described. 2nd. The combination of the spring blades and supporting stem, with knee joint links placed between the two blades, and an operating rod connected to knee joint links, substantially as set forth. 3rd. The combination of the spring blades, the supporting stem and links *e, e* pivoted to the blades, with a head *D* and an operating rod adjustably connected to the said head, substantially as described. 4th. The combination of the inwardly tending spring blades, with a knee joint for separating the blades, a rod *d* connected to the knee joint and a handled lever *E* connected to the rod, substantially as described.

No. 23,454. Steam Boiler. (*Chaudière à Vapeur.*)

James Hartley, Brooklyn, N.Y., U.S., 18th February, 1886; 5 years.

Claim.—1st. In a boiler, the side tubes having off-sets between their cylindrical ends, the off-sets being arranged substantially as explained, so as to obviate trapping of steam within the tubes. 2nd. The water and steam drums, the side tubes having off-sets, top tubes and corner columns, combined and arranged substantially as explained. 3rd. The wrought metal tubes having cylindrical ends of unequal lengths, and off-sets between the ends arranged to leave open spaces between the tubes, substantially as shown. 4th. The combination, with the water drum, of the two man hole plates and the securing devices, the securing device for one plate being located outside of the drum, and that for the other plate located inside of the drum, for the purposes set forth. 5th. In a steam boiler, the combination with the steam drum, of the two manhole plates and the securing devices, the securing device for one plate being located outside of the drum and that for the other plate located inside the drum, for the purposes set forth. 6th. In a sectional boiler, the combination, with the tubes of the sectional part, of the fire walls or divisions formed of separate blocks or pieces located in place upon the tubes by means of bolts and plates secured to the blocks or pieces. 7th. The walls of the ash pit, provided with troughs to receive the lowermost tubes of the boiler walls. 8th. The steam drum provided with an offset for receiving the ends of the inclined tubes, communicating with said drum and the interior stay pieces, combined with said drum. 9th. In a sectional boiler, the tubes of the sectional part having off-sets and cylindrical ends, said tubes being arranged so that clearing space shall be afforded being consecutive tubes, and so that the apices of the off-sets upon the tubes shall lie in or below the horizontal lines through the centers of the cylindrical ends, as explained.

No. 23,455. Block or Surface for Engraving or Etching upon. (*Bloc ou Surface pour Graver au Burin ou à l'Eau Forte.*)

William C. Norman, Sydney, N.S.W., 18th February, 1886. 15 years.

Claim.—1st. An improved block or surface for engraving or etching upon, consisting of an etching surface of veneer, superposed either by cementing or combining on or adhering to a second prepared surface or block, which latter will more stubbornly resist the action of an etching material than the former, substantially as herein described and explained. 2nd. An improve block or surface for engraving or etching upon, consisting of a "surface" sheet or mass of material, in which are imbedded separately arranged quantities (such as dots, strips, etc.) of another material, offering more stubborn resistance to the action of a third material that will etch said "surface" or first material, substantially as herein described and explained. 3rd. The manufacture of such blocks or surfaces by preparing the design for the "second" or under surface in reverse upon the reverse or back of the sheet or veneer to form the first or upper surface, and electroplating said back with the "second" material, substantially as herein described and explained. 4th. The manufacture of such blocks or surfaces by engraving, or preparing the design for the second or under surface upon the "second" material, and electroplating it with first material, which after polishing forms the "surface", substantially as herein described and explained. 5th. The manufacture of such blocks or surfaces by electroplating or stereotyping any suitable material upon an embossed, engraved or suitably prepared matrix, to such a thickness that it may be stripped off to form the "second" material upon which sufficient "first" material is electroplated or precipitated to form the "surface", substantially as herein described and explained. 6th. Mounting or backing such blocks or surfaces upon a smooth sheet of metal or alloy, by first coating the two surfaces which are to adhere with a film of tin or solder, and then pressing them together at a temperature which will melt and affect only the solder, substantially as herein described and explained.

No. 23,456. Printer's Galley. (*Gallier.*)

David W. Whitaker and James E. Lyon, Durham, N.C., U.S., 18th February, 1886. 5 years.

Claim.—1st. The combination, in a printer's galley, of a longitudinal bar sliding transversely in the galley parallel to the sides, arms hinged to the outer side of the sliding bar, and means for tilting and straightening the said arms, as and for the purpose shown and set forth. 2nd. The combination, in a printer's galley, of a longitudinal bar sliding transversely in the galley parallel to the sides, arms hinged in pairs to the outer side of said sliding bar, and means for spreading and drawing together the outer ends of the said arms, substantially as and for the purpose shown and set forth. 3rd. The combination, in a printer's galley, of a longitudinal bar sliding transversely in the galley parallel to the sides, arms hinged to the outer side of said bar, and having heads with threaded perforations at their outer ends, and a screw-threaded rod passing through the said

perforations adapted to tilt and straighten the arms, substantially as and for the purpose shown and set forth. 4th. The combination, in a printer's galley, of a longitudinal bar sliding transversely in the galley parallel to the sides, arms hinged in pairs to the outside of said bar, and having heads at their outer ends provided with right and left-handed threaded perforations, each pair of arms having a right-and-left hand threaded perforation, and a bar journalled longitudinally in the side of the galley and having right-and-left hand screw threads for the perforations of the arms and means for revolving it, as and for the purpose shown and set forth.

No. 23,457. Cross-Cut, or Drag Saw.

(*Scie de Travers ou Trainante.*)

John J. Parkor, St. Cloud, Minn., U.S., 19th February, 1886. 5 years.

Claim.—The construction, in a cross-cut, or drag saw, of the depressed middle section, either with or without teeth, with the more elevated and toothed adjacent end sections, as and for the purposes hereinbefore set forth.

No. 23,458. Divided Car Axle.

(*Essieu de Char Divisé.*)

George W. Bedbury, San Francisco, Cal., U.S., 19th February, 1886. 5 years.

Claim.—1st. A divided car axle having adjustable packing rings or sleeves, divided, as described, and held circularly immovable, and means, substantially as described, for tightening or compressing them longitudinally, as set forth. 2nd. A divided car axle having adjustable rings or sleeves, divided, as described, and held circularly immovable, and a gland resting directly or indirectly upon the packing, and means, substantially as described, for adjusting said gland. 3rd. In a divided car axle, the combination, with the coupling box having the longitudinal slits or ways described, and the ring or sleeve packing having the projections for lying in said ways. 4th. In a divided car axle, the combination, with the coupling box and parts of the axle, of the solid hard metal rings, or bands, described, and divided packing rings or sleeves between said hard metal rings or bands, and means, substantially as described, for adjusting said packing longitudinally. 5th. The combination, in a divided car axle, of the divided V-shaped rings, each alternate ring being set in reverse direction, so that one set of said rings shall form the wearing surface for the axle, and the other the tightening wedges, said rings being held circularly immovable, and means, substantially as described, for adjusting said packing longitudinally. 6th. In a divided car axle, the combination of the two parts of the axle, the coupling box having the oil reservoir, the semicircular packing rings or pieces, and an opening or openings connecting the oil reservoir with the space or spaces between the ends of the packing rings or pieces. 7th. In a divided car axle, a coupling box having a continuous annular lubricant chamber surrounding the entire axle, and an opening or openings from said chamber into the packing chamber, whereby said chamber is given an automatic feed, as set forth. 8th. In a divided car axle, the combination, with the coupling box and parts of the axle, of the packing rings or pieces and the gland having the packing at *d*, as shown and set forth. 9th. In a divided car axle, the combination, with the two parts of the axle, the coupling box, metallic packing and gland of the packing at *d*, and securing plate or plates *F*, substantially as set forth. 10th. In a divided car axle, the combination, with the coupling box having the lubricant chamber, of the channels or tubes for filling the chamber passing out through the wheel of the car and having suitable covers thereon, as set forth. 11th. In a divided car axle, the combination, with the coupling box having a packing space around the axle in the gland or outer face, and a plate or plates, as described, for holding and compressing the packing in said space. 12th. The combination of the journal or end of axle portion, and casting or box *B* having a space between its inner wall and the journal for receiving the packing.

No. 23,459. Bark Shaving Mill.

(*Moulin à Tan.*)

Benedict Ott, LaCrosse, Wis., U.S., 19th February, 1886. 5 years.

Claim.—1st. In a bark mill, the combination, with the main frame of a hopper divided longitudinally into sections, substantially as set forth. 2nd. In a bark mill, the combination of a main frame having a bearing for the lower end of the shaft, the hopper divided longitudinally into sections, and frames connected to said sections and provided with a bearing for the shaft, substantially as set forth. 3rd. In a bark mill, a cutter cylinder divided into segmental sections, substantially as set forth. 4th. In a bark mill, a cutter cylinder combined with a presser formed with wrings arranged at approximately right angles to each other, substantially as set forth. 5th. The combination of the top and base plates, provided with stop shoulders, the cutter cylinder formed in segmental sections abutted against such shoulders, and fastenings for said sections and the bark carrier, substantially as set forth. 6th. The combination, with the top and base plates of the uprights placed between them, and having their sides formed in lines diverging outwardly, the cutter cylinder sections and the carrier, substantially as set forth. 7th. In a bark mill having a cutter cylinder and a carrier shaft, the combination, with the carrier plate, of a presser provided with a rearwardly extended base flange rested on said plate, and fastening bolt passed through said flange into the plate, substantially as set forth. 8th. The combination of the cylindrical rim having knives, and the revolving carrier operating within said rim, and consisting of a base plate adapted to support the material being cut, a shaft and pressers having their inner edges arranged close to or against the shaft and extended outwardly therefrom, and having their outer edges arranged to move close to the edges of the knives, substantially as set forth. 9th. The combination of the rim having cutters and the carrier arranged within said rim, and comprising a shaft and pressers extended outwardly from said shaft, and inclined rearwardly toward their outer ends with reference to the line of motion, substantially as set forth. 10th. The combination, with the framing, the carrier and the cutting

mechanism of the case sections pivotally supported at one end, whereby their other ends may be moved outward and provided at such movable ends with latches, substantially as set forth. 11th. The combination, with the rim having cutters and the carrier having pressors, of the case sections pivotally supported at one end, whereby their other ends may be moved outward, and provided at said movable ends with latches, whereby they may be secured in normal position, substantially as set forth.

No. 23,460. Washer for Carriage Top Prop. (Rondelle pour Branche de Couverture de Voiture.)

Ernesto Rothlisberger, Cincinnati, Ohio, U. S., 19th February, 1886; 5 years.

Claim.—1st. A carriage top washer, composed substantially of the plates A, E, covering C pierced with the shank-hole a and united together by means of cup-flange D, substantially as specified. 2nd. A washer for a carriage top prop, composed substantially of the metallic plate A, convex plate B, enamelled covering C, each pierced with the shank-hole a, and united together by the annular cup flange D, substantially as specified.

No. 23,461. Electric Cable Repeater.

(Répétiteur de Câble Electrique.)

Moses G. Farmer, New York, N. Y., U. S., 19th February, 1886; 15 years.

Claim.—1st. The combination, with a cable containing a continuous line, and a sectional main line or wire, of one or more devices for repeating signals from one section of the main to another, each consisting of a primary coil in the continuous line, means for reversing the direction of current through the coil connected with and operated by one section of the main, and a secondary coil in the next succeeding section, all substantially as set forth. 2nd. The combination, with a cable containing a continuous line and a sectional main line or wire, of one or more devices for repeating signals from one section to another, each consisting of a primary coil in the continuous line, means for reversing the direction of current through the coil included in one section of the main, a secondary coil in the next succeeding section, and apparatus operated by the local for transferring the circuit reverser, and secondary coil from one section of the main to the other, all substantially as set forth. 3rd. A repeater for submarine electric cables, consisting of the following instrumentalities, to wit, an induction coil, means for reversing the direction of the current through its primary, an electro-magnet for controlling the same independent of the primary coil, and an electro-magnetic switch or director in a branch of the primary circuit for connecting the said magnet and the secondary coil with either of two circuits respectively, all as set forth. 4th. The combination, with cable containing a continuous line and a sectional main wire or line, of one or more devices for repeating signals from one section of the main to the next, consisting of a primary coil in a branch of the continuous line, means for reversing the direction of current in said branch included in one section of the main, a secondary coil in the next succeeding section, and an electro-magnetic switch, or director, included in a second branch of the continuous line for transferring the circuit reverser and secondary coil from one section of the main to the other, all substantially as set forth. 5th. The combination, with an electrical cable containing a continuous line and a sectional main wire or line, of one or more devices for repeating signals from one section of the main to the next, each consisting of a primary coil in a branch of the continuous line, a device for reversing the current through said branch, a magnet in one section of the main for controlling said device, a secondary coil in the next succeeding section, and an electro-magnetic switch or director for grounding the sections through the secondary and the circuit reverser, respectively, as and for the purpose specified. 6th. The combination, with an electrical cable containing a continuous line and a sectional main wire or line, of one or more repeaters consisting of a primary coil in a branch of the continuous line, a device for reversing the current through said branch, a magnet in one section of the main for controlling said device, a secondary coil in the next, an electro-magnet with polarized armature in a second branch of the local, and a switch or director for grounding the sections through the secondary, and the circuit reverser, respectively, all as set forth. 7th. The combination, with a cable containing a continuous line and a sectional main line or wire, of one or more repeaters, consisting of a primary coil in the continuous line, a circuit reverser for changing the direction of the current in the primary and connected with one section of the main, a secondary coil included in the next succeeding section and condensers inserted in the sections of the main, as and for the purpose specified. 8th. The combination, with a grounded section of a main line M, a magnet K included therein and a circuit reverser operated by the said magnet, of a primary coil in a circuit co-extensive with the main line, the current in which is sent through the primary in opposite directions by the circuit reverser, and a secondary coil in the next branch of the main line M, all substantially as set forth. 9th. The combination, with a cable containing a continuous line and a sectional main line, of a primary coil in the continuous line, means for reversing the direction of current through the coil, an electro-magnet for controlling said means included in one section of the main line, and a secondary coil in the next section, the sections being grounded through the magnet and secondary, respectively as set forth.

No. 23,462. Stock Car. (Char à Bestiaux.)

Harrison Arms, Toledo, Ohio, U. S., 18th February, 1886; 5 years.

Claim.—1st. In a stock car, the combination, with a kicking beam, of a hanger composed of two screw sections, one section having a right thread and the other section a left thread, and an interiorly threaded tubular connection, substantially as and for the purpose described. 2nd. In combination with the hanger A, the handle C adapted to be depressed and prevent the turning of the tubular section

c, substantially as described. 3rd. In a stock car, the combination, with a kicking beam, of the hanger A and the safety chains E, substantially as and for the purpose specified.

No. 23,463. Checking Apparatus for Preventing Fraud on the Part of Persons Employed to Receive Money. (Appareil de Contrôle pour Empêcher les Personnes préposées à Recevoir de l'Argent de Commettre de la Fraude.)

Perceval Everitt, London, Eng., 19th February, 1886; 5 years.

Claim.—1st. A checking apparatus, in which the closing together of a pair of handles will feed forward a fixed length of paper, or other material, from a reel, which length of paper, or other material, can then be cut off by operating a knife, the length of paper cut off being held by the apparatus ready for delivery, the closing together of the said handles also operating (when required) a hammer to sound a bell, substantially as hereinbefore described. 2nd. In a checking apparatus, the combination, with a pivoted handle having a quadrant end and guide plate, of a sliding radial arm provided with a projection having pins, the said parts operating to feed forward the paper, or other material, when the handle is closed, substantially as hereinbefore described, and represented in the accompanying drawings. 3rd. In a checking apparatus, the combination, with the mechanism for feeding forward the paper, or other material, of the slotted concentric guide plates, such as g, h, i, as and for the purpose hereinbefore described, and represented in the accompanying drawings. 4th. In a checking apparatus, the combination, with the mechanism for feeding forward and guiding the paper, or other material, of the mechanism for cutting off the length of paper fed forward, substantially as hereinbefore described, and represented in the accompanying drawings. 5th. In a checking apparatus, the combination, with the mechanism for feeding forward the paper, of the spring pawl n, hammer k, and bell j, arranged and operating substantially as and for the purpose hereinbefore described, and represented in the accompanying drawings. 6th. The combination of parts forming the improved checking apparatus, operating in the manner and for the purposes substantially as hereinbefore described, and represented in the accompanying drawings.

No. 23,464. Car-Coupler. (Accouplage de Chars.)

John B. Winters, Batavia, N. Y., U. S., 22nd February, 1886; 5 years.

Claim.—1st. In a car-coupling device, the longitudinal timbers C, C, formed with corresponding horizontal longitudinal slots g, g near their inner ends, and cross-bars h and i fitted to said slots, in combination with the bumper B placed between said timbers, and provided with a longitudinal stem f, reaching through openings in said cross-bars h and i, with a spring k on the stem between the cross-bars, and a burr l on the stem outside the bar h, substantially as shown and described. 2nd. In a car-coupling device, the bumper B formed with a cavity p and coupling-hook b placed therein, pivoted at its inner end to a pin n in the bumper, in combination with the notched rod c reaching from the coupling-hook upward, substantially to the level of the deck of the car, the retaining bracket b₁ for the rod, and the spring d, substantially as shown and described. 3rd. In a car-coupling device, the bumper B formed with a cavity p and coupling-hook b placed therein, pivoted at its inner end to a pin n in the bumper, in combination with the notched rod c reaching from the coupling-hook upward to a point near the deck of the car, the retaining bracket b₁ for the rod, the spring d, and shaft d with crank e₁ and arms p at the sides of the car, substantially as shown. 4th. In a car-coupling device, the bumper B formed with a cavity p and coupling-hook b placed therein, pivoted at its inner end to a pin n in the bumper, in combination with the notched rod c reaching from the coupling-hook upward to a point near the deck of the car, the retaining bracket b₁ for the rod and spring d, the rod c being provided with the lever c₁, substantially as and for the purpose set forth. 5th. In a car-coupling device, a lever e₁ and a ring or crook n provided with an additional ring or catch e, in combination with a notched sectional lever c, the bracket b, the spring d which operates to press said rod forward against the edge o₁ of said bracket, the transverse crank-rod or shaft d and the coupling-hook k, all substantially as and for the purpose set forth.

No. 23,465. Machine for Planing Shingles.

(Machine à Planer le Bardeau.)

Thomas S. Disston, Philadelphia, Penn., U. S., 22nd February, 1886; 5 years.

Claim.—1st. The combination, in a shingle-planing machine, of a plate on which the shingles are placed, and mechanism for pushing the said shingles over the plate, with a rotary planer on one side of the plate, and an eccentric bed on the opposite side of the same, substantially as set forth. 2nd. A shingle planing machine, in which the following elements are combined, namely: first, a plate on which to place the shingles, second, an endless chain with pushers for moving the shingles over the bed, third, a rotary cutter, fourth, an eccentric bed for the shingles to bear against as they are acted upon by the cutter, and fifth, driving mechanism, whereby the said endless chain and bed are caused to operate in unison, substantially as specified. 3rd. The combination of the plate, endless chains and pushers for traversing the shingles over the plate, with a rotary cutter and a shaft H, and two eccentric semi-cylindrical beds attached thereto, all substantially as specified. 4th. The combination, in a shingle-planing machine, of beds n, n₁, endless chains and pushers for traversing shingles over the beds, a rotary cutter N below the bed, two semi-cylindrical beds above the same, a rotary cutter N₁ above the beds, and two semi-cylindrical beds below the same, substantially as set forth. 5th. The combination of the shaft H and its square portion s, with the two semi-cylindrical beds adjustably secured to the shaft, substantially as specified. 6th. The combination of the beds K, K₁, rotary cutter N, plate n and the endless chain

and its pushers, with the guide bars *m, m*, substantially as described. 7th. The combination of the beds *M, M*, bed *n*, rotary cutter *N*, the endless chains and its pushers and the guide bars *m, m*, substantially as described. 8th. The combination of the bed *K, K*, and the rotary cutter *N*, with the bed *n* having an overhanging elastic portion, substantially as described.

No. 23,466. Seeder. (*Semoir.*)

Halsey H. Monroe, Thomaston, Me., U.S., 22nd February, 1886; 5 years.

Claim.—1st. A bracket adapted to slide upon the axle, and connected to the valve-bar of a seeder, in combination with means for giving it reciprocating lateral movement, substantially as set forth. 2nd. A bracket adapted to slide on the axle and connected to the valve-bar of a seeder, in combination with a zigzag wheel fixed to the axle. 3rd. A bracket adapted to slide on the axle, and connected to the valve-bar of a seeder, said bracket being provided with a sleeve and bar *l* sliding in said sleeve, in combination with a pin and mechanism for operating the same, and with a zigzag wheel fixed to the axle connected to the bar, all substantially as described. 4th. The bracket *D* adapted to slide on the axle having a sleeve and bar *l* provided with holes, and means for giving the bar reciprocating motion, the spring *f* and pin and the lever *e*, all substantially as described. 5th. In connection with the seed-box, a curved or bevelled valve-bar provided with valve-blocks *s*, said bar being suspended below the box in straps, and combined with means for imparting to it reciprocating motion, all substantially as described. 6th. The valve-bar and valve-block provided with holes and combined with the stirring pin *t*, said pin serving to connect the block and bar, substantially as described.

No. 23,467. Combination Tool.

(*Outil à Combinaison.*)

Osecola D. Harmon, Holmesburg, Penn., U.S., 22nd February, 1886; 5 years.

Claim.—The hereinbefore described compound tool, consisting of two levers pivoted together near one end, and having their short arms bent toward each other to form uppers, and having their long arms of different lengths, the longer one having a hook formed at its end, a punch secured to one lever, and a seat therefor formed on the other one, a file formed on the upper side of the longer lever, a spring secured to one lever in position to be compressed by the other lever when the two are brought together, and a hook pivoted on one of the levers, and engaging a pin on the other, substantially as described and shown.

No. 23,468. Seat Fastening for Waggon.

(*Ferrure de Siège pour Chars.*)

Edwin S. Davis, Winona, Minn., U.S., 22nd February, 1886; 5 years.

Claim.—In a wagon-seat fastening, the combination of the bearing plate *C* having the foot flange *E*, and its upper end provided with the offset *F* having the perforated bearing-studs *U, G* in front and rear, with a passage *H* between them, and the seat having the plate *L* provided with the forward and downwardly curved tongue *Z* at its lower end, adapted to enter the said bearing-plate between the front and rear studs thereof substantially as specified.

No. 23,469. Tree Guard. (*Tuteur d'Arbre.*)

George S. Cole, The Dean, near Cironcester, Eng., 22nd February, 1886; 5 years.

Claim.—1st. In a tree-guard, a frame consisting of three or more uprights connected at their base and upper extremities, in combination with strained and interlaced wires filling the spaces between the said upright, substantially as herein set forth. 2nd. In a tree-guard, the combination of three or more upright *A*, united by bars or rails *B*, and by a hoop or ring *C*, substantially as herein set forth. 3rd. In a tree-guard, the spiral wire *D* and wires *E*, arranged substantially as herein set forth.

No. 23,470. Ventilating Spittoon for Railway Cars, etc.

(*Crachoir-Ventilateur pour Chars de Chemin de Fer, etc.*)

Herbert Wallis, Montreal, Que., 22nd February, 1885; 5 years.

Claim.—1st. In a car, for the purpose of ventilation, the combination of pipes or troughs laid longitudinally below the surface of floor opening into same from the car itself, and one or more outlets on each pipe below the car with ejector ventilators on same. 2nd. The combination, with the pipes *A* provided with suitable outlets, of spitoons communicating with same and set flush with floor of car, and connections by which pipes may be flushed. 3rd. The combination, with the *T*-pieces *A*, of castings *S* and valves *C* pivoted to same, all as herein set forth. 4th. In a railway car, the combination of a fixed spitoon, and an ejector ventilator communicating directly with same.

No. 23,471. Manufacture of Paint.

(*Fabrication de la Peinture.*)

Patriek J. McNally, Toronto, Ont., 22nd February, 1886; 5 years.

Claim.—A compound of orange mineral oil and glycerine compounded, substantially in the manner and in the proportions specified.

No. 23,472. Car-Coupling. (*Attelage de Chars.*)

Thomas L. McKeen, Easton, Penn., U.S., 22nd February, 1886; 5 years.

Claim.—1st. In a car-coupling, the combination of a drawhead having longitudinal recesses in its bottom, and having a transverse

bearing through the rear ends of the said recesses, a shaft rocking in the said bearings, and having a forwardly projecting arm at one end, and having cam plates secured at their rear ends to it and resting in the recesses, a transverse operating shaft upon the end of the car, a bracket having its edge parallel with the shaft at a distance from the same, a bar resting upon the edge of the bracket, and having its inner end pivoted to an arm projecting from the operating shaft, and a connecting rod pivoted to the outer end of the said bar, and having its lower end pivoted to the end of the arm upon the cam shaft, and for the purpose shown and set forth. 2nd. In a car-coupling, the combination of a drawhead having longitudinal recesses in its bottom, and a transverse bearing intersecting the rear ends of the said recesses, a shaft journaled in the said bearing, and having means for rocking it, and cam plates secured at their inner ends upon the shaft, and having their forward corners rounded, and having their upper rear corners cut off obliquely to bear against the rear ends of the recesses, as and for the purpose shown and set forth. 3rd. In a car-coupling, the combination of a shaft journaled and sliding in transverse bearings upon the front end of the car, and having a forwardly projecting arm connected to the coupling pin, with a bracket projecting from the front of the car under the shaft for supporting the arm of the shaft when raised, as and for the purpose shown and set forth. 4th. In a car-coupling, the combination of a drawhead having longitudinal recesses in its bottom, and having ribs at the inner sides of the recesses, and having registering perforations or bearings in the sides of the drawhead and in the ribs at the rear ends of the recesses, a shaft journaled in the said bearings, and having square portions in the recesses, and having means for rocking it in the bearings and cam plates secured with square perforations in their rear ends upon the shaft and resting in the recesses, as and for the purpose shown and set forth. 5th. In a car-coupling, the combination of a drawhead having a recess in its outer end, and a pin-supporting block sliding longitudinally in the said recess, and having a rear flat face and helical spring bearing, with its wide base against the rear face of the block, and with its apex against the rear end of the recess, being capable of being compressed into a flat spiral, as and for the purpose shown and set forth. 6th. In a car-coupling, the combination with the drawhead, its sliding block and the spring for forcing the latter forward of the pin-supporting latch pivoted to the upper side of the block, as and for the purpose shown and set forth. 7th. In a car-coupling, the combination of the sliding block having the recess in its upper side formed with the inclined bottom, and with the vertical grooves in the rear ends of its sides, with a pin-supporting latch having its laterally projecting transverse sliding and rocking in the grooves, as and for the purpose shown and set forth.

No. 23,473. Wood Sawing Machine.

(*Machine à Scier le Bois.*)

Samuel P. Dresser, Pleasant Mount, Mo., U.S., 22nd February, 1886; 5 years.

Claim.—1st. In a sawing machine, the combination with the upright frame *A* and the bars *J*, of a reciprocating saw blade gearing and levers for operating it, and a cross-piece uniting the bars *J* and having a binding screw for holding the blade, substantially as herein shown and described. 2nd. In a sawing machine, the combination with the upright frame *A* and the bars *J*, of a reciprocating saw blade gearing and levers for operating it, the cross-piece *L* uniting the bars *J* and having a slot *L*, and of the screw *M* in the cross-piece, substantially as herein shown and described. 3rd. In a sawing machine, the combination of the pitman *D*, the saw pivoted at its shank thereto, the lever *Q* pivoted to the side of the pitman, the spring *P* secured to the said lever and pivoted to the saw-shank, the lug *S* on the pitman, and the screw *K* passing through the said lug and bearing against the spring between its points of attachment to the pitman and said shank, substantially as shown and described. 4th. In a sawing machine, the combination of the pitman *D*, the saw-blade *F* pivoted at its shank thereto, the lever *Q* pivoted to the side of the pitman and having a slot *Q*, the pin *Q'* projecting from the pitman through the end slot, the lug *S* on the pitman, the screw *B* in the same and the spring *P* secured to the lever *Q* and to the saw-shank, substantially as shown and described. 5th. In a sawing machine, the combination with the standard *H* and the extensible lever *H*, pivoted to the standard *H*, of the pitman *D*, means for operating the same, the forked piece *E* carrying the saw *F* and the spring *P* secured to the pitman and to the forked piece, the said pitman and forked piece being pivoted to the lower end of the lever *H* by the same bolt, substantially as herein shown and described.

No. 23,474. Smoothing Iron. (*Fer à Repasser.*)

George G. Oldaker, London, Ont., 22nd February, 1886; 5 years.

Claim.—1st. The lever *I*, sliding arm *J*, standard *C*, formed with socket *K*, standard *C*, cover *A*, handle *D* and spring *L* formed with an angular end *L*, in combination with the box *B* formed with the notch *M*, substantially as shown and described and for the purpose specified. 2nd. The lever *I*, formed with a curved end *I*, cover *A*, standards *C, C*, and handle *D*, in combination with a slug *E*, formed with slot *E* and bar *N*, substantially as shown and described and for the purpose set forth. 3rd. The lever *I*, formed with a curved end *I*, sliding arm *J*, standard *C*, formed with socket *K*, standard *C*, cover *A* and handle *D*, in combination with a spring *L*, formed with an angular end *L*, box *B*, formed with the notch *M*, and the slug *E* formed with slot *E* and bar *N*, substantially as shown and described and for the purpose specified. 4th. In a smoothing iron, the spring *L* formed with an angular end *L* to permit the handle *D* to be alternately engaged with and disengaged from the box *B*, substantially as shown and described. 5th. In a smoothing iron, the lever *I* formed with a curved end *I* for the purpose of disengaging the spring *L* from the box *B*, and engaging the handle with the slug simultaneously, so that both motions are made with one movement of the hand, substantially as shown and described. 6th. The guides *U, O*, formed on the underside of the cover *A*, in combination with a slug *E*, formed with bevelled slot *E* to conduct the cover and lever secured thereon in proper position for the latter to engage with the bar *N*, substantially as shown and described. 7th. The box *B* formed with a guide *V*, in

combination with the standard C formed with a socket W, substantially as shown and described and for the purpose specified. 8th. The cover A, formed with an angular flange P and square flanges T, T, in combination with the box B, formed with flange S, in which the angular groove R and square recesses U, U, are formed, substantially as shown and described and for the purpose specified.

No. 23,475. Tubular Lantern.
(*Lanterne Tubulaire.*)

Earnest Schultz, Hamilton, Ont., 22nd February, 1886; 5 years.
Claim.—1st. In a tubular lantern, the hooks E, E attached to the flange D, and made to catch on the under side of the globe's band, in combination with the air tube chamber C and draw-bar G, substantially as and for the purpose specified. 2nd. In a tubular lantern, the draw-bar G secured to the flange D, and in combination with the same, the air tube chamber C and hooks E, E, substantially as and for the purpose specified. 3rd. In a tubular lantern, the plate H formed with projections e, e, and holes d, d, and the draw-bar G, provided with top bends f, f and lower bends g, g and spring thumb ring c, substantially as and for the purpose specified.

No. 23,476. Sale Book. (*livret de Vente.*)

James L. Morrison, Toronto (Assignee of John R. Carter, as Trustee for Carter & Co., Niagara Falls), Ont., 23rd February, 1886; 5 years.

Claim.—1st. The combination, with the cover of a book, of a clamping tablet and a spring attached to the sides of the cover below the tablet at the sides thereof, as set forth. 2nd. The combination, with the cover of a sales or memorandum book, of an end clamping tablet, an inclosed metallic plate in said tablet, and a spring attached to the sides of the cover and bearing on the metallic plate in the tablet, as set forth. 3rd. The combination, with a sales book cover, of a clamping tablet having a rib across the under surface, and a spring connected with the cover and bearing the tablet toward the cover, substantially as described. 4th. The combination, with cover A, of the clamp tablet C held toward the cover by side springs connected with the cover, and the pad of sheets having a line of perforations near the edge of the tablet. 5th. The sales book described, having stiff cover, jointed centrally, the spring tablet and pad of leaves perforated on a line near the edge of the tablet, perforated centrally, and perforated near the end away from the tablet, as set forth. 6th. The book cover A, of stiff material, centrally jointed, the tablet C, the side springs attached to the cover and bearing on the inner end of the tablet, the pad of sheets K perforated on the lines N, O, Q, and the transfer leaf held under the tablet and shorter than the leaves of the pad, as set forth. 7th. The book cover A and the pad of sheets perforated on a line transversely across the cover, the transfer leaf and the pad secured to the cover, by means of a rigid clamp bearing on the sheets near the line of perforations.

No. 23,477. Cuspidore. (*Crachoir.*)

Orson W. Smith, Charlevoix, Harrison Berdan and Elisa Bordan, Detroit, Mich., U.S., 23rd February, 1886; 5 years.

Claim.—1st. A cuspidore, having an opening at its lower end, and a series of bars arranged across its mouth, substantially as set forth. 2nd. A cuspidore of the form of a truncated cone having an opening at its lower end, a series of bars arranged across its mouth and a flange for its attachment, substantially as set forth. 3rd. The combination, with a cuspidore having an opening at its lower end, of a valve for closing said opening, said valve being adapted to be lowered to discharge the contents of the cuspidore, substantially as set forth. 4th. The combination, with a cuspidore, having a series of bars arranged across its mouth, a suitable opening and a flange for its attachment, of a valve for closing said opening, substantially as set forth. 5th. The combination, with a cuspidore having an opening at its lower end, of a valve and spring actuating mechanism connected with and holding the valve against the opening, as set forth. 6th. The combination, with the cuspidore, substantially as described, of a valve held against the lower end thereof by means of a spring-actuated rod, as set forth. 7th. The combination, with a car, dental chair, or the like, of the cuspidore, substantially as herein described. 8th. The combination, with a cuspidore having a suitable opening, and a valve for closing said opening, of a rod for lowering said valve to discharge the contents of the cuspidore, substantially as set forth. 9th. The herein described cuspidore of the form of a truncated cone having an opening at its lower end, a valve for closing said opening, a rod connected with the valve and actuated by a spring, and a series of bars arranged across the mouth and a flange for the attachment, substantially as set forth. 10th. A cuspidore, having the opening at its upper end provided with a grading of parallel bars, substantially as shown and described. 11th. The combination, with a conical cuspidore, having the grating at its top, of the conical screen suspended within the same, substantially as set forth. 12th. The combination of the cuspidore having the grating at its top, and an opening at its bottom, the pivoted valve, the operating rod connected therewith and having the shoulder, and the head or plate and the spring acting upon said rod, substantially as set forth.

No. 23,478. Band Cutter and Feeder for Thrashing Machines. (*Coupe-Hart et Alimentateur pour Machines à Battre.*)

Charles Paridy, N. Herman, A. Schroeder, East St. Louis, Ill., U.S., 23rd February, 1886; 5 years.

Claim.—1st. In a band cutter, the combination, with an endless belt or apron, of a plurality of superposed cutters increasing in diameter, as described, and rotating in planes transverse to the said endless apron, for the purpose set forth. 2nd. In a band-cutter, the combination, with an endless belt or apron, of a plurality of superposed rotary shafts placed parallel with said apron, and a plurality of cutters increasing in diameter, as described, secured to each shaft, the cutters on the respective shafts overlapping in the manner, as and for the purpose set forth.

No. 23,479. Ironing Board.

(*Planche à Repasser.*)

William Feigel (Assignee of John M. Ellison), Pittsburgh, Penn., U.S., 23rd February, 1886; 5 years.

Claim.—The combination, with the main board, its transverse cloth and the block or bearing C, of the bolt D, connecting said board and bearing, the transverse bolt L, links K, K, lever support pivoted to said links, and the brace Z, substantially as specified.

No. 23,480. Machine and Process for Simultaneously Cutting and Expanding Slashed Metallic Screening.

(*Machine et Procédé pour Couper et Étendre Simultanément les Tamis Métalliques Entre lacs.*)

John F. Golding (co-inventor with George B. Durkee,) and Joseph S. Salisbury, Chicago, Ill., U.S., 23rd February, 1886; 5 years.

Claim.—1st. In a machine for cutting slashed metallic screening, the combination of the upper bar K provided with the cutters g, g, and having a vertical movement with the lower bar N, provided with the cutters a, a, and having a longitudinal movement, as and for the purpose shown. 2nd. In a machine for cutting slashed metallic screening, the bar K provided with cutters cutting over bar N, provided with similar knives, the first working vertically, while the second is working horizontally, to provide the necessary cutting surface and space for the cut loops to expand. 3rd. In a machine for cutting slashed metallic screening, the cutters in each cutter bar arranged one overlapping the other, for the purpose of simultaneously cutting a number of slashes, and forming loops, leaving uncut sections between them, for the purpose of forming a continuous mesh from one piece of metal, without cutting away or wasting any of the material, as and for the purpose shown. 4th. The combination of the cutter bar provided with cutters set at a slight angle with the surface of the bar, with guides, whose faces are parallel with the faces of the cutters, causing the cutters to travel in a line with their own faces, and the bar to have a slight oblique movement, substantially as shown. 5th. In the art of making metal screening by slashing metallic plates or sheets, and then bending the strands flat-wise, line after line successively in forming the meshes and setting the strands, the improvement of which consists of opening successive lines of meshes on lines parallel with one another, but oblique to the original edge of the sheet, substantially as before set forth. 6th. The process herein shown and described, of making slashed metallic screening, which consists in cutting successive slashes or incisions in the sheet, beginning at one side and near the corner thereof, and pressing the strips thus partially disconnected from the sheet, successively away from the sheet in a direction oblique thereto, but otherwise in a plane perpendicular to said sheet, or substantially so, the two operations, as well as the further operation of bending the connected material and giving form and set to the meshes, being effected by the simultaneous operations of slashing and pressing.

No. 23,481. Thrashing Machine.

(*Machine à Battre.*)

The Case and Willard Thresher Company, Battle Creek, Mich. (Assignee of Thomas E. Gilkeson, Loda, Ill.), U.S., 23rd February, 1886; 5 years.

Claim.—1st. A guard or rib adapted to use in connection with the throat of a thrashing machine, said guard or rib having a hollowed out face and bevelled back, substantially as set forth. 2nd. The combination, with the forks adapted to force the straw rearwardly from the thrashing cylinder, of a series of longitudinally curved guards adapted to form the upper side of the straw conduit, said guards having slanting backs for the purpose, substantially as set forth. 3rd. The combination, with the thrashing cylinder and the straw conduit leading therefrom, of a series of hollow faced guards adapted to form the upper side of the straw conduit, and to direct the air blast from the cylinder, substantially as set forth. 4th. The combination, with the thrashing cylinder and the forks adapted to remove the straw therefrom, of a series of hollow faced slanting backed guards adapted to form the upper side of the straw conduit, substantially as set forth. 5th. The combination, with the rotary crank shaft, of one or more sets of tines, or teeth, secured to a sleeve head loosely mounted on the cranked portion or portions of the shaft, said sleeves being connected with the supporting frame by jointed arms, substantially as set forth. 6th. The fork head, consisting essentially of an elongated sleeve in one or more parts, provided with laterally extending perforated lugs, in which the heads of the fork tines are secured, and to which the jointed operating arm is secured, substantially as set forth.

No. 23,482. Electrotpe Shell and Base.

(*Planche Electrotpe.*)

The American Press Association (Assignee of George W. Cummings and John R. Cummings), Chicago, Ill., U.S., 23rd February, 1886; 15 years.

Claim.—The block, having the upper outer edges or beads formed by grooves parallel and adjacent to the said upper edges, in combination with an electrotpe shell, having its edges turned downward and inward past the edges or beads on the block to fit into said grooves, substantially as set forth.

No. 23,483. Folding Chair and Camp Bed.

(*Silège Pliant et Lit de Camp.*)

Frank Nowby, Ottawa, Ont., 21th February, 1886; 5 years.

Claim.—1st. In a folding chair, such as described, the hooks J, J, as shown, for the purpose described. 2nd. The combination in a folding chair, of the cross-leaf A and M, A1 and M1, and cross-bar D, with

the hooks J, J, as shown, for the purposes described. 3rd In a chair, such as described, the combination of the back, with the extension H, and frame legs F and G, as shown for the purpose set forth. 4th. In a camp chair and bed, the back pieces B having a slot in the lower end, to hinge with the seat hinge E, as shown and described for the purpose set forth.

No. 23,484. Metal Shingle.

(*Bardeau Méallique.*)

John G. Jopling, Clay Centro, Ks., U. S., 24th February, 1886; 5 years.

Claim.—1st. A metal shingle, or roofing plate A, having corrugations B, B, B, formed parallel to the side edges, in the shape of a square having corners cut off by short corner corrugations *b, b, b*, substantially as set forth as and for the purpose specified. 2nd A metal shingle, or roofing plate A, having corrugations B, B, B, formed at its middle parallel to its edges, in the form of a square having its corners cut off by short corner corrugations *b, b, b*, and having a diametric corrugation D and shorter corrugations D', D'' parallel to the same, substantially as set forth as and for the purpose specified. 3rd. A metal shingle, or roofing plate, having an upper nailing edge H, and an upwardly and inwardly bent locking flange E, parallel to the said nailing edge, and having the diametrically opposite edge *e*, bent downwards and inwards to form a hook-shaped lock, substantially as set forth as and for the purpose specified. 4th. A metal shingle, or roofing plate, having one upper nailing edge H, and an upward and inwardly bent locking flange E, parallel to and inside of the nailing edge, having one upper edge formed with one or more parallel corrugations *a*, and bent upwardly at the outer edge *a*, having the lower edge *d* opposite to the corrugated edge *a*, bent downwardly in a plane below the plane of the shingle, and provided with a corrugation C parallel to the said edge, and having the other lower edge bent downwardly and inwardly to form a hook-shaped lock *e*, and provided with a corrugation *c* parallel to the same, substantially set forth as and for the purpose specified. 5th. A metal shingle, or roofing plate, provided at or near one of its lower inclined edges with one or more stiffening corrugations C, and having its opposite lower edge *e*, bent downwards and inwards forming a hook-shaped lock, engaging on roof with the plate next below in the same diagonal course, substantially set forth as and for the purpose specified. 6th. A metal shingle, or roofing plate, having one or more corrugations C, at or near one of its inclined lower edges, which is bent downwards on a plane below the plane of the shingle, and having its opposite upper edge *a* bent slightly upwards, and provided with one or more corrugations *a*, adjacent to and running parallel therewith, and having the other lower inclined edge *e* bent downwards and inwards, forming a hook-shaped lock to engage with the plate next below in the same diagonal course on the roof, substantially set forth as and for the purpose specified. 7th. A metal shingle, or roofing plate, having a flat corrugation parallel to and near the edge, bent inwards towards the body of the shingle, preventing dampness getting past the edge of the plate, also forming a hook-shaped locking flange projecting from the face of the shingle, substantially set forth as and for the purpose specified.

No. 23,485. Process of Making Mouldings from Paper, etc. (*Procédé pour faire les Moulures en Papier, etc.*)

Benniville Butz and Oliver J. Pfueger, Allentown, Pa., U.S., 25th February, 1886; 5 years.

Claim.—1st The process herein described of making moulding, which consists in placing paper, or other like material, between two dies, the upper one of which possesses sufficient specific gravity independent of other mechanical devices, to gradually and uniformly press the material into the lower die, substantially as and for the purpose described. 2nd. The process of manufacturing paper and other like mouldings, which consists in dampening the material, placing it upon a female die, and passing a male die of cylindrical shape over the same to partly press the material into the female die, and then placing a male die upon the material which is of sufficient specific gravity to gradually and uniformly press the same into position, and then subjecting the whole to the action of a drying agent, substantially as and for the purpose described. 3rd. The combination, of a female die of uniform thickness, with a male die of the herein-described specific gravity, substantially as specified. 4th. The female die A having the hollow chamber *a*, and side and end walls *b* and *c*, substantially as and for the purpose set forth.

No. 23,486. Nut Lock. (*Arrête-écrou.*)

Henry G. Buch, Oregon, Pa., U.S., 25th February, 1886; 5 years.

Claim.—1st. As a nut lock, the combination of a grooved bolt, a washer having an angular recess in its outer face, springs seated in the bottom of the recess, a projecting lip in the bolt-hole for the purpose of engaging the bolt-groove, and openings in the side for receiving fastening pins, and a locking-block having a groove cut in its perimeter of such size and shape as to fit the recess in the washer, with fastening pins for holding the locking-block down in said recess, and a nut having a recess in its inner face adapted to receive the receive the locking block, substantially as and for the purpose specified. 2nd In a nut lock, the combination of a grooved bolt, a washer having an angular recess in its outer face, springs seated in the bottom of the recess, a projecting lip in the bolt-hole for the purpose of engaging the bolt-groove, and a locking-block of such size and shape as to fit the recess in the washer, with a nut having a recess in its inner face adapted to engage the locking-block, and openings through the head to permit the passage of the prongs of an opening-key, and the said opening-key, substantially as and for the purpose specified.

No. 23,487. Postal Packet. (*Enveloppe Postale.*)

Henry A. Robinson, Foxcroft, Me., U.S., 25th February, 1886; 5 years.

Claim.—1st. A postal packet, substantially as described, consisting of the paper tube, the two rabbeted heads, the external covering extending around and posted to such tube and across and to one of the said heads, and projecting beyond the other head at its end of the tube, so as to be capable of being folded down thereupon, as explained, and a fastening device or devices, as described, adapted to the tube, so as to be capable of being turned from over its head or end, and when the head is in place of being bent, turned or twisted down thereupon, or over it so as to hold, or aid in holding it in place, as set forth. 2nd. A tube closed at one end and open at the other, and provided with the rabbeted head and the paper covering, and also with the fastening device or devices, substantially as described, applied to such tube and to the head when therein, as and for the purpose set forth.

No. 23,488. Dredging Apparatus.

(*Appareil pour Draguer.*)

Arthur W. Robinson, St Catharines, Ont., 25th February, 1886; 5 years.

Claim.—1st. The dredge bucket provided with the front and rear jointing knuckles, and having the single plate bottom extending from the front to the rear knuckles, and terminating at its front end over the front knuckles, substantially as and for the purpose set forth. 2nd. The dredge bucket having the front and rear jointing knuckles, and the single plate bottom inclined and terminating at front over the front knuckles, substantially as and for the purpose set forth. 3rd. The dredge bucket having the front and rear jointing knuckles, and the plate bottom, with the inclined front portion and the tumbler-bearing rear portion, substantially as and for the purpose set forth. 4th The dredge bucket having the back plate provided with the inclined front portion and the tumbler-bearing rear portion, the back rib, the front jointing knuckles beneath the back plate in the bucket, sides and back rib and the rear jointing knuckles, substantially as and for the purpose set forth. 5th. The dredge bucket having the back plate with the tumbler-bearing rear portion and inclined front portion, the sides extending below the inclined portion of the bucket, the back rib, the front jointing knuckles, the bottom recesses between the bucket sides and back rib and the rear jointing knuckles, substantially as and for the purpose set forth. 6th. The combination of the series of dredge buckets, having the front and rear jointing knuckles, and the pivot pins directly connecting the front and rear knuckles of respectively adjacent buckets, substantially as and for the purpose set forth. 7th. The endless chain of dredge buckets consisting of the combination of the buckets, each having a single plate bottom with the inclined front portion and tumbler-bearing rear portion, and the front and rear jointing knuckles and the pivot pins directly connecting the front and rear knuckles of respectively adjacent buckets, substantially as and for the purpose set forth. 8th. The combination of the tumbler body having the corner lugs, and the wearing plates having the horns registering with said corner lugs, substantially as and for the purpose set forth. 9th. The combination of the tumbler body, having the corner lugs, the wearing plates having horns registering with the corner lugs, and the cushions upon which the wearing plates rest, substantially as and for the purpose set forth. 10th. The combination of the buckets jointed directly together to constitute the endless chain, each bucket being provided with the back plate inclined in front, and having the bottom recesses, and the tumbler provided with the corner horns, substantially as and for the purpose set forth. 11th. A series of dredge buckets provided with the front and rear jointing knuckles connected by pivot pins and having their joints provided with oil reservoirs, substantially as and for the purpose set forth. 12th. The combination of the buckets, provided with the front jointing knuckles, and the hollow rear jointing knuckles constituting oil reservoirs, the bushes fitted in the rear jointing knuckles and having oil passages, and the pivot pins secured tightly in the front jointing knuckles, and directly connecting the front and rear jointing knuckles of respectively adjacent buckets, substantially as and for the purpose set forth. 13th. The combination of the buckets, each provided at one end with the hollow jointing knuckles constituting oil reservoirs, and with jointing knuckles at its opposite end for engagement with the hollow knuckles of an adjacent bucket, the pivot pins uniting the buckets, the packing rings between adjacent knuckles and the packing-protecting rings, substantially as and for the purpose set forth. 14th. The combination of the buckets, each provided at one end with the hollow jointing knuckles constituting oil reservoirs, and with jointing knuckles at its opposite end for engagement with the hollow knuckles of an adjacent bucket, the bushes of the hollow knuckles having oil passages, the pivot pins and the packing rings between adjacent knuckles, substantially as and for the purpose set forth. 15th. The combination of the buckets provided at one end with hollow jointing knuckles, and with jointing knuckles at its opposite end for engagement with the hollow knuckles of an adjacent bucket, the bushes of the hollow knuckles having oil passages, the pivot pins, the packing rings between adjacent knuckles, the packing-protecting rings and the packing washers, substantially as and for the purpose set forth.

No. 23,489. Steam Engine. (*Machine à Vapeur.*)

Julius E. Waterous, Brantford, Ont., 25th February, 1886; 5 years.

Claim.—1st. The combination of the steam chest B, with the interchangeable valve seat C, valve D and sat bolts E, E, E, substantially as and for the purposes set forth. 2nd. The combination of the valve seat C, and steam chest B, so arranged that the former can be made of a different metal from that of the latter, having their steam and exhaust ports F, F and G, so arranged with their intermediate bars H that they coincide with those of the steam chest and cylinder.

No. 23,490. Vessel for Aerial Navigation.

(*Vaisseau pour Navigation Aérienne.*)

Eugene F. Falconnet, Nashville, Tenn., U.S., 25th February, 1886; 5 years.

Claim—1st. A vessel for aerial navigation constructed in one continuous cylinder, with a cone attached to each end divided into compartments or sections, which are separated from each other by bulkheads of polygonal shape, inscribed within the periphery of cylinder or cones, substantially as shown and described. 2nd. A vessel for aerial navigation, having a separate passenger apartment or cut-off space formed between the circle of cylinder or cones, and the lower side of the polygonal bulkhead, substantially as shown and described. 3rd. A vessel for aerial navigation, having rigid sharp pyramids at each end of vessel, to form points for cones constructed of metallic frame work, and suitably covered, whose base corresponds in continuous shape with the cones and polygonal bulkheads, substantially as shown and described. 4th. A vessel for aerial navigation, constructed in one continuous cylinder, with cones attached at each end, divided into compartments or sections which are separated from each other by bulkheads both in the cones and cylinder, such bulkheads being thoroughly connected by diagonal cable braces forming a substantial netting of large mesh, whereby the whole ship is tied together in one complete whole, substantially as shown and described. 5th. A vessel for aerial navigation, having separate gas-bags, each to fill when inflated a single space between each pair of bulkheads whether in cylinder or cones and above the cut-off space, substantially as shown and described. 6th. In a vessel for aerial navigation, substantially as described, gas-bags having a regulating air-sack located centrally, and supported within by a partition to which it is attached, substantially as shown and described. 7th. In a vessel for aerial navigation of the character described, the combination of gas-bags and air-sacks, with regulating valves for gas-bags and air-sacks, whereby the pressure within the gas-bags is kept under control, substantially as set forth. 8th. In a vessel for aerial navigation of the character described, the combination of the cones at each end with cone trusses, consisting of trussed girders extending from the base of the pyramid points of the cones to which they are attached, along the cone to its junction with the cylindrical portion of the vessel, substantially as shown and described. 9th. In a vessel for aerial navigation of the character described, the combination of the several gas-bags with special protecting bands or belts, covering the whole width of bag from polygonal bulkhead to bulkhead, and extending down to gunwale chords to which they are attached, and thence by pendant cables, having springs for elasticity, and swivels for adjustment to the foot of each post of truss beneath, substantially as set forth. 10th. A vessel for aerial navigation, having the cut-off, or apartment space, beneath the polygonal framework or bulkheads, arranged as a single central hull, or divided into one or more hulls, each having its supply of decks according to size and depth, substantially as set forth. 11th. In an aerial vessel of the character described, the combination of two separate polygonal bulkheads at the centre of ship, whereby a space is formed for the passage of smoke-pipe, steam-pipe ventilators, substantially as shown and described. 12th. In an aerial vessel of the character described, the combination of the roofing jackets, of the gas-bags with gutters, spouts and connecting water carriers, substantially as and for the purposes specified. 13th. In combination, with an aerial vessel of the character described, a series of side forward and stem propellers attached to the hull and cone trusses, substantially as and for the purposes specified. 14th. In combination with an aerial vessel of the character described, a series of wheelhouses, protruding frames, rigid and non-rotating beams in pairs to provide for bearings for propellers, and housings for connecting gear, substantially as shown and described. 15th. In an aerial vessel of the character described, a series of stationary parallel hollow beams X, X₁, arranged in pairs at right angles to and projecting from both sides of vessel's hull, provided at the outer ends with journal boxes, for receiving propelling screws a, and lubricating reservoir r, and with internally arranged machinery for operating side screws or propellers, substantially as shown and described. 16th. In an aerial vessel of the character described, a series of revolving and adjustable side fins operated by machinery within the vessel for acting as sails, and deflecting the movement of vessel in a vertical direction, substantially as set forth. 17th. In an aerial vessel, of the character described, a series of adjustable fins arranged at intervals along the sides of the hull, and attached by suitable joints to a suitable fixed base, in combination with a laterally adjustable screw for deflecting and changing the course of the vessel, substantially as shown and described. 18th. In vessels for aerial navigation, adjustable fans secured by knuckle joints at fixed points in the sides of the vessel, constructed to be opened and closed and otherwise handled through cables or chains passing to within the vessel by internally arranged machinery, substantially as shown and specified. 19th. In vessels for aerial navigation, a fan or sail consisting of a frame of thin blades, severally jointed or hinged to a suitable frame at common points on the side of vessel, and covered with thin flexible material, in combination with cables or chains attached to the fan and passing into vessel and with rudders at both ends of vessel, substantially as set forth. 20th. In vessels for aerial navigation, fin shaped rudders, blades secured at the smaller ends by pivotal joints on a line with center of ship, and ranged along and made to conform to underside of vessel at cone ends, the outer and larger ends extending to and resting in frames secured to forming part of and protruding from the under side of the vessel where they are secured, and operated in ways for steering the vessel laterally, substantially as set forth. 21st. In a vessel for aerial navigation, the fin-like rudder blades, as described, in combination with adjustable fans or fins secured to sides of vessel, for the purpose of steering the vessel, substantially as set forth. 22nd. In vessels for aerial navigation, the fin-like rudder blade, as shown and described, in combination with adjustable end screws or propellers for laterally deflecting and changing the course of the vessel, substantially as set forth. 23rd. In a vessel for aerial navigation, the fin-like rudder blade, as shown and described, in combination with projecting frame r, carrying horizontal ways at top and bottom, in which the wheels on the outer end of the rudder have seats, and move vertically stanchions carrying pulleys arranged for supporting the rudders employed in steering the vessel's course, laterally, and cables or chains attached to the rudders passing over said pulleys to steering gear, substantially as set forth. 24th. The vessels for aerial navigation, long fin-shaped tapering rudder blades, provided with a journal joint at one end, and carrying in suitable journals at the opposite end

wheels, by means of which they are moved in their ways for steering the vessel, substantially as set forth. 25th. In a vessel for aerial navigation and propelling and steering screws mounted between the end of the hull, and a supporting arm actuated by a longitudinally adjusted shaft, intersected by a universal joint and secured in bearings in an adjustable carriage, arranged in ways in the end of the vessel's hull, as shown, the whole to be operated from within for propelling and laterally changing the course of the vessel, substantially as set forth. 26th. In a vessel for aerial navigation, the combination of the cylinder portion of the vessel with truss girders, extending along the bottom of vessel and within the hull portion of the same, to which they are attached and fastened at the ends connecting with the cones to the cone trusses, thereby forming one continuous connection or truss between both ends of vessel, substantially as shown and described. 27th. In a vessel for aerial navigation, a hull having cones at each end and constructed of one general framework of metal tubing, so jointed together by hollow connections that the entire framework may be emptied of air and filled with gas, substantially as set forth. 28th. In a vessel for aerial navigation, a hull having a gas field consisting of gas bags, separated by hollow metal bulkheads rising from the hull, such bulkheads united to each other over cone and cylinder trusses, by longitudinal cable chords passing through the angles of the polygonal bulkheads, and by diagonal cable braces forming a netting of large mesh to confine the gas bags, and uniting them to operate in lifting one complete air-ship, substantially as shown and described. 29th. In a vessel of the character described, a longitudinal truss girder extending along the cut-off or apartment space to necessary depth, connected at each end with the cone trusses uniting the whole into one longitudinal truss between the two ends, pyramids, and receiving and transmitting the entire uplift of the gas field and carrying the entire load within the hull, substantially as set forth. 30th. In an aerial vessel, of the character described, a hull constructed below the gas-field and within the cylinder of vessel having one or more decks for traffic purposes, such hull having one or more compartments containing cylinder trusses, and middle compartments having lateral trusses only, substantially as shown and described. 31st. A movable supporting carriage adjusted in ways, and arranged to travel vertically within the hull of vessel, and provided with journal bearings for carrying a vertically mounted propelling screw for vertically raising, lowering and holding to position aerial vessels, the whole constructed and operated substantially as shown and described. 32nd. In an aerial vessel, of the character described, a vertically arranged movable carriage secured in ways, constructed in a well passing upwards into the hull of the vessel, and carrying a vertical central screw for raising and lowering such vessels, substantially as set forth. 33rd. In a vessel, of the character described, a central screw secured on a perpendicularly arranged shaft, carrying a screw or propeller at the lower end, and provided with shoulder bearings by which it is secured in its mountings, in combination with a movable vertical carriage having angular journal bearings in a central bore for securing the shaft of screw or propeller, and provided with projecting shoulders at top and bottom and a toothed rack along the sides, substantially as and for the purposes set forth. 34th. In a vessel of the character described, the combination of a vertically mounted raising and lowering screw, movable supporting carriage provided with journal bearings and engaging gearing, and a supporting frame work consisting of vertical stanchions, and horizontal and diagonal braces and supports, the whole constructed and arranged substantially as and for the purposes specified. 35th. In a vessel for aerial navigation, a central bottom screw secured on a perpendicularly arranged shaft and projecting from the bottom of vessel, said shaft being provided with bearings or steps to take the thrust of screw or propeller and by which it is secured to the vessel, in combination with a downwardly projecting housing within which such screw or propeller is located, and a series of opening or closing sides or shutters, whereby it is exposed or enclosed, substantially as and for the purposes specified. 36th. In a vessel of the character described, the combination of horizontal screw or propeller operated upon a vertical shaft, supporting journals or steps engaging gearing for operating the screw or propeller to raise or lower the vessel, a supporting frame-work consisting of vertical stanchions, horizontal and diagonal braces, and their connections, sides or shutters, for opening or closing the housing for propeller or screw, means for raising or lowering such sides or shutters, and machinery for operating the same from within, substantially as shown and described. 37th. In a vessel for aerial navigation, the combination of a cylindrical vessel provided with cones and pyramids at each end, with a hull having a series of propellers along each side of hull, also a series of fans and fins along the sides, and a propellers, end rudders, and a series of bottom screws or propellers for raising, lowering, or holding the vessel, and machinery contained within the vessel for controlling and operating the whole for moving the vessel in any direction, substantially as set forth. 38th. In a vessel for aerial navigation, the combination of cylinder having conical ends pointed with closed pyramids, cone and cylinder trusses connecting the whole structure from end pyramid to end pyramid into one complete vessel, polygonal partitions or bulkheads within the cylinder and cones dividing them into gas-bag compartments, gas-bags provided with air sacks suspended within for controlling gas pressure, a series of propellers along each side of hull at bottom of vessel, a series of fins and fans also along each side of vessel, end propellers and end rudders, the whole controlled and operated from within for the purpose of moving the vessel in any direction through the air, substantially as set forth.

No. 23,491. Nut Lock. (*Arrête-Ecrou.*)

Peter Robertson, Ottawa, Ont., 25th February, 1886, 5 years.

Claim.—1st. In combination with a screw bolt A, a nut C, having a heavy side D, to gravitate, as set forth, for the purpose described. 2d. The gravitating nut C, having a heavy side D reduced on the inner face E, in combination with a bolt A, for the purpose set forth.

No. 23,492. Ink Stand. (*Ecritoire.*)

Jasper S. Ross., Geneva, Ohio, U.S., 25th February, 1886, 5 years.

Claim.—In an inkstand, the combination of ink well A, independ-

ent ink cup B depending therein, and gasket d, said ink cup having a close bottom and formed with the side orifices a, a located below the gasket, substantially as and for the purposes set forth.

No. 23,493. Self-Registering Voting Machine. (*Machine Compteuse de Votation.*)

John Waddell, Harrisdon, Ont., 25th February, 1886; 5 years.

Claim.—1st. In a vote recording machine, a series of registering cylinders J on the shaft I, provided on one side with a ratchet K and on the other a cam L, and covered with rows of figures and caused to revolve by a draw-rod p, draw-bar P and its dog Q operated by the pull handle h, which turns the registering cylinder J one notch at a time, and exposes the figure corresponding to the number of times the handle is pulled at the opening U, when the slide F is withdrawn, substantially as and for the purpose specified. 2nd. In a vote recording machine, the combination of the draw-rod p, spiral spring i, collar f, pin e, draw-bar P, dog Q and spring Y, substantially as and for the purpose specified. 3rd. In combination with the cylinder J, of the notched sliding plate M, made to move horizontally in the grooved, plate N, and operated by the cam L on the edge of the said recording cylinder substantially as and for the purpose specified. 4th. In combination with the draw-bar P, of the thumb-screw Z for elevating the rear part of the dog S, substantially as and for the purpose specified. 5th. In a vote recording machine, the combination of the draw-rod p, draw-bar P, dog S, shaft U, ratchet T, armed collar e, shaft d, pin b and spring X, substantially as and for the purpose specified. 6th. In a vote recording machine, the divided rods o, p, q, placed end to end in the brackets r, the end ones provided with springs r, the said rods being divided, as required, by the notched cam a secured to any of the corresponding holes in the downward projection u of the draw-bar P, substantially as and for the purpose specified. 7th. The spring P, in combination with the draw-bar P and rear plate R, substantially as and for the purpose specified. 8th. In a vote recording machine, the check rod l behind each compartment D, supported by the brackets k, k, the outward end one provided with a spring m to push it inward, in combination with the dividing cam j attached to the rear part of the draw rod p, substantially as and for the purpose specified. 9th. In a vote recording machine, the rear plate R divided in two parts longitudinally, and provided with brackets r, r, having holes drilled therein to receive the rods o, p, q, and on the other side brackets k, k to receive the check rods l, substantially as and for the purpose specified. 10th. In a vote recording machine, the lock rod w, the same sliding on the plate Q, and having notches Y cut out of its upper edge to be partially filled with sectional pieces or blocks z fitted in the said notches, with pin and screw, when required, and the outer end of the said lock rod having attached thereto an eccentric lever k on the outside of end plate A, and a spring i to press against a pin m on the said rod, and push it inward as far as it will go, substantially as and for the purpose specified. 11th. In combination with the check rod l, of the thumb screw m, made to pass through the end of the box A in a line with and to impinge against the said check rod l and so lock it, and all the operating parts of the machine at the close of polling, substantially as specified. 12th. In combination with the shaft U, of the lever f, constructed as shown, with a circular slot g to receive the outer end of the pin b, of the arm a, and a projection h to engage with the flat side of the eccentric i on the shaft U, so as to turn said shaft by frictional contact of the edges of the lever and eccentric i, substantially as specified. 13th. The dovetail sliding plates c, made to slide in the end brass plate A, and constructed with notches d of various sizes, as shown from Fig. 20 to Fig. 25, in combination with the arm a and its pin b, all arranged substantially as and for the purpose specified. 14th. The combination of the arm a, pin b, shaft U and slotted lever f, substantially as and for the purpose specified. 15th. The combination of the lever f, projection h, eccentric i, shaft U and pin j, as and for the purpose specified. 16th. In combination with the ratchet K, of the recording cylinder J, of the rear spring v made to engage with the said ratchet to prevent it going backwards, as specified. 17th. The combination of draw-bar p, brackets k, k, and pin n to lock cam f in any of the compartments D, when not to be used for voting, substantially as specified. 18th. In combination with the registering cylinders J and their operating devices, of the dial W and index finger V on the outer end of the shaft U, substantially as and for the purpose specified. 19th. In combination with the box A, of the slide F passing in front of the glassed apertures G in the plate N, substantially as and for the purpose specified. 20th. In combination with the box A and internal recording devices, of the movable cover H arranged to cover the end devices, and be locked, substantially as specified. 21st. In combination, with the box A and internal registering devices, of the slide B provided with openings C, and vertical openings D communicating from the top with the rectangular openings C, to receive the glass and cards upon which the names of candidates are written, substantially as specified. 22nd. In combination, with the box A and internal registering devices, of the plate B provided with glassed openings G and placed on the outside of plate N, and the openings arranged to show the sliding notched plate M, and one number only at a time on the registering cylinder J, of the exact number of votes polled on any one of the cylinders, as specified.

No. 23,494. Nut Lock. (*Arrête-Ecrou.*)

George A. Rathbun, Ridgway, (Assignee of Frederick S. D. Broughton, Dagus Mines.) Pa., U.S., 26th February, 1886; 5 years.

Claim.—1st. A nut lock composed of a base plate adapted to serve as a washer, a locking plate bearing against the inner side of a nut and not against its outer side, and a key to secure the two plates together, the said plates being formed with openings for the passage of said key, and the key being pressed down on the locking plate, substantially as described. 2nd. A nut composed of a base plate adapted to serve as a washer, a locking-plate adapted to bear against the end of a nut, and having a hook lapping over the edge of the base plate, and a key formed with a head, and adapted to pass through both plates and have its ends bent down upon the locking plate, substantially as described.

No. 23,495. Injector. (*Injecteur.*)

Edgar A. Donison, (Assignee of Silas W. Moreland,) Geneva, Ohio, U.S., 26th February, 1886; 5 years.

Claim.—1st. In an injector nozzle a, provided with a transverse opening through it, communicating with the bore of the nozzle, and steam chamber b, combined with fixed nozzle a, and constructed with a triangular section adapted to a concave seat in nozzle a, the point of nozzle a tapering and extending through nozzle a, into water chamber c, and entering within the throat of nozzle d, nozzle a, also extending into chamber c, but not into nozzle d, nozzle a and a, combined with water chamber c, nozzle d, steam chamber b, nozzle f, into the throat e of which the point of nozzle d enters, chamber e, tube h, and overflow k, and nozzle a, d and f, and tube h, aligned in a straight line with each other, and inclosed in a case provided with suitable connections for steam and water pipes, and all arranged, constructed and operating as set forth. 2nd. In an injector, a cam chamber o, provided with a cam at each end of the chamber and handle A, and combined with said chamber valve e, provided with width A upon a stem, held in line in boxes in said caps, and a conical bearing adapted to a concave seat in the cap at the end of chamber o, next to handle A, said chamber o also provided with ports under valve e, and passages m and n communicating with steam chambers b and c, combined with steam nozzles a, d and f, tube h, and overflow k, all arranged, combined and constructed and operating as set forth.

No. 23,496. Building Block.

(*Bloc de Construction.*)

Solomon T. Trumbull, Gloucester, and Arthur P. Thissell, Beverly, Mass., U.S., 26th February, 1886; 5 years.

Claim.—1st. As a new article of manufacture, a building block composed of glass or similar vitreous material, having two or more rows of cells or compartments, extending vertically through the same, one of the walls of said block being provided with suitable aperture opening laterally into one of its compartments, substantially as set forth. 2nd. A building block, composed of glass, or similar vitreous material, and having two or more compartments extending vertically through the same, the outer of said compartments being filled with mortar or cement, and the inner being provided with suitable ventilating apertures, substantially as described. 3rd. The blocks A, constructed substantially as described, in combination with the joint-plate C, substantially as and for the purpose set forth.

No. 23,497. Door Stop and Holder.

(*Arrête-Porte.*)

Harry Wade and Theodore C. Munez, (Assignees of Sidney W. Jay and Michael J. Garvey,) Toledo, Ohio, U.S., 26th February, 1886; 5 years.

Claim.—1st. A door-stop or holder consisting of the conical shank F, having the ball f at one end, and the flange e at the other end, secured to the floor or wash-board, said balls being constructed and arranged to interlock when the door is thrown open, substantially as described. 2nd. The conical shank E, having at one end, the ball e, provided at its outer portion with the attached projecting elastic stop J, in combination with the shank F, having the ball f, substantially as described. 3rd. In a door, gate or shutter-stop and holder, the ball f, with its conical shaft F, and its ears or flanges f, in combination with the ball e and its rubber stop J, supported upon the conical shank E, with its ears or flange e, and with the rubber cushion or gasket I, the balls e and f, being adapted to engage with each other, as herein described and specified.

No. 23,498. Hand Fire-Extinguisher.

(*Extincteur d'Incendie à Bras.*)

The Chemical Hand Fire Pump Company, Portland, Me., (Assignee of William A. Morse, Boston, Mass.,) U.S., 26th February, 1886; 5 years.

Claim.—1st. A hand fire-extinguisher, composed of a portable can or receptacle holding chemical fluid, and a force-pump connected to same, operated by a lever, and provided with an inlet pipe led into such can or receptacle, all as herein set forth. 2nd. The force pump, herein described, composed of cylinder F, and chamber M connected by valves, inlet pipe K, O, with flexible joint N, and discharge pipe P, suitable piston and operating lever, as and for the purposes herein set forth. 3rd. The portable can or receptacle, lined internally with anti-corrosive material, and having opening at top and means to attach force-pump thereto, all as herein described.

No. 23,499. Bracket. (*Console.*)

Robert Borthwick, Guilph, Ont., 27th February, 1886; 5 years.

Claim.—1st. Stud A and cup D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of stud A and cup D, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of cup D and stud A, with extensions B, B, substantially as and for the purpose hereinbefore set forth.

No. 23,500. Dory Knee. (*Courbe de Périssoire.*)

Louis P. LeBlanc, West Pubnico, N.S., 27th February, 1886; 5 years.

Claim.—The iron plates C, C, having flanges f, f and a, a, substantially as described, in combination with tubers of wood A, B, having slots O, O and rivets d, d, substantially as and for the purposes hereinbefore set forth.

No. 23,501. Nut Lock. (*Arrête-Ecrou.*)

Gideon Woodring, DuBois, Pa., U.S., 27th February, 1886; 5 years.

Claim.—In a nut-lock, the combination of the bolt, the nut having

a smooth inner face, the plate or bar provided with a retaining-notch, and the spring washer consisting of a helically-coiled bar, having its outer end pointed and turned slightly upward to bite against the inner face of the nut, and having its inner end bent at right angles and extended to form an arm, the end of which is bent at right angles to engage in a retaining notch in the plate or bar, substantially as shown and described.

No. 23,502. Boot and Shoe Nail.
(*Clou de Chaussure.*)

Andrew Eppler, jr., Boston, Mass., U.S., 27th February, 1886; 5 years.

Claim.—1st A boot and shoe nail made of tubular metal, provided with a V-shaped notch at its upper end, and a V-shaped point at its lower end, substantially as described. 2nd. A boot and shoe nail made of tubular metal, with a fibrous core, and having a V-shaped notch at its upper end, and a V-shaped point at its lower end, substantially as described.

No. 23,503. Composition of Matter for Washing Clothes, etc. (*Composition de Matières pour Laver le Linge, etc.*)

Emile Brostou, Chatham, Ont., 27th February, 1886; 5 years.

Claim.—A compound composed of matter to be used for washing clothes, or other fabric, consisting of sal soda, borax, limo, spirits of turpentine, and glycerine, substantially in the proportions and for the purposes set forth.

No. 23,504. Sled. (*Traineau.*)

Samuel Baum, Little Falls, N.Y., U.S., 27th February, 1886; 5 years.

Claim.—1st. In a sleigh, the combination, with runners having their forward ends extended and bent rearwardly, and formed with flanges, of raves adapted to fit said flanges, substantially as set forth. 2nd. In a sleigh, the combination with the runners having grooves upon their under sides, of shoes having ribs or tongues to fit the same, the ends of said runners being formed with downwardly-extending flanges, and raves adapted to be fitted between said flanges, substantially as set forth. 3rd. In a sleigh, the combination, with the runners, having their rear ends bent forwardly and inwardly, and raves mounted above the runners, of a sand board secured to the forwardly and inwardly bent ends of the runners, and to the raves, and shoes having ribs or tongues to fit grooves in the under faces of the runners, substantially as set forth. 4th. In a sleigh, the combination, with the runners having the forwardly and inwardly-extending rear ends, raves mounted above and connected with said runners, and a sand board connecting said raves, of braces, connecting the forwardly and inwardly-extending free ends of the runners, and the raves, as set forth. 5th. In a sleigh, the combination, with raves and runners supporting the same, of the sand board, and braces F secured to the under side of the raves bent inwardly and secured to the sand board, their other ends being divided and secured to the runners, as shown and described. 6th. A sled, comprising in its construction runners having grooves on their under faces, shoes having ribs to fit the same, the forward ends of the runners being flanged, turned back and secured to the raves, the sand board connecting the runners, said runners having their rear ends turned inwardly and forwardly, and secured to the sand board, braces *e* connecting the rear ends of the runners and raves, and the braces F connecting the raves, sand board and runners, substantially as set forth.

No. 23,505. Envelope. (*Enveloppe.*)

Knott H. Pedrick, Lynn, Mass., U.S., 27th February, 1886; 5 years.

Claim.—A combined envelope and letter sheet, consisting of a pocket composed of a front A, and back B, integral with each other, one of said parts being provided with end flaps folded and cemented to the other part, and a letter sheet integral with and narrower than said pocket, said pocket being provided with a rumpled flap adapted to close its mouth when a letter sheet is folded therein, substantially as described.

No. 23,506. Carriage Seat Cushion.
(*Matelas de Siège de Voiture.*)

Marie E. Dupont, (Administratrix de Eugène Panneton), Montréal, Que., 27th February, 1886; 5 years.

Réclame.—La combinaison spéciale des lames A, des traverses B, et des croix formant un coussin de siège pour voiture, tel que décrit et pour les fins mentionnées dans cette spécification.

No. 23,507. Button Hole Attachment for Sewing Machines. (*Appareil à faire les Boutonnères pour Machines à Coudre.*)

Charles W. Durant, New York, N.Y., (Assignee of John H. Palmer, Philadelphia, Pa.), U.S., 27th February, 1886; 5 years.

Claim.—1st. In a button hole attachment for sewing machines, the combination of the reciprocating plate E, with the cloth clamp levers, the oscillating lever F, arranged to vibrate said cloth clamp levers, and an adjustable connection between said plate E and lever F, substantially as and for the purposes specified. 2nd. In a button hole attachment for sewing machines, the combination of the reciprocating plate E, with the cloth clamp levers, the oscillating lever F, arranged to vibrate said cloth clamp levers, and an adjustable connection between said plate E and lever F, consisting of the plate E₂, adjustably secured to plate E, substantially as and for the purpose specified. 3rd. In a button hole attachment, the cloth-carrying clamp and the base-plate A, in combination with the needle-plate L, having slots I₂, and large hole L₂, and pin L, and clamp screw L₁, substantially as and for the purpose specified. 4th. In a button hole attachment for sewing machines, the combination of the reciprocating plate, with the cloth clamp levers, the cloth clamps, the oscillating

lever F arranged to vibrate said cloth clamp levers, and an adjustable connection between said plate E, and lever F, with an adjustable needle plate, whereby the said plate and cloth clamp may both be adjusted with respect to the needle, substantially as and for the purpose specified. 5th. The combination of the vibrating lever G, and mechanism for vibrating said lever, substantially as shown, with base plate A, pin H, and an anchor plate under which a part of the said lever G works, and by which it is held down upon plate A, substantially as and for the purpose specified. 6th. The combination of the cloth clamp lever I, having slot I₁, hinge blocks H, F, and vibrating lever G, having slot G₁, with means, substantially as described, to vibrate said lever G, base-plate A, pin H, and an anchor plate under which a part of the said lever G works, and by which it is held down upon plate A, substantially as and for the purpose specified. 7th. The combination of lever G, having ratchet M and slot G₁, means substantially as described, to vibrate said lever I, with pin H, lever I, having slot I₁, and a cloth clamp carried by said lever, and hinge blocks P, R, provided with the adjusting springs S, substantially as and for the purpose specified. 8th. The lever I, having the slots P, I, and plate I₂, in combination with piece I₃, and adjusting screw I₄, substantially as and for the purpose specified. 9th. The lever I, having piece I₂, provided with the lower jaw K₂, and notch it, in combination with spring plate K, carrying upper jaw K₁, and having its rear end it placed in the notch it, and clamping lever K, substantially as and for the purpose specified.

No. 23,508. Cover for Pots and Pans.
(*Couvercle de Marmites et Casseroles.*)

James D. Bowley, Brandon, Man., 27th February, 1886; 5 years.

Claim.—1st. The cover having the side B, top A, hinges C, guides E, clips F, opening G, apron I, clips K, K, wire D, all combined substantially as shown and described. 2nd. The combination of flues L, L, top A, collar Q in stove pipe M, with cap attached thereto by chain, as shown and described. 3rd. The combination of two or more covers having side B, top A, hinges C, guides E, clips F, opening G, apron I, clips K, wire D, flues L, L, junctions N and O, and collars Q, with caps P attached thereto by chains, substantially as and for the purpose hereinbefore set forth.

No. 23,509. Machine for Raising Waggon and Vehicles. (*Machine pour Soulever les Chars et les Voitures.*)

James F. Trueman, Truemanville, N.S., 27th February, 1886; 5 years.

Claim.—The combination of the frame-pieces a, a and b, b, with that of the end pieces d, d, and the lock braces e, e, substantially as and for the purposes hereinbefore set forth.

No. 23,510. Pump. (*Pompe.*)

Robert Mills, Greenock, Scotland, 27th February, 1886; 5 years.

Claim.—1st. The combination of parts forming the improved lifting and force pump, consisting of a double-acting barrel A in the centre, with two lifting and forcing chambers C, C, on each side of barrel over the suction pipes D, D, with their lift and discharge valves e, e and e', e' over each other, fitted with releasing and securing screws I, and cross-bars L above, and having the branch pipes G, G, leading from the chambers C, C to the forcing valve chamber H, and air vessel K, with a valve I over each branch G, G, and their securing and releasing spindle A, and cover H, with coupling nozzle J, for attaching hose or screw cap M, and having a pipe N for drawing water from the sea, when required, with coupling N for coupling hose or cap N₂, and plugs n, n, for closing the lift pipes D, D, all for working either as an ordinary lift and discharge ship's pump, or as a forcing pump and fire engine, substantially as herein described and shown in the drawings. 2nd. The fitting to a lift and discharge ship's pump the following forcing arrangements, consisting of pipes G, G, leading from the valve chambers thereof, with forcing chamber H, and air-vessel K, fitted with a valve I on each branch G, G, and releasing and securing screws A, and cover H, with coupling nozzle J for attaching the forcing hose or cap M, and pipe N for drawing water from the sea, with coupling N for coupling hose or cap N₂, and plugs n, n, for closing the lift pipes D, D, all substantially as herein described and shown in the drawings, for the purpose of making such ship's pumps act as a forcing pump and fire engine when required.

No. 23,511. Fire-Place Grate.
(*Grille de Foyer.*)

William J. Copp, Hamilton, Ont., 27th February, 1886; 5 years.

Claim.—1st. In a fire-box of any form or shape, the roller grato B, operated by the crank D, or its equivalent, on the end bar thereof. 2nd. The agitating grates C, working on bearings in the fire-box, sloping down inwards on the roller grato B, as described. 3rd. The combination and arrangement of the roller grato B, in connection with the side grato or grates C, bar H and cranks D, as described, and all operating substantially as and for the purposes of a rolling centre draft automatic shaking grato, as herein set forth.

No. 23,512. Syrup for Chest Diseases.
(*Sirup pour les Malades de Poitrine.*)

Jean C. Roman, Montréal, Que., 27th February, 1886; 5 years.

Réclame.—Une composition formée de vitriol romain, avec de l'ambro de l'esprit de soufre et de sucre de candio, dans les proportions et pour les fins décrites.

No. 23,513. Art of Butter Making.
(*Art de Faire le Beurre.*)

William R. Murray, Covington, Ky., U.S., 27th February, 1886; 5 years.

Claim.—1st. An improvement in the art of making butter, which consists in mixing one gallon of sweet milk with one ounce of liquid rennet, twenty-five grains (Troy) of nitrate of potash, one ounce of granulated sugar, half teaspoonful of butter coloring, and eight pounds of butter coloring and eight pounds of butter churned together, and worked in the manner substantially as described. 2nd. An improvement in the art of making butter, which consists in mixing with a quantity of sweet milk, flavoring and coagulating matter, then adding to this solution a quantity of ordinary butter almost equal in bulk, and churning the whole together, in the manner substantially as described.

No. 23,514. Button Shoe. (Soulier Boutonné.)

Peter Kelly and Joseph Kelly, Hagorville, Ont., 27th February, 1886; 5 years.

Claim.—As an improved article of manufacture for button shoes, cutting the vamp A, quarter B and button-fly *d* of one entire piece in the form shown, with the notch C between the upper and lower parts A and A' of the vamp, and bending the same at the dotted line *a*, *a*, bending the button-fly *d* at the dotted line *e*, *e*, and bending the vamp and quarter on the line *b*, *b*, and stitching or rivetting the two on the line X, X, completing the upper to be finished, substantially as specified.

No. 23,515. Octave Coupler for Organs.

(*Accoupleur de Régistre d'Orgue.*)

William Murphy, St. John, N.B., 27th February, 1886; 5 years.

Claim.—1st. The combination, in an organ-action, of the hinged or pivoted board F, the tracker-pin rods and the bearing-plates secured to the board and having the tongues bent around the tracker-pin rods to form journals or bearings therefor, substantially as described. 2nd. The combination, in an organ action, of the hinged or pivoted board F, the tracker-pin rods and the bearing-plates secured to the board and having the tongues bent around the tracker pin rods to form bearings therefor, one of said bearing-plates having the bearings formed with it to hinge or pivot the board, substantially as described. 3rd. The combination, in an organ action, of the hinged or pivoted board F, the sliding-rod for operating said board, the tracker-pin rods and the bearing-plates secured to the board and hav-

ing the tongues bent around the tracker-pin rods to form bearings therefor, one of said bearing-plates having the pivoted lugs *l* for the attachment of the sliding rod, substantially as described. 4th. The bearing-plates, having the tongues bent to form bearings for the tracker-pin rods, substantially as described. 5th. The bearing-plates having the tongues bent to form bearings for the tracker-pin rods, and the bushing in said bearings surrounding the tracker-pin rods to prevent metallic sounds from the latter, substantially as described. 6th. The combination, in an organ action, of the key-levers having the buttons on their under sides, the tracker-pins having the buttons *D* near their lower ends, the hinged or pivoted board F and the tracker-pin rods journaled to the board F, having flattened lower bent ends adapted to bear on the buttons *D*1, and the curved horizontally-bent upper arms adapted to bear under the buttons on the key-levers, when the board F is vertical, and to move out of the paths of said buttons when the board is inclined toward the tracker-pins, substantially as described. 7th. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons *D*3 on their under sides, said buttons being provided with openings to receive the upper ends of the tracker-pins, the hinged board F and the tracker-pin rods journaled thereon, and having arms bearing against the buttons on the keys and tracker-pins, substantially as described. 8th. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons on their under sides, the hinged board F, the arm F2 secured to the free edge of the board F for inclining said board, and the tracker-pin rods journaled on the said board, and having arms bearing on the buttons of the keys and the tracker-pins, substantially as described. 9th. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons on their under sides, the hinged board F, the sliding arm F2 secured thereto, the bent pivoted pin F4 for locking the outer end of the arm F2, and the tracker-pin rods journaled on the hinged board and bearing against the buttons on the keys and tracker-pins, substantially as described. 10th. The combination of the tracker-pins, with the keys, and the tracker-pin rods connecting the tracker-pins with the keys and adapted to be actuated by the latter to cause the movement of the tracker-pins, as set forth. 11th. The combination, with the tracker-pins, of the keys, the hinged or pivoted board, the tracker-pin rods connecting the keys with the tracker-pins, and a sliding arm to actuate the pivoted board and hold the parts out of engagement, as set forth.

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

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| <p>544. E. THOMSON and E. J. HOUSTON, 2nd 5 years of No. 22,331, from the 8th day of February, 1886. Improvements on Armatures for Dynamo-Electric Machines, 1st February, 1886.</p> | <p>552. M. JASPER and W. H. HOOVER, 2nd 5 years of No. 12,400, from the 21st day of February, 1886. Improvements on Platform Fire Coolers, 20th February, 1886.</p> |
| <p>545. E. J. HOUSTON and E. THOMSON, 2nd 5 years of No. 12,341, from the 10th day of February, 1886. Improvements on Automatic Adjuster for Commutator Brushes of Dynamo Electric Machines, 1st February, 1886.</p> | <p>553. T. COWAN and J. BALLANTINE, 2nd 5 years of No. 12,420, from the 26th day of February, 1886. Improvements on Moulding Machines, 20th February, 1886.</p> |
| <p>546. E. J. HOUSTON and E. THOMSON, 2nd 5 years of No. 12,407, from the 24th day of February, 1886. Improvements on Regulators for Electric Lamps, 1st of February, 1886.</p> | <p>554. P. STUART, 2nd 5 years of No. 12,663, from the 23rd day of April, 1886. Improvements on the manufacture of Composite Pavements, Floors, Platforms, Landings, Stair Steps, and the Like, and of Ornamental Works in Imitation of Stone, and on Composition Therefor, 22nd February, 1886.</p> |
| <p>547. S. VERMILYEA and H. M. VERMILYEA, 2nd 5 years of No. 12,436, from the 1st day of March, 1886. Improvements on corsets, 6th February, 1886.</p> | <p>555. L. RIBOURT, 2nd 5 years of No. 12,594, from the 7th day of April, 1886. Improvements on Apparatus for Pressing Alimentary Substances by Means of cold, 22nd February, 1886.</p> |
| <p>548. R. H. RAMSAY and G. N. SCARLETT, 3rd 5 years of No. 5,734, from the 11th day of March, 1886. Improvements on Apparatus for Removing Car Bodies from their Trucks and for their Replacement, 10th February, 1886.</p> | <p>556. R. WHITE (Assignee), 3rd 5 years of No. 5,955, from the 11th day of April, 1886. Improvements on Apparatus for Forming Hoel Counters, 25th February, 1886.</p> |
| <p>549. J. McCLOSKEY, 2nd 5 years of No. 12,607, from the 8th day of April, 1886. Improvements in Thrashing and Separating Machines, 12th February, 1886.</p> | <p>557. L. H. LAWRENCE, 2nd 5 years of No. 12,474, from the 9th day of March, 1886. Sap Bucket or Pail, 27th February, 1886.</p> |
| <p>550. J. W. SWAN, 2nd 5 years of No. 12,464, from the 8th day of March, 1886. Improvements on and connected with Electric Lamps, 16th February, 1886.</p> | <p>558. S. NORTH, 2nd 5 years of No. 12,490, from the 11th day of March, 1886. Improvements in Ear Trumpets, 27th February, 1886.</p> |
| <p>551. G. BOOTH, 2nd 5 years of No. 12,333, from the 21st day of February, 1886. Improvements on Kettle Handles, 20th February, 1886.</p> | |

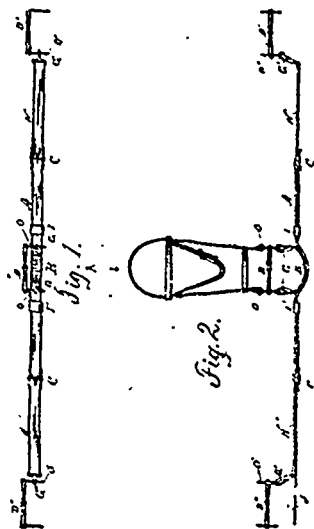
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

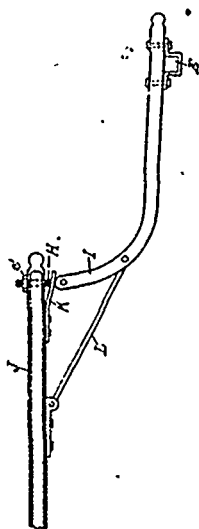
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MARCH, 1886.

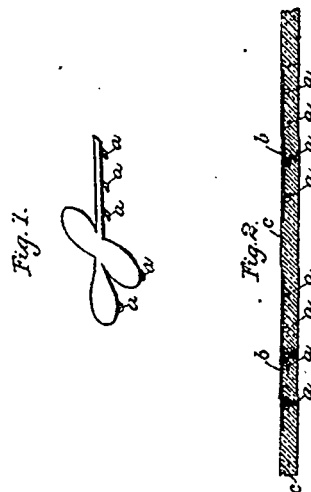
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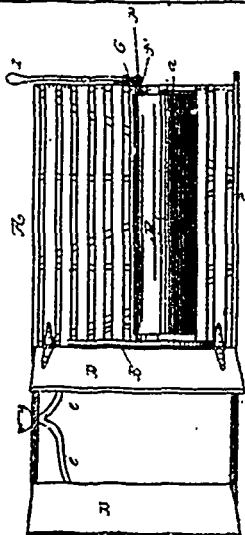
23291 Stenssy's Harness.



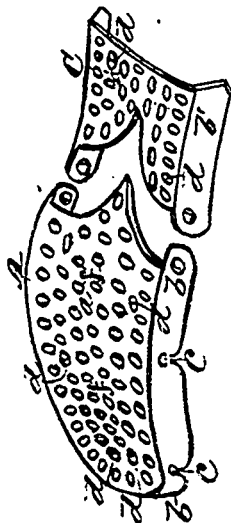
23292 Stother's Adjustable Hansome.



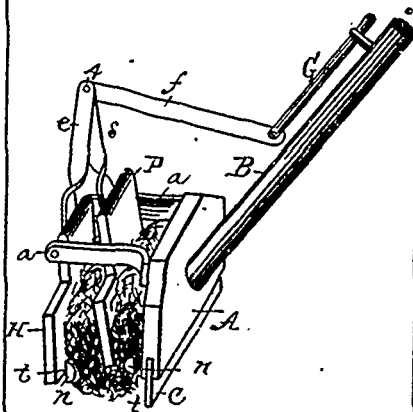
23293 Swan's Ornamental Surfaces.



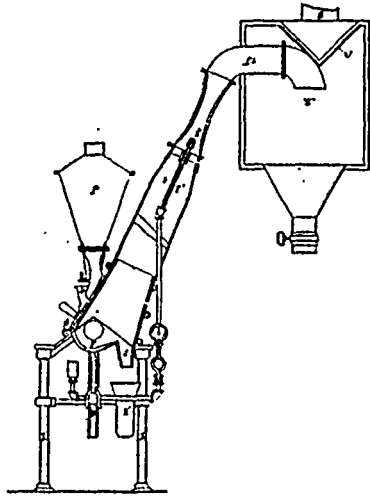
23294 Armstrong's Adjustable Trough



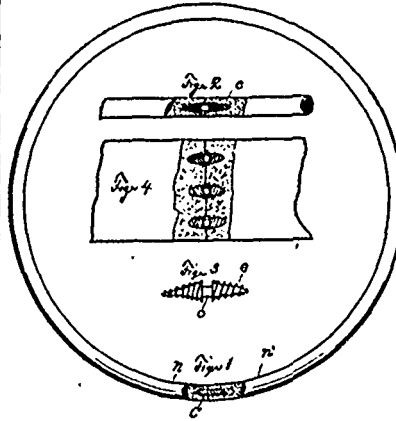
23295 Gribble's Boot and Shoe Protector



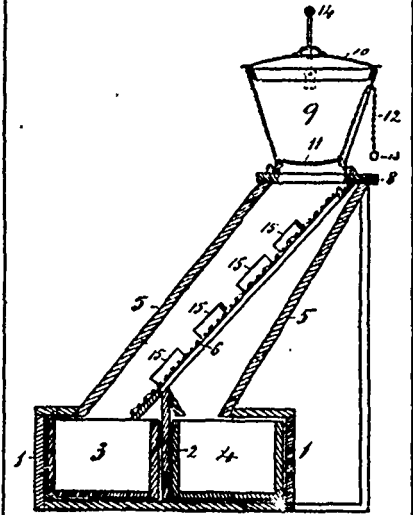
23296 Keen's Floor Mop.



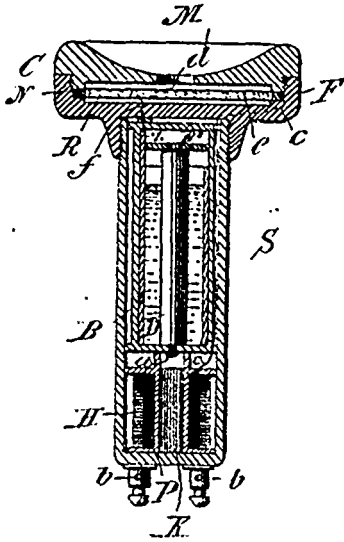
23297 Luckenbach's Apparatus for Pulverizing Ores, etc.



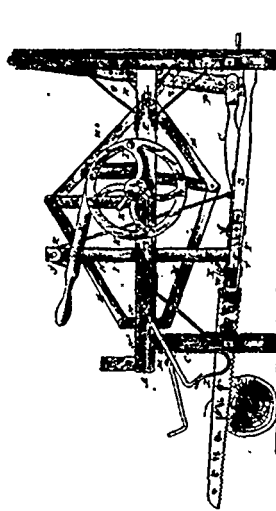
23298 McGlehan's Belt Coupling.



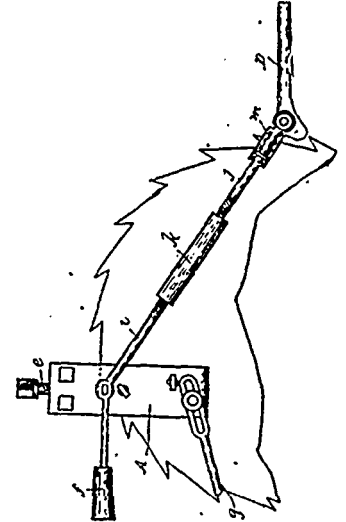
23299 Millner's Ash Sifter.



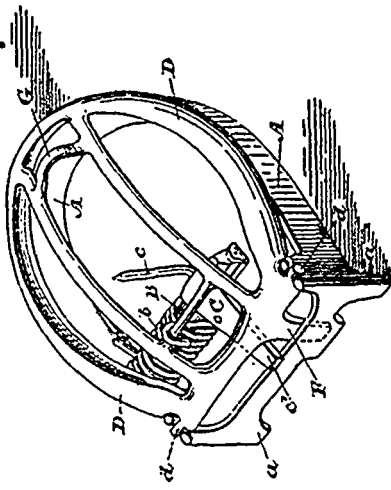
23300 Lockwood's Electric Battery Telephone.



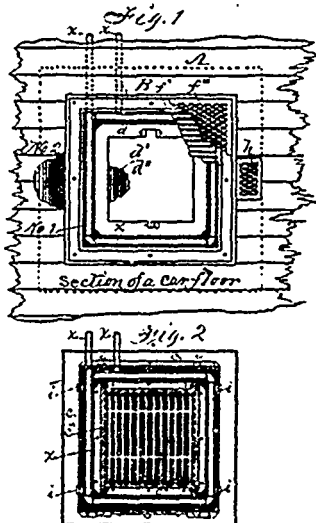
23301 Hulburt's Drag Saw.



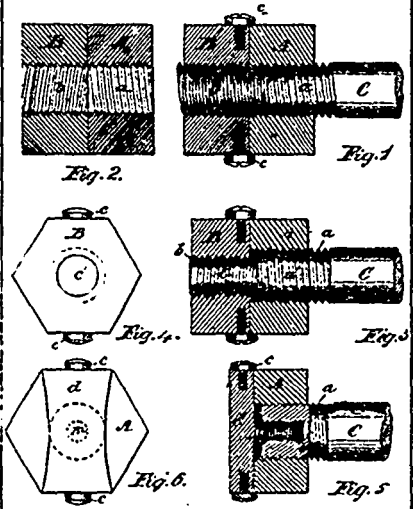
23302 Smirle's Saw Swage.



23303 Brock's Rat Trap.



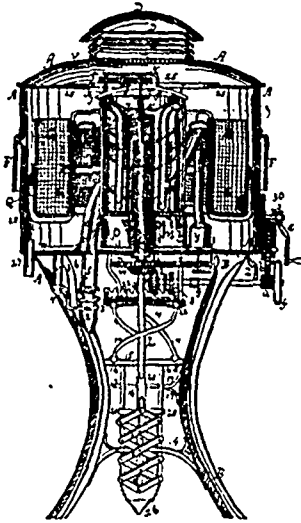
23304 Thoroughgood's Car Heater.



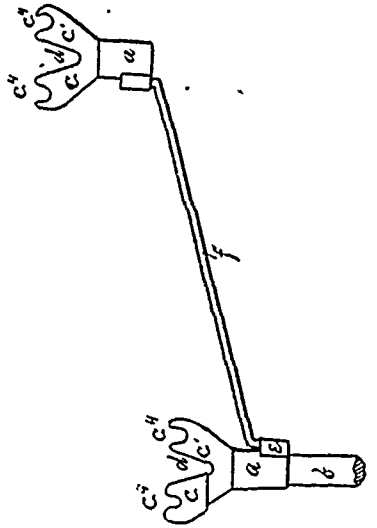
23305 Hoff's Nut Lock.



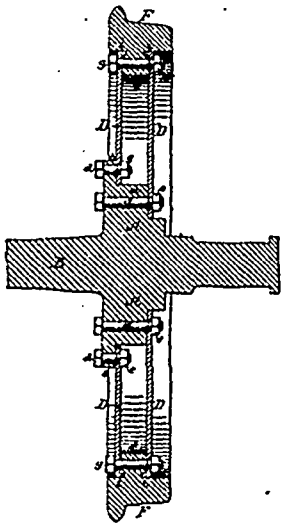
23306 Vallant's Boot.



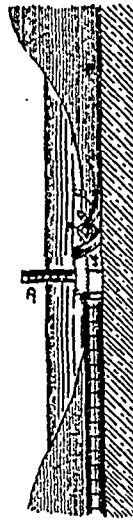
23307 Ingall's Dish Washing Machine.



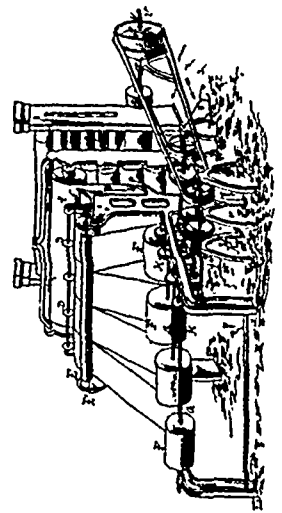
23308 Kauth's Suspending and Detaching Device.



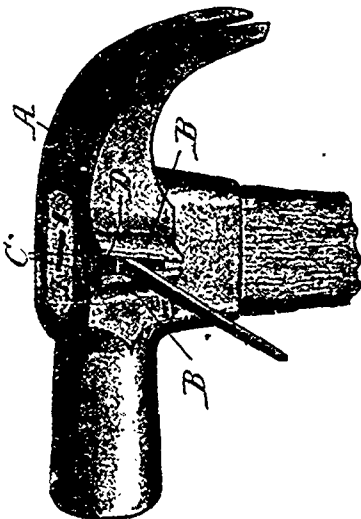
23309 Malam's Car Wheel and Axle.



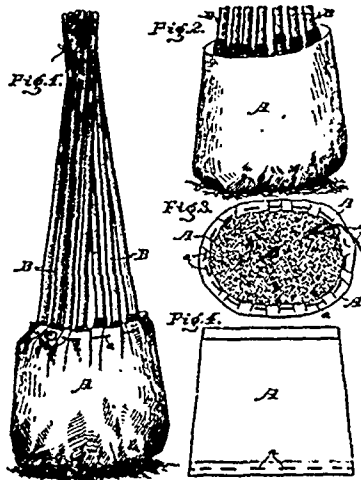
23311 Hall's Apparatus for Laying Submarine Tunnels and Tubes.



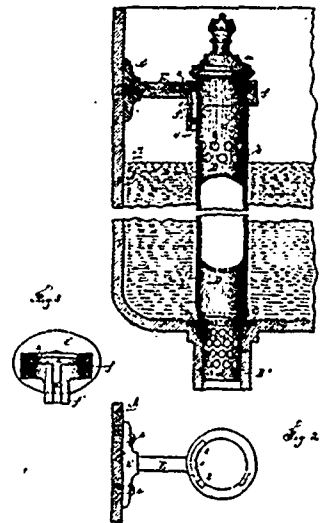
23312 Manning's Apparatus for Spooling Rolls of Paper Web.



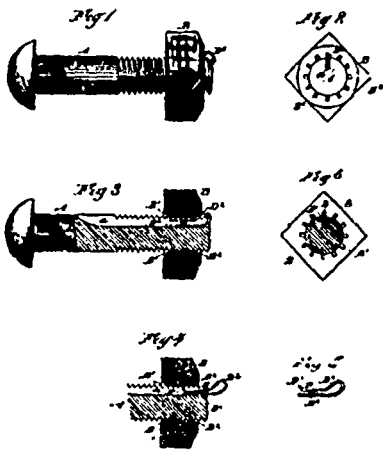
23313 Warren's Nail Holding Hammer



23314 Perry & Prince's Broom Cover



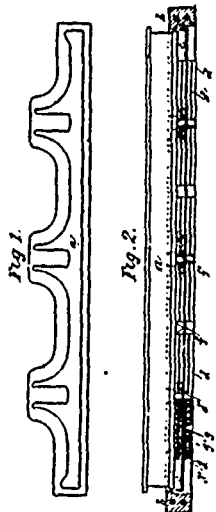
23315 Demarest's Overflow and Discharge Valve for Baths.



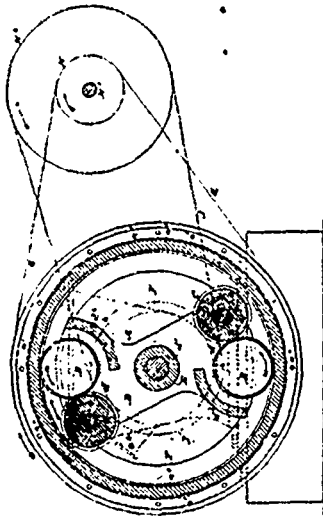
23316 Stark's Nut Lock.



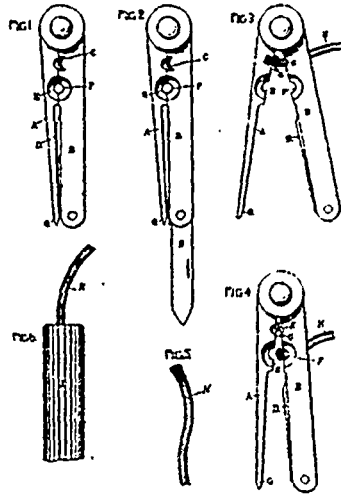
23317 Fox's Horn Plate for Rolling Stock.



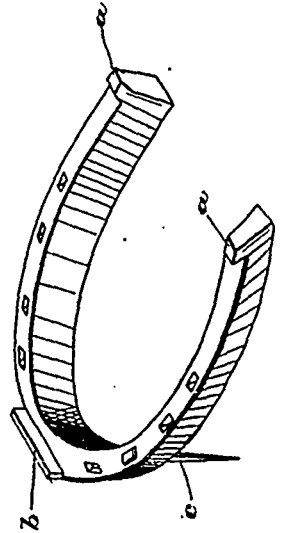
23318 Fox's Apparatus for the Manufacturing of Horn Plate for Rolling Stock.



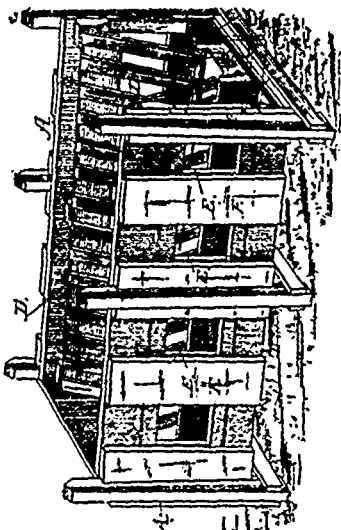
23319 Waring's Pulverizing Machine.



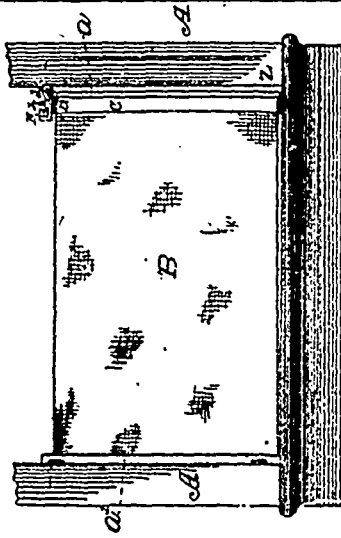
23320 Martin's Fuse Cutter.



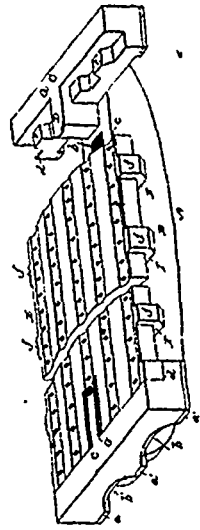
23321 Jackson's Horse Shoe.



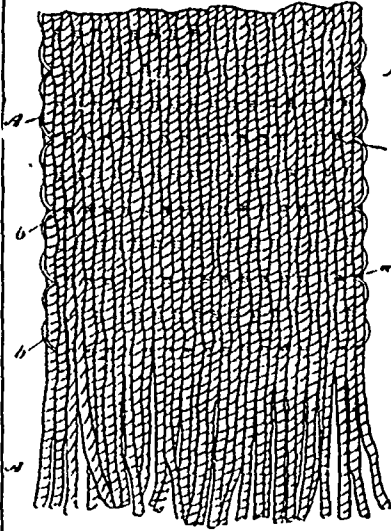
23322 Legate's Sheep Rack.



23323 Tarney's Window Screen Roller.



23324 Solt & Kline's Grate Bar.



23325 Avie's Belt for Pulleys.

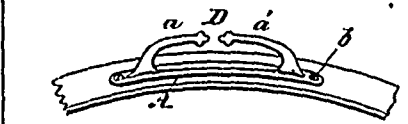


Fig. 1.

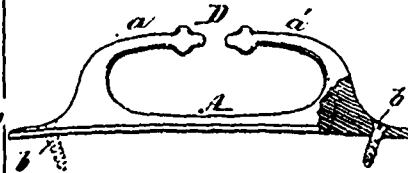
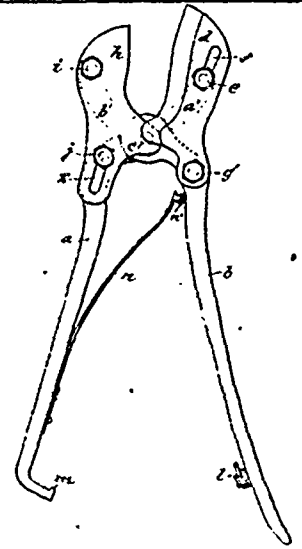
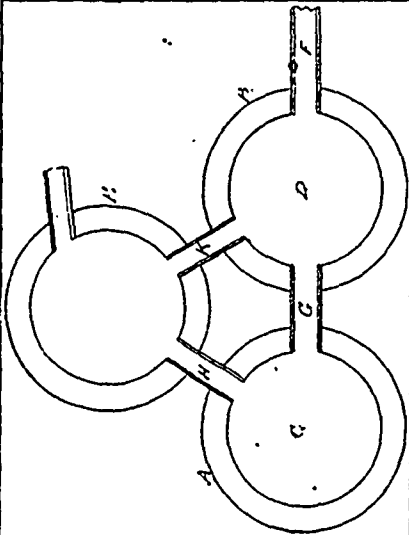


Fig. 2.

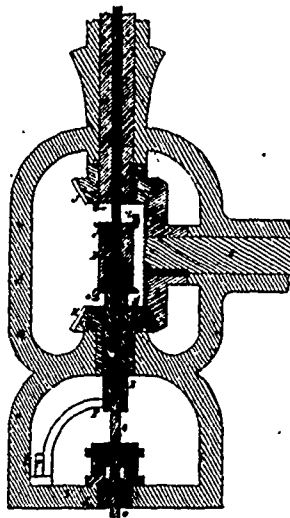
23326 Mitchell's Rein and Strap Supporter.



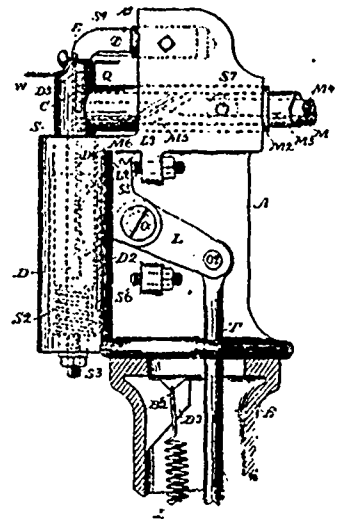
23327 McKay's Pruning Shears.



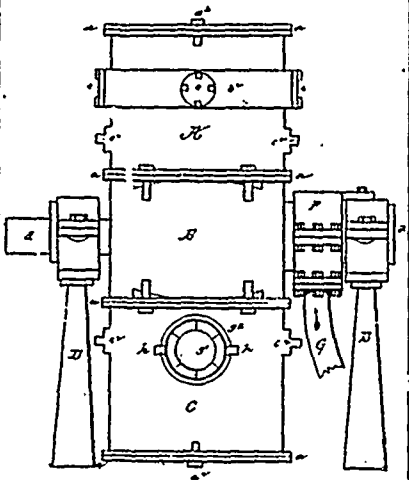
23328 Duffield's Apparatus for Manu'g. Water Gas.



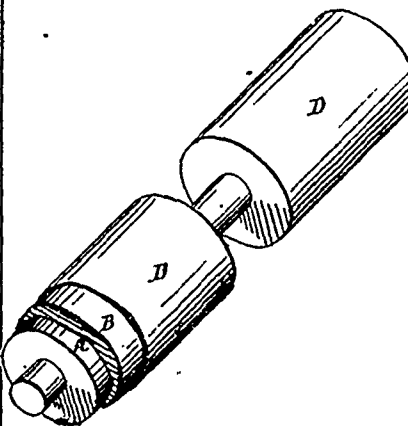
23329 Goding's Governor for Steam Engines.



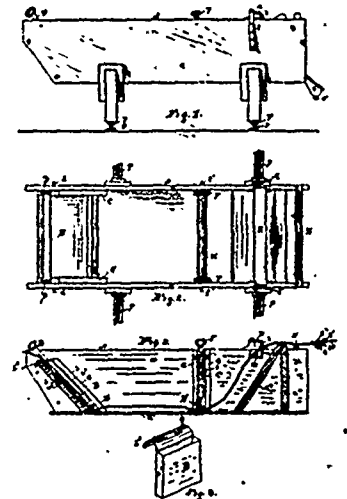
23330 Richards' Button Fastener Setting Machine.



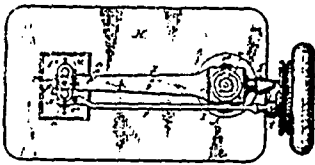
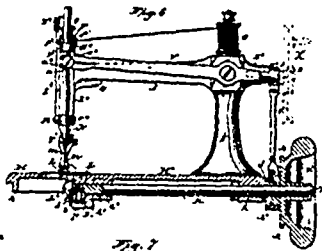
23331 Baylis' Manufacturing Iron and Steel.



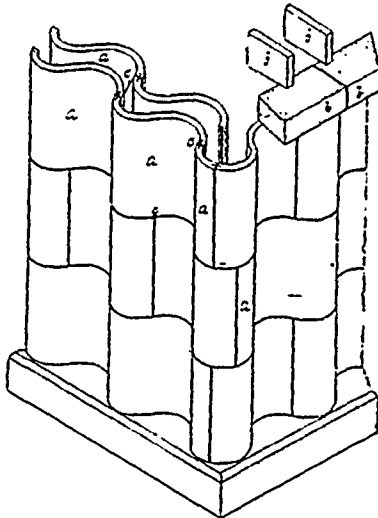
23332 Bergstresser's Covering for Feed Rolls of Machinery.



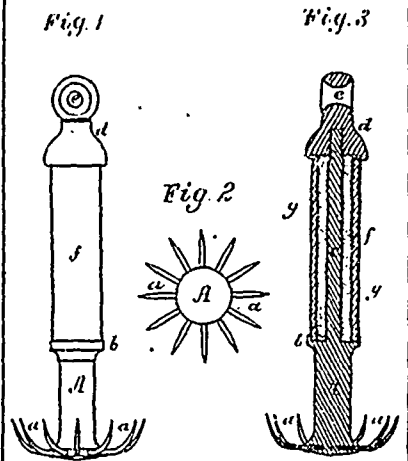
26333 Sagendorph's Apparatus for Man'g. Flexible Roofing Material.



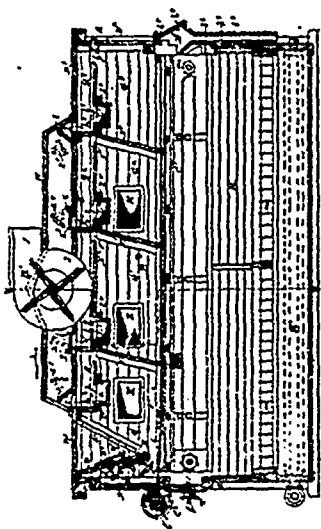
23334 Post's Sewing Machine.



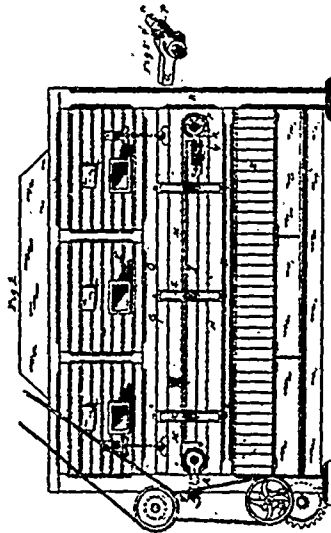
23335 Armstrong's Building Material.



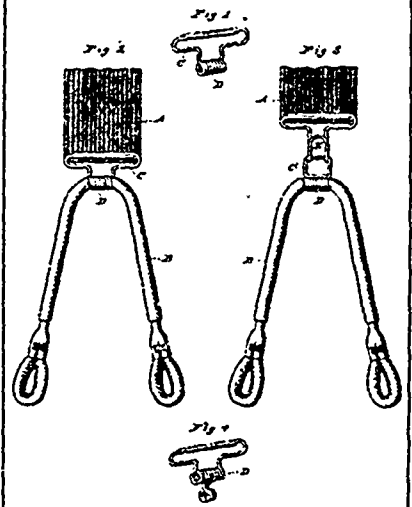
23336 Scotland & Cordon's Fishing Hook.



23337 Smith's Middlings Purifier.



23338 Sherwood's Middlings Purifier.



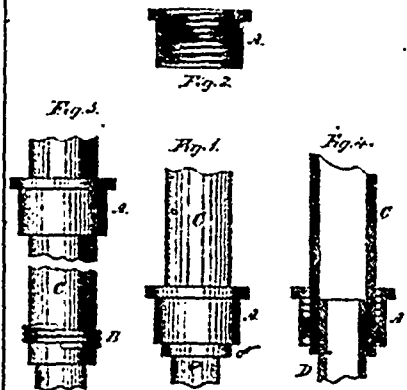
23339 Atwood's Wire Tubular Bearing for Suspender Ends.



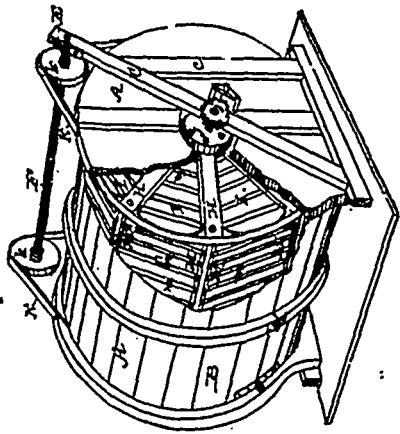
23340 Atwood's Suspender Buckle.



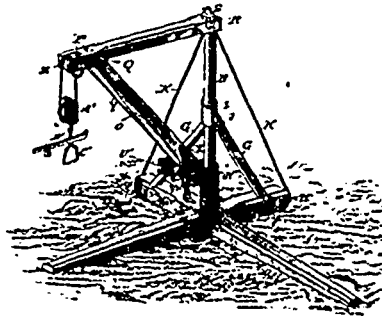
23341 Cook's Steam Boiler.



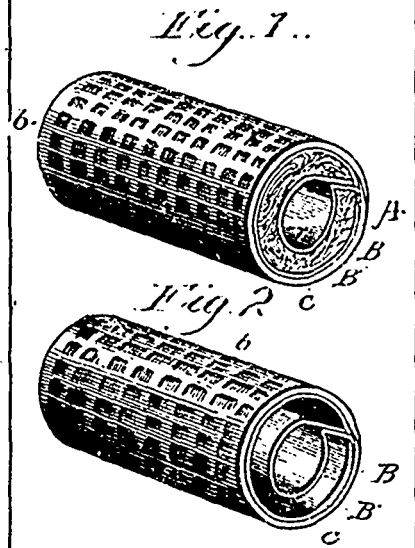
23342 Findlay's Hose Connection.



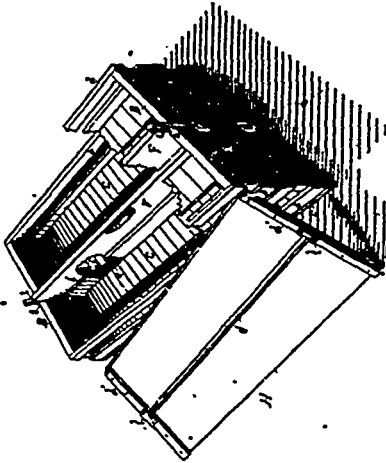
23543 Jull's Carpet Cleaning Machine.



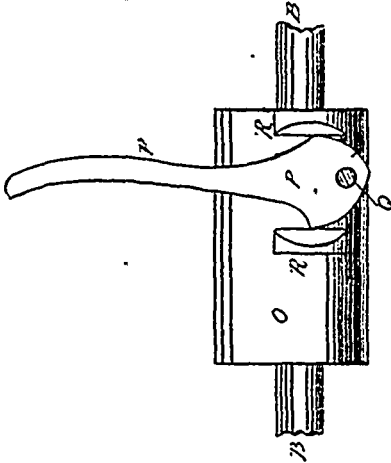
23344 Hollingsworth's Crane.



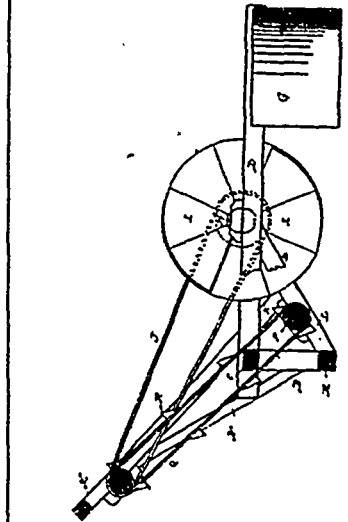
23345 Launkin's Steam Pipe Cover ring.



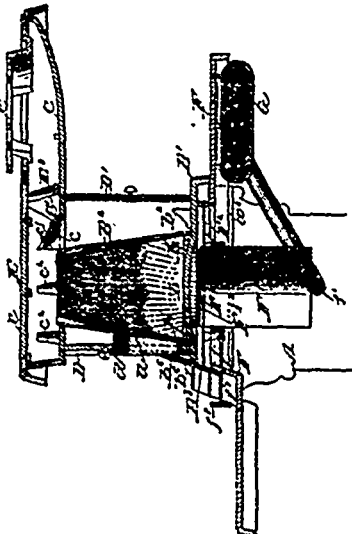
23347 Wilkin's Crate for Fruit.



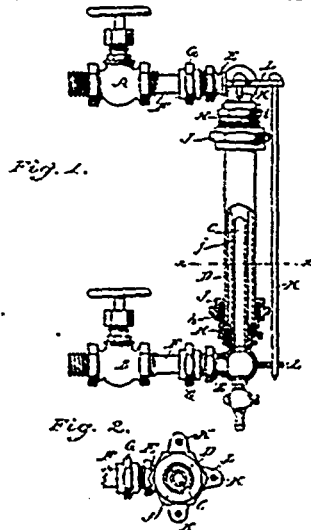
23348 Hendry's Straw Cutter.



23349 Nellis' Water Elevator.



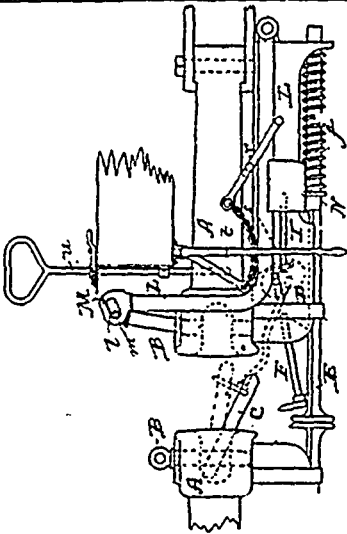
23350 Schwartz's Oil Stove.



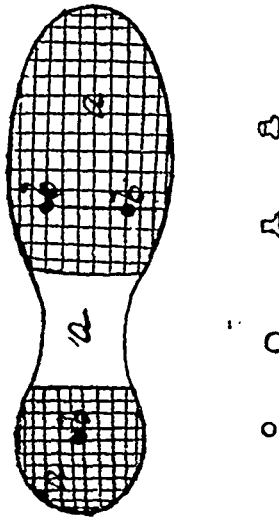
23351 Young's Water Gauge for Steam Generators



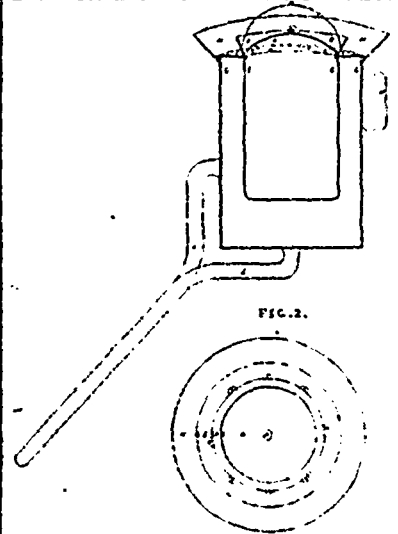
23352 Clark's Stove Pipe.



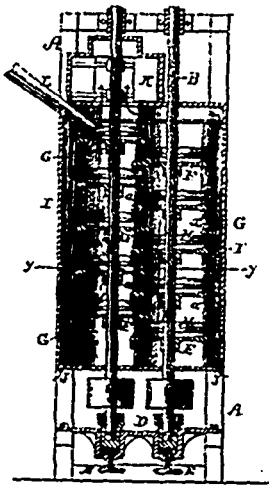
23353 Hawkenson's Automatic Car Coupler.



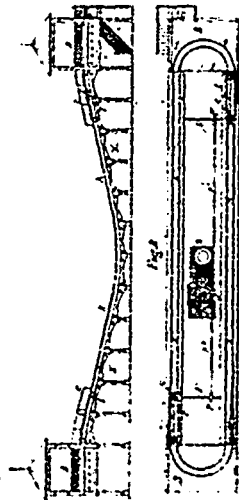
23354 Farmer's Rubber, Rubber Boot and Rubber Shoe.



23355 Kecsee & Toe's Cooking Utensil.



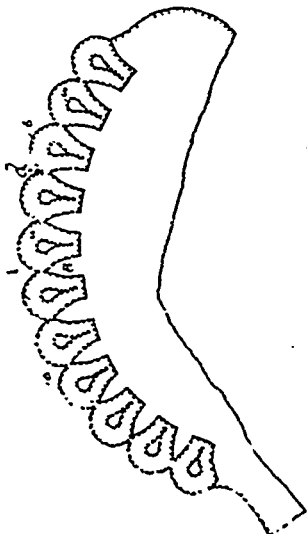
23356 Sergeant's Machine for Degerminating and Scouring Wheat.



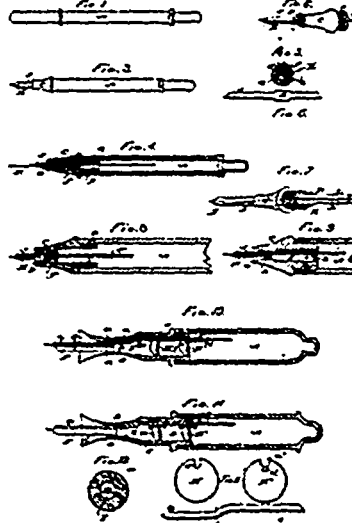
23357 Pusey's Gravity Railway.



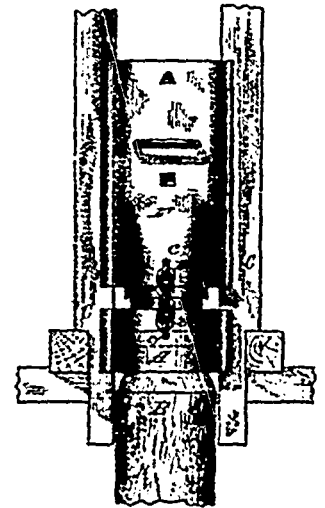
23358 Pusey's Artificial Toboggan or Sledding Course



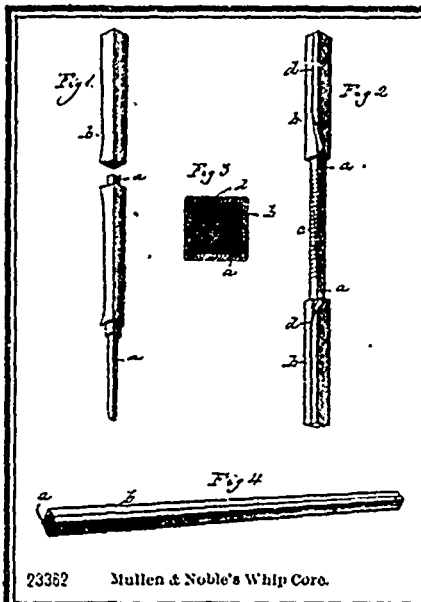
23359 Vallant's Boot.



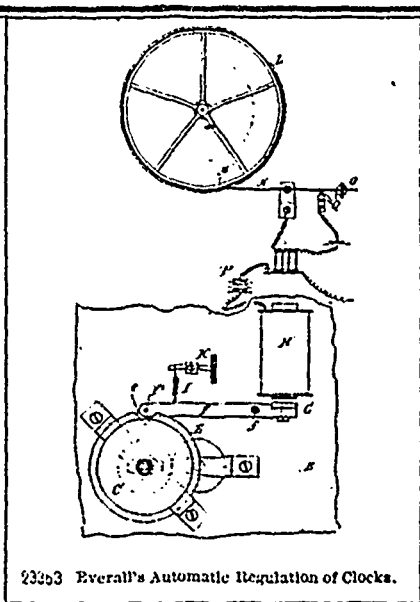
23360 Wirt's Fountain Pen.



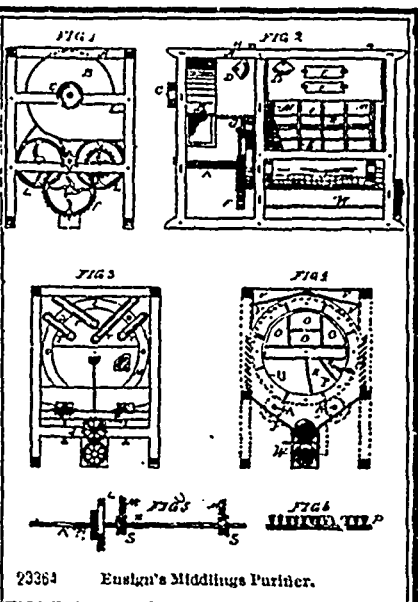
23361 Casgrain's Hood or Cap for Piles.



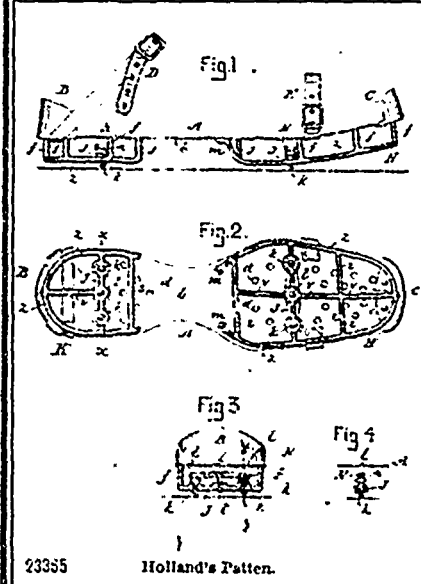
23362 Mullen & Noble's Whip Core.



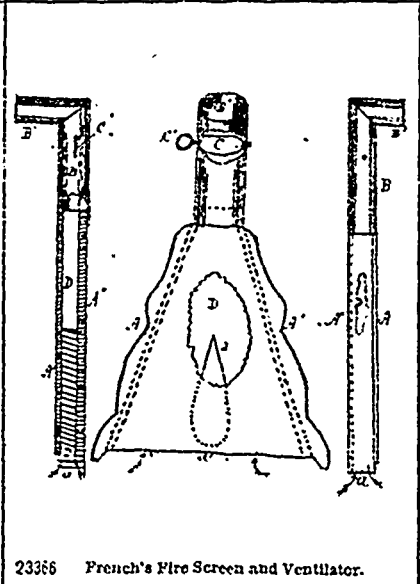
23363 Everall's Automatic Regulation of Clocks.



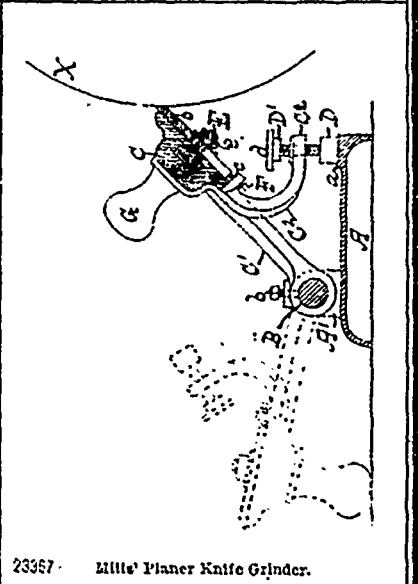
23364 Euskn's Middlings Purifier.



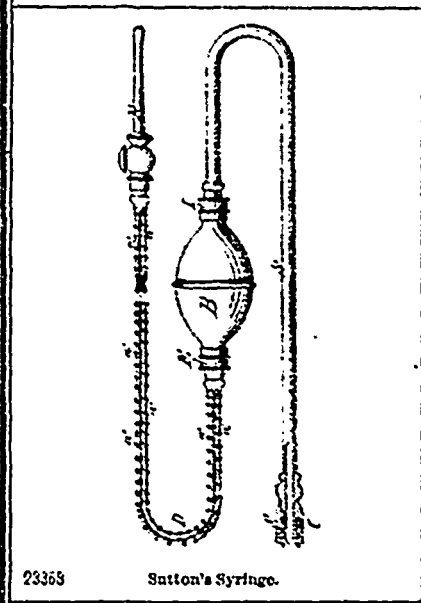
23365 Holland's Tatten.



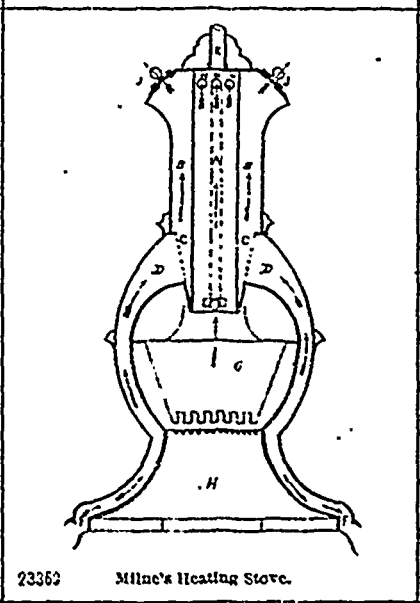
23366 French's Fire Screen and Ventilator.



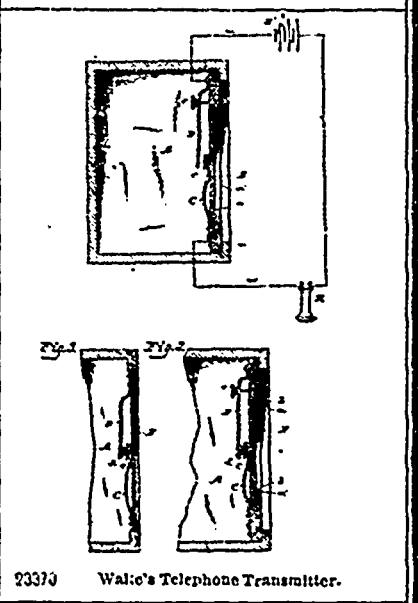
23367 Millie's Planer Knife Grinder.



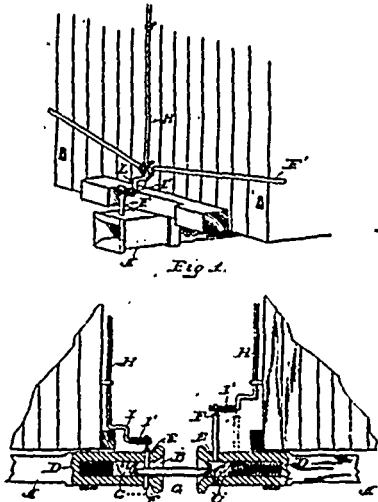
23368 Sutton's Syringe.



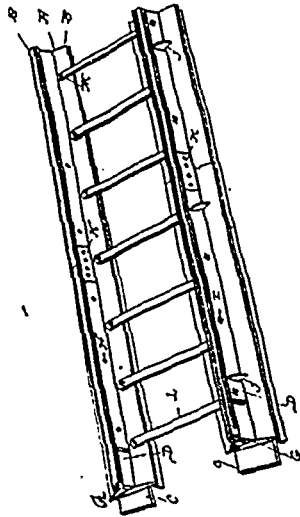
23369 Millie's Heating Stove.



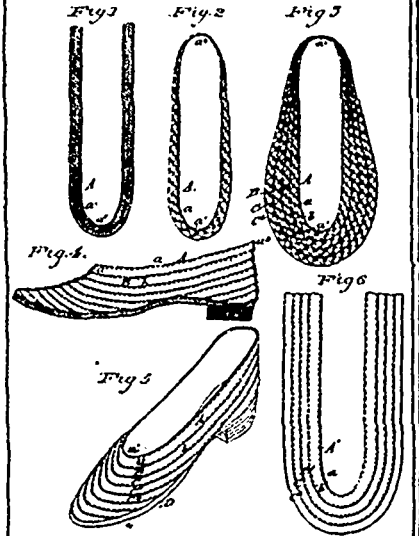
23370 Walke's Telephone Transmitter.



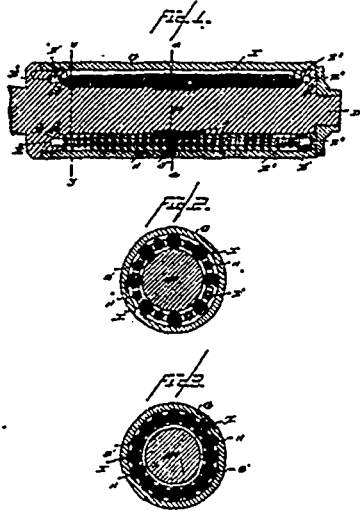
23371 McAllister's Car coupler.



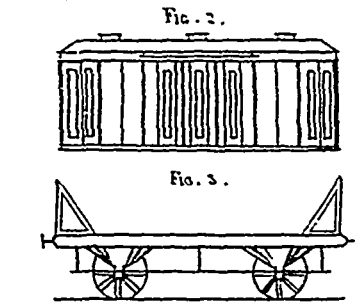
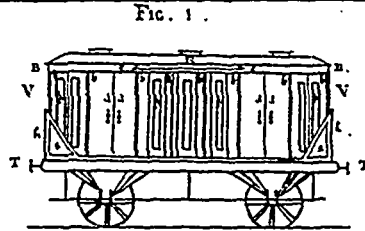
23372 Campbell's Railway.



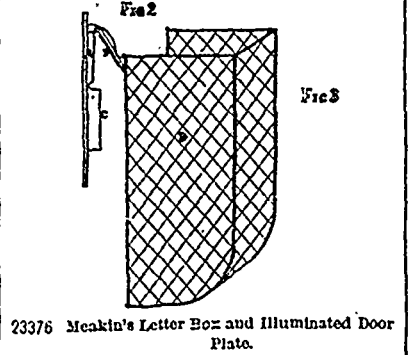
23373 Buchanan's Shoe and Slipper.



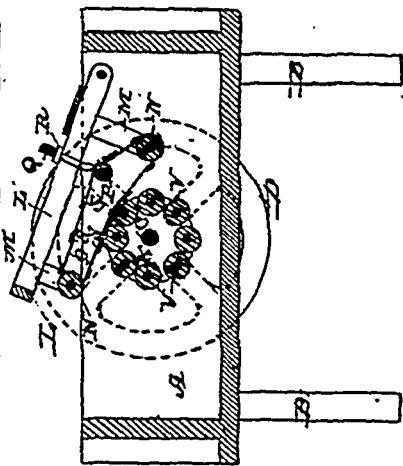
23374 Shoemaker's Friction Bearing.



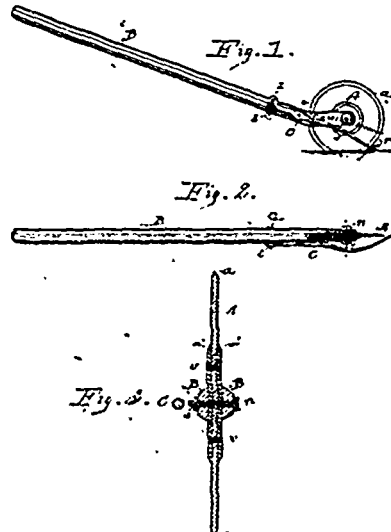
23375 Clifton's Railway Van.



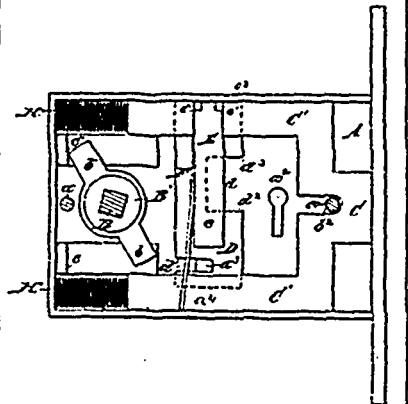
23376 Meakin's Letter Box and Illuminated Door Plate.



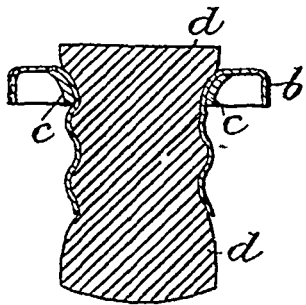
23377 Martin's Washing Machine.



23379 Mason's Device for Cutting Strawberry Runners.



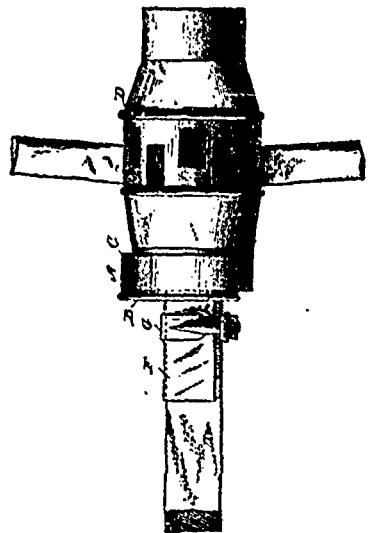
23380 Robertson's Lock.



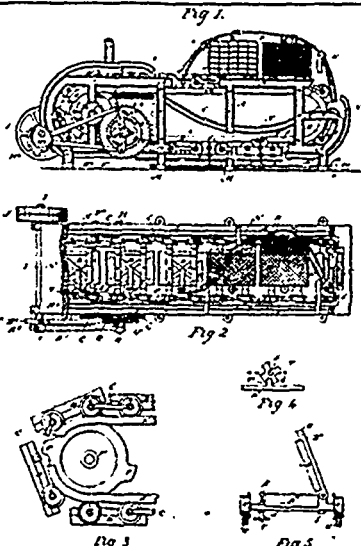
23381 Taylor's Bottle Stopper.



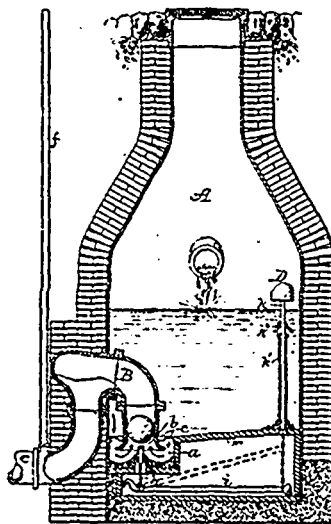
23382 Harrison's Fire Extinguisher.



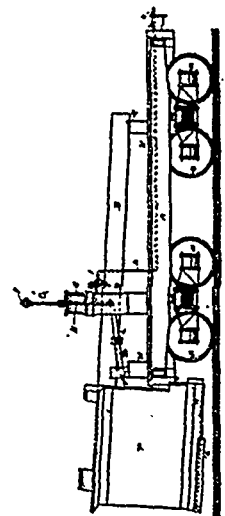
23383 Clark's Sand Band for Vehicle Wheels.



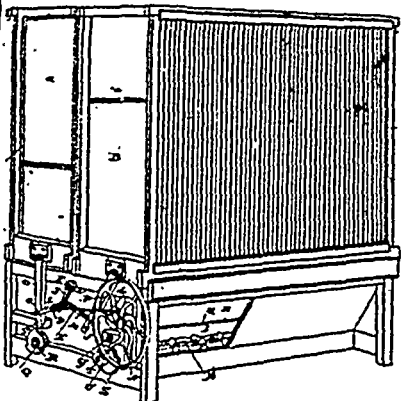
23384 Baker's Machine for Baking Sugar Wafer Cakes.



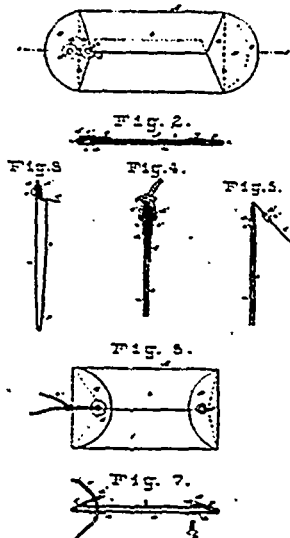
23385 Lowrie's Flushing Siphon.



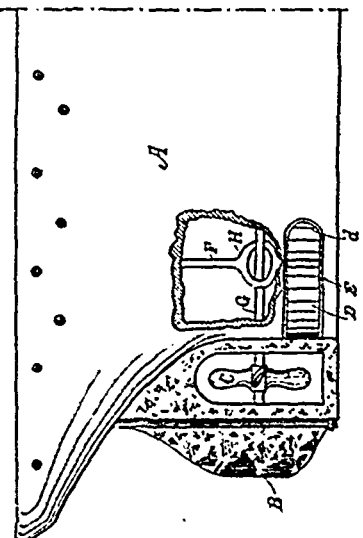
23386 Dalley's Railway Snow Plough.



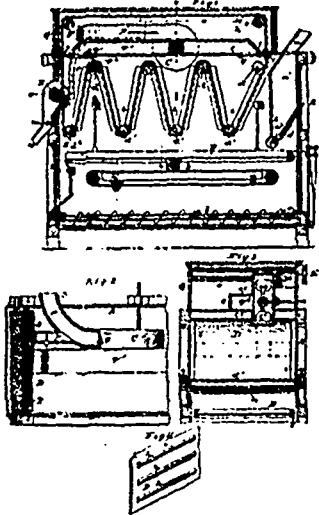
23387 Wilson's Dust Collector.



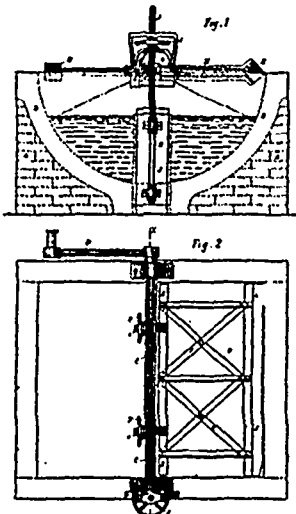
23388 Dunham's Envelope.



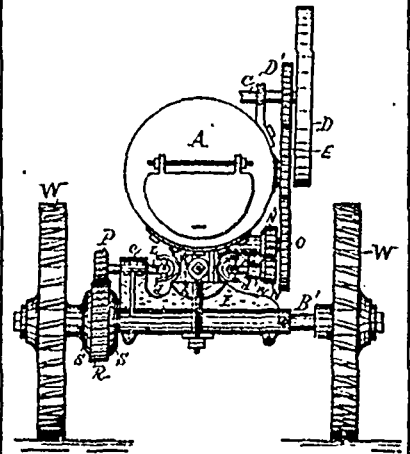
23389 L'ocell's Ship Steering Device.



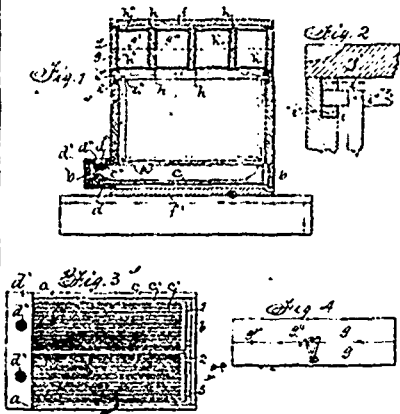
23390 Holt's Dust Collector.



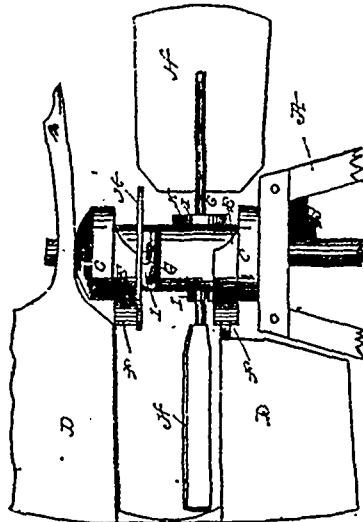
23391 Weirch's Treatment of Auriferous and Au-roargentiferous Minerals.



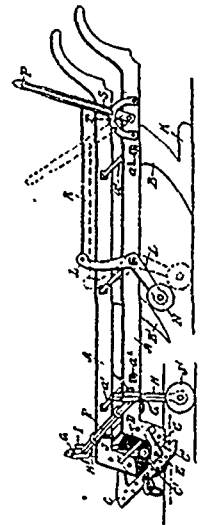
23392 Taber's Traction Engine.



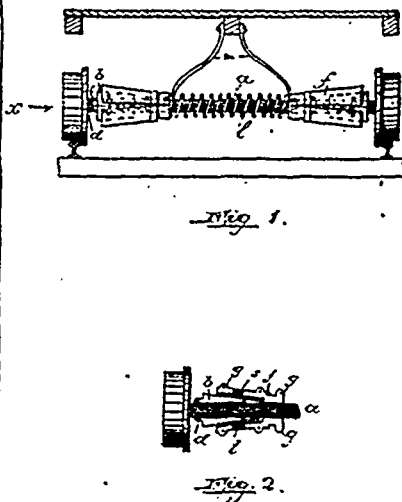
23393 Shuck's Bee-Hive.



23394 Ellsworth's Wind Mill.



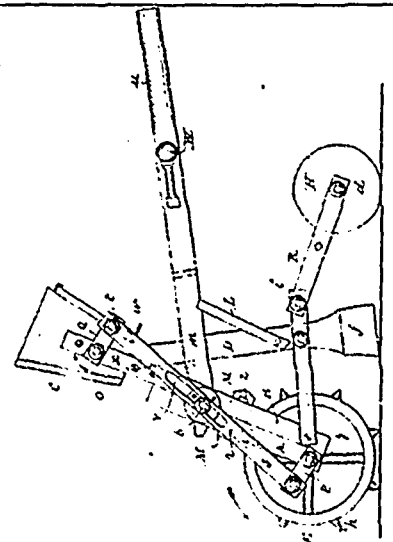
23395 McSherry's Two Furrow Plough.



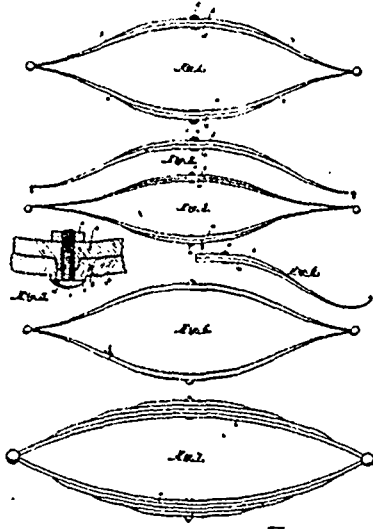
23396 Meler's Car Brako.



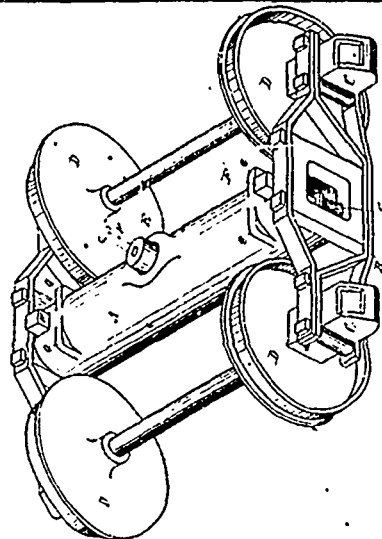
23397 Davis' Hot Air Flue Attachment.



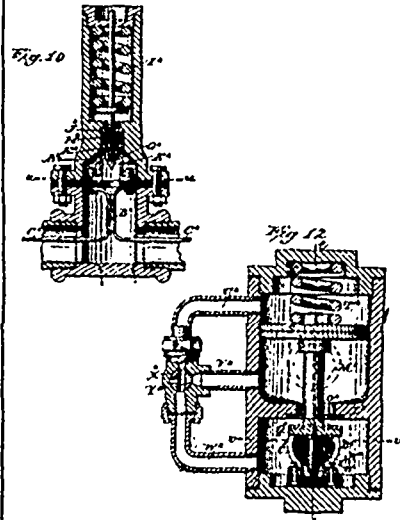
23398 Shaw's Seed Planter.



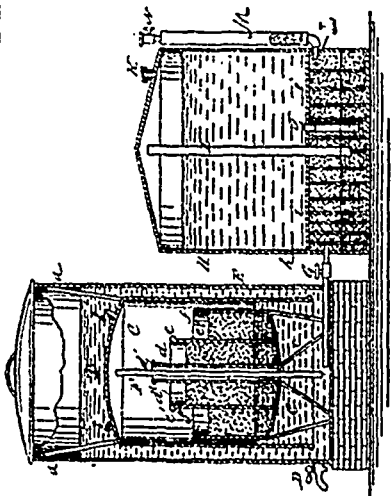
23400 Armstrong's Vehicle Spring.



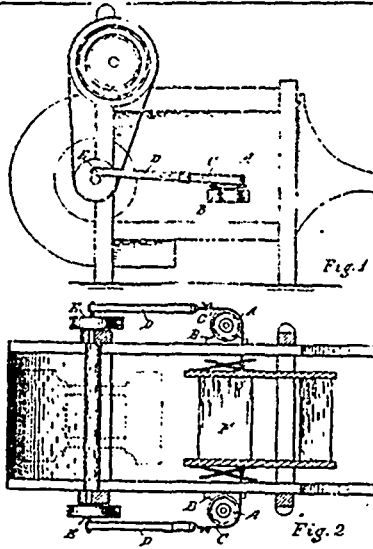
23401 Turner's Car Truck.



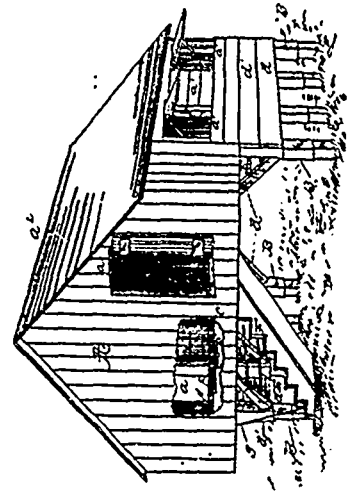
23402 Hollerith's Air Brake for Railway Cars.



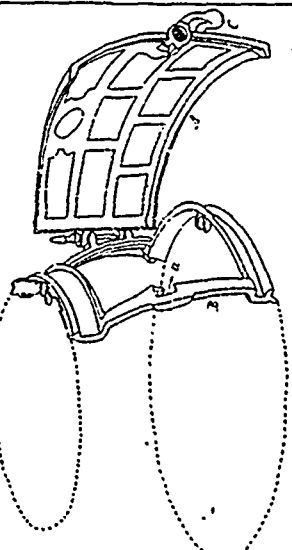
23403 Sloper's Process for Man'fg. Illuminating Gas.



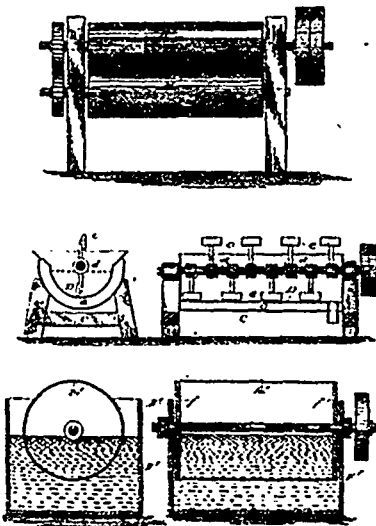
23404 Challfour's Fanning Mill.



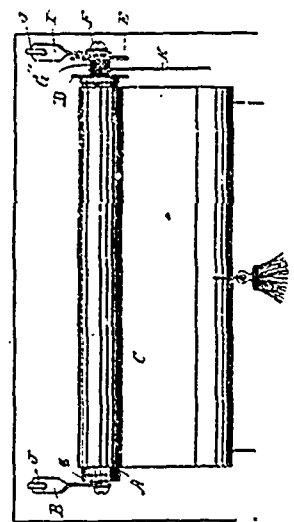
23405 Bailey's Corn House.



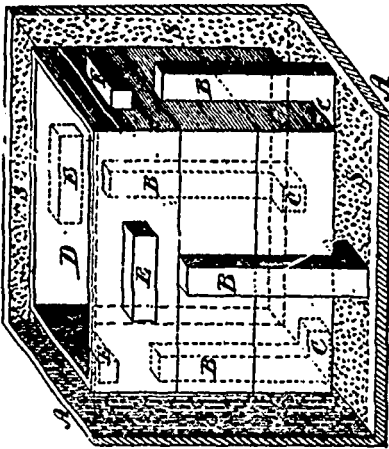
23406 Herrick's Stove Door.



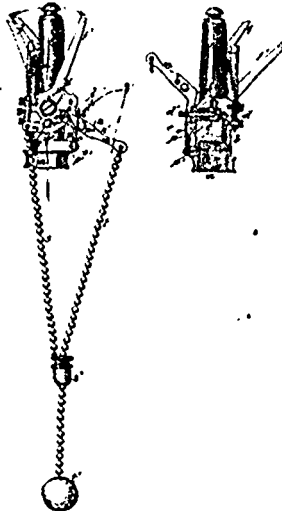
23407 Spitzer's Machinery for Manufacturing Starch.



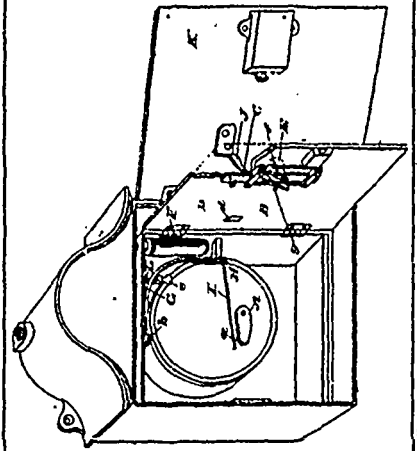
23408 Kelly's Curtain Fixture.



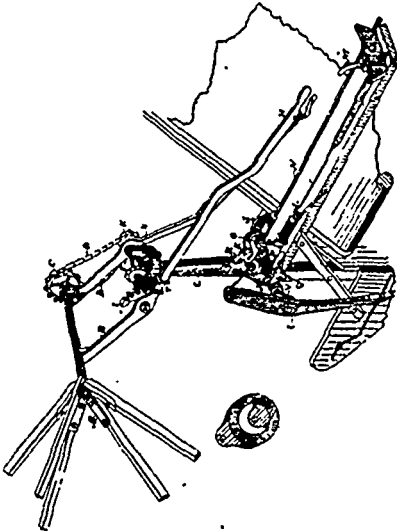
23409 Torrance's Package for Storing and Transporting Fruit, etc.



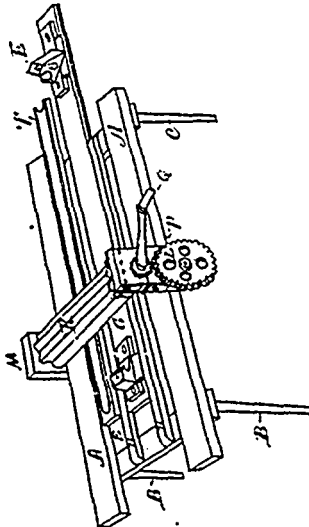
23410 Rousseau's Electric Gas Lighting Burners.



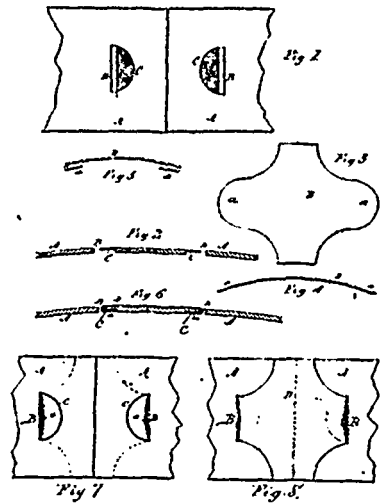
23411 Anderson's Fire Alarm Telegraph System.



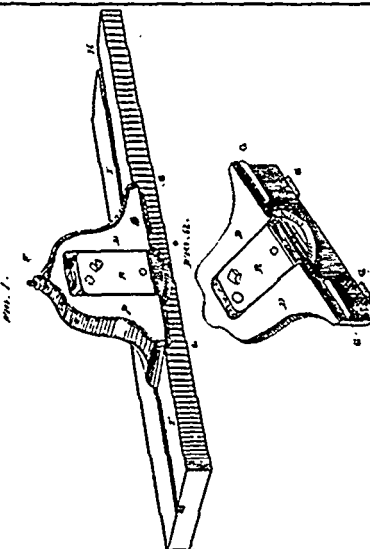
23412 Garvin and Closkey's Mechanism for Supporting the Reel of a Harvesting Machine.



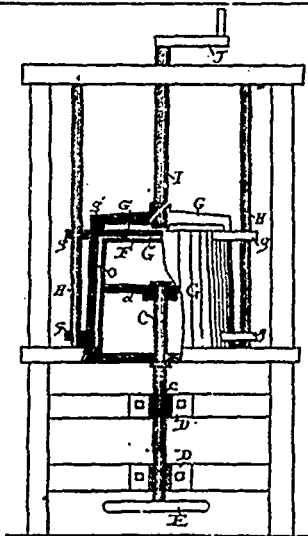
23413 Waters' Butter Worker.



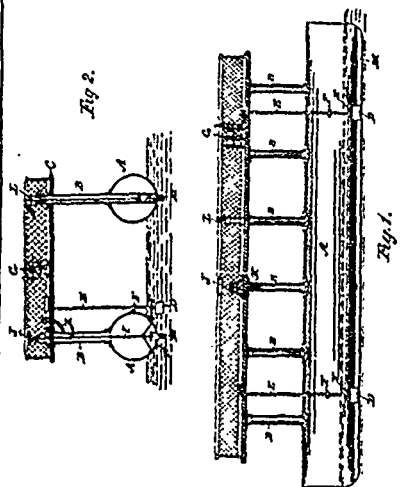
23414 O'Neill's Fastening for Milk Can Hoops.



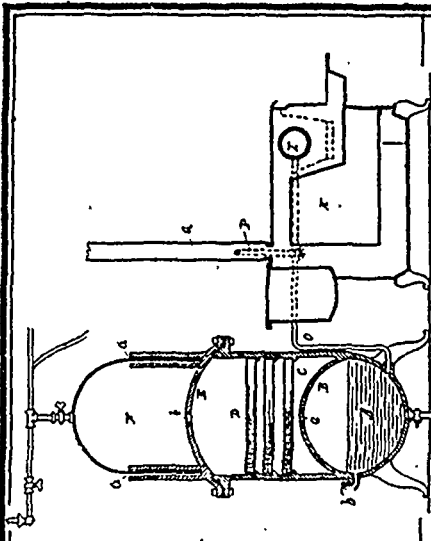
23415 Van Horn's Wall Paper Trimmer.



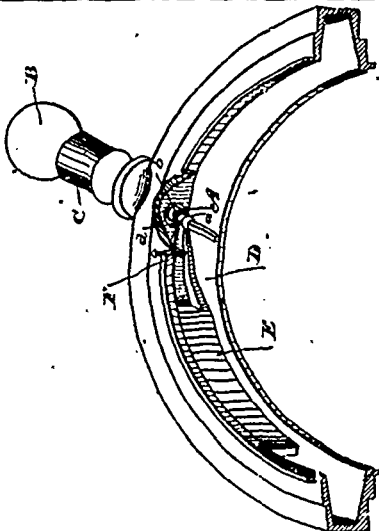
23416 Butterfield's Machine for Forming Palls from Wood or Paper Pulp.



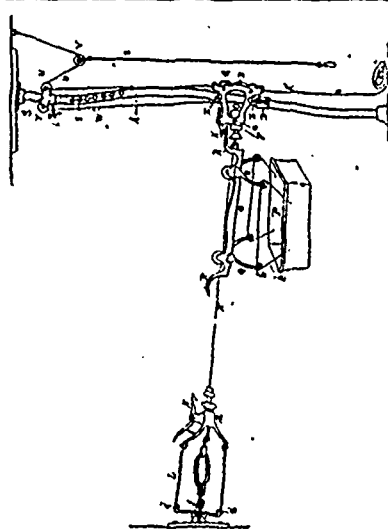
23417 Paterson's Twin Boat.



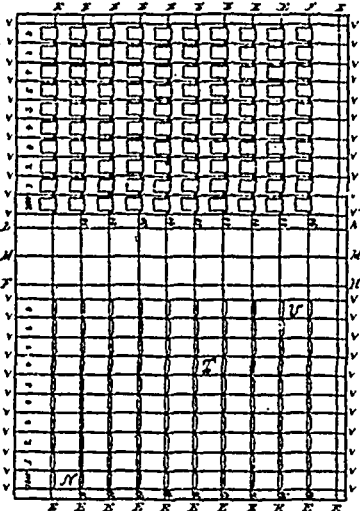
23418 Bryant, Finlayson & Coul's Gas Machine.



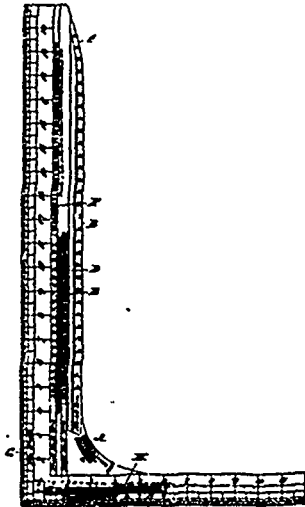
23419 Heffernan's Stem Winding Watch.



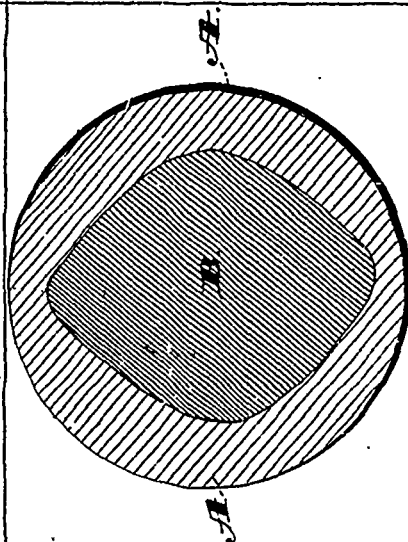
23420 Smith's Parcel Carrier.



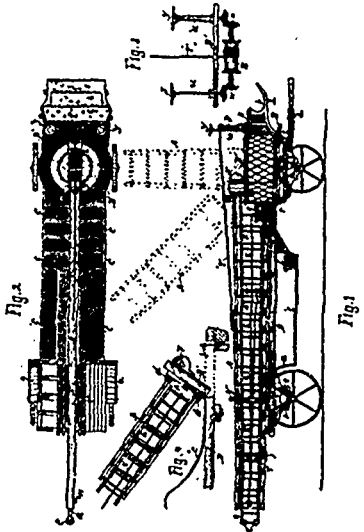
23421 Colby's description File.



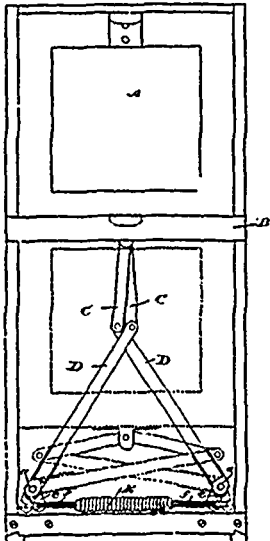
23422 Smith's Tailor's and Dressmaker's Square.



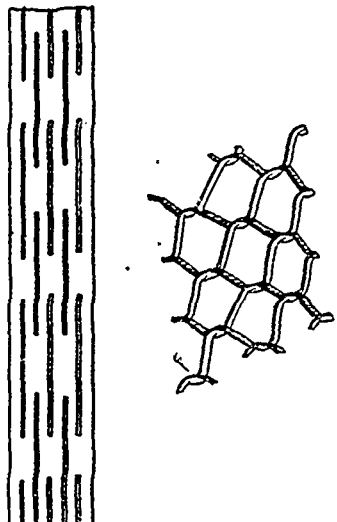
23423 Paul & Woods' Compound Wire for Electric Purposes.



23424 Harris' Fire Ladder and Truck.



23425 Clarke's Compensating Spring Balance.



23427 Golding's Process for Making Metallic Screening Material.

Fig. 1.



Fig. 2.



Fig. 3.



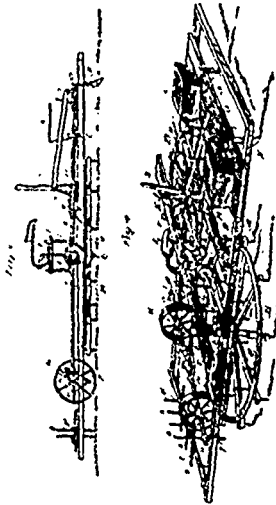
Fig. 4.



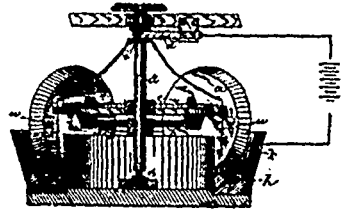
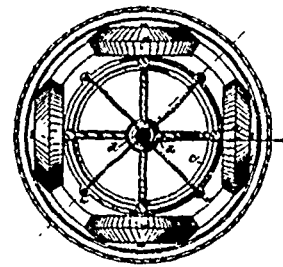
Fig. 5.



23428 Rothlisberger's Carriage Top Bolt Head.



23429 Munro's Rotary Harrow.



23430 Wiswoll's Apparatus for Treating Ores.



Fig. 2.



Fig. 3.



Fig. 5.

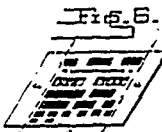
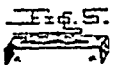
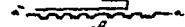
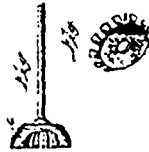
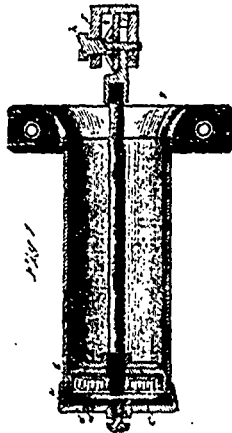


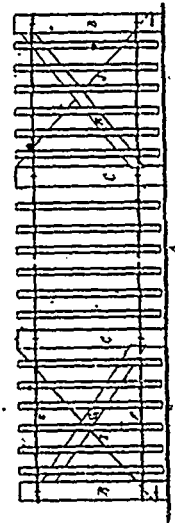
Fig. 7.



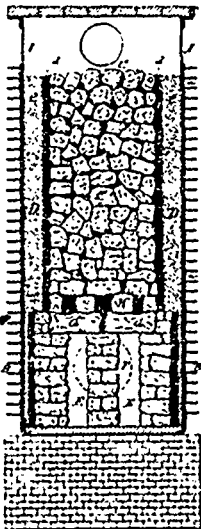
23431 Marshall's Electrotyping Plate.



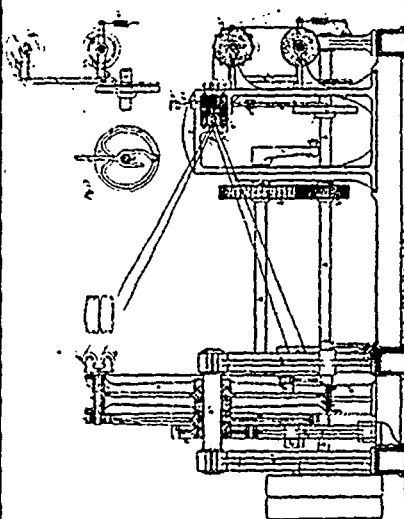
23432 Elliott's Door Check



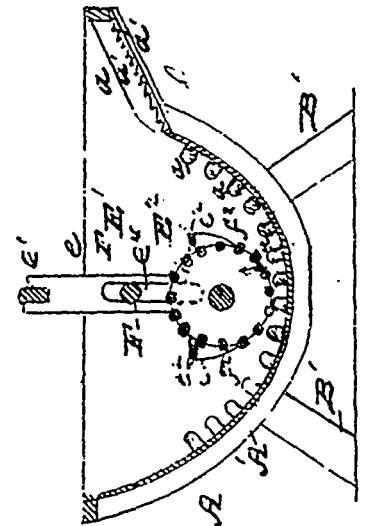
23435 Dickenson's Combined Wooden and Wire Fence.



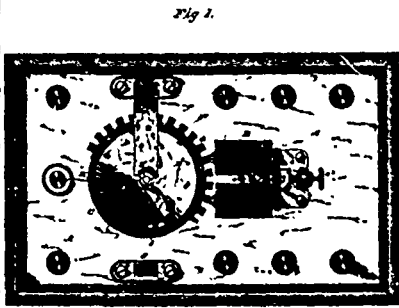
23436 Herreshoff's Sulphuric Acid Tower.



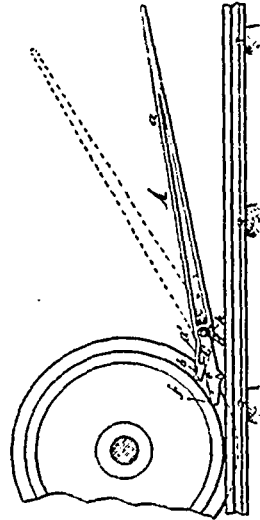
23437 Donnie's Apparatus for the Manufacture of Wire Netting.



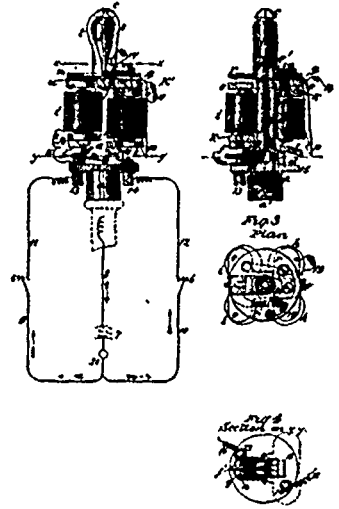
23438 Ensley's Washing Machine.



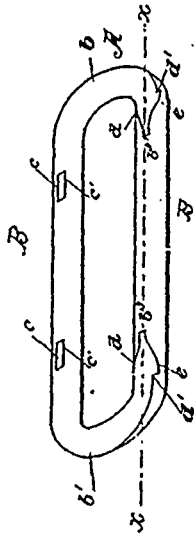
23439 Delany's Electrical Telegraphic System.



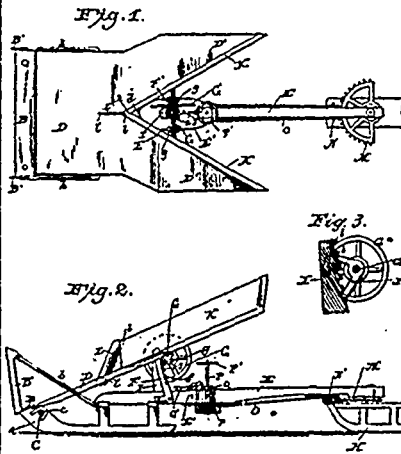
23440 Sheldon's Pluch Bar for Moving Railway Cars.



23441 Rousseau's Automatic Electric Gas Lighting Burner.



23442 Preston's Link for Chains, etc.



23443 Greenlee's Snow Clearer.

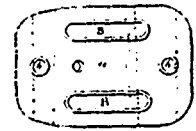


Fig. 1 SIDE VIEW

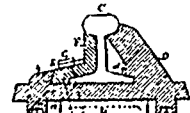
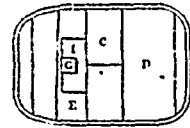
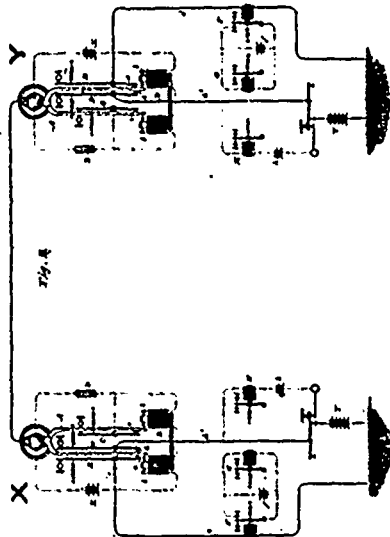


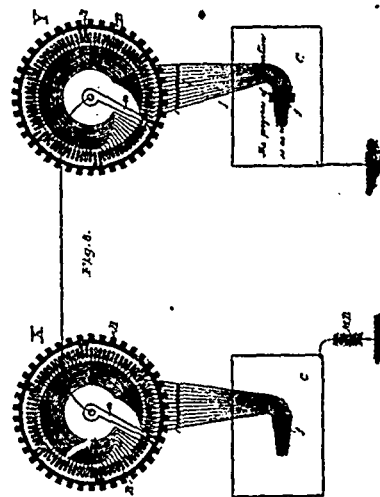
Fig. 2 VERTICAL SIDE & ENTIRE VIEW



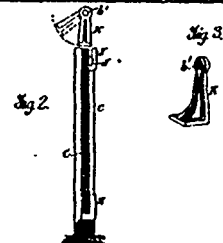
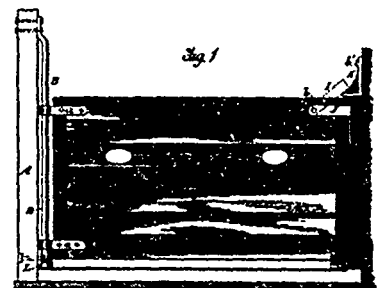
23444 Do Guera's Safe Rail Grip for Securing Ball Ends to their Place Upon the Rail Tie.



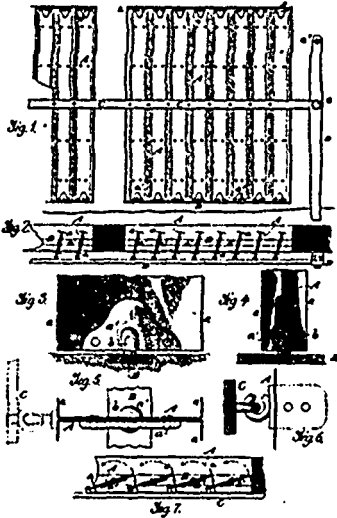
23445 Delany's Telegraphy.



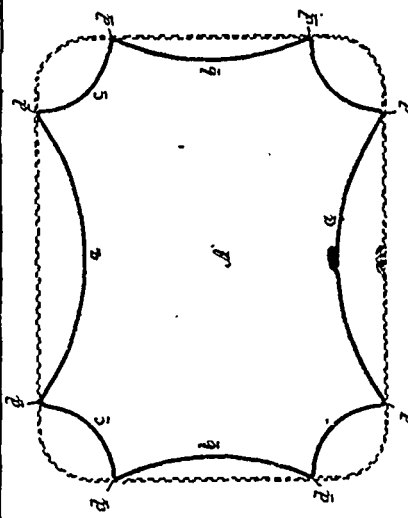
23446 Delany's Facsimile, or Autographic Telegraphy.



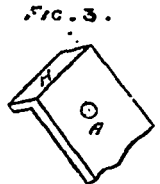
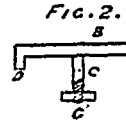
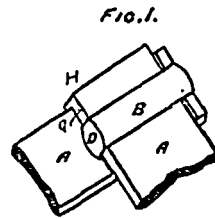
23447 Arms' Stock Car.



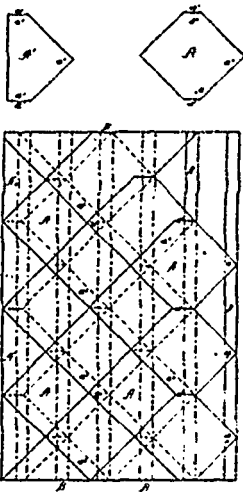
23448 Arms' Stock Car.



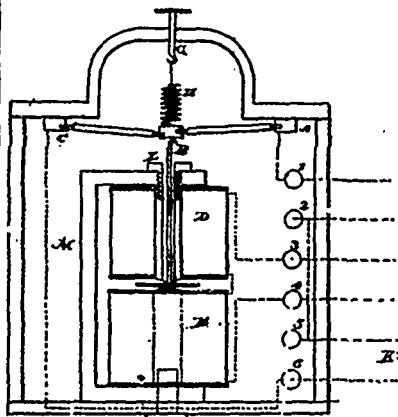
23449 Leadley's Sheet Metal Conducting Pipe.



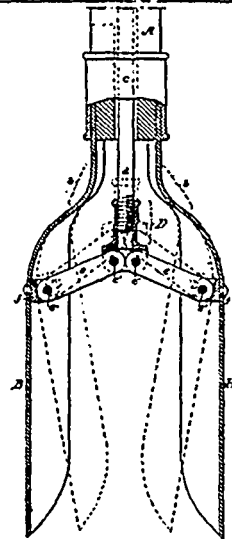
23450 Collings' Cross Spring Bolt for Waggon's.



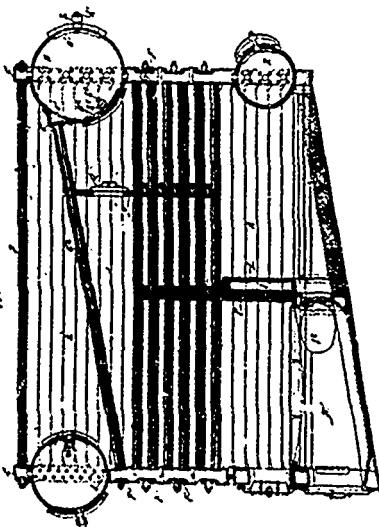
23451 Blackie's Method of Slating Roofs.



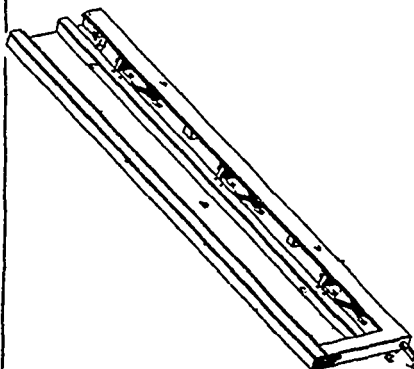
23452 Wright & Pocock's Telephone.



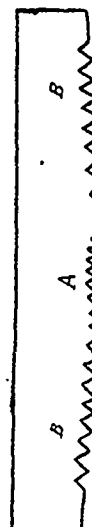
23453 Dieston's Apparatus for Digging Post Holes, etc.



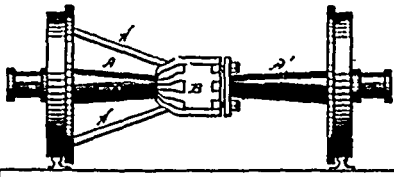
23454 Hartley's Steam Boiler.



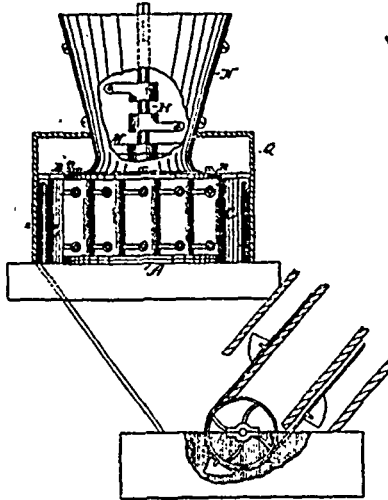
23456 Whitaker's Printer's Galley.



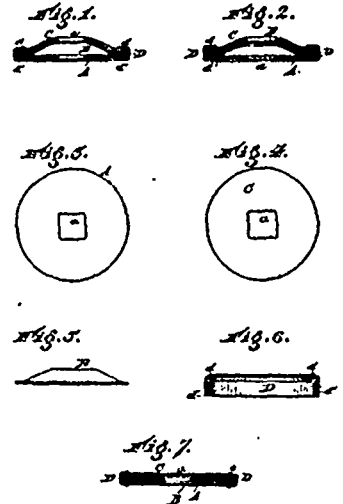
23457 Parker's Cross Cut, or Drag Saw.



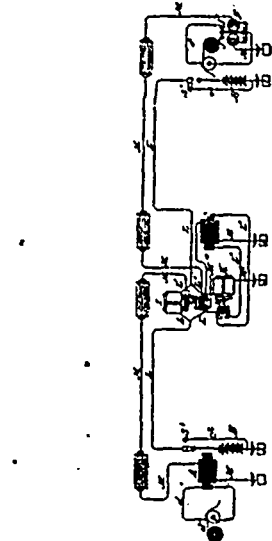
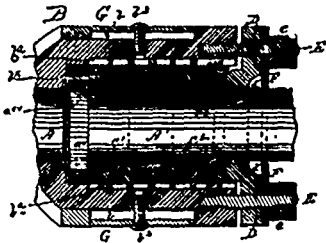
23458 Bedbury's Divided Car Axle.



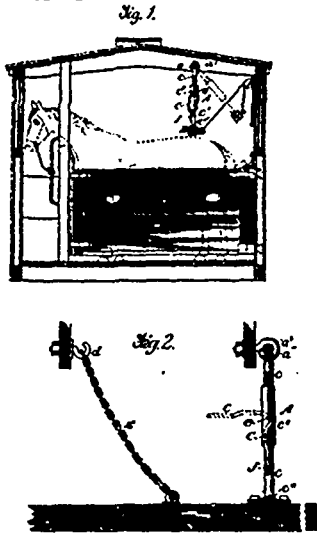
23459 Ott's Bark Shaving Mill.



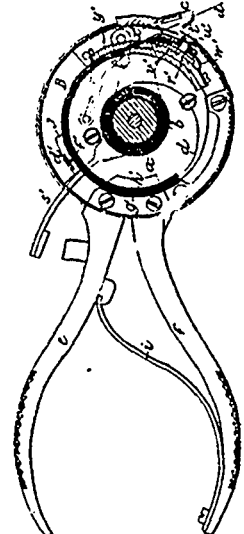
23460 Rothlisberger's Washers for Carriage Top Props.



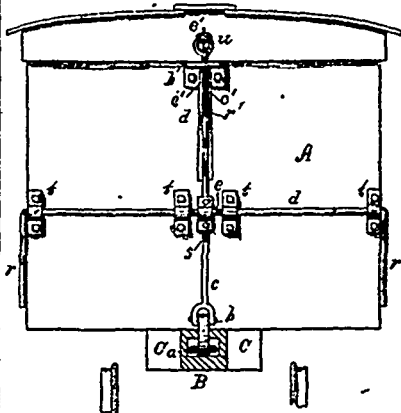
23461 Farmer's Electric Cable Repeater.



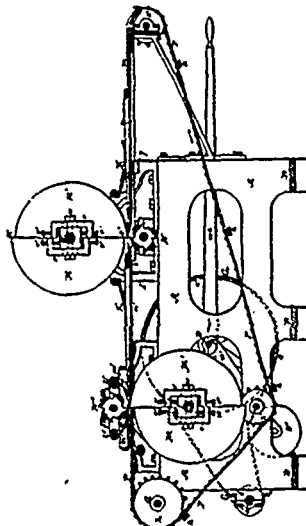
23462 Arms' Stock Car.



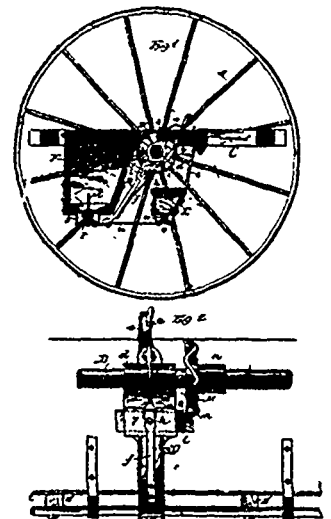
23463 Everitt's Checking Apparatus for Preventing Fraud on the Part of Persons Employed to Receive Money.



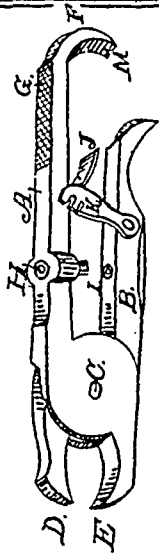
23464 Winters' Car Coupler.



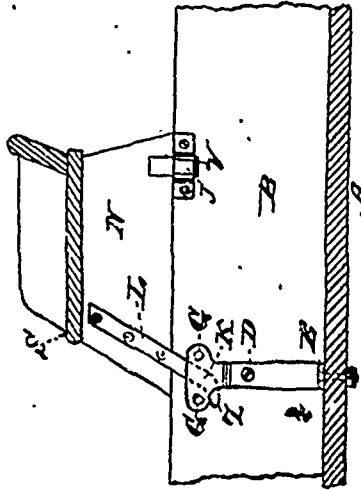
23465 Duston's Machine for Planing Shingles.



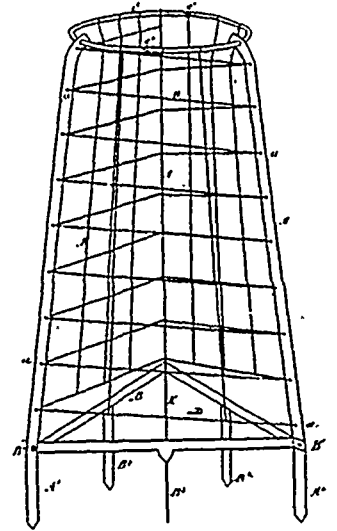
23466 Monroe's Seeder.



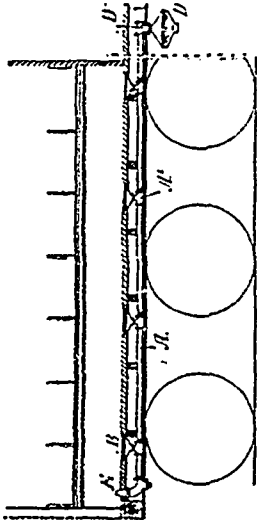
23467 Harmon's Combustion Tool.



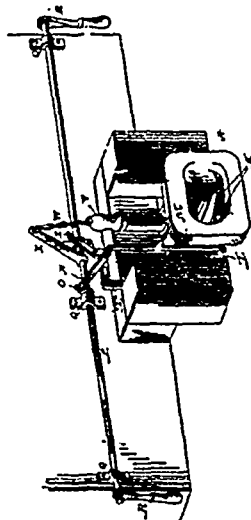
23468 Davis' Seat Fastening for Wagons.



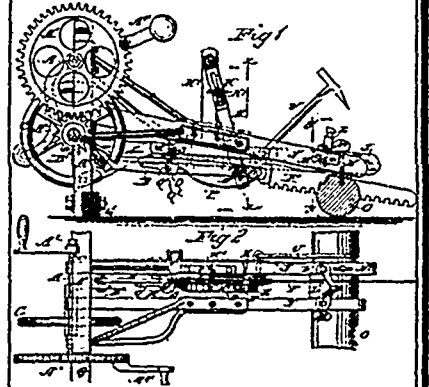
23469 Cole's Tree Guard.



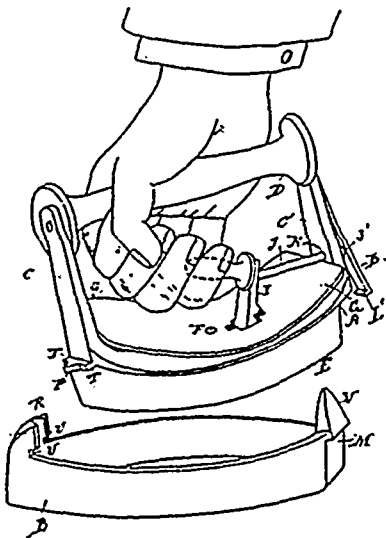
23470 Wallis' Splitton for Railway Cars and other Vehicles.



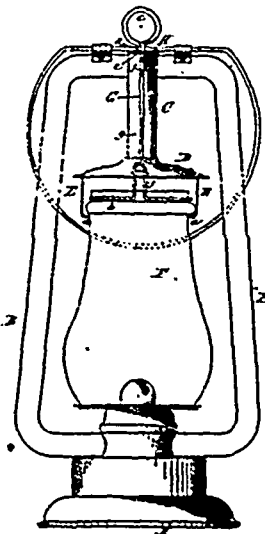
23472 McKeen's Car Coupler.



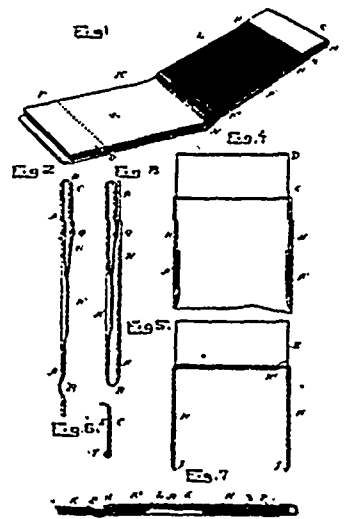
23473 Dresser's Wood Sawing Machine.



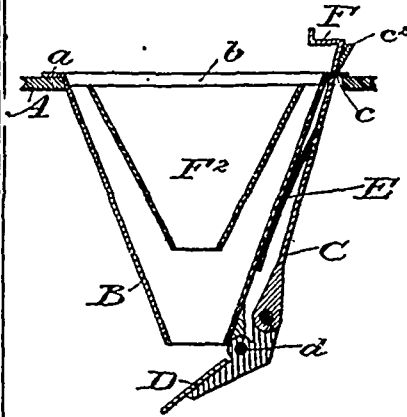
23474 Oldaker's Smoothing Iron.



23475 Schultz's Tubular Lantern.



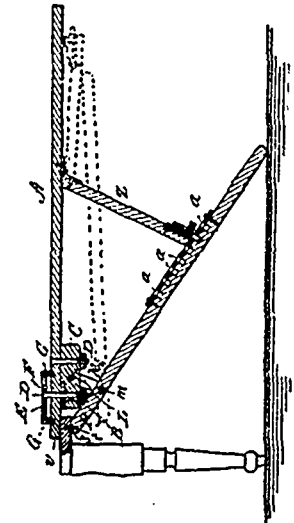
23476 Carter's Sale Book.



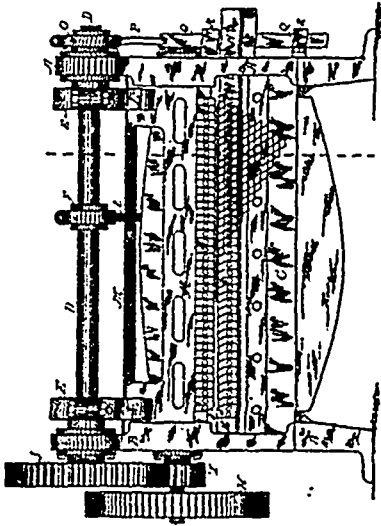
23477 Smith's Cuspidor.



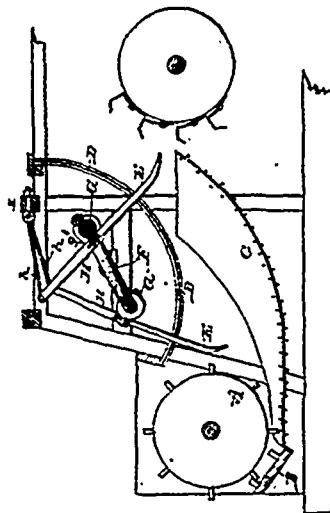
23478 Paridy's Band Cutter and Feeder for Thrashing Machines.



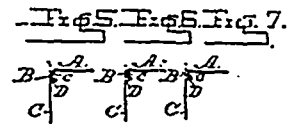
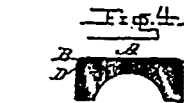
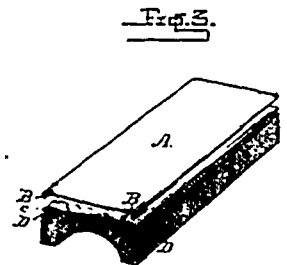
23479 Ellison's Ironing Board.



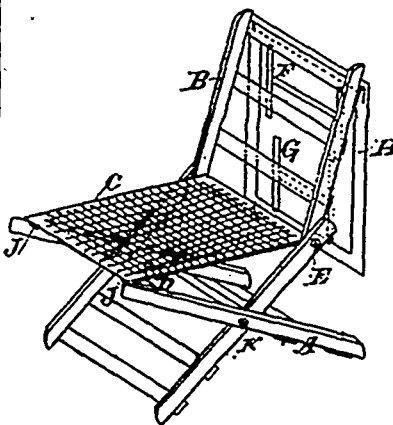
23480 Golding & Durkee's Machine for Cutting and Expanding Metallic Screening.



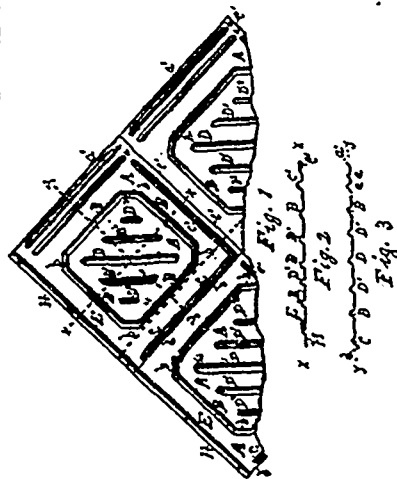
23481 Gilkeson's Thrashing Machine.



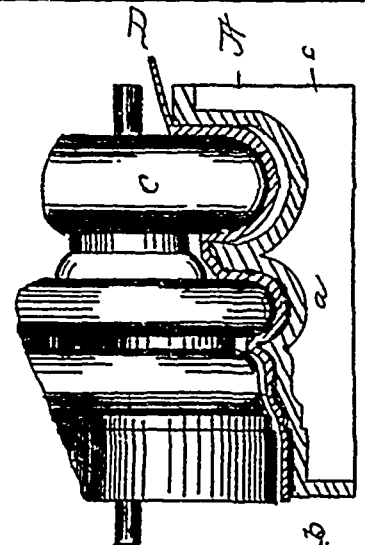
23482 Cumming's Electrotyping Shell and Base.



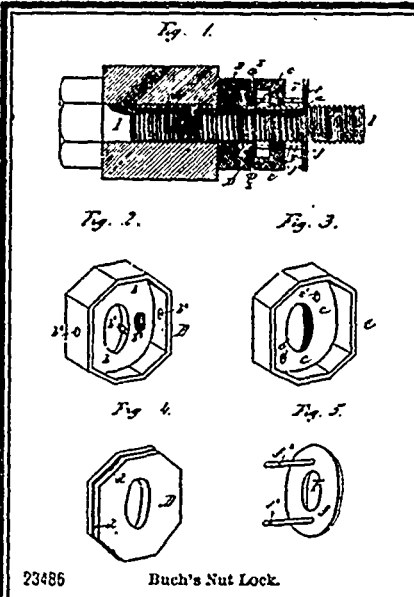
23483 Newby's Folding Chair and Camp Bed.



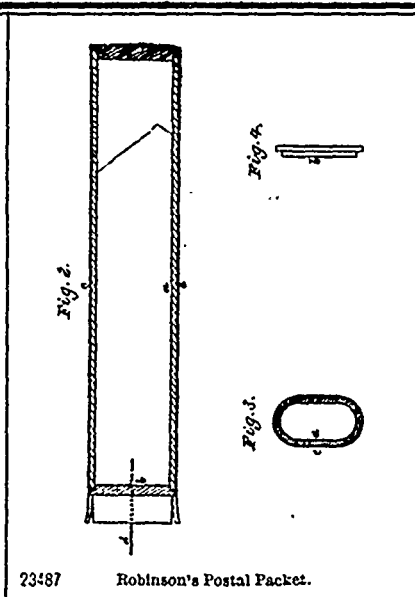
23484 Montrose's Metal Shingle or Roofing Plate.



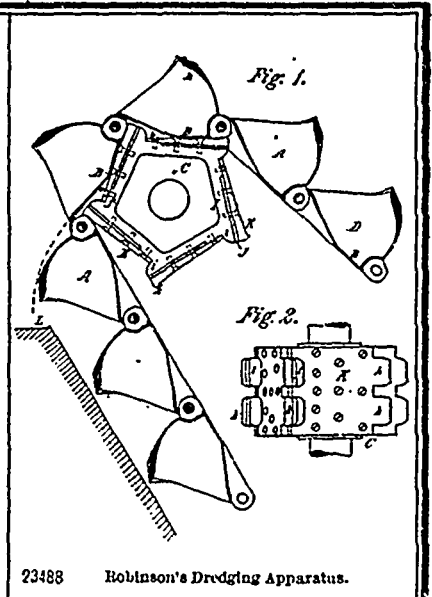
23485 Butz and Pfluger's Process of Making Mouldings from Paper, etc.



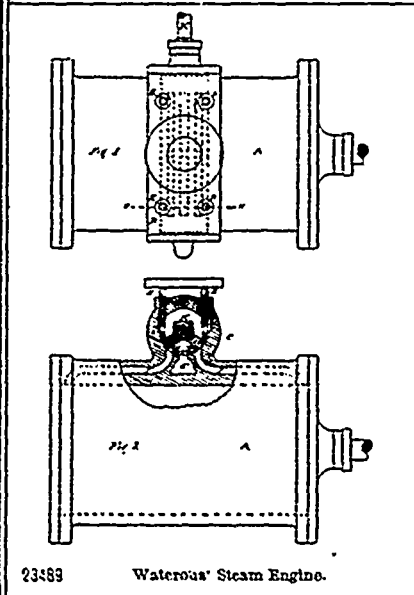
23486 Buch's Nut Lock.



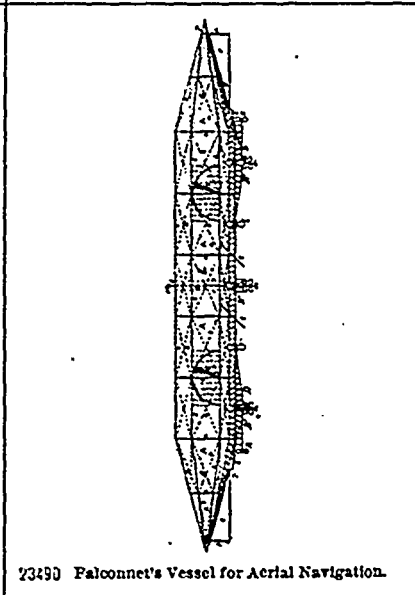
23487 Robinson's Postal Packet.



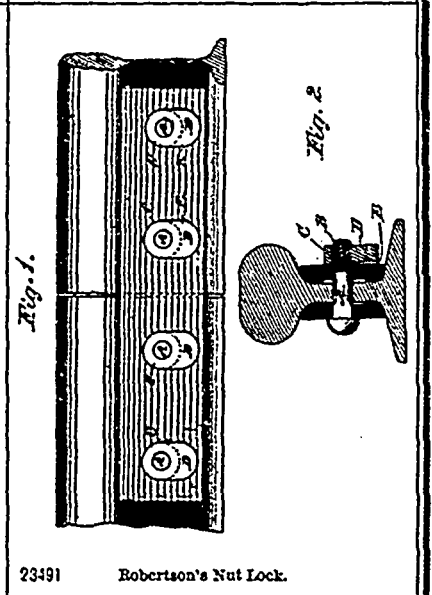
23488 Robinson's Dredging Apparatus.



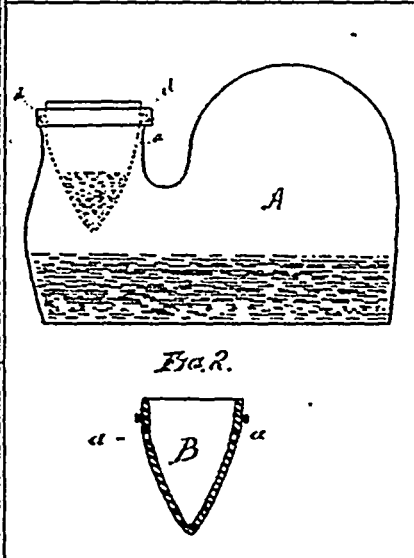
23489 Waterous' Steam Engine.



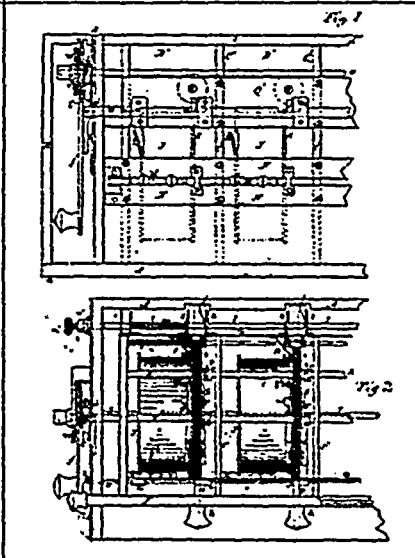
23490 Falconnet's Vessel for Aerial Navigation.



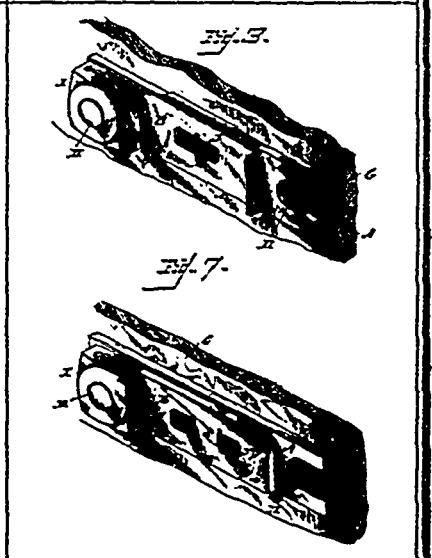
23491 Robertson's Nut Lock.



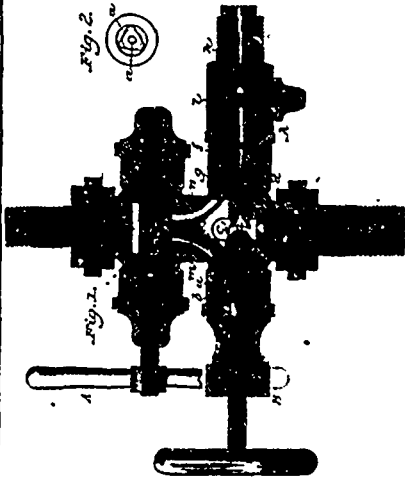
23492 Ross' Ink Stand.



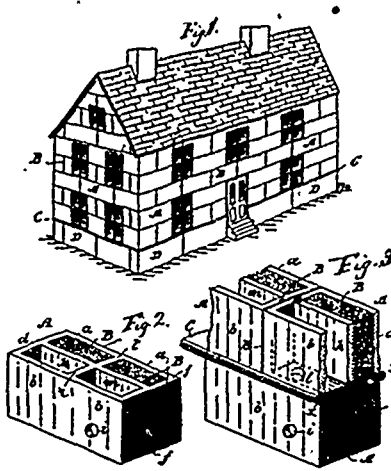
23493 Waddell's Self-Registering Voting Machine.



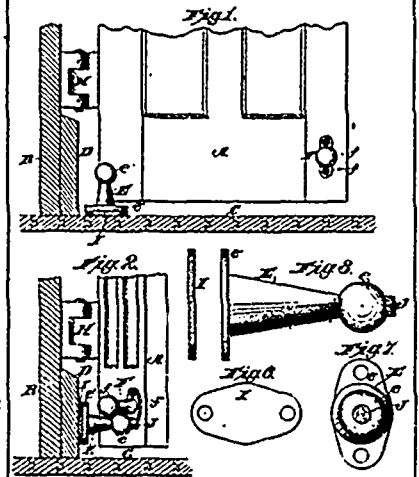
23494 Broughton's Nut Lock.



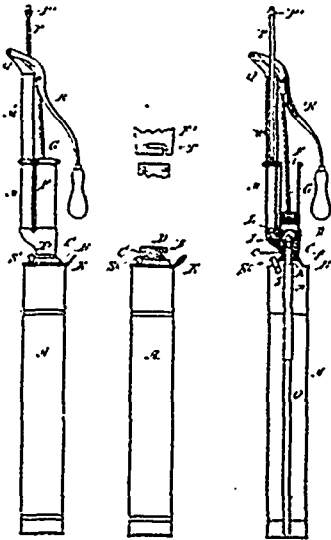
23495 Moreland's Injector.



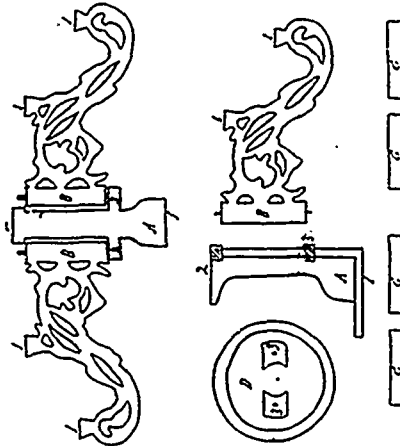
23496 Trumbull's Building Block.



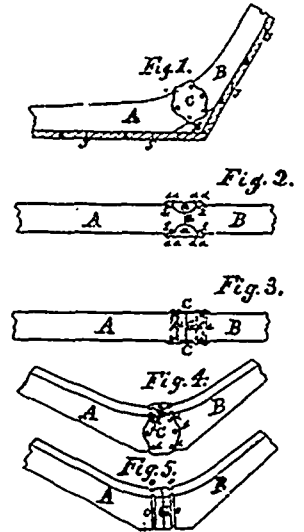
23497 Jay & Carvey's Door Stop and Holder.



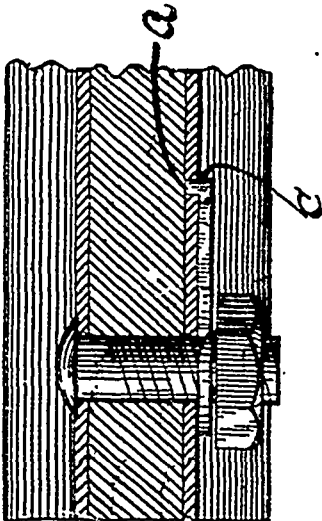
23498 Morse's Hand Fire Extinguisher.



23499 Borthwick's Bracket.



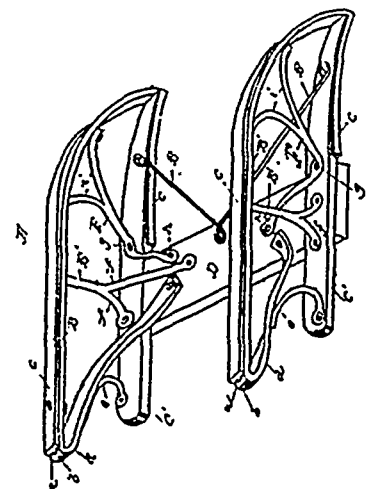
23500 LeBlanc's Dory Knee.



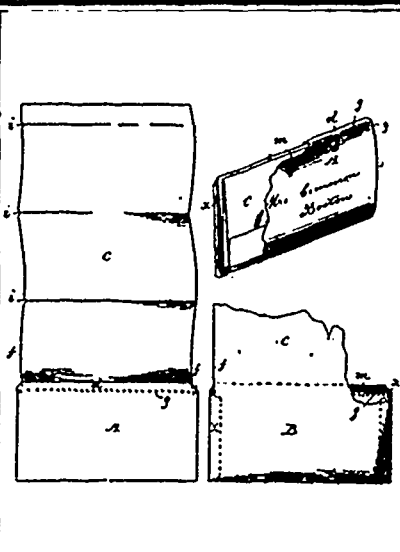
23501 Woodring's Nut Lock.



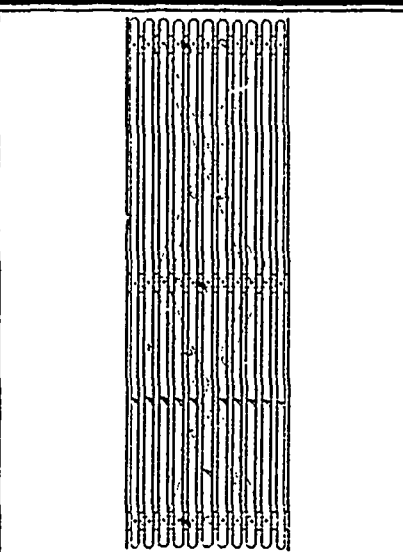
23502 Eppler's Boot and Shoe Nail.



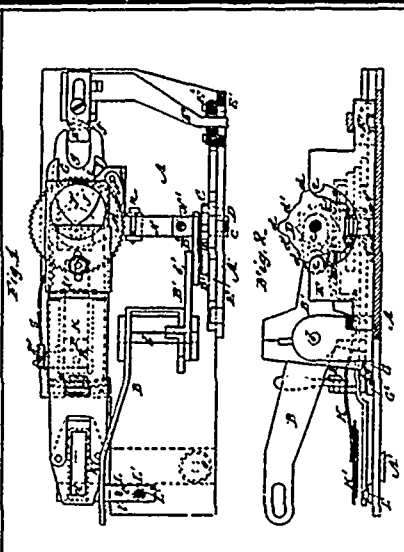
23503 Baum's Sled.



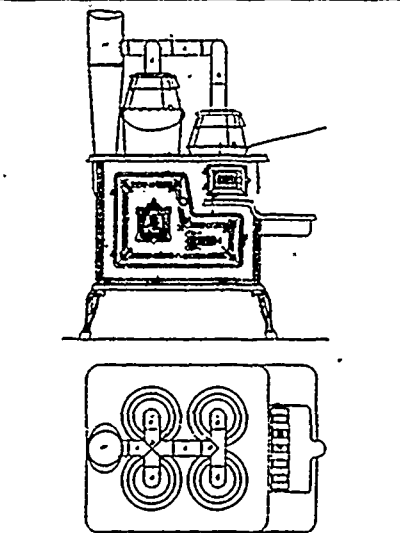
23505 Pedrick's Envelope.



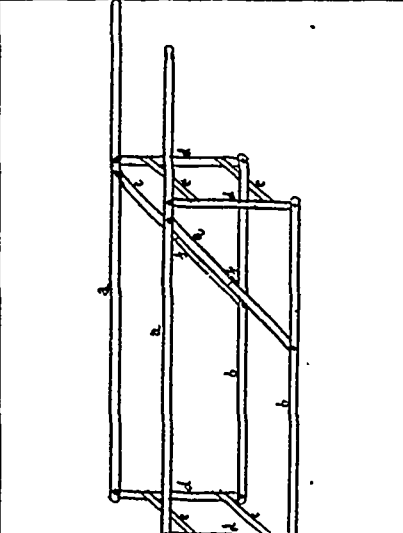
23536 Dupont's Buggy Cushion.



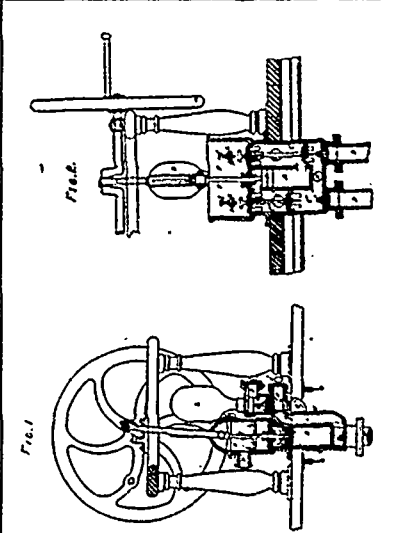
23507 Palmer's Button Hole Sewing Machine.



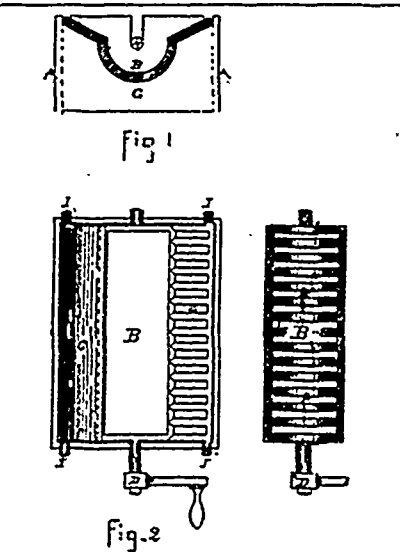
23508 Rowley's Cover for Pots and Pans.



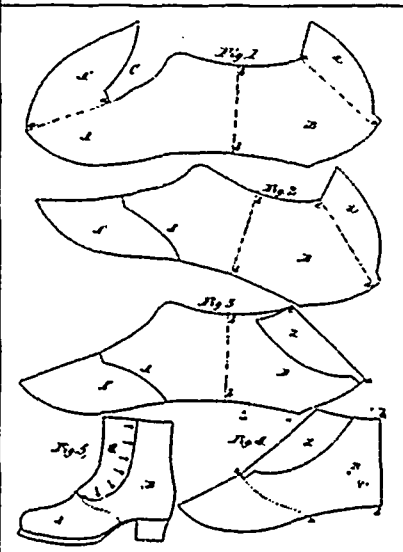
23509 Truceman's Machine for Raising Waggon.



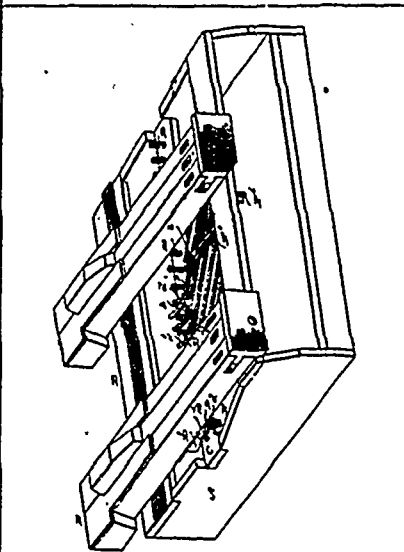
23510 Mills' Pump.



23511 Copp's Fire Place Grate.



23514 Kelly's Button Shoe.



23515 Murphy's Octavo Coupler for Organs.