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The Canadian Patent Office Record

Vol. XVI.—No. 9. SEPTEMBER, 1888. Price in Canada $2.50 per An. United States - $2.50 "

INVENTIONS PATENTED.

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

No. 29,784. Sewing Machine.

(Machine à coudre.)

Edward C. Bean, Herbert W. Reynold and Charles L. Reynold, Portsmouth, Eng., 1st September, 1888 ; 5 years.

Claim.—1st. The combination of the adjustable second shuttle arrangement placed horizontally and at right angles with the usual shuttle arrangement, and means for driving the second shuttle carrier from usual shuttle driving shaft, substantially as hereinbefore described and illustrated in the accompanying drawings. 2nd. The combination, with the shaft E, of the bevel wheels F and G, short spindle G_2, suitably held and attached to carrier D_2, as and for the purposes described. 3rd. The combination, with a movable shuttle arrangement, of the adjustable bevel wheel F, shaft E, wheel G and spindle G_2, suitably held as described. 4th. The combination, with a needle bar provided with a right angle extension J_1, of the needle holder J_2, suitably secured to, and adjustable on the extension J_1, as described.

No. 29,785. Trunk. *(Coffre.)*

John F. Zimmerman, Jersey, N. Y., U. S., 1st September, 1888 ; 5 years.

Claim.—1st. The combination, in a trunk having a hinged lid of greater depth than its body, a series of trays held above each other and connected by arms or levers with each other, and with the body and lid of the trunk, substantially as shown and described. 2nd. The combination, in a trunk having a hinged lid of greater depth than the body or bottom part thereof, a series of trays connected together and to the body of the trunk by pivoted arms, and to the lids thereof by two arms at each end, substantially as shown and described. 3rd. The combination, in a trunk, of a hinged lid, a series of trays held above each other and connected together, and with the trunk and its lid, by arms pivotally attached to plates, or ears fixed to the trays and to the trunk, and its lid, substantially as shown and described. 4th. The combination, in a trunk, of a hinged lid of greater depth than the body of the trunk, a series of trays, pivoted arms connecting the trays together and to the body and lid, and a hinged front flap on the body adapted to fit in the front of the lid, substantially as shown and described 5th. In combination, the trunk A, the lid B, the trays and the pivoted arms connecting them together and to the body A, and the arm K, arranged as shown and slotted at O, substantially as and for the purpose described. 6th. In a trunk having a series of trays adapted to be extended from the body of the trunk, and separated from each other by a system of arms or levers connecting said trays, and the body and lid, pivot plates or ears M for attaching the lever arms to the trays and body part of the trunk, as and for the purpose described.

No. 29,786. Sash Lock. *(Arrête-croisée.)*

John Jackson, Clinton, Iowa, U.S., 1st September, 1888 ; 5 years.

Claim.—1st. The combination, with the upper and lower meeting-rails of a sash, of a sash-lock mounted on the former, the same consisting of a lock-case having a pivoted swinging lock adapted to take over the lower meeting-rail, and a projecting lug arranged to be struck thereby and formed with a shoulder at its opposite end, and a pawl adapted to take against the shoulder when the sash is closed, and to be operated thereby when opened, substantially as specified. 2nd. The combination of the meeting-rail 1, the casing 4, provided with the securing flanges 4_1 and 5, the lock 8 mounted on the shaft 7 in said casing and formed with the locking-face 9, and the shoulders 10, 12 and 16, and the pawl 13 mounted in the rear of the lock and formed with the opposite shoulders 15 and 17, of the recessed rail 2 having the trip 3, all combined and arranged to be operated as specified.

No. 29,787. Harrow Attachment for Ploughs. *(Herse-charrue.)*

William Smith, Ottawa, Ont., 1st September, 1888 ; 5 years.

Claim.—1st. A harrow attachment for ploughs, constructed substantially as herein shown and described, and consisting of an angularly bent and twisted frame carrying harrow-teeth to be attached to any plough. 2nd. In a harrow attachment for ploughs, the combination, with any plough, of the angularly bent and twisted frame A A, Fig. 1, having the bent part B_1 B_2 carrying the teeth B,B,B,B, and attached to the plough handle or the mould-board and plough handle, or other available part of the plough, by means of pivots, bolts or sockets, or in any suitable manner, substantially as set forth. 3rd. In a harrow attachment for ploughs, the combination, of the frame A A, Fig. 1, carrying the teeth B,B,B,B attached to a plough at such an angle to the line of direction of the plough as that the teeth B,B,B,B shall thoroughly pulverize the soil just turned over by the plough and at the same operation as that of ploughing, as set forth.

No. 28,788. Wind Mill. *(Moulin à vent.)*

James Kievell, Hamilton, Ont., 1st September, 1888 ; 5 years.

Claim.—1st. The combination, with the upright shaft D, of the projecting arms K provided with perpendicular V-shaped blades J, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the shaft D, arms K and blade J, of the guard G, doors and guides E and E_1, rudder F, rotary table H, wheels I and platform A, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the shaft D, arms K, blades J, foot bearing C, braces N, and the wheel O, substantially as and for the purpose hereinbefore set forth.

No. 29,789. Deck Pipe. *(Ecubier de pont.)*

Frank S. Manton, Providence, R. I., U. S., 1st September, 1888 ; 15 years.

Claim.—1st. A cast iron windlass bitt provided with a deck pipe integral therewith, substantially as described. 2nd. A cast iron windlass bitt having a laterally projecting flange, and a deck pipe rising from said flange and integral therewith, substantially as described. 3rd. The cast iron windlass bitt A provided with the flange *a*, the deck pipe E rising from said flange, and the web E_1 uniting the deck pipe and the bitt, substantially as described. 4th. The combination, with the deck of a vessel having the hole F, of a cast iron windlass bitt provided with a deck pipe integral therewith and registering with the hole F, the under surface of the bitt and deck pipe being planed smooth and coated with cement, substantially as described.

No. 29,790. Target. *(Cible.)*

Thomas B. Ralston, Bothwell, Scotland, 1st September, 1888 ; 5 years.

Claim.—1st. In a target for rifle practice, the combination, with the frame carrying the target and pivoted to a standard, of a lever mounted on the standard, and projections, substantially as described, on the frame adapted to be engaged by said lever, for maintaining the said frame in elevated or lowered position, as set forth. 2nd. In a target for rifle practice, the combination, with the swinging frame mounted on a standard and having projections *c*, *d*, of a lever fulcrumed on the standard for engaging said projections, and a counterpoise mounted on the frame for controlling its movement, substantially in the manner set forth. 3rd. In a target for rifle practice, the combination, with the two frames swinging across the line of fire and each mounted on a shaft supported on a standard, of gear wheels secured on said shafts and intermeshing, whereby said frames are made to move simultaneously, as and for the purpose set forth. 4th. In a target for rifle practice, the signalling frame I, furnished with two swinging indicating boards or discs L, M, lying normally at right angles to the frame and capable of being turned and held parallel with it, the said frame being also provided with a counterpoise K, which, when the frame is released from its lowered position, swings it partially upward, substantially as described. 5th. In a target for rifle practice, the combination, of a target frame, and a signalling frame pivoted on a standard and connected together to operate reciprocally at the

same time by means of intermeshing gear wheels mounted on said frames, substantially in the manner herein set forth.

No. 29,791. Boots and Shoes. (*Chaussures.*)

Charles Lafleur, St. Henri, Que., 1st September, 1888, 5 years.

Claim.—1st. The blank A with meeting edges *a*, *a*, as and for the purposes set forth. 2nd. A boot having its upper formed of a single piece with seam up the vamp, all as herein described. 3rd. In a boot or shoe upper, the combination, of the blank A, strip B, toe cap C, and re-inforcing piece D, all as herein set forth.

No. 29,792. Stove or Furnace Grate.

(*Grille de poêle ou de fourneau.*)

Charles DeZ. Howard, Syracuse, N. Y., U.S., 1st September, 1888; 5 years

Claim.—1st. The combination, with the ash-pit of a stove or furnace, of a spherical grate consisting of two perforated concavo-convex shells, connected together and provided with trunnions, and having a circumferential slot for the removal of cinders, substantially as specified. 2nd. The combination, with the ash-pit of a stove or furnace and the ring *r*, adapted to rest in bearings formed in the upper edge of the ash-pit, of the spherical grate consisting of two perforated concavo-convex shells, connected together and having a circumferential slot for the removal of cinders, one of said shells provided with trunnions adapted to rest in bearings made in the ring *r*, substantially as specified.

No. 29,793. Plough. (*Charrue.*)

Peter McAnealey, Adjala, Ont., 1st September, 1888; 5 years.

Claim—The coulter clearer A pivoted to the beam of a plough and operated by the line *d*, substantially as herein shown and described and for the purpose set forth.

No. 29,794. Means for Preventing Nuts and Bolts from Running Loose. (*Arrête-écrou.*)

Samuel Bayliss, Wolverhampton, Eng., 1st September, 1888; 5 years.

Claim—1st. In screw nuts, shoulders formed between their front and back faces, and the metal in the angle of such shoulders, preferably close up to the angle, forced in so as to distort some of the threads, substantially as and for the purpose described. 2nd. In screw-nuts, shoulders formed between their front and back faces, and lumps, which have been formed in the angle of the shoulders forced into the solid metal of the nuts, or the metal of the angles of the shoulders indented, so as to distort some of the threads, substantially as and for the purpose described. 3rd. In screw-nuts, notches formed in their top or outer edges, in the bottoms or inner ends of which lumps are forced down, or indentations punctured in, to distort some of the threads, substantially as and for the purpose described.

No. 29,795. Roofing. (*Toiture.*)

William H. Fay, Camden, N.J., U.S., 1st September, 1888, 5 years.

Claim.—1st. A sheet of roofing material, having its ends folded on the board or top of the roof, and secured by clips which are covered by the continuation of said roofing material, substantially as described. 2nd. A roofing sheet folded at intervals, and clips secured to the same by nails driven into the board or top of the roof, substantially as described. 3rd. A roofing sheet, folded at intervals, and clips secured to the folded or double portions and the board or top of the roof, said clips being of angular form, substantially as described.

No. 29,796. Circular Knitting Machine.

(*Machine à tricot circulaire.*)

Samuel P. Kitter and Joseph J. Adgate, London, Eng., 1st September, 1888; 5 years.

Claim—1st. A circular knitting machine, in which the needle *jacks slide up and down in one set of grooves or races, and the* needle shanks slide and are supported against the tension of the fabric in corresponding grooves of less depth than the jack grooves, and in which the needle jacks are of the shape shown and are retained in their races by a guard ring, shrunk or otherwise secured on to the rebated lower end of the needle cylinder, and flush with the circumference thereof, substantially as shown and described. 2nd. In a circular knitting machine, in which the cam for operating the needles is made of two separate rings, as shown, the particular arrangement of screw pillar for connecting the rings and enabling the width of the cam slot to be readily adjusted, substantially as shown and described. 3rd. In a circular knitting machine, the combination, with the spring rod R, actuating the take-up motion of a spring Q, connected to the rod R, as described, so as to act in tension, and the combination, with the spring and rod so connected, of the adjustable stop *r*2 and of the adjustable bracket supporting the anti-friction roller *r*, whereby the tension of the spring Q is readily adjustable, and the combination, with the foregoing mechanism, of the double inclined cam S, S1, whereby sudden action of the spring is prevented. 4th. In a circular knitting machine, guiding the journals of the cloth roller in adjustable inclined slotted guide arms, as described. 5th. In a circular knitting machine, the temple, or device for stretching the fabric, consisting of the frame with downwardly bent ends *w*, in combination with the pair of cross rollers *u*, supporting the frame in position, substantially as specified. 6th. In a weft, thread circular knitting machine, wherein a weft thread is laid between the needles, whilst in their highest position, and whilst separated into front and back rows by the moving backwards of certain of the needles, the arrangement of the weft thread guide relatively to the needles, so that the weft thread shall act as a guard for the batches of the back row of needles, as described. 7th. In a weft thread circular knitting machine, wherein certain of the needles move back automatically when raised, the combination, with the needle cylinder having grooves of such depth as to guide and support the needles, as described, of needles having shanks bent backwards (at a point which is just above the edge of the needle cylinder, when the needles are in their highest position) and fixed in jacks which slide in the grooves of the needle cylinder, and of a guard ring which prevents contact of the lower ends of the needle jacks with the cam ring, substantially as specified.

No. 29,797. Boots and Shoes. (*Chaussures.*)

John F. Gilmour, Langdale, Scotland, 1st September, 1888; 5 years.

Claim.—A boot or shoe having heel pieces H, attached by screws C and nuts D, substantially as and for the purpose hereinbefore set forth.

No. 29,798. Automatic Fire Extinguisher.

(*Extincteur automatique d'incendie.*)

The J. C. Mackey Co., (assignee of John C. Mackey), Syracuse, N.Y., U.S., 1st September, 1888; 5 years.

Claim.—1st. The combination, with a body having an annular valve seat at its extreme upper end, of a valve stem, a valve secured to said stem with a soft metal face which engages the seat, and rubber or other flexible material that breaks the pounding of the water or liquid, a deflector having flanges, bottom stud N, notched upon the inner edge to receive one end of spring R, spring R notched to the other end so as to fit over stud M, bottom stud M notched on the outer edge so that slat 7 in lever O will pass over stud M, and brought in contact with notch 9 of bottom stud M, thereby pressing against the outer end of spring R, the slot 8, lever O passes over stud N, a spring R, clasp L fitting over the projecting end of stud N beneath lever O, as shown in drawings, and securely soldered in position with fusible solder, substantially as shown and described. 2nd. In an automatic fire extinguisher, a valve support consisting of a spring connected to a stud projecting from the deflector, and bearing against the bottom of the valve stem, and a cross bar compressing said spring and fusibly connected to studs projecting from the deflector, substantially as described. 3rd. In an automatic fire extinguisher, a deflector suspended from the body and provided with bottom studs, in combination with a valve stem, a spring connected to one stud, and a cross-bar bearing against the free end of the spring and fusibly connected to the studs, substantially as shown and described.

No. 29,799. Seal Lock. (*Serrure à cachet.*)

The Sully Car Seal Lock Company, Richmond, (assignee of Robert M. Sully, Petersburg), Va., U.S., 1st September, 1888; 5 years.

Claim—1st. In a seal lock for cars, the combination of a perforated lug, a locking bolt passing through said lug, and a fastening-cap hinged to the upper end of the bolt to have locking engagement with the lug when the bolt is in locking engagement with a connected seal, and flanged to cover the whole of said lug in front of the bolt, substantially as described. 2nd. In a seal lock for cars, the combination of a perforated and mortised lug having lateral shoulders rabbetted at their lower ends, a staple, a perforated and slitted lug, a locking bolt passed through said lugs and staple, and having a hook at one end, a seal adapted to engage said hook and slitted lug, and a fastening-cap hinged to the other end of the bolt, and adapted to engage the mortised and shouldered lug, and completely cover said lug in front of the bolt, substantially as described. 3rd. In a seal lock for cars, the combination of the lug 4 having perforation 5, mortise 6, shoulders 7, and rabbets 8, the bolt, and the fastening-cap 15 hinged to the head of said bolt, and provided with a recess 16 formed by flanges adapted to cover the whole of the lug in front of the bolt studs 19 to engage the shoulders 7, and a catch 17 to engage the mortise 6, substantially as described. 4th. In a seal lock for cars, the combination of the staple 2, the perforated and mortised lug 4 having shoulders 7 and rabbets 8, the perforated lug 9 having side slits 10, the locking bolt 12 having hook 13, and perforation 23, and the fastening-cap 15 hinged to the head of said bolt, and provided with catch 17 and studs 19, said cap being adapted to cover the whole of the lug 4 in front of the bolt, substantially as described.

No. 29,800. Steam Engine. (*Machine à vapeur.*)

The Bruno Nordberg Company, (assignee of Bruno V. Nordberg), Milwaukee, Wis., U.S., 1st September, 1888, 5 years.

Claim.—1st. The combination, with a cut-off valve, of trip and lifting levers, a trip frame counterpoise from which the latter is suspended, a driving sleeve upon which the counterpoise slides, and elbowed levers linked to the said driving sleeve, as set forth. 2nd. The combination, with the counterpoise and driving sleeve, of elbowed governor arms, links or toggles for connecting the inner ends of said arms to lugs on the driving sleeves, and mechanisms whereby the pivots that connect the links or toggles with the driving wheel may be adjusted horizontally to regulate the sensitiveness of the governor arms, as set forth. 3rd. The combination of the rock shaft that connects the cut-off mechanism with the eccentric of the engine, a sleeve carried thereby having two crank arms, angular trip levers, lifting levers adapted for engagement with the lower ends of said trip levers, and a hanger from which the cut-off valve is suspended, adapted to engage arms of the lifting levers with a trip frame counterpoise and governor arms connected, substantially as set forth. 4th. The combination of the trip levers and their operating mechanism, the lifting arms, springs for forcing the lower ends of the latter apart, and cushioned set bolts for regulating their throw with the cut-off valve and its hanger, and a spring for closing the valve when released by the lifting arms. 5th. The combination, with the trip frame and levers, of adjustable bolts passed through the trip frame for receiving the impact of the trip levers, as set forth. 6th. The combination of trip levers, with the valve and lifting levers, the lifting levers being independent of each other and of the valve stem, as set forth. 7th. The combination of the sleeve to which the pulley is

studded, and means for giving it a tendency to turn against the strain of the pulley belt, with an arm projecting from the said sleeve in the direction of the strain of the pulley belt, and a lever parallel to said arm and connected thereto and to the valve or governor stem, as set forth. 8th The combination of the sleeve adapted to resist the strain of the pulley belt, a weighted arm for giving it this resistance, another arm loosely clamped to said sleeve and projecting from the opposite side thereof, a stop projecting from said sleeve in position to strike a pin on the last named arm, and a hinged lever connected to said arm and to the valve or governor stem, as set forth. 9th. The combination, with the sleeved bearing, of the sleeve to which the pulley is studded, means for giving the latter a tendency to turn on its bearing against the strain of the pulley belt, a shaft and gearing connecting the said shaft with the pulley and driving sleeve of the governor, and an arm and lever connecting the sleeve with the valve or governor stem, as set forth. 10th. The combination, with the valve or governor stem, of means, constructed and operated as shown, for lifting it to cut off steam in case of accident, and a spring for returning it when released, as set forth.

No. 29,801. Rubber Boot and Shoe.

(Chaussure de caoutchouc)

The Canadian Rubber Company, (assignee of John J. McGill,) Montreal, Que., 1st September, 1888; 5 years.

Claim.—A "pure gum" ankle boot or shoe, with central slot C and eye D, D on each side of said slot, all as herein set forth.

No. 29,802. Separator. *(Séparateur)*

James J. Lowden, George A. Walker and William F. Baldwin, Boston, Mass., U.S., 1st September, 1888; 5 years.

Claim.—1st. A grease, grit and water separator, consisting of a body provided with removable perforated places, and a receiver provided with an automatic discharge valve, substantially as set forth. 2nd. The body A provided with perforated plates D, in combination with the receiver B, provided with a valve H operated by a float, substantially as set forth. 3rd The body A, perforated plates D, pipes *f*, bolts *g*, and screws *h*, in combination with the receiver B, and cover B_1, the perforated plates E, valve H, rod G, and float F, substantially as and for the purposes set forth.

No. 29,803. Coffin Depositor.

(Enfouisseur de cercueil)

Andrew M. Lewellen and Charles A. Lowellen, Rosendale, Mo., U.S., 2nd September, 1888, 5 years.

Claim.—1st. In an apparatus for depositing coffins and caskets in graves, the combination, with a main frame, of uprights extending therefrom, and bearing-rollers and ropes by means of which the lowering is accomplished. 2nd In an apparatus for depositing coffins and caskets in graves, the combination, with a main frame composed of two parts hinged together for the purpose of folding of uprights extending therefrom, and attached thereto by means of hinges, braces connecting the uprights and main frame, said braces being jointed or hinged to permit of folding with the uprights, and rollers journalled in the uprights, substantially as shown. 3rd. In an apparatus for depositing coffins and caskets in graves, the combination, with the main frame hinged at its centre and having pivotal legs attached thereto, of uprights, one set of which is hinged to the main frame, and the other set attached to a frame sliding upon the main frame, substantially as described 4th. In an apparatus for depositing coffins and caskets in graves, the combination, with the main frame, of uprights extending therefrom, one set of said uprights being attached to the main frame, the other attached to a frame sliding thereon, the main frame being provided with a scale for the purpose of adjusting the apparatus to any desired length, substantially as shown and described. 5th. In an apparatus for depositing coffins in graves, the combination, of the main frame centrally hinged for the purpose of folding uprights hinged to the main frame near one end, and uprights hinged to the sliding frame upon the opposite end of the main frame, a strap beneath the main frame attached to the sides thereof near one end, and a similar strap attached to the sides of the sliding frame at the opposite end, the straps being for the purpose of supporting the coffin before lowering it into the grave, substantially as set forth. 6th. In an apparatus for depositing coffins and caskets in graves, a crank-roller having perforations therein for the attachment of the lowering ropes, there being a longitudinal groove connecting said perforations, and a break for locking the crank-roller consisting of a strap rigidly secured to some convenient point of the frame of the apparatus, and passing partially around the roller and connected to a pivoted cam-lever, all substantially as and for the purpose set forth and described.

No. 29,804. Sulky Plough. *(Charrue à siège.)*

Herbert W. Fleury and William J. Fleury, (assignee of Charles Thom and Charles J. Bailey), Aurora, Ont., 2nd September, 1888; 5 years.

Claim.—1st. A lead-wheel connected to a bracket adjustably supported on an arm extending at right angles from the beam of the plough, in combination with a pivoted lever connected to the adjustable bracket, so that the movement of the said lever shall impart the desired adjustment to the lead-wheel, substantially as and for the purpose specified. 2nd. The combination, with a tongue pivoted on the plough-beam, of an arm extending from the journal of its pivot to engage with an arm or loop extending from the lead wheel post, substantially as and for the purpose specified. 3rd. The tongue D pivoted on the bracket C which is journalled on the post B extending vertically from the plough-beam, in combination with an arm E fixed to and extending horizontally from the bracket C to engage with a loop F, or its equivalent, extending from the lead-wheel post H, substantially as and for the purpose specified.

No. 29,805. Sad Iron and Plate Heater.

(Réchaud pour fers à repasser et assiettes)

Brent Shearer, West Point, Miss., U. S., 2nd September, 1888; 5 years.

Claim.—1st. The improved sad iron and plate heater herein described and shown, comprising the top a^1 and back a^2, the rearwardly projecting supporting hooks a, the sides a^3 at the ends of the top, and the steps A^2 at the lower ends of the sides to support the irons or plates, substantially as specified. 2nd The improved sad iron and plate heater comprising the top a^1, the hooks a, the sides a^3 at the ends of the top, the feet A^2 at the lower ends of the sides and arranged at an acute angle thereto, and the closed sides a^4, substantially as specified

No. 29,806. Roller Mill Feed Hopper.

(Trémie de moulin à rouleaux)

William J. Purdy and John H. Lyons, Carberry, 2nd September, 1888; 5 years.

Claim.—In a roller mill, the combination, with the feed roller S, of a hopper 9 connected to a feed board 6, endwise pivoted or journalled through the mill casing, a crank or wheel 19 on said journal to rock the feed board, and a spring tension regulator 11 connected to said lever or wheel by a chain or cord 10, whereby the hopper when overcharged will overcome the resistance of the spring, and actuate the feed board to allow an abnormal quantity of grain to escape to the feed and reduction rollers until the tension of the spring overcomes the gravity of the hopper, the feed board then returning to its normal position.

No. 29,807. Gate Latch. *(Loquet de barrière.)*

Henry Bacon, Walkerton, Ont., 2nd September, 1888; 5 years.

Claim.—The drop latch, and the combination by which the latch and striker fasten the gate, as described and shown.

No. 29,808. Electric Call. *(Avertisseur électrique)*

Willard H. Cutting, St. Louis, Mo., U. S., 2nd September, 1888; 5 years.

Claim.—1st. The combination of the hand, provided with a contact-brush alarm having electrical connections with the hand and with a suitable supply, a number of series of pins against which the contact-brush bears, and push buttons interposed in a connection between the pins and the supply, as set forth. 2nd. The combination of the hand alarm electrical connection between said hand and alarm, and between the alarm and battery, a ring or cylinder in which are arranged longitudinal series of pins, push buttons interposed in the connection between the pins and the battery, and a contact-brush on the hand adapted to bear on each of the pins in the series by means of a series of projections on the brush, substantially as described. 3rd. In a call-system, substantially as herein shown and described, the combination of the buttons, and removable tablets having bent fingers on their stems for fitting over the buttons, substantially as and for the purpose set forth.

No. 29,809. Tool for Spiral Turning.

(Outil pour tourner en spiral.)

Ellis Cutlan, London, Eng., 2nd September, 1888, 5 years.

Claim.—In a spiral-turning tool, the combination, with a pair of pivoted handles and arms, of an adjustable guide adapted to run on the work or upon a bar or rod parallel with the work, and a rotating or fixed blade for causing the traverse of the tool relatively to the work, for the purpose specified.

No. 29,810. Saw Mill Set-Work.

(Charriot de scierie.)

De Witt C. Prescott, Marinette, Wis., U. S., 2nd September, 1888; 5 years.

Claim.—1st. The set shaft, in combination with a ratchet-wheel secureed thereon, the fixed shells arranged on each side of the wheel and forming fixed ways to receive the pawl carriers, and the reciprocating pawl carriers mounted on said shells or ways, substantially as and for the purposes specified 2nd. The set shaft and a single ratchet-wheel secured thereon, in combination with the fixed shells arranged on each side of the wheel, and forming ways to receive the pawl carriers, the reciprocating pawl carriers mounted on said shells or ways, pawls attached to the carriers and arranged to engage with the ratchet-wheel in the same direction, and mechanism for reciprocating the pawl-carriers simultaneously in opposite directions, substantially as and for the purposes specified. 3rd The ratchet-wheel C_2, in combination with the fixed shells D arranged on each side thereof, and provided with inwardly-extending flanges *d*, and the reciprocating pawl-carriers E arranged within the shells D, and provided with flanges *e* extending outward over the flanges *d* of the shells, substantially as and for the purposes specified. 4th. The ratchet-wheel, in combination with the separate fixed shells to receive the pawl-carriers, the pawl-carriers E, cut away centrally as described to receive the pawls, and the pawls F pivoted to the carriers and arranged within the cut-away portion, substantially as and for the purposes specified 5th. The set shaft B, in combination with the single ratchet-wheel C thereon, the fixed shells D to guide the pawl-carriers, the pawl-carriers E mounted on said shells, the pawls F, the pitmen *i* and i_2 and the rock-shaft *h* and triangular plate H, substantially as and for the purposes specified. 6th. The ratchet wheel, in combination with the shell D provided with ways d_3 upon its inside, the plate I seated in said ways and provided with wings *s*, the eccentric J mounted in the shell and arranged to work in an opening in the plate I, and the pawls F provided with lateral projections *f*1, substantially as and for the purposes specified.

No. 29,811. Toilet and Wrapping Paper.

(*Papier de latrine et à enveloppe.*)

Seth Wheeler, Albany, N.Y., U. S., 2nd September, 1888, 5 years.

Claim.—A roll of toilet or wrapping paper containing lines of weakness, each of which is made up of perforations plainly indicating the position of the line, combined with incisions to increase the weakness of the line and avoid litter, substantially as described.

No. 29,812. Roll for Iron Rolling Mills.

(*Rouleau pour laminoir.*)

Arthur W. H. Collard, Pittsburgh, Penn., 2nd September, 1888; 5 years.

Claim.—1st. In a roll for metal rolling, an interior central portion formed of brick or earthen material, and the outer portion of metal which incloses the central portion, substantially as and for the purposes described. 2nd. The roll formed of an outer portion of metal, and a center piece of brick material having necks *a* and *a'* formed at its extremities, substantially as and for the purposes set forth.

No. 29,813. Adjustable Wire-Twisting Wrench. (*Pinces variables à tortiller le fil de fer.*)

Charles E. Wintrode, Huntington, Ind., U. S., 2nd September, 1888; 5 years.

Claim.—1st The combination of a main casting provided with arms forming one half of the jaws, and an adjustable casting having projections corresponding with the arms and forming the other half of the jaws placed on the main casting, and means for holding the adjustable casting in any desired position, whereby the jaws are adapted for twisting wires of different thicknesses, substantially as set forth. 2nd. The combination of the casting A, provided with the arms B forming one half of the jaws, the adjustable casting F which is pivoted upon the casting A, and which is provided with projections which form the other half of the jaws, and a means for holding the casting F in any desired position, substantially as described.

No. 29,814. Nail Plate Feeding Machine.

(*Appareil à alimenter les machines à clous.*)

Alfred B. Trudel, Montreal, Que., 2nd September, 1888; 5 years.

Claim—1st. In a nail plate feeding apparatus, the combination, with the feed cylinder rocker shaft immediately under same, and means for rocking such shaft, of pulley B mounted on rocker shaft, and straps E_2, E_3 secured on cylinder and attached to sides of pulley at points below the axis of rotation of the shaft, all as herein set forth. 2nd. The combination of the pulley B mounted on rocker shaft A, and formed with hub, web, and segmental flanges or peripheries, and the bar D to which ends of straps E_2, E_3 are attached, all as herein set forth. 3rd. The combination, with the cylinder E and double cam F for raising and lowering same, of the rest G and renewable bearing surface H, as and for the purpose described. 4th. The combination, with the cylinder E of the nose pieces K, K bolted thereto, as herein described.

No. 29,815. Fire Ladder and Fire-Escape Combined. (*Echelle-sauveteur d'incendie.*)

William Davison, London, Eng., 2nd September, 1888, 5 years.

Claim.—The combination, with the body A, the extension J thereof, the shaft D attached to said body, the wheels B mounted upon said shaft D, and the springs E attached to said body, of the ladder F attached to the said body, the struts G, G attached to said body and said ladder, the movable ladder N, the cage R, the tube L and the rod M working in said tube, and means, substantially as specified, for extending said body for extending said ladders, and for raising and lowering said cage, all substantially as and for the purpose set forth.

No. 29,816. Process and Apparatus for the Manufacturing of Gas for Heating and Illuminating and for the Production of Cyanogen or some of its compounds. (*Procédé et appareil de production du gas d'éclairage et de chauffage et du cyanogène ou quelques uns de ses composés.*)

Samuel R. Dickson, New York, N. Y., U. S., 5th September, 1888, 5 years.

Claim.—1st. The herein described process for producing combustible gas, as carbonic oxides and hydrogen and cyanogen, or a compound thereof, consisting of the simultaneous introduction of the following elements, to wit steam, air, finely divided carbon and alkali, into a heated chamber, the forcible mixing of said elements, and the simultaneous decomposition and combination of said elements to produce in said chamber the gas and the cyanogen or compound thereof, substantially as set forth. 2nd. The herein described process for producing combustible gas, as carbonic oxide and hydrogen and cyanogen, or a compound thereof, by the elimination of nitrogen from the nitrogen-bearing material, consisting of the introduction of the nitrogen-bearing material into a heated chamber, and forcibly disseminating into and through the chamber pulverized carbon and an alkali, substantially as set forth. 3rd. The herein described process for producing combustible gas, as carbonic oxide and hydrogen, and cyanogen or a compound thereof, by the elimination of nitrogen from the nitrogen-bearing material, consisting of the introduction of the nitrogen-bearing material into a heated chamber, and forcibly spraying into and through the chamber pulverized carbon and an alkali by a jet of steam, substantially as set forth. 4th. The herein described process for producing combustible gas, as carbonic oxide, and hydrogen and cyanogen, or a compound thereof, consisting of the simultaneous introduction of the following elements, to wit steam, air, finely divided carbon and alkali, into a heated chamber, the forcible mixing of said elements, the simultaneous decomposition and recombination of said elements, to produce in said chamber the gas and the cyanogen or compound thereof, and the passing of said gas through incandescent carbon, substantially as set forth. 5th. The herein described process for producing combustible gas, as carbonic oxide and hydrogen, and cyanogen or a compound thereof, consisting of the simultaneous introduction of the following elements, to wit: steam, air, finely divided carbon and alkali, into a heated chamber, the forcible mixing of said elements, the simultaneous decomposition and recombination of the elements to produce in said chamber the gas and the cyanogen or compound thereof, and the passing of said gas through incandescent carbon and through a carburetting retort, substantially as and for the purposes described. 6th. In an apparatus for the manufacture of ga the combination, with a furnace chamber, of a spraying and mixing device, a second furnace compartment above and communicating with the first, a carburetting retort within and heated by said second furnace chamber, and communicating at its upper end therewith, and a collecting chamber for receiving solid material from the first chamber, substantially as set forth. 7th. In an apparatus for the manufacture of gas, the combination, with a furnace chamber, of an injector, a second furnace compartment above and communicating with the same, a partition for preventing the fall of ashes into the first chamber, a carburetting retort within the second compartment communicating therewith at the upper end, and adapted to be charged with refractory material, and hydrocarbon, as described, and a collecting chamber for receiving solid material from the first retort, substantially as set forth. 8th. In an apparatus for the manufacture of gas, the combination, with a furnace chamber, of the coking furnace having the air and steam pipes, a pipe connecting the coking furnace with the first chamber, an injector for forcing material into the furnace chamber, and supply pipes for the injector, substantially as set forth 9th. In an apparatus for the manufacture of gas, the combination, with a furnace chamber E, the compartment above the same adapted to receive incandescent carbon, the central carburetting retort situated in both of said compartments, opening into the upper and adapted to contain refractory material and the supply pipe K, substantially as set forth.

No. 29,817. Bed Attachment.

(*Disposition aux couchettes.*)

Henry S. Allen, Toronto, Ont., 5th September, 1888; 5 years.

Claim.—The back support C hinged to the frame A, A, and held in position by the pawls D, and the ratchets E, as hereinbefore described and for the purpose set forth.

No. 29,818. Button-Hole Attachment for Sewing Machines. (*Appareil à faire les boutonnières pour machines à coudre.*)

Henry J. Williams, New York, N. Y., U. S., 5th September, 1888; 5 years.

Claim.—1st The combination of the frame plate, the feed plate, the rack secured thereon, a pinion mounted in the frame plate, the driving wheel having ratchet teeth in its periphery, and cams or wipers alternately set upon its opposite sides, a lever vibrated by the driving wheel, connections between the lever and the feed plate for giving the latter a vibrating movement, and connections between the lever and pinion that engage with the rack for giving the feed-plate a longitudinal movement, substantially as set forth. 2nd. The combination of the frame plate, the driving wheel having teeth in its periphery, and cams or wipers alternately set upon its opposite sides, the vibrating lever in operative connection with the driving wheel, a pinion mounted on the frame plate operatively connected with the vibrating lever, the rack on the feed plate with which the pinion meshes, and connections between the vibrating lever and the feed plate for giving the latter a vibratory motion, substantially as set forth 3rd. The combination of the frame plate, the feed plate, the driving wheel, means for rotating it, the vibrating lever operated by the driving wheel, the rack secured on the feed plate, the pinion with which it meshes, the ratchet wheel rigidly connected with the pinion, and operatively connected with the vibrating lever, and a handle or knob for withdrawing the pinion from engaging with the rack, substantially as set forth. 4th. The combination of the frame plate, the feed plate, the driving wheel, means for rotating it, the vibrating lever operated by the driving wheel, the pawl on the end of said lever, the ratchet wheel with which it engages, the pinion rigidly secured thereto, the rack on the feed plate with which the pinion engages, and an adjustable gauge that regulates the movement of the pawl on the end of the vibrating lever, substantially as set forth. 5th. The combination of the frame plate, the feed plate, the driving wheel mounted on the frame plate, having teeth in its periphery, and cam-shaped lugs or wipers on its opposite sides, a lever pivoted to the frame plate and having a slotted upright extension in which the driving wheel works, and a backwardly-extending arm carrying a pawl, the ratchet wheel with which said pawl engages, the pinion secured thereto, the rack secured to the feed plate with which the pinion meshes, and the securing pin G_2 extending through the slot in the feed plate, and the vibrating lever and adjustable therein, substantially as set forth. 6th. The combination of the button hole attachment herein described, the bed plate of a sewing machine and the removable throat plate N_1, having a transverse offset at x, to form a cover for the ordinary feeding mechanism of the sewing machine, substantially as set forth.

No. 29,819. Adjustable Pillow Sham Holder.

(*Porte-housse d'oreiller mobile.*)

William Jones, Buffalo, N.Y., U.S., 5th September, 1888: 5 years.

Claim.—A pillow sham holder, comprising the adjustably connected

bars A, A1, provided with the wire frames B, B, the socket pieces *b* secured to or upon the ends of the bars A, A1, and having the pins *c*, the arms C having the claw arms C1 and cap sockets *f*, the pins *c* extending through said sockets, and secured by burrs *g* and spiral springs on the pins *c* within the sockets, as set forth.

No. 29,820. Shingle Cutting Machine.

(*Machine à débiter le bardeau.*)

Francis J. Drake, Belleville, Ont., 5th September, 1888; 5 years.

Claim.—1st. The rocking shafts J, J1, having arms I fixed thereon, the said arms hinged to links which are connected with the tilt frame, as and for the purpose set forth. 2nd The rocking shafts J, J1, one of which has a lever L, with a link and arm connection to the other, whereby each shaft may be simultaneously and alike rocked by moving the said lever, as and for the purpose set forth. 3rd The combination, with the tilt frame, of the shafts J, J1, provided with connections to the said frame, and means for rocking the said shafts, whereby the tilt frame may be raised or lowered to a desired height, as and for the purpose set forth. 4th. A quadrant K, mounted loosely upon one of the said shafts, alongside the said lever for locking and holding the latter at different desired points, as and for the purpose set forth. 5th. The combination, with the quadrant of a rod O pivoted to the said quadrant, and having a threaded end passing through a hand wheel, the latter being held to revolve in a box, whereby the said quadrant may be held rigid and swung upon its axes to various points, by turning the said hand wheel, as and for the purpose set forth. 6th. The tilts D, D1, separately made and hinged to permit each of adjustment, one independent of the other, as and for the purpose set forth. 7th. The yokes G, having inclined planes upon which they rest at right angles to and upon the tilt frame, and provided at one of their ends with a set screw for adjusting their height under the tilts, as and for the purpose set forth 8th. The adjustable yokes, in combination with and arranged to support the said tilts at various heights, as and for the purpose set forth. 9th. A spindle E1, having two jamb nuts, whereby the said spindle and cams can be adjusted under the tilts to lift the said tilts to various heights, as and for the purpose set forth. 10th The combination of a rocking shaft S and torsion spring *w*, the latter being coiled around the said shaft, so as to turn it, whereby the dog T1 is drawn back to release the said bolt, as and for the purpose set forth.

No. 29,821. Composition of Matter to be used in the Manufacture of Medicine for Piles. (*Composition de matières pour la fabrication d'un médicament pour les hémorroïdes.*)

Richard Crowther, Dundas, Ont., 5th September, 1888; 5 years.

Claim.—A compound, composed of rhubarb root, Columbia root, blood root, gentian root, snake root, gum aloes, epsom salts, whisky and water, substantially in the proportions and for the purposes set forth.

No. 29,822. Electric Switch.

(*Commutateur électrique.*)

Edward F. Bergman, Frankport, N.Y., U. S., 5th September, 1888; 5 years.

Claim.—1st. In an electric switch, the combination, with the switch block formed with a slot in one side of the circuit, wires passed through the block and one of them broken, and a switch lever pivoted in the slot to make and break the circuit, substantially as and for the purpose set forth. 2nd. The combination, with the switch block formed in two parts, removably secured together, of the circuit wires *b*, *b*, one of which is broken within the block, and the pivoted switch lever *c*, provided with lateral wings *c*1, substantially as and for the purpose set forth.

No. 29,823. Stove-Pipe Beading Machine.

(*Machine à canneler les tuyaux de poêles.*)

Isaac M. House, Gravenhurst, Ont., 5th September, 1888; 5 years.

Claim.—1st. In a stove-pipe beading machine, the combination, with the spindles B, B1, of a pair of beading rolls F, F1, having a double or O, G bead *f*, and having the inner edge of said rollers diverging or turned inwardly and outwardly respectively, to adapt the same for expanding and contracting the edges of the ends of the pipe, substantially as set forth. 2nd. In a stove pipe beading machine, the combination, with the spindles B, B1, of collared extension necks G, internally threaded and screwed to the forward ends of said spindles, and adapted to carry the beading rolls, and the beading rolls F, F1, having O, G, or double bead *f* and diverging rear ends *f*1, substantially as set forth.

No. 29,824. Submerged Current Motor.

(*Moteur hydraulique submergé.*)

Thomas A. McDonald, Durham, N.S., 5th September, 1888. 5 years

Claim.—A stationary submerged current motor, consisting of ballast boxes C, sunk or anchored to the bed of the stream in alignment with the direction of the current, standards B supported by said boxes, line shaft A journalled in or to said standards, and wheels D having spiral vanes keyed on said shaft at suitable distances apart, whereby each wheel will be submerged and have an axial rotation at right angles to the current, for the purpose set forth.

No. 29,825. Sulky Plough. (*Charrue à siège.*)

Charles Boulay, Saint Pie, Que., 5th September, 1888; 5 years.

Claim.—1st. In a sulky plough, the device for raising the mould board, consisting of the bracket F and guide H, lever G and links *f*1, and the curved beam e1 arranged to slide upward against the guide H, substantially as shown and described 2nd. The device for raising the inner mould board, consisting of the slotted bracket F, lever G and links *f*1 guide H and link *k*1, substantially as herein shown and described. 3rd. In a sulky plough, the body A supported with the lever s, and arc J provided with lugs for holding said lever, substantially as herein shown and described.

No. 29,826. Milling Machine.

(*Machine à ébarber.*)

John A. Gregg, West Bay, Mich., U.S., 7th September, 1888: 5 years.

Claim.—1st. In a milling machine, the combination, with cutter arbor journalled upon a suitable carriage, and provided with a worm wheel, of a cylindrical nut secured below the said arbor, and having through the centre of its length a threaded opening, and provided on its periphery with worm gear teeth engaging with the thread of the said worm wheel, and a feeding screw passed through the said threaded opening of the nut, and journalled by its ends to supporting pieces extending from the machine bed-piece, substantially as and for the purpose set forth. 2nd In a milling machine, the combination of the base plate provided with a longitudinal groove, having overhanging edges, a carriage fitted into the groove and provided with a raised box lying at right angles with the groove, a cutter arbor journalled in the said box and carrying a rotary cutter, and a worm wheel and a feeding screw placed at right angles with the said cutter arbor and journalled at its ends in supporting brackets, of a cylindrical nut provided with a central longitudinal opening having a screw thread and passed upon the said screw and having on its periphery worm gear teeth engaging with the said worm wheel upon the arbor, and retained in position by brackets, as *s*, projecting from the carriage, substantially as and for the purpose set forth. 3rd. In a milling machine, in combination, the base plate *a* suitably supported and provided with a groove *c*, a carriage *d* fitted into the groove, an arbor *f* journalled upon the said carriage and carrying a rotary cutter and a worm wheel *h*, the nut *q* provided with a central opening having a screw thread, and having on its periphery worm gear teeth engaging with the worm wheel *h*, the brackets *s*, *s*, upon each side of the nut and secured to the carriage, and a feeding screw *j* passed through the said opening in the nut, the brackets *k* and *l* secured to opposite ends of the bed plate and carrying the screw, and devices, as cap piece *o* and screw *p*, for retaining the said feeding screw against revolution, substantially as and for the purpose set forth. 4th. In a milling machine, the combination, with a base plate *a* provided with a groove *c*, the carriage *d* fitted into the groove and carrying a cutter arbor and a rotary cutter, a worm wheel *h* upon the arbor, a cylindrical nut provided with a threaded central opening, a feeding screw *j* passed through and engaging with the nut *q*, and journalled to supporting brackets, of a table *t* provided with a vertical apron *u*, having vertical slots *w*, and secured to the column by the bolts *r* passed through the said slots and into the column, and the lugs *x* projecting outwardly from the column and provided with the adjusting screws *y*, and the set screws *z* passed through threaded openings in the apron and against the column, substantially as and for the purpose set forth

No. 29,827. Hot Air Wool Burning Furnace for Heating Buildings. (*Calorifère à air consumant le bois.*)

William S. Harland, Clinton, Ont., 7th September, 1888; 5 years.

Claim.—1st. The combination, in an air heating furnace, having steel plate body A, A, and cast iron ends C and D, with the fire box B, B, and the back flue L, L, L, with damper V, V, and connected thereto the damper lever U, U, worked by damper rod H, H, H, and having expansion bands N, N, N, N, and a feed door E with inside plate F and draft regulator at top I, I, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, in an air heating furnace, of steel plate body A, A, and cast iron ends C and D, with the fire box B, B, and the back flue L, L, L, with damper V, V, and connected thereto the damper lever U, U, worked by damper rod H, H, H, and having expansion bands N, N, N, N, and a feed door E with inside plate F, and draft regulator at top I, I, with a steel plate radiator having cast iron ends O, O, O, O, outside plate P, P, P, P, and inside plate R, R, and partition S, S, substantially as and for the purpose hereinbefore set forth.

No. 29,828. Composition of Matter to be used in Primary Galvanic Batteries. (*Composition de matières pour servir dans les piles galvaniques primaires.*)

Bloomfield J. Wheelock, New York, N.Y., U.S., 7th September, 1888; 5 years.

Claim.—1st. The herein described composition of matter to be used in primary batteries, consisting of sulphuric acid, nitric acid, bichromate of potash, or bichromate of soda, salamoniac, sulphate of iron, and pure water, dissolved together and in the proportions substantially and for the purpose set forth. 2nd. The combination of carbon and zinc elements, with a composition of matter consisting of sulphuric acid, nitric acid, bichromate of potash, or bichromate of soda, salamoniac, sulphate of iron and pure water, dissolved together and in the proportions substantially as described and for the purpose set forth.

No. 29,829. Gate. (*Barrière.*)

Judson N. Hatcher, Americus, Mo., U. S., 7th September, 1888; 5 years.

Claim.—A gate, comprising longitudinal rails, the upper rail being notched, spaced uprights between which the rails are pivoted, a notched bar pivoted between the upper ends of the inner uprights and extending along the upper rail between the middle uprights, a stirrup pivoted to the lower ends of the outer uprights and engaging the notched bar, and a stirrup pivoted near the centre of the gate and

engaging the notched portion of the upper rail, substantially as shown and described.

No. 29,830. Pie Plate Lifter.

(*Manche de tourtière.*)

Amos L. Pomeroy, Sand Lake, N. Y., U. S., 7th September, 1888; 5 years.

Claim.—In a pie plate lifter, the combination, with a pair of lifter arms provided with coiled wire springs, of a supporting frame provided with wire-receiving eyes, and a pair of levers provided at one end with arm supporting guides, at the opposite end with operating handles, and intermediately with coil-supporting hubs, through which the levers are pivoted to the supporting frame, substantially as described.

No. 29,831. Mowing and Reaping Machine.

(*Faucheuse-moissonneuse.*)

William H. H. Heydrick, Philadelphia, Penn., U.S., 7th September, 1888; 5 years.

Claim.—1st. The guard finger B, with front projections G, and having the shoulders L and S thereon, in combination with the finger bar A, the rear end of said shoulder L projecting into a notch in the forward edge of the rocking ledger plate F, having a grooved channel in its under face, and its rear end projecting above the finger bar, and the cutter bar R with cutter C, the said cutter bar abutting against the rear end of the rocking ledger plate, substantially as and for the purpose set forth. 2nd. The combination of the several members enumerated in claim 1, with the bolt D and keeper E, substantially as described.

No. 29,832. Frame for Upright Pianos.

(*Boîte de piano droit.*)

Charles Bunce and Edwin H. Benedict, Brooklyn (assignees of Mary H. McDonald, administratrix of the estate of James McDonald, New York), N.Y., U.S., 7th September, 1888; 5 years.

Claim.—1st. A metallic frame for pianos, comprising in a single piece longitudinal parallel bars, proportioned in length to the length of the strings and in line with the strings, a marginal plate, hitch pins on said marginal plate, a continuous flange for the support of the sounding board, a hammer bridge, a top plate above the hammer bridge having an overhanging flange for the retention of the wrist plank, said top plate being formed with said parallel bars, which extend above the hammer bridge, and a down-bearing bar located above the hammer bridge, between it and said top plate, said down-bearing bar being connected to the bridge by intermediate brackets, substantially as set forth. 2nd. The metallic frame, having a supporting flange for the sounding board, in combination with the sounding board resting on said flange, wooden strips on the outer surface of the sounding board, and attaching screws extending through said flange and board and into said strips, substantially as set forth. 3rd The metallic frame, having marginal plate or ring, the hitch pins thereon, and a supporting flange for the sounding board, in combination with the sounding board resting on said flange, and strips on said sounding board, which project outward beyond said marginal plate, whereby the strings press upon said strips, and hold said sounding board in place, substantially as set forth. 4th. The metallic frame, having in one piece longitudinal bars, hammer bridge, and top plate having an overhanging flange, said top plate being connected to said hammer bridge by said bars, whereby a space is formed between said top plate and bridge and in front of said bars, which is wide at one end and gradually narrows to the other end, over which space said flange projects, in combination with the wrest plank, which is inserted into said space, and which rests in front of said bars against said hammer bridge throughout its entire length, and which is held beneath said overhanging flange, substantially as set forth. 5th. The metallic frame, having hammer bridge, top plate having overhanging flange and connecting bars, in combination with the wrest plank between said hammer bridge and top plate, and resting on said bars, beneath said overhanging flange, blocks inserted between said bars and glued to the wrest plank, and a back piece behind the bars glued to said blocks, substantially as set forth. 6th. A metallic frame for a piano, comprising longitudinal bars proportioned in length to the length of the strings, a hammer bridge, and a top plate above the hammer bridge, connected therewith by the longitudinal bars, so that a place is left between them for the reception of the wrest plank, said space being widest at the treble end of the frame and gradually narrowing to the bass end, substantially as set forth.

No. 29,833. Washing Machine.

(*Machine à blanchir.*)

William H. Hornby, Toronto, and Lucas M. Lent, Ridgetown, Ont., 7th September, 1888, 5 years.

Claim.—1st. In a washing machine, the combination of the levers N, N1, with centre connection P and bearings of said levers in slots d1, d1, and l, l, also adjustable handles h1, h11 and rest blocks n, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the angle piece f, with pivot p, as specified, and the slot h and mortice r, in the upright of rubber, substantially as and for the purpose hereinbefore set forth. 3rd. In a washing machine, the tray or folding slide P, substantially as and for the purpose hereinbefore set forth.

No. 29,834. Method of Filling Secondary Battery Plates. (*Manière de charger les plaques des batteries secondaires.*)

Henry G. Morris and Pedro G. Salom, Philadelphia, Penn., U.S., 7th September, 1888; 5 years.

Claim.—1st. The mode herein described, of forming secondary battery plates, said mode consisting in filling the cells or interstices of the grid with powdered active material, placing a uniform layer of said active material on one or both sides of the grid, and then compressing the surplus material into the cells of the grid. 2nd. The mode described of filling a secondary battery plate, said mode consisting in mounting the grid on a supporting plate, applying a retaining frame to the top of the grid, placing the active material in the cells of the grid, and piling it above the same, removing the surplus material until it is level with the top of the retaining frame, and then removing the latter, and compressing the surplus material into the cells of the grid. 3rd. The mode described of filling a secondary battery plate, said mode consisting in mounting the grid on a supporting plate, applying a retaining frame to the top of the grid, filling the cells of the latter with active material, and piling the latter above the same, removing the surplus material until it is level with the top of the retaining frame, then reversing the grid and repeating the operation on the other side of the same, and finally compressing the two layers of surplus material into the cells of the grid.

No. 29,835. Holder for Bed Covers.

(*Attache-couverture de lit.*)

Maud C. Murray, Bardstown, Ky., U.S., 7th September, 1888; 5 years

Claim.—The herein described attachment, composed of the rod, the attaching straps at the ends of the rod, whereby the latter may be readily attached and detached by hand without the use of a screw-driver or similar implement, the holding straps secured to the rod at intermediate points, and the fastener at the outer ends of the holding straps, for connecting the same with the covers, substantially as set forth.

No. 29,836. Telephone Transmitter.

(*Transmetteur téléphonique.*)

The Bell Telephone Company, (assignee of Charles W. Warren), Montreal, Que., 8th September, 1888; 15 years.

Claim.—1st. In a telephone transmitter employing granulated conducting material as the current varying medium, the combination, of a vibratory diaphragm having free edges, with a vertically mounted granulation containing cell, comprising a vertical metal back plate, a rigid non-conducting annular side wall, an elastic and yielding metal front plate acting as an auxiliary vibrating diaphragm, a mass of granulated conducting material enclosed between the said plates and thereby included in an electric circuit, a centrally perforated metal gland clamping the same, and a rod attached to the centre of the said front plate and passing through the central perforation of the gland to a mechanical connection with the outer diaphragm, whereby the vibrations of the outer diaphragm are transmitted to the front plate of the said cell and to the granulations, substantially as described. 2nd. The combination, substantially as hereinbefore described, of the compound granular carbon button comprising a mass of granulated carbon enclosed between a rigid metal plate, and an elastic and centrally vibrating metal plate, the said plate being separated electrically by a rigid non-conducting ring with an external vibrating diaphragm, the said compound button being mounted vertically in proximity to the vibratory diaphragm, the centre of the button being approximately opposite to the centre of the said diaphragm, and the centres of the vibrating diaphragm, and the elastic front plate of the button being mechanically united by a rod, whereby the vibrations of the former are transmitted to the latter, as described 3rd. In a telephone transmitter, the combination, with a vibratory diaphragm loosely supported in a ring seat, and adapted to receive sound waves, of a hollow button supported opposite thereto having an elastic metal front plate serving as an auxiliary diaphragm, a rigid metal back plate separated electrically therefrom by a ring of hard rubber, and carbon granulations interposed in the chamber thus formed, and a rod attached to the centre of the auxiliary diaphragm and in contact with the main diaphragm, so that the vibrations of the latter may be communicated to the former, both diaphragm and hollow button being vertically mounted, substantially as hereinbefore described. 4th In a granular carbon transmitter, the compound containing cell and contents, comprising an external cylinder, a rigid metal back plate closing one end of said cylinder constituting one electrode of the said cell, and centrally perforated for the introduction of the granulations, a rigid and non-elastic ring within the external cylinder and in contact with the said rear wall, and forming the non-conducting side wall of said cell, an elastic metal front plate supported by said ring and clamped at its edges by a metal ring, and a screw gland closing the other end of the external cylinders, whereby the said elastic plate is fixed opposite to the back plate, the central portion thereof being free to vibrate, granular carbon interposed between the said plates, and a screw-plug closing the central aperture of the back plate for the purpose of retaining the carbon therein. 5th. The combination of an ordinary Blake transmitter case, diaphragm, and adjustment lever and screw, with the hereinbefore described granulation containing cell, the granulations being contained between a rigid back plate and a centrally elastic front plate, forming electrodes of an electric circuit separated electrically at their edges by a rigid and non-conducting ring, in such a manner as to form a shallow chamber for the reception of said granulations, the said cell being suitably mounted upon the central portion of the adjusting lever opposite the central portion of the Blake diaphragm, and the front plate or auxiliary diaphragm thereof being provided with a light rod attached to its centre, and projecting outwardly therefrom to a delicate but permanent mechanical contact with the centre of the main diaphragm, whereby the vibrations of the latter are communicated to the former, for the purpose specified. 6th. The combination, with the vibratory diaphragm and adjusting lever of a Blake transmitter, of a compound granular carbon button mounted upon the centre of the said lever, so that its centre is in the same horizontal plane as the centre of the said diaphragm, the said button comprising carbon granulations enclosed between a rigid back electrode, and a vibratory elastic front electrode clamped at its edge and adapted to serve as an auxiliary diaphragm, the said electrodes being separated by a non-elastic and non-conducting ring, and means, as indicated, for pro-

ducing in the auxiliary diaphragm the vibrations of the main diaphragm, substantially as described. 7th. In combination with the vibratory diaphragm and adjusting lever and screw of an ordinary Blake transmitter (so called), the hereinbefore described hollow button containing granular carbon, and closed in front by a metal elastic vibrating plate constituting an auxiliary diaphragm, the said hollow button being mounted upon the central portion of the adjusting lever in line with the centre of the main diaphragm, the centre of the auxiliary diaphragm having a mechanical connection with the centre of the main diaphragm, so as to participate in its vibrations, and the hollow button being provided with suitable electrical connections, whereby it is adapted for inclusion in an electric circuit, substantially as described. 8th. In a telephone transmitter, a shallow chamber containing granular current-varying material enclosed between two metal plates constituting the electrodes of an electric circuit, and uniting the same electrically, one of the said plates being rigid and the other elastic, an adjustable lever supporting the said chamber vertically by means of the rigid plate thereof, a vibratory diaphragm loosely mounted to vibrate freely in a vertical plane, a rod extending outwardly from the elastic plate of the said chamber, an adjusting screw controlling the said lever, and adapted to adjust the same and to bring the free end of the rod into contact with the said vibratory diaphragm for the purpose of forming a mechanical connection between the said diaphragm and the front plate of the carbon containing chamber and electrical connections, whereby the granulations and their enclosing plates may be included in an electrical circuit, substantially as described.

No. 29,837. Wheeled Scraper. (*Grattoir à roues.*)

Francis W. Kimball, Milwaukee, (assignee of Frank A. Addison, Beloit, Wis., U.S., 8th September, 1888; 5 years.

Claim.—1st. In a wheeled scraper, the combination of a crank-axle and a pan, with suspending bars rigidly secured to the sides of the pan, and having their upper ends journalled to the shaft of the crank-axle, a tongue or its equivalent, and double connections between the tongue and pan, the points of connection with the pan being one above the other, substantially as and for the purpose specified. 2nd. In a wheeled scraper, the combination, of a crank-axle, bars loosely journalled on the shaft thereof, and a pan rigidly secured to the lower ends of said bars, with a tongue or its equivalent, bounds secured to the tongue and pivoted to the pan, and a bar pivotally connected with the tongue and with the upper ends of the suspending bars, substantially as and for the purpose specified. 3rd. In a wheeled scraper, the combination of a crank-axle and a pan suspended therefrom, with drag-bars pivoted to the pan and connected with the tongue, and a hooked bar adjustably connected with the tongue, and adapted to hook over the shaft of the crank-axle, substantially as and for the purpose specified. 4th. In a wheeled scraper, the combination of a crank-axle, and a pan suspended therefrom, with drag-bars pivoted to said pan and secured to the tongue, a hand-lever pivoted to the tongue, and a hooked bar pivoted at one end to the lower end of the lever, and having its other end adapted to hook over the shaft of the crank-axle, substantially as and for the purpose specified. 5th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and means for raising said pan above the ground, with a bar pivotally connected with the tongue having a hook on its rear end adapted to engage with the shaft of said crank-axle, and a lever pivoted to said bar behind the shaft and adapted to rest on said shaft, substantially as and for the purpose specified. 6th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom having pins upon its sides, with sockets on the inner sides of the crank arms to receive said pins, and dogs for retaining said pins in the sockets, substantially as and for the purpose specified. 7th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom having flanged pins on its sides, with sockets in the crank-arms having interior grooves adapted to receive said flanges, substantially as and for the purpose specified. 8th. In a wheeled scraper, the combination, of a crank-axle, and a pan suspended therefrom, with pins on the sides of said pan, sockets in the crank-arms adapted to receive said pins, and dogs pivoted to said crank-arms adapted to automatically engage with said pins to hold them in the sockets, substantially as and for the purpose specified. 9th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and pins on the sides of said pan with sockets on the inner sides of the crank-arms, dogs to hold said pins in the sockets, arms mounted on the shaft, a yoke connecting said arms, chains connecting said yoke and dogs, and a lever for moving said yoke, substantially as and for the purpose specified. 10th. In a wheeled scraper, the combination of the ground wheels, a crank-axle and a pan suspended therefrom, with arms mounted on the shaft of said crank-axle adapted to engage with the wheels, a yoke connecting said arms, an arm rigidly secured to the shaft of the said crank-axle, a lever secured to the yoke, and mechanism for engaging and disengaging said arm and yoke or lever, substantially as and for the purpose specified. 11th. In a wheeled scraper, the combination of the ground-wheels, a crank-axle and a pan suspended therefrom, with arms mounted on the shaft of the crank-axle, and adapted to engage with the rim of said wheels, a yoke connecting said arms, and arms secured to said pan and adapted to strike said yoke, substantially as and for the purpose specified. 12th. In a wheeled scraper, the combination of a pan having its rear end pivotally connected to the sides, and mechanism to raise the pan from the ground in a substantially horizontal position, with mechanism which automatically opens said rear end when the pan is tipped backward, and closes it when it is returned to the horizontal position, substantially as and for the purpose specified. 13th. In a wheeled scraper, the combination of a pan adapted to be raised above the ground having its rear end pivotally secured to the sides, with an arm secured to said rear end, a bar pivotally connected with the tongue, a link-bar pivotally connected to said arm and bar, and means for tipping said pan backward, substantially as and for the purpose specified. 14th. In a wheeled scraper, the combination of a crank axle, a pan suspended therefrom, and means for raising and retaining said pan above the ground, with an arm rigidly secured to the shaft of the crank-axle, and a lever adapted to engage with said arm, suostantially as and for the purposes specified. 15th. In a wheeled scraper, the combination of a crank-axle, a pan suspended therefrom, and means for raising and retaining above the ground in a substantially horizontal position with an arm having a notch in its upper edge, and a shoulder on the rear end of said upper edge rigidly secured to the shaft of the crank-axle, and a lever with a spring catch adapted to engage with said arm, substantially as and for the purpose specified. 16th. In a scraper, the combination of a crank-arm having a socket with raised sides, and the ribs on its inner side, with the dog pivoted to said crank arm and having the pin adapted to engage with said rib and the sides of the socket, substantially as and for the purpose specified.

No. 29,838. Post Hole Digger.

(*Trepan pour clôture.*)

Frank P. Stanley, Spencer, Iowa, U.S., 11th September, 1888; 5 years.

Claim.—1st. The combination, with the base, of the drill carrying frame mounted over the same, and the bit cleaning knives secured to the side of the base, as set forth. 2nd. The combination, with the base and the standard erected thereon, of the swinging frame hinged to the standard, and the sliding frame mounted on the swinging frame and carrying the drill, as set forth. 3rd. The combination, with the frame having a slot X, of the shaft passing through said slot, the lever pivoted below said slot and connected to said shaft, and the rack bar pivoted to the lever and adapted to engage a stud on the frame, as set forth.

No. 29,839. Rotary Engine. (*Machine rotatoire.*)

James C. Robertson, Morrisdale Mines, Penn., U.S., 11th September, 1888; 5 years.

Claim.—1st. The combination, in a rotary engine, of the cylindrical case A having the exhaust openings G, the rotary pistons journalled in the case A arranged between the exhaust openings, and having the peripheral groove, the shoulder or abutment M having the cam faces N, O extending in opposite directions the latter being provided with the opening P, and the said rotary piston being provided with the openings R communicating with the opening P, the valve case to which fluid pressure is introduced, and the valve pivoted in the valve case and bearing in the peripheral groove of the rotary piston, substantially as described. 2nd. The combination, of the circular case A having the exhaust openings G, and the channel H communicating therewith, the rotary piston journalled in the case A and having the peripheral groove, the shoulder or abutment M, with the cam faces N, O extending in opposite directions, the latter having the opening P, and the rotary piston, being vertically divided with the openings R communicating with the openings P the circular valve case secured to the case A, and having the openings X on the face of the piston, the inlet opening A1 and the opening Z communicating with channel H, and the valve B1 pivoted in the valve case near its centre, the shorter end of the said valve bearing against the inner side of the valve case, and the outer end thereof being adapted to bear in the bottom of the peripheral groove, substantially as described.

No. 29,840. Railroad Rail Joint.

(*Joint de rail de chemin de fer.*)

James M. Moody and Sidney B. Moody, Harwich, Mass., U.S., 11th September, 1888; 5 years

Claim.—1st. The combination, with a railway rail, of the chair provided with tapered side flanges B. B, having inclined grooves H, H in their inner sides the single wedge F arranged between the rail and each side flange, and provided with a series of inclined grooves K in their outer sides adapted to register successively with the grooves H, the upper ends of the said grooves being flush at their inner sides with the outer edges of the wedges, whereby the grooves K are invisible except when registering with the grooves H and K, substantially as and for the purpose specified. 2nd. The combination, with the railway rail, of the chair provided with a depression or groove C, and the apertures I, I, the vertical side flanges B. B having grooves H therein, the wedges arranged between the rail and the side flanges, and having grooves in their outer sides adapted to register with the grooves H, and the railway spikes arranged in the aligned grooves and apertures I, and engaging notches in the base or flanges of the rail, all substantially as and for the purpose specified.

No. 29,841. Metal Wheel. (*Roue metallique.*)

Eli Charbonneau, Toledo, Ohio, 11th September, 1888; 5 years.

Claim.—1st. In a metal wheel, a hub, a collar thereon having transverse perforations through the right angled portion, in combination with return spokes passed through the perforations and embracing the intermediate metal, as and for the purpose set forth. 2nd. In a metal wheel, a hub, a collar having an annular portion formed with an integral key or lug in parallel relation, a flange having perforations, spokes passed through the perforations, and a cap formed with grooves coincident with the keys or lugs, as and for the purpose set forth. 3rd. In a metal wheel, a hub, collars upon each end thereof having radial flanges formed with an annular depression, perforations through the flanges opening into the annular depression, and radial grooves from the perforations to the periphery thereof, in combination with caps secured upon the end of the collars, and having radial grooves corresponding with the grooves in the flange, as and for the purpose set forth.

No. 29,842. Toy. (*Jouet.*)

Otto E. Rooker, Mooresville, Ind., U.S., 11th September, 1888; 5 years.

Claim.—1st. A toy horse adapted to be straddled and ridden by children, comprising two portions having in their meeting faces, concavities which form an interior chamber that receives and protects the operative mechanism, a crank-axle mounted at the rear of the chamber and provided with wheels, a crank-shaft mounted at the front

of the chamber and provided with legs, and a rod connecting the two, the loop in said crank shaft being longer than the loop of the crank axle, whereby the crank shaft is caused to oscillate, substantially as described. 2nd. A toy horse adapted to be straddled and ridden by children, comprising two similar portions having in their meeting faces concavities which form an interior chamber to receive and protect the operative mechanism, a crank axle mounted at the rear of the chamber and provided with wheels, a crank shaft mounted at the front of the chamber and provided with legs, a rod connecting the two, and washers placed at each side of the loop of said crank axle, whereby the connecting rod is prevented from slipping and the device from becoming inoperative, substantially as described.

No. 29,843. Pump Handle. (*Brimbale de pompe.*)

David Plews, Toronto, Ont., 11th September, 1888, 5 years.

Claim.—The combination, with a pump handle, lug, or lugs, with one of the open sides, substantially as and for the purpose hereinbefore set forth.

No. 29,844. Car-Coupling. (*Attelage de chars.*)

Thomas W. Patterson, Victoria, B.C., 11th September, 1888, 5 years.

Claim.—The combination of the sliding block D and pawl or catch e, substantially as and for the purpose hereinbefore set forth.

No 29,845. Water Velocipede. (*Vélocipède marin.*)

James W. Dolliver, Everett, Mass., U. S., 11th September, 1888; 5 years.

Claim.—1st The improved water velocipede having the uprights *d*, the intermediate posts *g* provided with sockets or catches, the gates *i* pivoted to the uprights *d* and adapted to engage the sockets of the posts *g*, and the fixed guards attached to the uprights *d*, as set forth. 2nd. The combination, with a water velocipede, constructed substantially as described, of a series of uprights attached to the hulls of the velocipede, pivoted gates, and front and back guards supported by said uprights, the whole forming a continuous guard or enclosure surrounding the space on the deck on which the passenger's seats are placed, and an awning supported by the corner uprights, whereby said space is covered, as set forth.

No. 29,846. Truss. (*Bandage herniaire.*)

Orville M. Robinson, Bath, N. Y., U. S., 11th September, 1888, 5 years.

Claim.—The combination of the spring body-band A having its end formed to receive the spring C upon it, and provided with the perforated projection, with the set screw, and the coiled spring C having the pad or button secured to one end, and having its inner bent end extend into the recess in the projection, substantially as shown.

No. 29,847. Folding Table. (*Table pliante.*)

John T. Bon, Syracuse, N.Y., U.S., 11th September, 1888; 5 years.

Claim.—1st. In a folding table, the combination, with the top A, apertured bracket K, two sets of hinged legs D, transverse recesses or sockets F, and rotating rods G, of braces I, longitudinal, closed slots J, threaded bolt M, and a tightening nut N, substantially as and for the purpose hereinbefore set forth. 2nd In a folding table, the combination, with the top A, cross pieces B, legs D, and boards E, of rotating rods G, and braces I, substantially as and for the purpose hereinbefore set forth.

No. 29,848. Concrete Pavement. (*Pavage en béton.*)

George A. Bayard, Bellefonte, Penn., U.S., 11th September, 1888, 5 years.

Claim.—The improved concrete pavement herein described, consisting of a foundation layer of coarse broken stone and ashes or pebbles, a second layer of broken stone, cinders, pebbles, and tar, a third layer of sand, small pebbles and coal tar, resin and unslaked lime, and a surface coating of cement, and sand, as described and specified.

No. 29,849. Mode of Taking up the Slack in and Equalizing the Tension of the Band, Belt or Cord, Driving Spinning or Twisting Spindles, and the Banding of the same. (*Manière de tirer le mou et égaliser la tension des courroies ou cordes plates mettre en mouvement les broches à filer ou retordre, et les lier ensemble.*)

Charles W. Jones, London, Ont., 11th September, 1888, 5 years.

Claim.—1st. In a spinning or twisting machine, the tensing device F, in combination with the endless band D, substantially as arranged and described for the purpose set forth. 2nd. In a spinning or twisting machine, the combination of the band D, with the tension devices E, E and F, substantially as set forth. 3rd. In a spinning or twisting machine provided with spindles B, and cylinder or drum C, the combination of the tension devices E, E, with the band D, substantially as set forth. 4th. In a spinning or twisting machine, the frame A having spindles B, and cylinder or drum C, the combination of the band D, with the tension devices E and F, all substantially as arranged and described for the purpose set forth.

No. 29,850. Process of Making Alkaline Silicates. (*Procédé de production des silicates alcalins.*)

Adolf Kayser, Horace Williams and Albert B. Young, Buffalo, N.Y., U.S., 12th September, 1888; 5 years.

Claim.—The herein described method of producing the silicate of sodium or potassium from the chlorides thereof, which consists in mixing the chloride with silica, moulding the mixture into cakes or bricks, and heating the same in a convertor by means of highly heated gases containing steam passed through the converter, substantially as set forth.

No. 29,851. Process of Making Alkaline Silicates and Carbonates. (*Procédé de production de silicates et carbonates alcalins.*)

Adolf Kayser, Horace Williams and Albert B. Young, Buffalo, N.Y., U.S., 12th September, 1888; 5 years.

Claim.—1st. The herein described method of treating chloride of sodium or potassium, whereby the chloride is converted into oxide and muriatic acid gas is generated, which consists in mixing the chloride with clay, and heating the mixture in a converter directly by passing highly heated gases containing steam through the converter, substantially as set forth. 2nd. The herein described method of obtaining the oxide of sodium or potassium from the chloride thereof, which consists in mixing the chloride with clay, heating the mixture in a converter directly by passing highly heated gases containing steam through the converter, smelting the converted material together with an alkali, and then extracting the sodium or potassium combinations by lixiviation, substantially as set forth.

No. 29,852. Apparatus for Propelling Vehicles. (*Appareil à propulser les voitures.*)

Alexander C. Mather, Montreal, Que., 12th September, 1888; 5 years.

Claim.—In giving motion to a vehicle, the combination, with the leg C F, and the vehicle V, of a lever V P, substantially as and for the purpose hereinbefore set forth.

No. 29,853. Wooden Pail, Tub, etc. (*Seau, cuvette, etc., de bois.*)

The E. B. Eddy Manufacturing Company, (assignee of George H Millen), Hull, Que., 12th September, 1888; 5 years.

Claim.—A pail or tub having staves grooved peripherally on the outside, and bound by undulated wire B strained lengthwise in said grooves, and the ends of the wire locked together when so strained, whereby the grooves will prevent the wire rings falling off when shrinking occurs, and the undulations of the wire permit of contraction and expansion as set forth.

No. 29,854. Car-Coupler. (*Attelage de chars.*)

The Hix Automatic Car-Coupler Company, (assignee of Oliver P Hix), Rockland, Me., U.S., 12th September, 1888; 5 years

Claim.—1st. In a car coupler, a draw-bar or head combined with a coupling hook, or knuckle, pivoted in a vertical plane to the head or bar, and having a limited sliding movement longitudinally of the same, the construction and arrangement of the hook and bar with respect to each other being such that the hook may be moved inward or rearward, and bear or be seated against the end of the bar and become virtually one therewith, as set forth. 2nd. In a car coupler, a draw-bar or head, combined with a coupling hook, or knuckle, pivoted to the head and having a limited sliding movement longitudinally of the same, and a weighted bolt or bar for locking said hook against and releasing it to permit of action on its pivot, said weighted bolt being constructed and arranged to bear against the hook, or knuckle, and hold it normally pressed forward, as set forth 3rd. In a car coupler, a draw-bar or head combined with a coupling hook, or knuckle, pivoted to the head, and having a limited sliding movement longitudinally of the head, and a weighted bolt or bar having a movement vertically and longitudinally with respect to the head for locking said hook against and releasing it to permit of action on its pivot, substantially as set forth. 4th. In a car coupler, a draw-bar or head, combined with a coupling hook, or knuckle, pivoted to the head, and having a limited sliding movement longitudinally of the head, and a weighted locking bolt or bar having a movement vertically and longitudinally with respect to the head, said bolt or bar being arranged to bear against the coupling hook, or knuckle, whereby when the latter is pressed rearwardly in the draw-bar or head and left free, the weighted locking bolt will push it forward again to its normal position, and turn it on its axial pin when uncoupled or released, as set forth.

No. 29,855. Mowing Machine. (*Faucheuse.*)

The Brown Endless Cutter Company, (assignee of James O. Brown), Boston, Mass., U.S., 12th September, 1888; 5 years.

Claim.—1st. A finger bar composed of a metal strip or plate of uniform thickness, having a series of teeth or projections at its forward edge integral therewith forming leger plates, and provided with a series of rigid guard fingers attached to the under side of the plate behind said teeth and in contact with the under surfaces thereof, and interlocked as described with the outer ends or points of the teeth, and having guards projecting backwardly over the upper surfaces of the teeth, said guard fingers holding and stiffening the teeth or leger plates, as set forth. 2nd. In a cutter mechanism for mowing or reaping machines, the combination of a finger bar composed of a metal sheet or plate of uniform thickness, having a series of integral teeth at its forward edge forming leger plates, a corresponding series of guard fingers attached to said plate, and bearing against the under sides of the teeth, and provided with guards projecting over and

separated from the teeth by knife receiving slots or spaces, a longitudinal rib bearing on the upper side of said finger bar, and an endless chain or series of knives bearing on the upper side of said finger bar and guided by said rib, the knives at the front side of the rib passing through the slots between the teeth and the guards, and co-operating with said teeth as described, and means for impelling said knives, all substantially as set forth. 3rd. An endless chain or series of knives composed of gangs secured to links which are permanently riveted together, and are provided with separable connections at the ends of the gangs, whereby any gang can be removed from the endless chain or series, as set forth. 4th. A gang of knives secured to links which are permanently rivetted together end to end, the links at the end of the gang having connecting devices, whereby the gangs may be separably connected with the corresponding ends of similar gangs, as set forth.

No. 29,856. Manufacture of Wrapping or Toilet Paper Rolls. (*Fabrication des rouleaux de papier à enveloppe ou de latrines.*)

Seth Wheeler, Albany, N.Y., U.S., 13th September, 1888; 5 years.

Claim.—1st. A roll of paper having all its incisions or perforations in the same plane, and adapted, substantially as described, to permit the introduction of a suspensory device through the incisions from the interior outwardly. 2nd. As a new manufacture, a roll of paper having all its incisions or perforations in the same plane, and provided with a suspensory device introduced from the interior of the roll and passing outwardly through the incisions, substantially as described.

No. 29,857. Steam Trap. (*Trappe de vapeur.*)

John Kolb and J. R. Drozeski, (assignee of Frederick G. Botsford), Erie, Penn., U.S., 14th September, 1888; 5 years.

Claim.—1st. The combination, in a steam trap, of a tubular body adapted to retain steam and water, having an expansion tube secured in one end thereof, with an annular or hollow valve seat secured in the opposite end of said body, against which the open end of said expansion tube operates so that the air will circulate entirely through said expansion tube and valve seat, substantially as and for the purpose set forth. 2nd. The combination, in a steam trap, of a hollow tubular body having a bushing 2 in one end thereof, into which bushing an expansion pipe 5 is secured with a bushing 6 having guides 7 therein, and the adjustable valve plug 8, substantially as and for the purpose set forth. 3rd. The combination, in a steam trap for car heating, of a hollow tubular body having a tubular expansion pipe 5 secured therein, with the hollow adjustable valve plug 8, constructed substantially as shown and for the purpose set forth.

No. 29,858. Water Heater. (*Calorifère à eau.*)

Warden King, (assignee of Archibald Spence), Montreal, Que., 14th September, 1888; 5 years.

Claim.—1st. The combination, in a heater, of the sections E and O, with section F having projections G, and tap bolts H with furnace A, the whole constructed and arranged substantially as described. 2nd. The combination, in a heater, of the sections E and O, with section F having central opening K and openings P, the whole substantially as described. 3rd. The combination, in a heater, of a number of sections placed one over the other, substantially as shown, the lower section being provided with projections G, tap bolts H, and opening K, the whole substantially as described.

No. 29,859. Duplex Engine. (*Machine double.*)

The Waterous Engine Works Company, Brantford, Ont., (assignee of Harvey F. Gaskill, Lockport, N. Y., U. S.,) 15th September, 1888; 5 years.

Claim—1st. The combination, in a duplex engine, of the valves, the valve stems, the levers pivoted to the valve-stems, the adjusting screws for varying the throws of the valves, and connecting devices connecting one end of each lever with one set of pistons, and the other end of each lever with the other set of pistons, substantially as set forth. 2nd. The method of regulating the motion of a duplex engine having independent pistons, consisting in causing both sets of pistons to act about equally upon both sets of valves, causing the pistons to off set each other in their actions on the valves during one part of the stroke, and to re-inforce each other in their actions on the valves during another part of the stroke, substantially as set forth. 3rd. The method of regulating the motion of a duplex engine having independently moving pistons, consisting in causing both sets of pistons to act about equally on both sets of valves, causing said pistons to off set each other in their actions on the valves during the first parts of the strokes, and to re-inforce each other in their actions on the valves during the latter parts of the strokes, substantially as set forth.

No. 29,860. Watch Case. (*Boîte de montre.*)

Richard Russell, jr, Hamilton, Ont., 15th September, 1888, 5 years.

Claim—1st. In a watch case A, having projections *a*, and a bezel B, provided with slots *c*, and inclined planes D to receive and engage with the same, substantially as and for the purpose hereinbefore set forth. 2nd. In a watch case, the combination of a rim or movement holder C, having pins G and the case A, substantially as and for the purpose hereinbefore set forth.

No. 29,861. Pump. (*Pompe.*)

Hiram J. Wells, Nashville, Tenn., U. S., 15th September, 1888; 5 years.

Claim—1st. In a pump, the combination, with the cylinder provided with an air-valved outlet at its lower end, of the cover provided with a valved tube or cylinder at its upper end, and the plunger having a tubular rod provided at its upper end with a series of air-inlets, and at its lower end with a valve, substantially as and for the purpose set forth. 2nd. In a pump, the combination, with the cylinder provided at its lower end with a valved outlet, and at its upper end with a cover having a central valved passage, and a filter at one side of said passage, a tube or cylinder applied to the said cover, and adapted for connection to a pump barrel, and the plunger having a tube adapted for connection to the pump handle, and provided at its upper end with a series of air inlets and with an air-valved outlet at its lower end, substantially as set forth. 3rd. In a pump, the combination, with the cylinder provided at its lower end with a valved outlet, and at its upper end with a cover having a central valved passage, and at one side of said passage a filter having a valved lower end, a tube or cylinder applied to said cover and adapted for connection to a pump barrel, and the plunger having a tube adapted for connection to the pump handle, and provided in its upper end with a series of air inlets, and at its lower end with an air-valved outlet, substantially as set forth.

No. 29,862. Washing Machine. (*Machine à blanchir.*)

Josiah Shepherd, Jeffersonville, Ohio U. S., 15th September, 1888, 5 years.

Claim.—1st. The combination, with the suds box, of the lid the rotatable circular turn table mounted in the lid, and forming in connection with the same a complete cover for the suds box, the lever mounted on the turn table, and the plunger connected to the lever and extending through the turn table into the suds box, as specified. 2nd. The combination, with the suds box and the cover making a steam tight joint therewith, of the turn table attached to the cover, the shaft journalled thereupon, the lugs rising from said turn table, the lever handle pivoted on said shaft, the transverse bars secured to said lever above its pivotal point, the plunger rods and the plungers, substantially as specified. 3rd The combination, with the suds box and the lid, of the turn table comprising the upper plate *b*, and the lower plate *b*^{2} secured together by bolts, and the lever mounted on the turn table and the plungers connected to the lever, as set forth. 4th. In a washing machine, a suds box having the door *a*, provided with a circular opening having the bevelled recess *b*^{4}, the turn table B comprising the outer plate *b*, having the bevelled edge *b*^{2} to rest in the recess *b*^{4}, and the inner plate *b*^{3} connected to the outer plate by pins and bolts, and engaging under the lid or cover *a* around the opening therein, and the plunger and operating connections mounted on the turn table, as set forth.

No. 29,863. Machine for Sawing and Drilling Railway Rails. (*Machine à scier et percer les rails de chemins de fer.*)

Eben N Higley, Somersworth, N. H., U. S., 15th September, 1888; 5 years

Claim.—1st. In a rail sawing machine, a circular saw mounted in a suitable frame or holder, and provided with apertures in its side, near its periphery, in combination with a driving wheel having pins or projections adapted to enter said apertures, whereby the saw is rotated positively by the driving wheel, substantially as set forth. 2nd In a rail sawing machine, the combination, with the main frame and a movable or swinging frame attached thereto, of a circular saw mounted in said movable frame, and provided with side apertures near its periphery, a pair of driving wheels applied to the said saw on opposite sides of the same, and having pins or projections adapted to enter said apertures, and the mechanism for feeding the saw, all operating substantially in the manner and for the purpose described. 3rd. In a rail sawing machine, the combination, with a saw D provided with side apertures *v* near its periphery, of a pair of driving wheels N, N, arranged upon opposite sides of the saw, and each provided with pins *t* and recesses *u* alternating with each other, the driving wheels being so arranged with respect to each other that the pins of each wheel, after passing through the apertures in the saw will engage the recesses in the opposite wheel, substantially as set forth. 4th. In a rail sawing machine, the combination of the main frame adapted to be secured to the rail, a swinging frame C pivoted thereto, a circular saw D mounted in said movable frame and having apertures *v* in its side near the periphery, a pair of horizontal driving wheels N, N, connected with and driven by the main shaft, and provided with pins or projections *t* adapted to enter the apertures *v* in the saw, and positively rotate the same, and a device for feeding the saw, all operating substantially as described. 5th. In a rail sawing machine, the combination of the main frame, a swinging frame C pivoted thereto, a circular saw D mounted in said movable frame and having apertures *v* in its side near the periphery, the horizontal driving wheels N, N, provided with pins or projections *t* adapted to enter said apertures *v*, and the feeding device for the saw consisting of the yoke G jointed to the frame C and carrying the feed screw H, the worm gear K and feed nut *g* carried thereby, the pulleys or chain wheels *m*, *p*, *r*, chains *n*, *q*, and the driving shaft M, all operating substantially in the manner and for the purpose set forth. 6th. In a rail sawing machine, the combination, with the saw D, its pivoted supporting frame C and the yoke G, of the feed screw H, worm gear K with its box or recess *f* and cap *h*, and the feed nut *g* placed within said recess *f* and made convex at its opposite ends, whereby it is permitted to adjust itself within said recess to the varying inclination of the feed screw produced by the movement of the swinging frame, substantially as described. 7th. The combination, with the frame A, of the rotating sleeve *w*, the crank shaft *e*^{1}, a train of gearing between the crank shaft *e*^{1} and the sleeve *w*, whereby the latter is operated, the drill T sliding with a spline or key within the sleeve *w* and rotated thereby, a sleeve *g*^{1} provided with an external screw thread and sliding upon the rear end of the sleeve *w*, and having a pin or plug *k*^{1} fitting within the sleeve *w*, and bearing against the rear end of the drill to feed the same, the ratchet wheel *k*^{2} having an internal thread fitting over the thread of the sleeve *g*^{1}, whereby the latter is moved in the direction of its length to feed the drill, and the pawl *M*^{1} and its actuating lever *a*^{1}, all operating substantially in the manner and for the purpose set forth. 8th. The combination, with the drill T and its operating mechanism, substantially

as described, of the sleeve g^1 having an external screw thread, and provided with a pin or plug h^2 bearing against the rear end of the drill, and the screw threaded ratchet wheel h^1 fitting over and adapted to propel the sleeve g^1, the pawl m^1, lever n^1 and cam p^1 on the crank shaft e^1, all operating substantially as and for the purpose set forth

No. 29,864. Manufacture of Sofas or Lounges. (*Fabrication des sofas ou causeuses*)

Daniel Hibner and Solon L. Doolittle, Berlin, Ont., 15th September, 1888; 5 years.

Claim—The combination of the back leg *a*, the centre post *f*, the end post *k*, the top rails *e* and *h*, and the stay rails *g*, *g*, substantially as and for the purpose hereinbefore set forth.

No. 29,865. Extinguishing Lamp. (*Lampe à éteignoir*)

George E. Dehany, Liverpool, Eng., 15th September, 1888; 5 years

Claim.—1st. In a lamp, an automatic extinguishing tube or ferrule sliding by gravity on the burner tube beneath the dome, and of such a length that it cannot leave the tube so long as the dome is in position, substantially as described. 2nd. In a lamp, having two or more burners, the combination, with each wick tube, of an automatic extinguishing tube or ferrule sliding by gravity on the said wick tube beneath the dome, and of such a length that it cannot leave the wick tube so long as the dome is in position, substantially as described.

No. 29,866. Bit Brace. (*Vilbrequin.*)

George Gavin and Lawrence W. Cromer, Eureka, Nev., U. S., 15th September, 1888; 5 years.

Claim.—1st The combination, with a bit stock, having a vertical bit socket and a T-shaped slot leading from the end of the stock and communicating with its socket, of a spring actuated bolt adapted to *slide over the horizontal member of the slot and into the vertical* member of the same, substantially as set forth. 2nd. The combination, with a bit stock having a vertical socket, a vertical slot leading into the said socket, and a T-shaped slot extending from the end of the stock communicating with the socket and terminating below the aforesaid horizontal slot, and a longitudinal bore intervening the wall of the socket, and the outer face of the bit stock containing the aforesaid slots, of a spring actuated bolt sliding in the said bore, and a screw attached to the said bolt sliding in the said horizontal slot, all combined to operate substantially as and for the purpose specified.

No. 29,867. Spring Hoe Attachment for Cultivators, Seed Drills, etc. (*Ajustage des dents aux scarificateurs, semoirs, etc.*)

Charles R. Hartman, Vincennes, Ind., U. S., 15th September, 1888; 5 years.

Claim.—1st. The herein described attachment, consisting of the bracket formed with the downward projection, the fulcrum head at its rear upper end, the forward curved arm having the opening in its upper end, and the side shoulders, the connecting links, the curved lever, the rod and the spiral spring, all constructed and arranged as herein set forth. 2nd. The attachment, consisting of the bracket formed with the downward projection, the fulcrum head, the forward arm having the opening in its upper end, and the side shoulders, the fulcrum links, the connecting links formed with the lugs on their inner sides, the curved lever, the rod having the threaded upper end and the nut and the spiral spring, substantially as set forth. 3rd. The combination, with a shank foot piece or drill tooth of the usual construction, and its beam, of the herein described attachment, consisting of the bracket formed with the downward projection, the fulcrum head, the forward arm having the opening in its upper end, and the side shoulders, the fulcrum links, the connecting links formed with the lugs on their inner sides, the curved lever, the rod having the threaded upper end and the nut and spiral spring, substantially as set forth.

No. 29,868. Chamois Holder. (*Porte-chamois*)

Andrew T. Veeder, Schenectady, N. Y., U.S., 15th September, 1888; 5 years.

Claim.—1st. As an article of manufacture, a chamois holder, consisting of a rod or bar having a right angular spur and keeper erected from each end, the spurs being pointed and edged on one side, substantially as described. 2nd. The combination, with a bar A, of end spurs C and bracket arms B erected therefrom, and stems provided with spur seats and vertically adjustable in the ends of the bracket arms, substantially as described.

No. 29,869. Vehicle Spring. (*Ressort de voiture*)

Henry C. Swan, Oshkosh, Wis., U. S., 15th September, 1888, 5 years.

Claim.—1st. A flexible packing k^2, having two free ends and a bearing in two concave sections k, k^1, in combination with the rock shaft arms h^1, h^1 of a vehicle spring, as and for the purpose specified 2nd In a vehicle spring, the combination, with the rock shaft H cranked at h, of the hooks L and equalizing lever M, the former pivoted between the ears m, m of the latter, as and for the purpose set forth. 3rd. In vehicle springs, the spring F coiled on a vertical bolt, the box E placed over said spring, and an equalizing lever attached to said box to prevent side motion in the manner set forth. 4th. In vehicle springs, the lever M having a journalled cross-bar at one end, and at the other a box E and ears m, m, to adapt it to be used, as described.

No. 29,870. Swing Saw. (*Scie oscillante.*)

James Martin, South Brooklyn, N.Y., U.S., 15th September, 1888, 5 years.

Claim.—1st. In a swing saw, the combination, with the swinging frame which carries the saw, and the driving shaft about which said frame rocks, of guides and sliding boxes adapted to provide for a free up and down movement of said shaft, and one or more stationary lower guide-rail attachments constructed to support the swinging frame and to direct it and its attached saw out of consonance with the curvilinear movement due to the swinging motion of said frame, substantially as specified. 2nd The combination of the upper stationary guides B, the sliding boxes C having a free up-and-down movement, the driving shaft L, the swinging frame A with its attached saw J, the guide-rail attachments or devices D, and the swinging frame carriers or wheels E, essentially as and for the purpose or purposes herein set forth. 3rd. The combination, with the vertically-swinging saw carrying frame A, having a rising and falling centre of motion about which said frame rocks, of the guide-rail attachments or devices D, made adjustable to vary their angle or level, and the swinging frame carriers or wheels E adapted to run or travel upon said adjustable guide-rail devices, substantially as specified 4th The combination, with the vertically-swinging saw-carrying frame A, having a rising and falling centre of motion, about which said frame rocks, of the independent frame G adjustable up and down, the swinging frame A, the wheels, rollers, or carriers E attached to said independent frame, and serving to support the swinging frame and adjustable guide-rail attachments or devices D, essentially as described.

No. 29,871. Process of Hulling, Cleaning and Separating Grain. (*Mode de battage, nettoyage et séparation des grains.*)

Frederick Melkersman, St. Charles, Mo., U.S., 15th September, 1888; 5 years.

Claim.—1st. The hereinbefore described process of hulling, cleaning and separating grain, which consists in first removing a large proportion of the hulls from all the grain, then separating the disconnected hulls, then washing and moistening the grain, then straining and drying it, then removing the remaining hulls and inner skins from the grain, and finally separating the disconnected hulls and skins, substantially as herein set forth. 2nd. The hereinbefore described process of hulling, cleaning and separating grain, which consists in first removing a large proportion of the hulls from all the grain, then separating the disconnected hulls, then washing and moistening all the grain, then separating the good grain from the imperfect grain during the process of washing, and then drying the grain and removing and separating the remaining hulls therefrom, substantially as herein set forth.

No. 29,872. Nose Warmer or Protector. (*Cache nez.*)

William A. Sentman, Britton, Dak., U. S., 15th September, 1888; 5 years.

Claim—1st A nose protector, having the wire frame A, comprising the central front piece B, the bottom pieces C diverging therefrom, and the rear side pieces D, all arranged in the form herein set forth, and covered by a suitable fabric, substantially as described. 2nd. A nose protector, having the wire frame A, comprising the central front piece B, the bottom pieces C diverging therefrom, and the rear side pieces D, constructed from a single piece of wire and arranged in the form herein set forth, and the fabric covering therefor having the side extensions E, substantially as described.

No. 29,873. Running Gear for Vehicles. (*Train de voiture*)

Adam Bock, Murfreesborough, Penn., U.S., 15th September, 1888; 5 years.

Claim.—1st. The combination, with the axle, spaced elliptical springs clipped upon the same, a cross-bar uniting the springs, and thill irons projected from said cross-bar, of a fifth wheel having the lower section attached to the said cross-bar, a second short cross-bar secured to the upper section of the wheel, a king pin passing through said cross-bars, and arms radiating from the upper cross-bar and the upper section of the wheel, substantially as shown and described 2nd. The combination, with the axle, spaced elliptical springs clipped upon the same, a main cross-bar uniting the springs, and thill irons projected from said cross-bar, of a fifth wheel having the lower section attached to the said cross-bar, a second short cross-bar secured to the upper section of the wheel, a king bolt passing through said cross bars, a bifurcated guide rod pivoted upon the king bolt and attached to the lower wheel section, and arms radiating from the short cross-bar, the king bolt and wheels, substantially as and for the purpose specified. 3rd. The combination, with the axle, spaced elliptical springs clipped upon the same, a main cross bar uniting the springs, thill irons projected forwardly from said cross-bar, and step-carrying bars projected rearwardly therefrom, of a fifth wheel having the lower section attached to said cross-bar, a second short cross-bar secured to the upper wheel section, a king bolt passing through said cross-bars, a bifurcated guide arm pivoted upon the said king bolt and attached to the lower wheel, section braces connecting the wheel and springs, and supporting arms radiating from the short cross-bar, the king bolt and wheels, substantially as shown and described.

No. 29,874. Safety Car. (*Char de sûreté.*)

Thomas G. Gilfillan, Union, Oregon, U. S., 15th September, 1888, 5 years.

Claim.—1st. The combination, with a railroad car having an opening in its roof, closed with the door B having a projecting cover *b*, of

the ring *b*, secured to the side of said door, near the lower edge, wire C engaging said ring and connected to a lever, the lever D connected with said wire and adapted to engage and lock upon a ratchet, so as to hold down the door, the ratchet E secured in the side of the car and adapted to engage and hold the lever D, substantially as set forth. 2nd. The combination, in the escape of a safety car, of an opening in the roof closed by a door B provided with a ring *b*, wire C, lever D and ratchet E for holding down and locking the same, and rails F placed under said opening and serving as a ladder to and from said door, substantially as set forth. 3rd. The combination, with a railroad car, having an opening in the roof and closed by the door B, with the projecting plate *b* held at the top by the moulding *a*, and near its lower edge by the ring *b*, and wire C connected to the lever D engaging the ratchet E, substantially as set forth. 4th The combination in a railroad car, having one or more openings in the floor of sufficient size to allow of the passage of a person, the edges of said opening bevelled, and said opening covered with a bevelled door G, provided with flush ring, and having its purpose indicated thereon, substantially as set forth.

No. 29,875. Machine for Forming Paper Vessels. (*Machine à façonner les ustensiles de papier.*)

Adelbert J. Grinnell, Oswego, N. Y., U. S., 17th September, 1888; 5 years.

Claim.—1st. The combination, with the feed spout C, of a perforated annular pulp carrier B, a coucher I bearing against the carrier B, and a forming roller J running in contact with the coucher, substantially as set forth. 2nd. In a machine for forming paper vessels from pulp, a pulp carrier composed of a circular frame, provided with an annular series of supporting bars, a perforated annular plate resting on said bars, and a wire gauze covering resting on the perforated plate, substantially as set forth. 3rd. In a machine for forming vessels from pulp, a forming roller J made in two sections *n*, *n*, between which the bottom of the vessel is arranged, substantially as set forth. 4th. In a machine for forming vessels from pulp, the combination, with the pulp carrier and coucher, of a forming roller provided with a clamping device, whereby the bottom of the vessel to be formed is attached to the forming roller, preparatory to winding the pulp upon the same, substantially as set forth. 5th In a machine for forming vessels from pulp, the combination, with the annular pulp carrier, the coucher and the forming roller, of a frame in which the forming roller is journalled, arms projecting from said frame on opposite sides of the forming roller, bearings and springs mounted on said arms, and pressure rollers journalled in said bearings, substantially as set forth.

No. 29,876. Tubular Lantern.

(*Lanterne tubulaire.*)

Frederick Dietz, New York, N. Y., U. S., 17th September, 1888; 5 years.

Claim.—1st. The combination, with a tubular lantern, of a detachable globe-supporting plate, having its margin provided with an upwardly projecting frame, and a lens secured in said frame, substantially as set forth. 2nd The combination, with a tubular lantern, of a detachable globe-supporting plate, having its margin provided with an upwardly projecting frame, and a lens secured in said frame and fastenings secured to the base of the lantern and engaging with the detachable plate, whereby the latter and its lens are held against displacement in the frame, substantially as set forth 3rd. The combination, with the globe supporting plate, of a lens frame secured to said plate, a lens seated in said frame, and guard wires secured to the lens frame and to the globe supporting plate, substantially as set forth.

No. 29,877. Machine for Stretching, Scraping and Finishing Hides or Skins. (*Machine à étendre, debourrer et finir les peaux.*)

Nicholas Weber, Lynn, Mass., U.S., 17th September, 1888; 5 years.

Claim.—1st. The combination of the carrier, means for reciprocating it, the upper and lower jaw holders pivotally connected to the carrier, a rock shaft journalled in bearings on the carrier, and engaged, substantially as described, with said jaw holders, whereby the jaws are closed by a movement of said shaft in one direction, and opened by a movement of the shaft in the opposite direction, and means for holding said shaft in its jaw closing position during the forward movement of the carrier, and in its jaw opening position during the return movement of the carrier, as set forth. 2nd. The combination of the carrier, the scraper or lower jaw pivoted to said carrier, means for reciprocating the carrier, the beam or lever pivoted to the carrier, and provided with the yielding roll or upper jaw adapted to co-operate with the scraping jaw, the vertically movable guide rod, means for holding said rod in a raised position during the forward movement of the carrier, and in a depressed position during the return movement of the carrier, a slide which moves vertically with said rod, and mechanism controlled by the position of said rod and slide, whereby the upper and lower jaws are separated when the rod is depressed and brought together when the rod is raised, as set forth. 3rd. The combination of the carrier adapted to reciprocate on guides on a supporting frame, means for reciprocating the carrier, the jaw holder pivoted to an arm on the carrier, the beam or lever *t* pivoted to the carrier and provided with the yielding roll or jaw at its outer end arranged over the scraping jaw, a spring which normally raises the lever and roll, the rock-shaft *p* journalled in the carrier and having a cam *q* bearing on the rear end of the lever *t*, and an arm or lever *d*1 connecting with the lower jaw carrier, the arrangement being such that a partial rotation of said rock shaft will either close or open the jaws, according to the direction of such rotation, and means whereby the rock-shaft is held in position to close the jaws during the forward movement of the carrier, and to open the jaws during the return movement, as set forth. 4th. The combination of the carrier, means for reciprocating it, the upper and lower jaw holders, each pivoted to the carrier, the spring *e* for raising the upper jaw holder, the rock shaft *p* journalled in bearings on the carrier and provided with the cam *q* and arm *d*1, the adjustable shoe *r* interposed between the cam *q* and the upper jaw holder *t*, the adjustable rod *e*1 connecting the lower jaw holder with the arm *d*, a cam *k* rotated by the driving shaft of the machine, and intermediate mechanism controlled by said cam, whereby the rock shaft *p* is held in position to close the jaws during the forward movement of the carrier, and in position to open the jaws during the return movement of the carrier, as set forth 5th The carrier, the upper and lower jaw holders pivoted thereto, the rock-shaft journalled in bearings on the carrier and having the cam *q* and arms *o*, *d*1, the rod *e*1 connecting the arm *d*1 with the lower jaw holder, and the spring *u* for raising the upper jaw holder, combined with the slide *s* connected with the arm *o*, the guide rod *f* mounted on links *h*, *i*, the cam *k* on the driving shaft, the lever *l* adapted to be oscillated by the rotation of the cam, and the rod *m* connecting the lever *l* with the guide rod *f*, all arranged and operating substantially as described. 6th. The combination of the carrier or cross head, the upper and lower jaws carried thereby, a connecting rod pivotally secured to the cross-head, and a driving shaft adapted to reciprocate the cross head and its jaws through the connecting rod, and arranged so that the force imparted through the connecting rod will be approximately in the line of movement of the cross-head, as set forth. 7th. The beam or lever carrying the roll or upper jaw, and provided with the adjustable bearing piece *u*, combined with the cross-head or carrier, the rock shaft journalled thereon, and the cam on said rock-shaft arranged to bear on the bearing piece *u*, as set forth 8th. The beam or lever carrying the roll or upper jaw, and provided with the adjustable casting or holder *at*, whereby said roll may be adjusted, as set forth. 9th. The combination of the cross-head or carrier, a holder *f*, having the lower jaw and pivoted to the carrier, the beam or lever *t* having the upper jaw and also pivoted to the carrier, the rock shaft journalled in bearings in the carrier, and provided with the cam *q* and arm *d*1, a rod connecting the arm *d*1 with the lower jaw holder, a driving shaft connected by a rod *d* with the cross-head, and arranged, substantially as described, relatively to the point of connection of said rod with the cross-head, and mechanism, substantially as described, operated by the driving shaft, whereby the rock-shaft is held with its cam in a vertical position during the forward movement of the cross head, and in a depressed position during the return movement of the cross-head, as set forth. 10th. The combination in a leather scraping and stretching machine, of the reciprocating jaws adapted to open and close, as described, and the finishing or polishing blade secured to the holder of one of the jaws, and arranged to bear on the grain side of the skin, while said jaws are closed upon the same, as set forth.

No. 29,878. Bottle Funnel. (*Entonnoir.*)

Christian Xander and William Thomas, Washington, D. C., U. S., 17th September, 1888, 5 years.

Claim.—The combination in a funnel for filling vessels, provided at its shank with a vent-tube formed by indenting the shank longitudinally, and covering said indentation with a piece of metal provided with air-induction apertures, the top of the tube forming the exit for the air, substantially as set forth.

No. 29,879. Car Replacer and Portable Switch. (*Déraileur et aiguille portative.*)

Thomas Holliday, Sanborn, Dak., U. S., 17th September, 1888; 5 years.

Claim.—1st. In a car replacer, the combination, with an upper plate, of inclined plates leading downward therefrom, flanges or ridges mounted at the sides of the inclined plates, and deflecting plates mounted above the upper plate, and each adapted to be moved towards or from the longitudinal centre of the upper plate, and held at its point of adjustment, substantially as described. 2nd. In a car replacer, the combination, with an upper plate, of two downwardly inclined plates arranged in connection therewith, ridges or flanges connected to the inclined plates, deflecting plates arranged above the upper plates, and adjustable screws arranged in connection with the deflecting plate, substantially as described. 3rd. In a car replacer and portable switch, the combination, with supporting plates 11 and 12, of a plate 10 mounted thereon, downwardly inclined plates 14 between which there is a space 2 that are also mounted upon the plates 11 and 12, spurs 3, flanges 15 extending upward from the plates 14, deflecting plates 16 mounted above the plate 10, and adjustable screws 17 arranged in connection with the plates 16, substantially as described.

No. 29,880. Stuffing Box for Steam Cylinders, etc. (*Boîte d'étoupe pour cylindres de vapeur, etc*)

Erastus G. Medrick, Middletown, N.Y., U.S., 17th September, 1888; 5 years.

Claim.—1st. In a stuffing box, the combination, with a gland, of a piston fitting steam-tight in the said gland, and operated on by steam from the steam compartment, wedge-shaped packing rings held in the said gland, and operated on by the said piston, and a ring surrounding the said wedge-shaped packing rings, substantially as shown and described. 2nd. In a stuffing box, the combination, with the gland having a cylinder, of a piston fitting steam-tight adapted to slide in said cylinder, metallic wedge-shaped split packing rings against which presses the said piston, and an internally cone-shaped ring enclosing the said wedge-shaped packing rings, substantially as shown and described.

No. 29,881. Fire-Escape and Lowering Apparatus. (*Sauveteur d'incendie et appareil de descente*)

Oscar F. Washburne, Goshen, Mass., U.S., 17th September, 1888; 5 years.

Claim.—1st. The improved fire-escape comprising the following

elements in combination: the lowering drum and cord, the high speed fan retarder, and the winding up spring, substantially as described. 2nd. The combination, with the basket of a fire-escape, of a flexible cord or speaking tube, attached at one end to the basket, and adapted for dropping the other end from the basket to the ground preparatory to using the basket for escape, substantially as described. 2nd. The combination, with the lowering drum in a fire-escape, of the bell cord working lever, actuating tappets and a retracting spring, substantially as described.

No. 29,882. Washing Machine.

(*Machine à blanchir.*)

Henry C. Glunsmann, Bayonne, N. J., U.S., 17th September, 1888; 5 years.

Claim.—1st. The combination of frame *a*, suds box *o*, levers *d*, cross-bar *c*, and roller *e*, with the inclined lugs *m* secured to frame *a*, and with the tubes *t*, and plugs *l* secured to levers *d*, substantially as specified. 2nd. The combination of frame *a* having tapering bars a^1, and sockets *s*, with the handle *r*, adapted to engage said sockets, substantially as specified. 3rd. The combination, with a tub or suds box having journal bearings, as described, of a reciprocating rubber composed of slotted levers, a transverse bar connecting the upper ends thereof, spools arranged on the said bar, and a lower transverse bar having short branches provided with eyes to receive the said upper bar, substantially as specified.

No. 29,883. Seat or Couch Spring.

(*Ressort de chaise ou de causeuse.*)

William F. Rippon, Cranston, R. I., U. S., 17th September, 1888; 5 years.

Claim.—1st. The spring A, post D, threaded at one end, hub *d* and disk B, said disk being loosely pivoted upon said post and having free rocking movement thereon, all combined with each other and with the frame or slats of a seat, couch, or analogous article, as shown and described and adapted to serve as specified. 2nd. The clamping plate *b*, auxiliary springs A^2 and disks B^1, B^1, B^1, combined with a central disk B, post *d* and main spring, as A, to form a cluster spring for seats, couches and analogous articles, said auxiliary springs radiating from said central disk, and said auxiliary disks B^1 having each independent free rocking movement pivotally upon upwardly-turned ends of said springs A. 3rd. A spring for seats, couches and analogous articles, consisting of a main spring and central disk, as shown, combined with one or more springs radiating from said central disk, in planes parallel with that of the main spring, and a disk loosely pivoted upon each of said radiating springs, and having free rocking movement thereon yieldingly to pressure applied at any angle to its pivotal axis, all arranged substantially as shown and described for joint operation, and adapted to serve as specified. 4th. In a seat, couch, or analogous article, the spring A adapted to be secured at one end to the frame of the chair or couch, and a post D tapped into the other end of the said spring, combined with each other and with a disk B carried on the free end of said post, all arranged and adapted to serve to raise or lower said disk to increase or lessen the tension of the seat or couch upholstery.

No. 29,884. Dress Cutting System.

(*Système de coupe d'habillement.*)

Thomas Hawkins, San Francisco, Cal., U. S., 17th September, 1888, 5 years.

Claim.—1st. A chart, the outlines of which form rules for drawing the front shape, outer sleeve shape, inner sleeve shape and side body, and upper outer end of the sleeve, substantially as described. 2nd. The chart having the outer edges or boundaries in the form of curved rules and pattern outlines, the inner curved rules cut out of the body of the chart, as shown, at I and J, in combination with the interior lines forming the body portion and the outer and inner sleeve portion, substantially as described. 3rd. The double curved outline forming the dart rule, and side form as shown at *m n*, in combination with the interior outline forming the arm-shape O, and the front and back shoulder shapes P, substantially as described.

No. 29,885. Sulky Plough. (*Herse à siège.*)

William Hewitt, London, Ont., 17th September, 1888. 5 years.

Claim.—1st. In a sulky harrow, a harrow section formed with a bracket *h*, in combination with harrow section formed with a knuckle *k*, the bracket *h* of the former passing through the knuckle *k* of the latter, and the bracket *h* formed longer than the knuckle *k* to permit one section to move back and forth independent of the other, as and for the purpose set forth. 2nd. In a sulky harrow, the chain C and pulley P, in combination with a sulky frame F, harrow section H^2, and evener E, as and for the purpose set forth. 3rd. The chain C, pulley P, evener E, and doubletree D, in combination with the chains D^1, D^2, frame F, harrow section H^2, and tongue T, as and for the purpose set forth. 4th. In a sulky harrow, the vertical standards S^1, S^2, and harrow section H^2, in combination with a frame F formed with apertures G, and axle A, as and for the purpose set forth. 5th. In a sulky harrow, the vertical standards S^1, S^2, harrow section H^2, and braces J, J, in combination with a frame F formed with apertures *g*, and axle A, as and for the purpose set forth. 6th. The harrow sections H^1 and H^3, and handles I formed with loops *e*, in combination with the standards S^1, S^2 formed with hooks *e*, and central harrow section H^2, as and for the purpose set forth. 7th. The self-locking lever L formed with an arm l^3, bracket l^2, and chain K, K, in combination with the central harrow section H^2, as and for the purpose set forth. 8th. The self-locking lever L formed with an arm l^3, bracket l^2, chains K, K, frame F, handles I formed with loops *e*, and standards S^1 and S^2 formed with hooks *e*, in combination with the harrow sections H^1, H^2 and H^3, as and for the purpose set forth. 9th. The pivotal tongue T, end pivotal pin t^1, in combination with the frame F and socket bracket N, as and for the purpose set forth. 10th. The pivotal tongue T, pivotal pin t^1 and pin t^2, in combination with the frame F, and socket bracket N, as and for the purpose set forth.

No. 29,886. Telephone Transmitter.

(*Transmetteur de téléphone.*)

John F. Bahr, Jersey, N. J., U.S., 17th September, 1888; 5 years.

Claim.—1st. The improved telephone transmitter herein described, combining therein a box or case having a perforated cover or lid, a partition separating the interior of said box into two chambers plates *f*, *e*, one of which is secured to said partition, and the other of which lies under the influence of gravity upon the first one, and is provided with projections *i*, and suitable conducting wires, all said parts being arranged and adapted to operate substantially as set forth. 2nd. The improved telephone transmitter, combining a case or box with a perforated cover, a sounding board secured therein, a carbon plate secured upon said sounding board, a carbon plate provided with projections and lying by gravity upon the first, said plate, and conducting wires *g*, *g*, said parts being arranged and combined substantially as and for the purpose set forth. 3rd. The improved transmitter substantially as described, combining therein a case or box, a hinged and perforated cover, a partition secured in said box at the edges and forming upper and lower chambers, a carbon plate *f* secured upon said partition, and having depressions *k*, *k*, *k*, an upper carbon plate *e* having contact points *i*, *i*, *i* corresponding with said depressions, said plate *e* lying on said plate *f* by gravity, and conducting wires *g*, *g*, and an induction coil arranged in said lower chamber, all said parts being arranged and adapted to operate substantially as and for the purposes set forth.

No. 29,887. Trouser Stretcher.

(*Forme de pantalon.*)

William F. Hutchinson, Lynn, Mass., U. S., 17th September, 1888; 5 years.

Claim.—As an article of manufacture, a trousers stretcher consisting essentially of a tapped handle, two rods provided with screw-threads to fit said handle, and hinged cross pieces fitted to the ends of said rods, substantially as and for the purposes hereinbefore set forth.

No. 29,888. Foundation for Cards.

(*Fondation des cardes.*)

Joseph Moseley, Manchester, Eng., 17th September, 1888; 5 years.

Claim.—1st. In a card foundation, a layer of parallel yarns or threads, substantially as and for the purpose described. 2nd. In card foundations, the combination of one or more layers of parallel yarns or threads, with one or more layers of cloth, felt, or similar material, substantially as described.

No. 29,889. Air Mattress. (*Matelas à air.*)

John R. Hargin, Elizabeth, N. J., U. S., 17th September, 1888; 5 years.

Claim.—1st. The combination, with the covering of an air mattress, of a pump chamber enclosed therein provided with a movable lid, and having an inlet valve admitting air to such chamber, and an outlet valve discharging the air from such chamber within the mattress to inflate the same, substantially as herein set forth. 2nd. The combination, with the covering of an air mattress, of partitions dividing the interior of the mattress into separate air-tight compartments, a pump chamber enclosed within said covering provided with a movable lid having an inlet valve admitting air to such chamber, and a series of outlet valves connected with the separate compartments, as and for the purpose set forth. 3rd. The means of connecting the partitions to the covering of the mattress, consisting in the stays D^1 folded longitudinally and secured to the partitions by the doubled portion D^1, and to the covering by the extended edges D^2, substantially as set forth. 4th. The combination, with the covering of the mattress, of stays *l* passed through slits in the same, and having feet l^1 folded upon the outside of the covering and cemented thereto, and the washers *p* secured to the covering over the feet and around the stay inside the covering, substantially as herein shown and described. 5th. The combination, with an air mattress, of the bands *r* secured to the edges of the mattress, and to one another at their intersections, as and for the purpose set forth. 6th. The combination, with an air mattress, of the lock attached to its edge consisting in the sections *s* and *t*, provided respectively with the spring bolts s^1 and the sockets t^1, the whole arranged and operated substantially as herein set forth. 7th. The combination, with an air mattress, of the lock sections *s* and *t*, provided respectively with the spring bolts s^1 having studs *b*, and with the sockets t^1, and the wedge *w* adapted to separate the bolts by pressure between their studs *b*, as and for the purpose set forth.

No. 29,890. Safety Appliance for Car Trucks. (*Appareil de sûreté pour châssis de chars.*)

Gavin Rainnie, Portland, N. B., 18th September, 1888; 5 years.

Claim.—1st. In railroad car and other like trucks, the combination, with the frame of the truck, of an attached bent safety guard adapted to loosely straddle the stationary bolster or bolsters of the car or body carried by the trucks, substantially as specified. 2nd. The combination, with the car or other like body having stationary bolster, or bolsters, C, and the swivelling trucks carrying said car or body, of the safety guards D secured to the frames of the trucks, and bent to loosely straddle the tops and sides of the bolsters, essentially as and for the purpose or purposes herein set forth.

No. 29,891. Thill Coupling. (*Armon de limonière.*)

Daniel Murray, Salem, Mass., U.S., 18th September, 1888; 5 years.

Claim.—1st. In a thill coupling, the clasp *a* and its bearing piece a^1, having the semi-spherical recess a^4, and upwardly projecting slotted and externally screw threaded sleeve a^5, in combination with

the follower e, the adjustable cap g, and the shaft iron d having the forked end d_3, trunnions d_{11}, d_{11} and ball d_1, as and for the purpose set forth. 2nd. In a thill coupling, the clasp a and its bearing piece a_3 having the semi-spherical recess a_4, and upwardly projecting slotted and externally screw threaded sleeve a_5, in combination with the follower e, the cup-shaped packings f, f_1, the adjustable screw-threaded cap g, and the shaft iron d_1 having the forked end d_3, trunnions d_{11}, d_{11}, and ball d_1, as and for the purpose set forth. 3rd. In a thill coupling, the clasp a and its bearing piece a_3 having the semi-spherical recess a_4, and upwardly projecting slotted and externally screw-threaded sleeve a_5, in combination with the follower e, the cap having the square or equivalent head g_1, and the shaft iron d having forked end d_3, and the internal stop projections or lugs d_4, d_4, as and for the purpose set forth. 4th. In a thill coupling, the clasp a and its bearing piece a_3 having the semi-spherical recess a_4, and upwardly projecting slotted and externally screw-threaded sleeve a_5, in combination with the follower e, the adjustable cap g, the metal spring washer E, and the shaft iron d having the forked end d_3, trunnions d_{11}, d_{11}, and ball d_1, as and for the purpose set forth.

No. 29,892. Waggon Jack. (*Chevre de carosserie.*)

Erwin A. Redford, Eau Pleine, Wis., U.S., 18th September, 1888, 5 years.

Claim.—A folding waggon jack consisting of a base piece having a block B, two uprights C, C pivoted to the block B, and provided with racks O, O, a hook F adapted to hold the upright in perpendicular position, a lever arm G pivoted in the top of the uprights C, C, said lever arm being provided with a shoulder K, and a recess L, the recess L being higher than the shoulder K, and a retraining rod M pivoted to the lever arm G, and provided with a cross bar N adapted to engage the racks O, O, substantially as described

No. 29,893. Boot or Shoe Stretcher.

(*Forme brisée de chaussure.*)

John Donovan, Boston, Mass., U.S., 18th September, 1888; 5 years.

Claim.—1st. In a boot or shoe stretcher, the combination of separable toe-pieces, a rocking bearing mounted in the toe-pieces, an adjusting screw swivelled in the said bearing, with its inner end projecting between the toe-pieces, and a nut on the inner end of the screw and adapted to be moved back and forth thereon by turning the said screw, substantially as described. 2nd. In a boot or shoe stretcher, the combination of separable toe-pieces, a rocking bearing, a hollow toe-piece adjusting screw threaded at one end, a spreader on the end of the adjusting screw, and a heel-piece adjusting screw working in and engaging the internal screw threads of the said toe-piece adjusting screw, substantially as described. 3rd. In a boot or shoe stretcher, the combination of toe-pieces, a nut held thereon, an adjusting screw working lengthwise in said nut, a step in which the adjusting screw is journalled, a heel-piece carried by the step, a gear on the adjusting screw, an upright spindle having its bearing in the step, a gear on the spindle engaging that on the adjusting screw, and a hand burr on the spindle, substantially as described. 4th. In a boot or shoe stretcher, the combination, with a pair of detachable toe pieces, of a hinge having one leaf secured permanently to one toe-piece, and holes in its other leaf, studs on the other toe-piece adapted to said holes, and a catch for holding the studs in the holes, substantially as described. 5th. In a boot or shoe stretcher, the combination of a pair of toe-pieces, a hinge having one leaf attached to one toe-piece, and a catch on the other toe-piece for securing the other leaf detachably thereto, substantially as described.

No. 29,894. Railway Switch.

(*Aiguille de chemin de fer*)

James B. Suffern, Hillburn, N. Y., U. S., 18th September, 1888; 5 years.

Claim.—1st. The combination, with the slotted switch rail operating bar F, of the curved pivoted track lever G, having a forked end embracing the bar F, the pin c passing through the fork of the said track-lever, and through the slot of the bar F, the slide J, and means for moving and locking the said slide, substantially as specified. 2nd. The combination, with the curved track-lever G and the slotted switch-operating bar F, of the slide J, yoke I connected with the slide J and the cam lever H, substantially as specified 3rd. The combination of the track-lever G, bar F, slide J, yoke I, the toggle M lever j, rod k, shaft f, provided with the fixed arms K, L, the movable arm g and spring h connecting the said arm g with the shaft f substantially as specified.

No. 29,895. Fire Proof Lathing.

(*Lattis incombustible.*)

B Greening & Co. (assignees of John Maw, Hamilton, Ont., 18th September, 1888; 5 years.

Claim.—1st. The combination of crimped hoop iron A, staples B and studding wall C, substantially as hereinbefore set forth. 2nd. The combination of wire cloth B, crimped hoop iron A and iron ties D, as and for the purpose hereinbefore set forth.

No. 29,896. Clothes Line. (*Ligne d'etendage.*)

Frederick O. Tarbox and Ubert P. Tarbox, Toronto, Ont. (assignees of Herbert E. Percival, Spokane, W. T., U. S., 18th September, 1888: 5 years.

Claim.—1st. A metal clothes line, having at intervals outwardly extended portions to form openings or apertures a for the insertion of the clothing, and nipping-jaws extending lengthwise of the line, and forming continuations of the said outwardly-extended portions, substantially as set forth. 2nd. A metal clothes-line, having longitudinally-extending nipping-jaws, and a series of openings from both ends of which the said jaws extend, the latter forming nipping spaces communicating with the said openings, substantially as set forth 3rd A metal clothes line, consisting of two wires or rods bent outward at intervals to form openings a, and connected together between the said openings, the said line having between the connected portions and the said openings, longitudinally extending nipping-jaws, substantially as and for the purpose specified.

No. 29,897. Stove and Range Oven.

(*Four de poêle et de fourneau*)

The James Smart Manufacturing Company (assignee of William M. Powell), Brockville, Ont., 19th September, 1888, 5 years.

Claim.—A cooking range or stove, having an oven provided with a bottom containing inter-secting serrations C, and surface projections D, as and for the purpose set forth.

No. 29,898. Smoothing and Polishing Iron.

(*Fer à repasser et à polir.*)

Walter F. C. Arlidge and William W. Stephen, Meaford, Ont., 19th September, 1888; 5 years.

Claim.—1st The combination of a tapering dovetail tenon or block D, mortise piece or luggage C, C, and tapering bolt I with smoothing and polishing irons, substantially as and for the purpose hereinbefore set forth 2nd. The combination, with smoothing and polishing irons, of an asbestos shield or covering B, substantially as and for the purpose hereinbefore set forth

No. 29,899. Mode of Covering Pulleys.

(*Manière de couvrir les poulies.*)

Luke A. C. Fisher and John A. Gallie, Toronto, Ont, and James Sangster, Buffalo, N.Y., U.S., 19th September, 1888; 5 years.

Claim.—The herein described mode of covering pulleys, consisting in first cleaning the face of the pulley with an alkali, then covering its face with a series of courses of paper and cement, then securing by cement to the paper covering a covering of leather, substantially in the manner and for the purposes above described.

No. 29,900. Combination Steam and Hot Air Heater. (*Calorifère à vapeur et air chaud combinés.*)

The J. F. Pease Furnace Co., Toronto, Ont. (assignee of John F. Pease, Syracuse, N.Y., U.S.), 19th September, 1888; 5 years.

Claim.—1st. The within described low down combination steam and warm air heater, having the boiler B within the combustion chamber over the fire-pot, and the combustion chamber of greater diameter than the fire-pot, all substantially as and for the purpose set forth. 2nd. The combination of the fire-pot, with the upwardly flaring section between the fire-pot and combustion chamber, the combustion chamber of greater diameter than the fire pot, a steam boiler within the combustion chamber, and suitable steam and warm air connections, all substantially as described and for the purpose set forth. 3rd. The combination of the fire-pot, with a radiator surrounding or partially surrounding the same, a combustion chamber connected to the fire-pot by a flaring section mounted on the fire-pot, and combustion or smoke flues leading from the flaring portion of the combustion chamber into the radiator, substantially as specified. 4th. The combination of the fire-pot and combustion chamber, with a steam boiler located within the combustion chamber, having a steam dome located within the outer casing of the heater, and outside of the combustion chamber, substantially as described and shown. 5th. The steam dome A connected to the boiler B by suitable steam connections, and having a return drip pipe to return the water of condensation to the boiler, in combination with the combustion chamber of a warm air furnace, substantially as described and shown.

No. 29,901. Refrigerator. (*Glacière.*)

Alfred C. Macdougall, Ottawa, Ont., 19th September, 1888, 5 years.

Claim.—1st. In a refrigerator, the ventilator R having diagonal or rectangular partitions, substantially as and for the purpose hereinbefore set forth. 2nd In a refrigerator, a perforated partition P, substantially as and for the purpose hereinbefore set forth. 3rd. In a refrigerator, a perforated drawing board M, in combination with protectors D, and gutters or troughs T, substantially as and for the purpose hereinbefore set forth 4th. In a refrigerator, perforated air conduits I, in combination with distributing board J, substantially as and for the purpose hereinbefore set forth. 5th. In a refrigerator, perforated exit flues K, in combination with escape passages N, substantially as and for the purpose hereinbefore set forth.

No. 29,902. Gravity Lock. (*Serrure à détente.*)

John Tye, Toronto, Ont., 21st September, 1888, 5 years.

Claim.—1st. The locking bar, with its motion. 2nd. The anchor attachment to locking bar 3rd. The double insertion of the key.

No. 29,903. Churn. (*Baratte.*)

Joseph E. Benjamin, Hubbell, Nebraska, U. S., 24th September, 1888: 5 years.

Claim.—1st. In a churn, the combination, with the dasher, of the tube having its inner walls roughened, substantially as and for the purpose described 2nd. In a churn, the combination, with the dasher, of the tapering tube having its inner walls roughened, substantially as and for the purpose specified. 3rd. The combination, with the churn body, and the dasher fitting snugly within the churn-body, of the rod, the valves opening downward, the dash block and the tapering tube having its inner walls roughened, substantially as specified.

No. 29,904. Combined Latch and Lock.

(*Loquet and serrure combinés.*)

John Austin, Fenelon Falls, Ont., 25th September, 1888, 5 years.

Claim.—*The combination, with the lock case, provided with posts* 3, 15 and 17, of the pendulum 4, having posts 5 and 6, spindle tappet 8, having arms 10, 11, engaging with the pendulum bolt 12, having a slot *h* engaging with the pendulum post 6, and slot 18 having a projection *g* engaging with post 17 of the lock case, and provided with arms *a*, *a*, dog 15, sleeved on post 17 and engaging one of said arms, and a spring 13 to throw the bolt outwardly after being retracted by the knob spindle, substantially as set forth.

No. 29,905. Window Blind. (*Persienne.*)

Henry E. Willer, Milwaukee, Wis, U. S., 25th September, 1888; 5 years.

Claim.—A sliding window blind, constructed with a series of slats pivoted centrally in the styles, and attached together by connecting rods pivoted to their ends, near their lateral edges, which window *blind has friction springs*, with wood bearing blocks attached to its edges, a drop handle 14 in its lower edge, and a cup-shaped lift with a partition bar, substantially as described.

No. 29,906. Combined Steam Generator and Radiator. (*Générateur et calorifère à vapeur combinés.*)

Robert G. Ferguson, Saratoga Springs, N. Y., U. S., 25th September, 1888, 5 years.

Claim.—1st. In a combined steam generator and radiator, the combination of a portable heater, a water-receptacle supported by said heater, and a radiator surmounting said water receptacle, as and for the purpose herein specified. 2nd. In a combined steam generator and radiator, the combination of a portable heater, a water receptacle supported by said heater, and a radiator surmounting said water receptacle, said radiator consisting of sheet metal walls, secured together to form a steam chamber or steam chambers, and being secured to the water receptacle by steam-tight joints, as herein specified.

No. 29,907. Door Knob and Shank.

(*Bouton et queue de porte.*)

John C. Atwater, New York, N. Y. U. S., 25th September, 1888; 5 years.

Claim.—1st. The combination, with a door knob A, having a dovetailed or inwardly enlarged recess, of a tubular shank having a normally straight and uniform bore, and at one end snugly fitting said recess, and a central expander made separate from the knob, larger in diameter than the internal diameter of the shank, and which, when it is placed in the knob recess and has the end of the shank forced inward over it, serves to expand said end in all directions against the wall of the recess, substantially as herein described. 2nd. The combination, with the door knob A, having the recess and the bushing D inserted therein, of the tubular shank B having its end cut or divided, and of substantially uniform diameter throughout, and the central expander *c* separate from the knob and larger than the bore of the shank, and by which the cut or divided end of the shank is expanded within the bushing D, and in all directions when the shank is forced inward over the expander, substantially as herein described.

No. 29,908. Valve. (*Soupape.*)

John E. Bell, Quebec, Que., 24th September, 1888; 5 years.

Claim.—In a valve, the shell or body 1, having a perforated annular flange 2 on the outside and an outlet passage 3, in combination with a rock shaft 4, journalled in a bore parallel to said outlet passage, one end of said shaft having an arm 5 to close over the inner end of said outlet, and the other end provided with a lever 6 for rocking said shaft to operate the arm for opening and closing the outlet passage, as set forth.

No. 29,909. Radiator Regulator.

(*Régulateur de Calorifère.*)

Peter W. Britts, Gunnison, Colorado, U. S., 26th September, 1888; 5 years.

Claim.—1st. The combination, with a radiator, of a tank connected at top and bottom with the radiator, and provided with an inlet and outlet pipe, a valve for opening and closing the outlet pipe, a weighted lever connected to said valve, and a float in the tank and connected to the weighted lever, substantially as described. 2nd. The combination, with a radiator, of a tank connected at top and *bottom with the radiator, and provided with an inlet and outlet pipe*, a valve in the outlet pipe, a weighted lever provided with an arm projecting into the tank, a pulley on the said arm, a float in the tank a chain secured to the float and passing over the pulley, and a connection between the valve and weighted lever, substantially as described. 3rd. The combination, with a tank constructed to be connected to the radiator at top and bottom, and provided with a lateral extension and an inlet and outlet pipe, and a valve in the outlet pipe, of a shaft journalled in the lateral extension and provided with a drum and a pinion, a weighted lever mounted on the shaft and provided with a pinion meshing with the pinion on the said shaft, and with an inwardly projecting arm carrying a pulley, a chain on the drum, a float on the end of the chain, and a connection between the valve in the outlet pipe and the weighted lever, substantially as described. 4th The combination, with a tank constructed to be connected to a radiator provided with a lateral extension, and inlet and outlet pipes, and a *valve in the outlet pipe, of a shaft journalled in the lateral extension* and provided with a drum and pinion, a sleeve on the shaft provided with an inwardly-projecting arm carrying a pulley, and a weighted lever carrying a pinion meshing with the pinion on the said shaft, a pawl engaging the pinion on the weighted lever, a chain on the drum, and having a float at its end, and a rod connecting the valve in the outlet pipe with the weighted lever, substantially as described.

No. 29,910. Window Fastener or Button.

(*Arrête croisée ou Bouton.*)

Osborn R. Cooke, Salem, Ohio, U.S., 26th September, 1888; 5 years.

Claim.—1st. The combination, with an arched plate, having an incline face and a bearing block located within the arched portion of said plate and having an inclined face, of a bolt having a lug adapted to rest and move between said inclined faces, substantially as set forth. 2nd The combination, with an arched plate, having an inclined face, a bearing block located within the arched portion of said plate and having an inclined face, and a locking plate provided with a depending rim, the latter having an inclined face, of a bolt having a lug adapted to rest and move between said inclined faces, and a *tongue adapted* to engage the inclined face of the rim. 3rd The combination, with an arched plate, a bearing block, a locking plate and a rotary and longitudinally sliding bolt located between the arched plate and bearing block, and provided with a lug adapted to engage inclined faces on the plate and block, and with a tongue for engaging a rim on the locking plate, of a handle secured to the bolt and adapted to engage an inclined surface on the arched plate, for drawing the meeting-rails of the sashes together. 4th. The combination, with the arched plate and the locking plate having a depending rim, of the bolt having a cam-shaped end and a tongue, substantially as and for the purpose set forth. 5th. The combination, with the arched plate having a cam face for the lug on the bolt, and a cam face for the handle, and a bearing block having a cam face for said lug, of a bolt having a lug and a handle attached to the bolt, substantially as set forth.

No. 29,911. Moulds to be used in the Manufacture of Confectionery. (*Moule pour conserves.*)

Walter E Coleman, Brooklyn, N. Y., U. S., 26th September, 1888; 15 years.

Claim.—1st. A permanent flexible mould for the manufacture of confectionery, formed with suitable shaped matrices, for the purpose and substantially in the manner described. 2nd. A permanent flexible mould for the manufacture of confectionery, formed with matrices, the side walls of which are split transversely, for the purpose and substantially in the manner described. 3rd A permanent mould for the manufacture of confectionery, formed with matrices of suitable shape, the side walls of which are split transversely and with a flexible bottom or backing for the manner described.

No. 29,912. Boring Machine.

(*Machine à forer.*)

Henry C. Cloyd, Indiana, U.S., 26th September, 1888, 5 years.

Claim.—1st. The combination, with a base, provided with forwardly extending metallic arms, the said arms being provided with radial teeth *e* on their inner faces, of an upright frame composed of two vertical bars suitably braced transversely, the lower ends of these bars being also provided with radial teeth *e*1 on their outer faces, and a horizontal connecting bolt, substantially as herein set forth. 2nd. The combination, with the upright frame, composed of vertical parallel bars, one of these bars having a series of recesses *g*, of a sliding tool carriage, and a stop clip K having tapped in one of its arms a set screw K1, substantially as and for the purpose herein set forth. 3rd The combination of the uprights, the sliding tool carriage therein provided with a shoulder *f*1, and a gravitating pawl J adapted to vibrate between two lugs *f*, *f* on one of the uprights, and engage the shoulder *f*1, substantially as herein set forth. 4th. The *combination of the uprights, the sliding carriage thereon*, the gravitating rack bar L, provided with an inclined slot at its upper end, and a parallel pin or finger at its lower end, a pin *k* carried by the said rack-bar and projecting through a slot in the upright, and a gravitating locking pawl *k*11, substantially as set forth. 5th. The combination of the vertical parallel uprights, the reversible tool carriage sliding on the same, the vertical bit shafts journalled on the carriage and carrying gear wheels of different diameter, and the driving gear wheels secured upon a horizontal shaft journalled on the carriage and provided with operating handles, substantially as described.

No. 29,913. Metallic Siding for Buildings.

(*Lambris métallique pour bâtiments.*)

Longley L. Sagendorph, Ohio, U.S., 24th September, 1888, 5 years.

Claim.—1st. A sheet of metallic siding, pressed or stamped to represent brick work or stone work, substantially as shown and set forth. 2nd. A sheet of metallic siding, having horizontal grooves and alternate cross grooves C, said grooves forming a raised portion between them to represent brick or stone work, as set forth

No. 29,914. Vehicle Wheel. (*Roue de voiture.*)

George W. Howell, Covington, Ky., U.S., 26th September, 1888, 5 years.

Claim.—1st. In combination with the rim of the wheel, the hub sections I, I, provided with flanges 6, notched or recessed, the spoke 4 provided with a neck seating therein, the locking ring 5 and the straining section 7 intervening the hub sections, substantially as set forth. 2nd. In combination with the sectional hubs I, I, having flange 6 notched or recessed to receive the head of the spokes, the locking ring 5 and the screw connected straining section 7, substantially as set forth.

No. 29,915. Motor for Sewing Machine.

(Moteur pour machine à coudre.)

Emma F. Briggs, San Marcos, Texas, U. S., 26th September, 1888, 5 years.

Claim.—As an attachment for the stand of a sewing machine, adapted for interchangeable motors, the dependent hook, designed to receive and support, when out of use, either the pitman or the inclined hand rod, substantially as described.

No. 29,916. Smoking Machine. (*Fumigateur.*)

George S. Boin, Salinas, Cal., U.S., 26th September, 1888, 5 years.

Claim.—1st. The smoking machine, consisting of the upright fuel box, having hinged nozzle top, perforated draft-plate, and blower attached thereto by braces, and having its tapering chute entering the centre of the base to communicate with the air chamber below the equalizer plate, substantially as specified. 2nd. The smoking machine, consisting of the upright fuel-box, having upper and lower openings with doors, the hinged nozzle-top, the inside perforated draft-plate, the blower attachment and its braces and the pivoted standards, substantially as specified.

No. 29,917. Stove Pipe Damper.

(Clé de tuyaux de poêle.)

James E. Fenner, and Henry G. Dixon, Delphi, N.Y, U.S, 27th September, 1888; 5 years.

Claim.—The combination, with the stove pipe section A, of the plates p, p secured lengthwise and respectively at opposite sides of the interior of said pipe section, disconnected from each other to leave a single passage in the pipe section, a series of diaphragms a, a pivoted independently of each other to the said plates at intervals of their lengths, couplings c,c connecting the alternate diaphragms at one side of the axis thereof, and connecting the intermediate diaphragm at the opposite side of the axis thereof, and the adjusting rod h attached to one of said diaphragms, substantially as described and shown.

No. 29,918. Electric Railway Station Indicator. (*Indicateur électrique de station de chemin de fer.*)

George H. Kirwin, Christian Stegmaier, and Frederick Stegmaier, Wilkesbarre, Penn., U.S., 17th September, 1888; 5 years.

Claim.—1st. The combination of the station indicator, the motor to operate the same, and provided with the switch wheel and arm or contact, the armature having the arm to engage and disengage the motor for the purpose set forth, the electro-magnet to operate the armature, the battery, the circuit closer, the bell and the open circuits connecting the electro-magnet to the circuit closer and the battery, and connecting the bell, the switch and the batter, substantially as described. 2nd. The combination in a station indicator, of the shaft F, the wheel M loose thereon, the motor having the operating wheel engaging wheel M, the clutch to connect the said wheel to the said shaft, the lever to operate said clutch, the shaft W, the spring U connected thereto, and the scroll or apron rolled on the shaft W and connected to the shaft F, whereby when the latter is rotated the scroll will be unrolled from the shaft W onto the shaft F, and the springs will be wound, substantially as described. 3rd. The combination of the spindle S, the spring U attached thereto, the shaft W having one end journalled in a suitable bearing and detachable therefrom, the opposite end of the said shaft being secured to the spindle, the operating shaft F, the scroll normally rolled on the shaft W, and having its free end detachably connected to shaft F, the the wheel M loose on shaft F1, the clutch to secure said wheel thereto, and the motor having the wheel engaging said wheel M, substantially as described. 4th. The combination of the station indicator, the motor to operate the same provided with a switch wheel, and with the revolving cam L2 having the notch M2, the annunciator connected in open circuit with the switch wheel and with the battery, the armature having the arm provided with the stop to engage the notch in the cam, and the electro-magnet to operate the said armature, said electro-magnet being connected in open circuit with the battery and with the circuit closer, substantially as described.

No. 29,919. Car Coupling. (*Attelage de chars.*)

Heinrich Somerfeld, Canton, and Archie Brown, McPherson, Ks., U.S., 27th September, 1888; 5 years.

Claim.—1st. In car couplings, the link C having handles D, in combination with the bumpers having recesses a and slot $a1$, and provided with sliding plates F operated by pivoted levers H, in the manner shown and herein specified. 2nd. The combination of the bumpers A and B, provided with sliding plates F actuated by springs G, and levers H with the links C, having cross-bars c to engage with the recesses a and slots $a1$, all constructed and arranged as herein shown and set forth. 3rd. The combination of the bumpers A and B, provided with sliding plates F actuated by springs G and pivoted levers H, with the links C having cross-bars c supported by springs E, and arranged to engage with the slots $a1$, and recesses a, in the manner and for the purpose herein specified. 4th. The link C supported on adjustable springs E, and provided with handles D, in combination with the bumpers A, B, having recesses a, and slots $a1$, and provided with sliding plates F actuated by springs G and pivoted levers H, all operating as shown and set forth. 5th. The car coupling herein described, consisting of the bumpers A, B, provided with sliding plates F actuated by springs G, and levers H, and having springs E, in combination with the link C having cross-bars c, and arranged to engage with the slot $a1$ and recess a, all as shown and specified. 6th. In car coupling, the spring-actuated sliding plate F, and levers H arranged to secure the link C having handles D in the slotted groove a in the bumpers A, B, provided with springs E for supporting said link C, and all constructed and arranged as shown and specified. 7th. In a car coupling, the combination, of a link C having handles D, and cross-bars c with bumpers having slotted grooves a, and arranged to engage by a movable sliding plate, and pivoted levers attached thereto, in the manner and for the purpose herein described.

No. 29,920. Mathematical Games.

(Jeu de mathématiques.)

Louise Martane, Paris, France, 27th September, 1888; 5 years.

Claim.—The herein described mathematical game, consisting essentially of a board divided into squares, as described, and checkers bearing numbers, mathematical signs, the word "Proof," and blank checkers, substantially as and for the purpose described.

No. 29,921. Utilization of Slate, Slate Waste, Black Grit, or other similar, or like waste material and in the Manufacture of Glass therefrom. (*Utilité de l'ardoise et de la grés noire dans la fabrication du verre.*)

William J. Parry, Coetmor Hall, John T. Welch, Penrhyn, North Wales, Great Britain, Andrew Burns, Montreal, Que., 27th September, 1888; 5 years.

Claim.—1st. In the manufacture of glass, the fusion of slate or slate waste, as described, and further manufacturing it as described, substantially as set forth. 2nd. In the manufacture of glass, the process which consists of pulverizing slate or slate waste, as described, adding thereto a flux and heating the mass to fusion, and further manipulating the fused mass by the ordinary methods in use for the manufacture of glass, substantially as described.

No. 29,922. Floor Mats and Matting.

(Natte pour plancher.)

John B. Carr, Montreal, Que., 28th September, 1888; 5 years.

Claim.—1st. A mat or matting composed of rows, or disks A, set edgewise vertically and arranged to make intervening interstices B, and connecting rods C, as set forth. 2nd. A mat or matting composed of disks A, provided with holes a, b, and having rods C passing through said holes, the alternate disks intervening, the alternate disks on the next row to form interstices B, as set forth. 3rd. A flexible mat or matting consisting of disks A provided with holes a, b, and sleeved laterally on rods C, and alternately adjusted to make intervening interstices B, said rods provided with ends to retain the disks thereon, substantially as set forth. 4th. In a mat or matting, the combination, of the disks A having holes a, b, and rods C provided with a head d, and nut e to compress the disks sleeved on said rods, and the disks alternately arranged to form interstices B vertically, substantially as set forth and for the purpose described.

No. 29,923. Machines for Making Barbed Wire for Fences. (*Machine pour faire le fil de fer barbelé pour clôtures.*)

John W. Grover, Springfield, Mass., U.S., 28th September, 1888; 5 years.

Claim.—1st. The combination, with the shaft B and a cam C having a groove c provided with a point $c2$, of a lever l having a roller $l3$, and adjustable plunger d, substantially as shown and described. 2nd. The combination, with a shaft B and eccentric E, of connecting rod $M2$, lever $m3$, punch N and die $N5$, substantially as shown and described. 3rd. In combination with a shaft B and cog wheel D, of a crank wheel $d2$, pitman d, slotted arm K, adjustable feed rollers $k8$, $k9$, and eccentric lever $k12$, substantially as and for the purpose specified. 4th. In combination, with rollers $k14$, tubes $k15$ and feed rollers $k8$, $k9$, one of which has adjustable bearing upon rods $k10$, provided with springs $k11$, and a cam lever $k12$ for tightening the same, substantially as shown and described. 5th. The combination, with the sprocket wheels $k7$, and feed rollers L, L2, of shaft B having gear connection with the crank wheel W3, pitman W2 provided with an arm $l1$ having pawls for driving the said sprocket wheels and rollers by means of ratchet wheels, substantially as shown and described. 6th. The combination, with shaft B and cam F, of a lever O and shear P, stationary shear Z, said stationary shear having detachable plates, substantially as and for the purpose specified. 7th. The combination of a shaft B and cam G, with a rod S and shear Q, said shear having points q, and a groove $q2$, and holes $q3$, substantially as and for the purpose specified. 8th. In combination with a shaft B, and a cam H having a groove h and a point $h2$, of a lever I having a roller $i2$ and an adjustable rod U provided with a head V, substantially as and for the purpose specified. 9th. A former R pivoted at one end and having a hole $r3$, and groove $r5$, combined with a wire $r4$, and a roller $r6$, substantially as and for the purpose specified. 10th. The combination, with a shaft B and gear for operating crank wheels $w3$, $w4$, which are provided with pitman rods W, W2 for driving the feed rollers, and sprocket wheels for feeding the strip into a machine from which the shields are formed, and for operating the rack, and fingers for feeding the wire into the machine from which the barbs are cut, substantially as and for the purpose specified. 11th. The combination, with a pitman W, which is operated as specified, of a cog wheel $x3$, rack $x4$, frame $x5$, provided with holes $x6$, a finger $x7$, having spring $x8$ for operating up and down by means of the rack, and a similar frame $x11$ made stationary and provided with a similar spring finger for feeding the wire from which the barbs are made into the machine, substantially as shown and described. 12th. In combination with a shaft B, frame A, cams, eccentric, and cog wheels, substantially as and for the purpose specified.

No. 29,924. Connection of Sash Cords to Window Sashes, and in the Arrangement of certain parts of the frames of Windows. (*Application des cordes de croisées et arrangement des châssis de fenêtre.*)

Henry Morgan, Oakleigh, Isle of Wight, Eng., 28th September, 1888; 5 years.

Claim.—1st. The combination of the suspended sashes having their stiles grooved from end to end, eyes secured in the grooves, and the sash cords passed through such eyes, and connected to the sashes by means of ferrules secured on their ends and bearing against the under sides of the lowermost of said eyes, all substantially as and for the purpose described. 2nd In the pulley stile of a window frame, the "pocket piece" pivoted at such a distance from its upper end that when the lower end is pulled outward such upper end will project into the boxes in which the sash weights work, for the purpose mentioned.

No. 29,925. Apparatus for Opening Windows outside and inside of the room. (*Appareil pour ouvrir les croisées en dedans et en dehors des appartements*)

Gustav J. Dollner, Hamburg, Germany. 28th September, 1888; 5 years.

Claim.—1st. The double hinge g, consisting of the hinge flanges g^1, g^2, g^3, the hinge flange g^1 of the double hinge being fastened in the inside of the casement b, while the hinge flange g^3 connected by the hinge flange g^2 with the flanges g^1 is fastened on the outside of the window frame h, so that the casement can either be turned outwards about the hinge flange g^3, or inwards about the flange g^2, substantially as set forth. 2nd. The double hinge g, with hinge flanges g^1, g^2, g^3, as described, the hinge sockets c, and the hinge flanges g^1 and g^2 which are provided with oblique surface d working together, in combination with the divided window, grooved bar a for the lowering of the casement provided with borders f and k when opened inwards, substantially as described. 3rd. In combination with a window casement which can be opened both inwards and outwards, and is provided with double hinge, substantially as described, the channel l on the inside of the window casement, substantially as set forth.

No. 29,926. Reciprocating Saw Mills. (*Scierie à scies verticales.*)

Henry McEvilla, Muskegon, Mich., U.S., 28th September, 1888; 5 years.

Claim.—1st. In combination with the feed mechanism and the driving shaft of a saw mill gang, upper and lower slides carrying the saw gate or frame, and mechanism, substantially such as shown, for oscillating the lower slides, connected with and driven by the main driving shaft, said lower slides having the pins on which they oscillate located below the top of the slides, and above the pins on the lower girder of the gate when the latter is at the upper limit of its stroke, whereby the saws are made to recede from the log at the start, and thus the cut during the first quarter of the stroke equalized with the cut during the rest of the stroke, as specified. 2nd. In a reciprocating saw mill, the combination, with the upper slides of prime levers pivotted to the lower ends of the slides and fulcrumed on the frame, secondary levers pivoted to the upper ends of the slides, and connected at the lower ends to the prime levers, and at the upper to stationary fulcrum pins, and a shaft provided with eccentrics connecting with the prime levers for operating said levers; substantially as and for the purpose set forth. 3rd. In a reciprocating saw mill, the combination, with the upper slides, of a shaft journalled in bearings on the frame and carrying two eccentrics, the prime levers fulcrumed at their lower ends on the frame, connected at their upper ends to the eccentric straps, and pivotally connected at suitable points to the lower ends of the slides, and the stationary levers pivotally attached at a proper point in their length to the upper parts of the slides, and connected at their lower ends by links with the prime levers, and at their upper ends by links with stationary fulcrum pins, all arranged to give a backward or forward movement to said slides for the purpose of increasing or decreasing the rake of the saws, substantially as described. 4th. In a reciprocating saw mill, the combination of the saw gate, the oscillating lower slides, the movable upper slides, the primary levers pivoted to the lower ends of the upper slides and fulcrumed on the frame, and the secondary levers pivoted to the upper part of the upper slides, and connected at their lower ends to the primary levers and at their upper ends to stationary fulcrum pins, substantially as described.

No. 29,927. Note Books, Memorandum Books, Pocket and other similar Books. (*Livret de notes, de memoires, calapin, etc.*)

William J. Downes, London, Eng., 28th September, 1888; 5 years.

Claim.—1st. Fitting the back of a note book, memorandum book, pocket, or other similar book on the inside with a clip or holder a, which receives a pen or pencil b, and making a slot c of any suitable shape in the central fold of the leaves of such book, so that as the leaves are turned over they freely pass over the clip or holder, whereby such note book, memorandum book, pocket, or other book is rendered automatically self registering, all substantially in the manner hereinbefore described and shown. 2nd. As a new article of manufacture, an automatically self-registering note book, memorandum book, pocket, or other similar book, made substantially in the manner hereinbefore described and shown.

No. 29,928. Horse Shoe Nails and Caulks. (*Clou de fer à cheval et crampon.*)

Asmus Carstens, Honsburg, Prussia, 28th September, 1888; 5 years

Claim.—1st. Horse shoe nails and caulks with wedge-shaped or circular outlined ribs at the head parallel to the length of the nail, which when the nail is driven in, as when the shod animal goes on to hard substances, are spread out, so that the nails or caulks always have a firmer hold, substantially in the manner and for the purposes hereinbefore described. 2nd. Horse shoe nails and caulks with ribs at the head as claimed above, but modified by having the ribs oblique to the length of the nail, substantially as described. 3rd. The substitution for the ribs at the head of horse shoe nails and caulks, referred to in claims 1 and 2, of semiphere shape, conical or other shaped elevations c, substantially as described.

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

1206. J. MOSES, 2nd 5 years of No. 17,591, from the 5th day of September, 1888. Improvements on Waggons, 3rd September, 1888.

1207. C. H. COGGESHALL, (assignee), 2nd 5 years of No. 17,810, from the 3rd day of October, 1888. Improvements in Dumping Carts, 4th September, 1888.

1208. V R. POWELL, (assignee), 2nd 5 years of No. 17,603, from the 4th day of September, 1888. Improvements in Horse Tail Holders, 7th September, 1888.

1209. THE ROYAL ELECTRIC CO., (assignee), 2nd 5 years of No. 17,680, from the 15th day of September, 1888. Improvements on Flash Preventers for Electric Conductors, 7th September, 1888.

1210. THE ROYAL ELECTRIC CO., (assignee), 2nd 5 years of No. 17,661, from the 12th day of September, 1888. Improvements on Commutators for Dynamo Electric Machines, 7th September, 1888.

1211. THE ROYAL ELECTRIC CO., (assignee), 2nd 5 years of No. 17,758, from the 24th day of September, 1888. Improvements on Air Blast Attachments for Electric Machines, 7th September, 1888.

1212. THE ROYAL ELECTRIC CO., (assignee), 2nd 5 years of No. 17,662, from the 12th day of September, 1888. Improvements on Dynamo Electric Generators, 7th September, 1888.

1213 J. MATISON, 2nd and 3rd 5 years of No. 17,915, from the 17th day of October, 1888. Improvements on Machines for Securing Buttons to Material, 10th September, 1888.

1214. J. GORDON, 2nd 5 years of No. 17,642, from the 11th day of September, 1888. Improvements in Detachable Book Covers, 10th September, 1888.

1215. THE GUELPH CARRIAGE GOODS CO., (assignee), 2nd 5 years of No. 9,207, from the 24th day of September, 1888 Improvements in the Art and Appliances for Tempering Steel and other Materials, 10th September, 1888.

1216. R. S. WARING and J. B. HYDE, (assignee), 2nd and 3rd 5 years of No. 17,606, from the 10th day of September, 1888 Improvements on the Art or Process of Insulating Wires for Electric Uses, 10th September, 1888.

1217. R. S. WARING and J. B. HYDE, (assignee), 2nd and 3rd 5 years of No. 17,607, from the 10th day of September, 1888. Improvements on Insulating Material for Electric Uses, 10th September, 1888.

1218. O. R. COOKE, 2nd 5 years of No. 17,683, from the 15th day of September, 1888. Improvements in Sash Holders, 12th September, 1888.

1219. H. G. GLAZEBROOK, 2nd 5 years of No. 17,726, from the 22nd day of September, 1888. Improvements in Waggon Racks and Tops for Democrat Waggons, 13th September, 1888.

1220. L. FINLAY, 2nd and 3rd 5 years of No. 17,795, from the 2nd day of October, 1888. Improvements in Supplemental Trucks for Railway Cars, 15th September, 1888.

1221. J. E. BARIL, 2nd 5 years of No. 17,706, from the 21st day of September, 1888. Improvements on Butchers' Blocks, 18th September, 1888.

1222. M. N. FORNEY, 2nd and 3rd 5 years of No. 17,949, from the 24th day of October, 1888. Improvements on Locomotive Engines, 19th September, 1888.

1223. T. SAUNDERS and R. BAIN, 3rd 5 years of No. 9,198, from the 23rd day of September, 1888. Improvements on Safes, 19th September, 1888.

1224. J. O. WISNER, SON & CO., 2nd 5 years of No. 26,049 (reissue of No. 17,833), from the 22nd day of February, 1888 Improvements on Spring Hoes, 19th September, 1888.

1225. J. O. WISNER, W. SHELDON and E. L. GOOLD, 2nd 5 years of No. 17,963, from the 24th day of October, 1888. Improvements on Combined Seeding and Drilling Machines, 19th September, 1888.

1226. E. and O. W. Norton, 2nd 5 years of No. 18,212, from the 29th day of November, 1888. Improvements on Soldering Cans, 19th September, 1888.

1227. W. H. LYNCH, 2nd 5 years of No 17,749, from the 24th day of September, 1888. Improvements in Butter Tubs, 20th September, 1888.

1228. THE GOOLD BICYCLE CO., (assignee), 2nd 5 years of No. 17,814, from the 3rd day of October, 1888. Improvements in Nut and Pipe Wrenches, 21st September, 1888.

1229 G. T. SMITH, 2nd 5 years of No., 17,736, from the 24th day of September, 1888. Improvements on Middlings Purifiers, 22nd September, 1888.

1230. C. C. WORTHINGTON, 2nd 5 years of No. 17,727, from the 22nd day of September, 1888. Improvements on Direct Acting Duplex Engines, 22nd September, 1888.

1231. E. B. BENHAM, H. B. RICHARDSON and J. W. CURRIE, 2nd 5 years of No. 17,730, from the 24th day of September, 1888. Improvements in Hydraulic Motors, 24th September, 1888.

1232. R. M. ROBINSON, 2nd 5 years of No. 17,787, from the 1st day of October, 1888. Mower Cutting Bar Tilter, 26th September, 1888.

1233. T. BARLAND, 2nd 5 years of No. 17,782, from the 29th day of September, 1888. Improvements in Bridge Girders and Beams, 28th September, 1888.

1234. THE SINGER MANUFACTURING CO., (assignee), 2nd 5 years of No. 17,894, from the 16th day of October, 1888. Improvements on Sewing Machines, 28th September, 1888.

SEPTEMBER LIST OF TRADE MARKS.

Registered at the Department of Agriculture—Copyright and Trade Mark Branch.

3252. EDMUND SCHEUER, of Toronto, Ont. Metal spoons, forks, cutlery and watch cases, 1st September, 1888.

3253. JAMES M. CONROY, of Montreal, Que. Clothing of all kinds, 4th September, 1888.

3254. BLACKWOOD BROS., of Winnipeg, Man. Mineral and Ærated Waters, 6th September, 1888.

3255. BLACKWOOD BROS. of Winnipeg, Man. Mineral and Ærated Waters, 6th September, 1888.

3256. ROSS WYLLAUME HAYTER, of Toronto, Ont. Tea, 6th September, 1888.

3257. WILLIAM ROBERTSON, of Toronto, Ont. Mineral and Ærated Waters, 6th September, 1888.

3258. ANNIE MATILDA WOOD, of 13 Delahay Street, Westmi ster, London, England. Goods made of Rubber Compounds, 11th September, 1888.

3259. SAMUEL ALLSOPP & SONS, (Limited), of Burton-on-Trent, County of Stafford, England. Beers of all descriptions, 12th September, 1888.

3260. CANADA PAPER COMPANY, of Montreal, Que. Paper, 13th September, 1888.

3261. J. M. MACKENZIE AND COMPANY, of Wishaw, County of Lanark, North Britain. Whisky, 13th September, 1888.

3262. J. A. GIBBONS & CO., of Toronto, Ont. A medicine, 14th September, 1888.

3263. BETTS AND COMPANY, (Limited), of 1 Wharf Road, City Road, London, England. Capsules, 18th September, 1888.

3264. CHARLES HENRY BINKS, of Montreal, Que. General Trade Mark, 20th September, 1888.

3265. THE REGINARIS COMPANY, (Limited), of 18 and 19, Great St. Helens, London, England. Mineral and Ærated Waters, 20th September, 1888.

3266. BENJAMIN YOUNG, of Canoe Pass, Fraser River, B.C. Canned Salmon, 21st September, 1888.

3267. KINNEY TOBACCO COMPANY, New York, U.S.A. Manufactured tobacco and particularly smoking tobacco, 27th September, 1888.

3268. KINNEY TOBACCO COMPANY, New York, U.S.A. Manufactured tobacco and particularly smoking tobaccco, 27th September, 1888.

3269. J. M. OTTENHEIMER AND SÖHNE, of Stuttgart, Germany. Corsets, 27th September, 1888.

3270. SAMUEL CLELAND DAVIDSON, carrying on business under the name of DAVIDSON AND COMPANY, of Sirocco Works, Belfast, Ireland. General Trade Mark, 27th September, 1888.

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4428. EMMANUEL (God with us). Sacred Song. Words by Walter Stevens. Music by Paul Rodney The Anglo-Canadian Music Publishers' Association, (Lt.) London, England, 4th September, 1888.

4429. MANUEL D'HYGIENE, par Severin Lachapelle, M.D. Cadieux & Derome, Montreal, Que., 5 Septembre, 1888.

4430. THE DOMINION ILLUSTRATED. Vol. I. Number 9. Weekly Illustrated Newspaper. G. E. Desbarats & Son, Montreal, Que., 6th September, 1888.

4431. THE DOMINION ILLUSTRATED. Volume I. Number 10 Weekly Illustrated Newspaper. G. E Desbarats & Son, Montreal, Que., 6th September, 1888.

4432. ECKARDT'S IMPROVED RECORD AND LEDGER, for the Use of Funeral Directors. Albert J. H. Eckardt, Toronto, Ont., 6th September, 1888.

4433. BLACK BLOOD, by Geo. Manville Fenn (book). Wm. Bryce, Toronto, Ont., 7th September, 1888.

4434. LE, PAROISSIEN NOTÉ. Troisième Edition. J. A. Langlais, Quebec, 7 Septembre, 1888.

4435. TRAITÉ DES SUBSTITUTIONS, par M. Thevenot D'Essaule de Savigny, et annoté par M. Mathieu, Juge de la Cour Supérieure, à Montréal. Amedée Periard, Montreal, Que., 8 Septembre, 1888.

4436. SWEET VOWS WALTZ, on Melodies, by Miss Jessie Miller, by Otto Roeder. The Anglo-Canadian Music Publishers' Association (Limited), London, England, 10th September, 1888.

4437. INDEX TO THE CONSOLIDATED RULES OF PRACTICE OF THE SUPREME COURT OF JUDICATURE FOR ONTARIO. Wm. F. Summerhays, Toronto, Ont., 10th September, 1888.

4438. THE SNOWY BREASTED PEARL. An Ancient Irish Air. Words by Stephen Edward de Vere. Arranged by Joseph Robinson. The Anglo-Canadian Music Publishers' Association (Limited), London, England, 11th September, 1880.

4439. PLAN OF THE CITY OF TORONTO AND SUBURBS. Compiled and drawn by S. R. G. Penson. S. R. G. Penson, Toronto, Ont., 11th September, 1888.

4440. GEMS FROM CANADIAN AUTHORS. Wm. Bryce, Toronto, Ont., 13th September, 1888.

4441. LOVE'S PROVING. Song. Words by Fred. E. Weatherly. Music by Frederic N. Löhr. Sydney Ashdown, Toronto, Ont., 17th September, 1888.

4442. FOR YOU. Song. Words by Arthur Chapman. Music by Sydney Smith. Sydney Ashdown, Toronto, Ont., 17th September, 1888.

4443. THE POET'S SONG. Ballad. Words by Arthur Chapman. Music by Hope Temple. Sydney Ashdown, Toronto, Ont., 17th September, 1888.

4444. KILLARNEY. Song. Words by Edmund Falconer, Esq. Music by M. W. Balfe. Sydney Ashdown, Toronto, Ont., 17th September, 1888.

4445. A DREAM OF YORE. Song. Words by G. Clifton Bingham. Music by Henri Logé. Sydney Ashdown, Toronto, Ont., 17th September, 1888.

4446. NOUVEAU MANUEL DE CHANTS LITURGIQUES. Par l'Abbé C. Bourduas, Ptre. Maitre de Chapelle à la Cathédrale de Montréal. Eusebe Senecal & Fils, Montreal, Que., 17 Septembre, 1888.

4447. DENTAL REGISTER AND LEDGER. David Tertius Baxter, Hamilton, Ont., 17th September, 1888.

4448. OUTLINES OF ENGLISH HISTORY, for the use of Schools, by a Catholic Teacher (Second Edition Revised). Dominion Catholic Series. James A. Sadlier, Montreal, Que., 18th September, 1888.

4449. THE GIRL IN THE BROWN HABIT, by Mrs. Edward Kennard (book). The National Publishing Company, Toronto, Ont., 18th September, 1888.

4450. LOGIE TOWN, by Sarah Tytler (book). The National Publishing Company, Toronto, Ont., 20th September, 1888.

4451. THE BREADMAKER'S BOOK OF COOKING LESSONS, compiled from original and selected formulæ. Thos. H. Churchhill, Toronto, Ont., 20th September, 1888.

4452. MARJORIE. Waltz, by P. Bucalossi. The Anglo-Canadian Music Publisher's Association (Limited), London, England, 21st September, 1888.

4453. KILLED IN THE OPEN, by Mrs. Edward Kennard (book). The National Publishing Company, Toronto, Ont., 22nd September, 1888.

4454. THADY AND I (I was a Simple Country Girl), by Richard Harvey. Sydney Ashdown, Toronto, Ont., 22nd September, 1888.

4455. THE DREAM, by Emile Zola (book). Wm. Bryce, Toronto, Ont., 24th September, 1888.

4456. THE CREATOR'S DECIMAL SYSTEM, by W. S. Nixon (pamphlet). Wm. Stinson Nixon, Hamilton, Ont., 24th September, 1888.

4457. HISTORY OF CANADA, by Wm. Kingsford, Vol. II. (1679-1725). Wm. Kingsford, Ottawa, 25th September, 1888.

4458. MEMORANDUM OF AGREEMENT. Alfred Boydell Lambe, Toronto, Ont., 27th September, 1888.

4459. THE DEATH SHIP, by W. Clark Russell (book). The National Publishing Company, Toronto, Ont., 28th September, 1888.

4460. THE DREAM Waltz, by May Ostlere. The Anglo-Canadian Music Publishers' Association (Limited), London, England, 29th September, 1888.

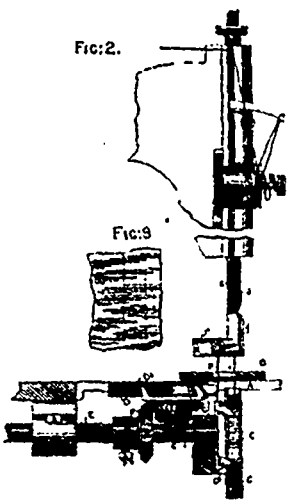
4461. THE SALUTE. Polka March, by Otto Roeder. The Anglo-Canadian Music Publishers' Association (Limited), London, England, 29th September, 1888.

THE

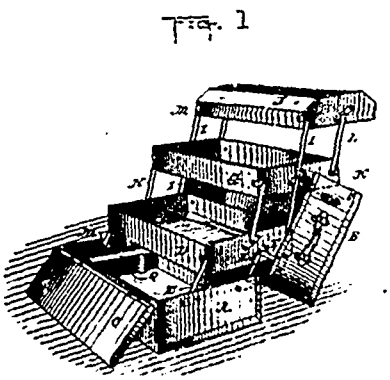
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

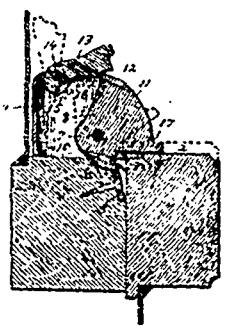
Vol. XVI. SEPTEMBER, 1888. No. 9.



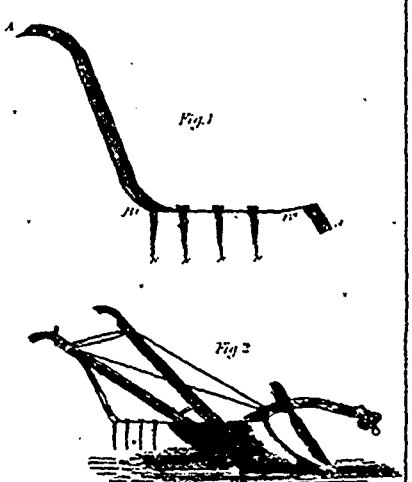
29784 Bean's Sewing Machine.



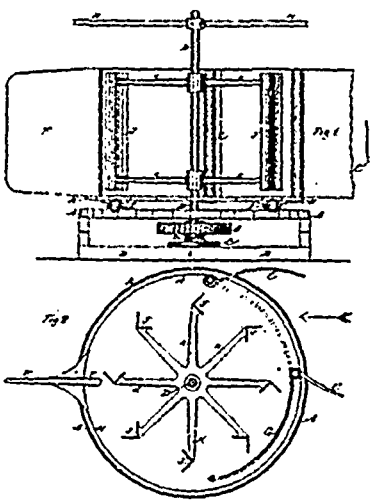
29785 Zimmerman's Trunk.



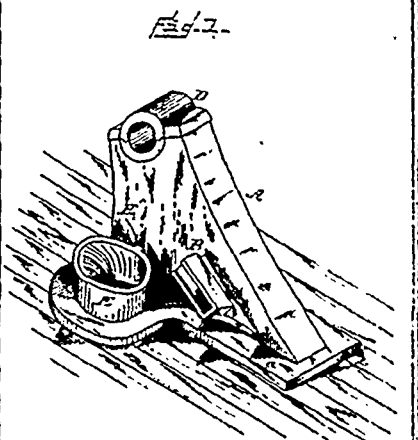
29786 Jackson's Sash Lock.



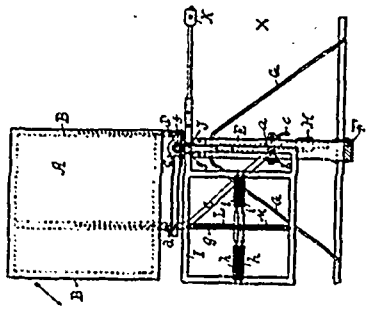
29787 Smith's Harrow Attachment for Ploughs.



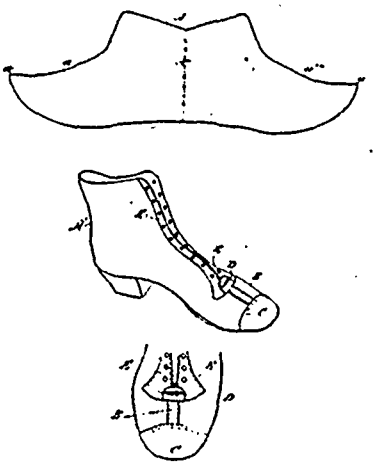
29788 Klovell's Wind Mill.



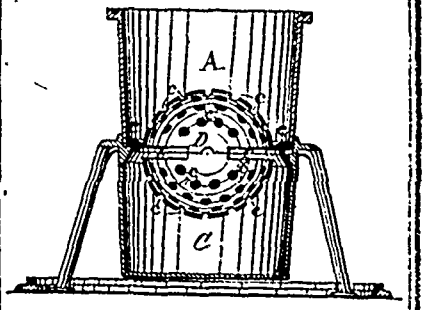
29789 Manton's Dock Pipe.



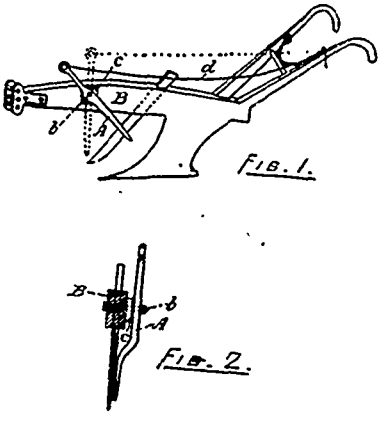
29790 Halston's Target.



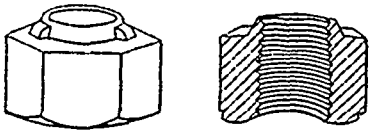
29791 Lafleur's Boot and Shoe.



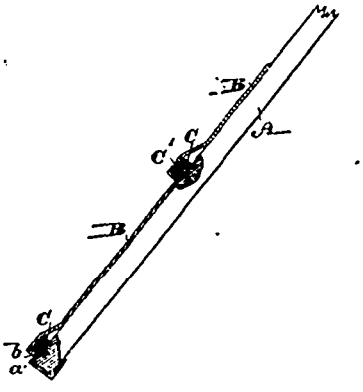
29792 Howard's Furnace Grate.



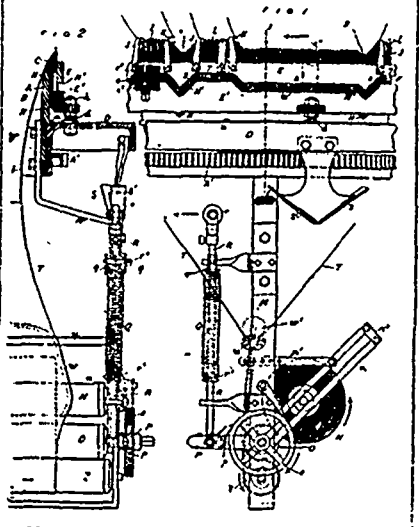
29793 McAnealey's Plough.



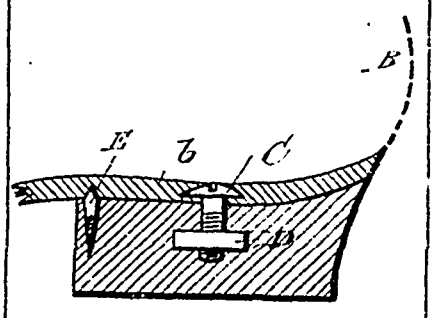
29794 Bayliss' Means for Preventing Nuts and Bolts from Working Loose.



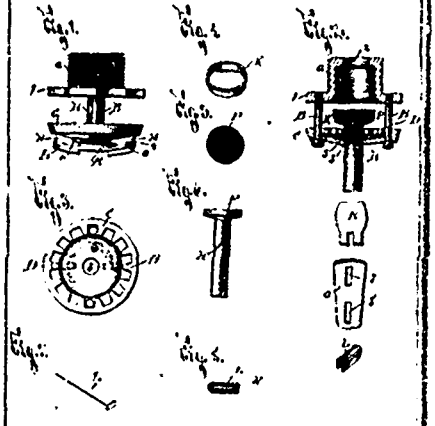
29795 Fay's Roofing.



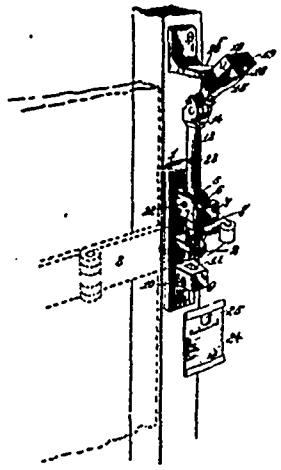
29796 Kettle & Adgate's Circular Knitting Machine.



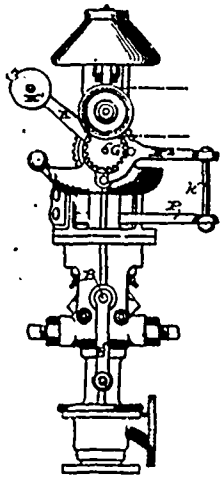
29797 Gilmour's Boot and Shoe.



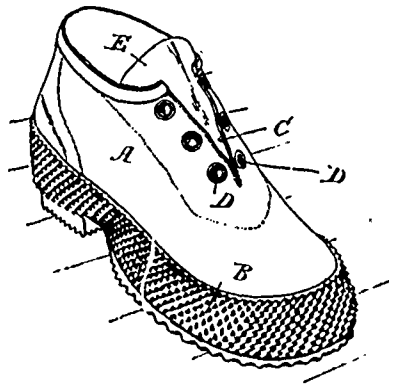
29798 Mackoy's Fire Extinguisher



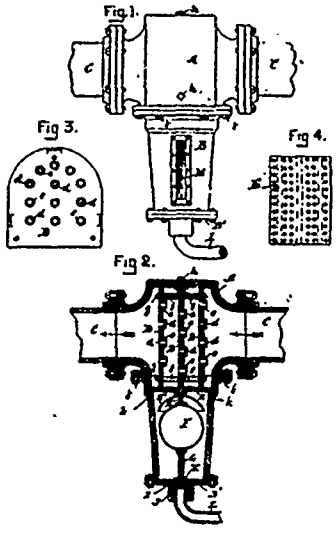
29799 Sully's Seal Lock.



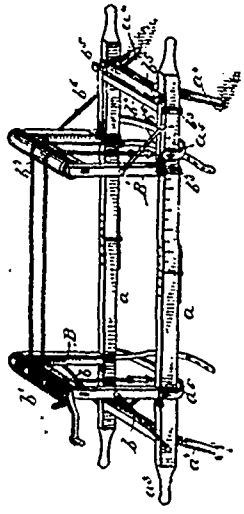
29800 Norberg's Steam Engine.



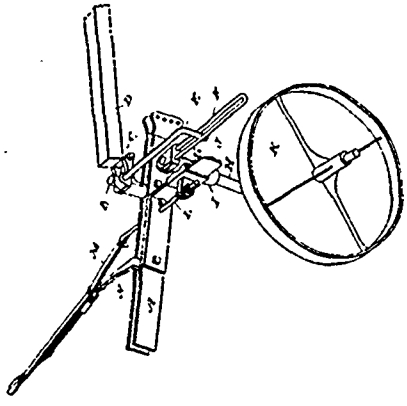
29801 Mcgill's Rubber Boot and Shoe.



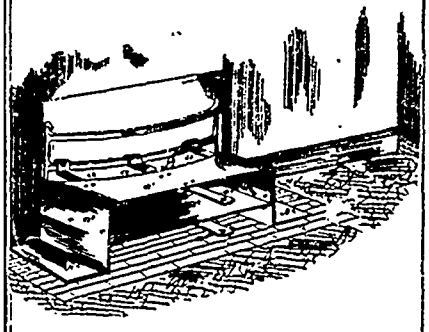
29802 Lowden's Separator.



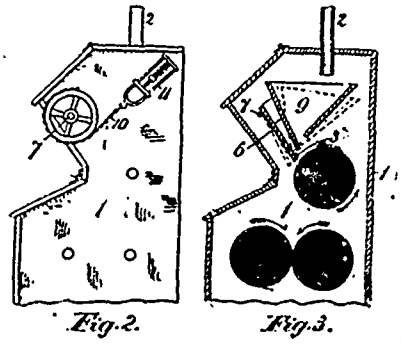
29803 Lewellen's Coffin Depositor.



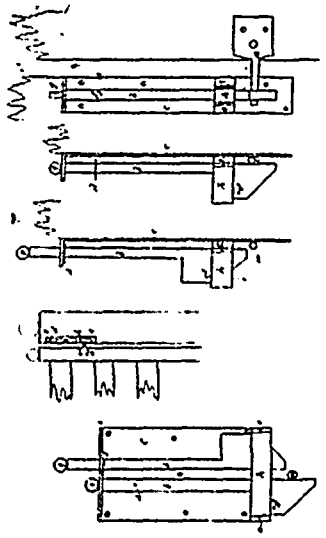
29804 Thom & Bailey's Sulky Plough.



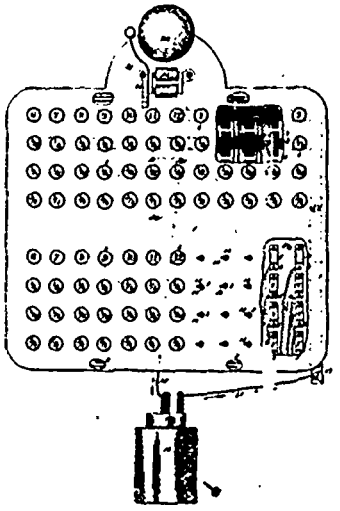
29805 Shearer's Sad Iron and Plate Heater.



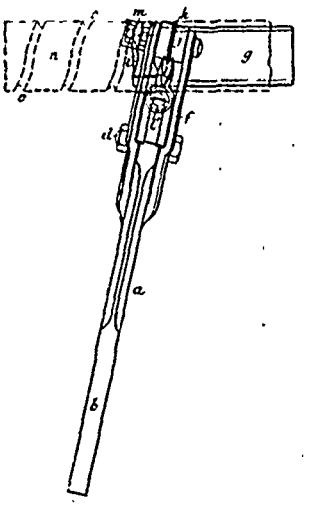
29806 Purdy's Roller Mill Feed Hopper.



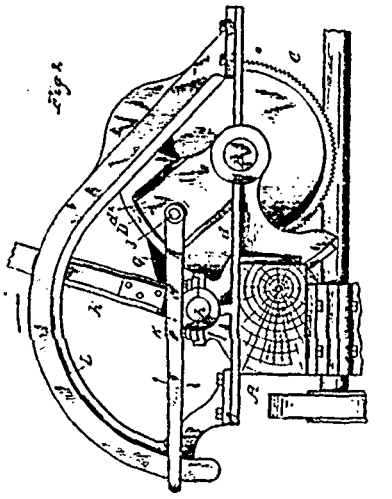
29807 Bacon's Gate Latch.



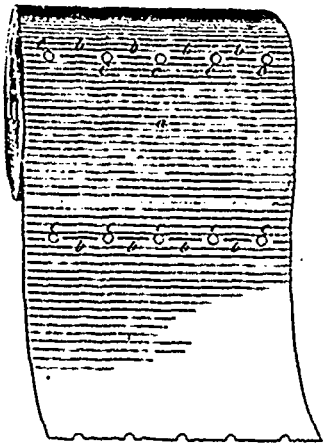
29808 Cutting's Electric Call.



29809 Cutlan's Tool for Spiral Turning.

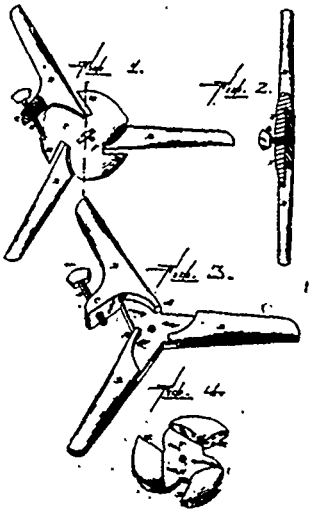


29810 Prescott's Saw Mill Set Works

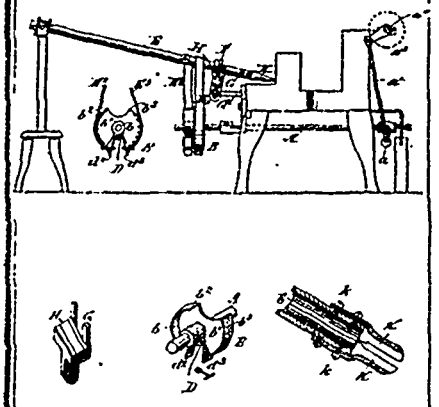


29811 Wheeler's Toilet and Wrapping Paper

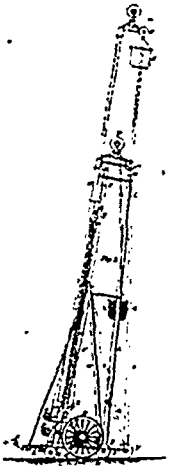
29812 Collard's Roll for Iron Rolling Mills.



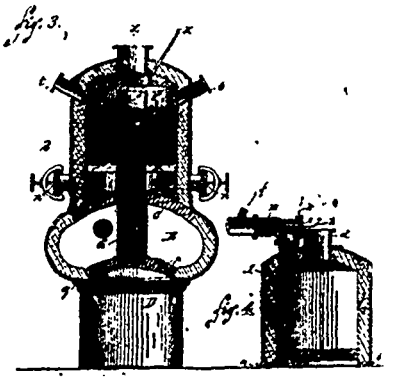
29813 Wintrode's Wire Twisting Wrench.



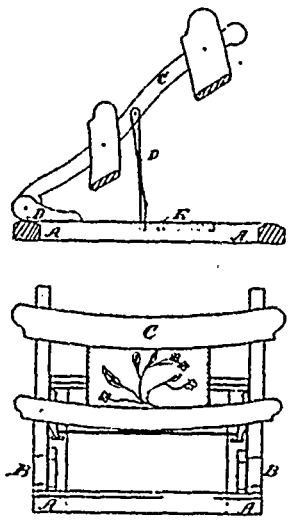
29814 Trudel's Nail Plate Feeding Machine.



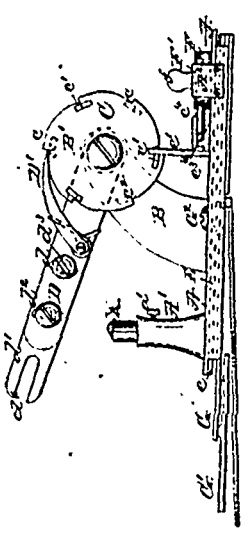
29815 Davison's Fire Ladder and Fire Escape.



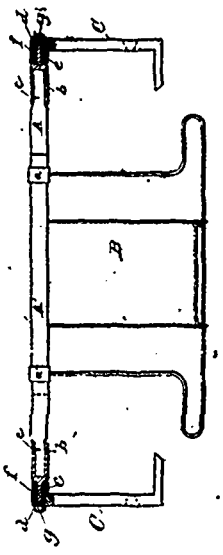
29816 Dickson's Apparatus for the Production of Gas, etc.



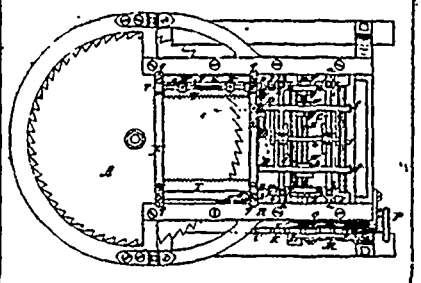
29817 Allen's Bed Attachment.



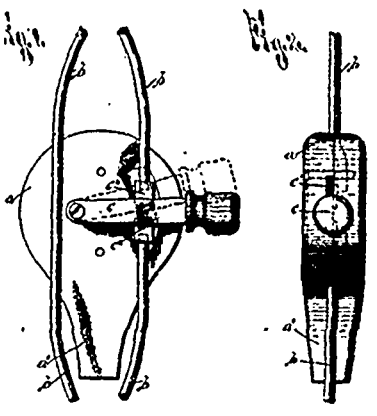
29818 Williams' Button Hole Attachment for Sewing Machines.



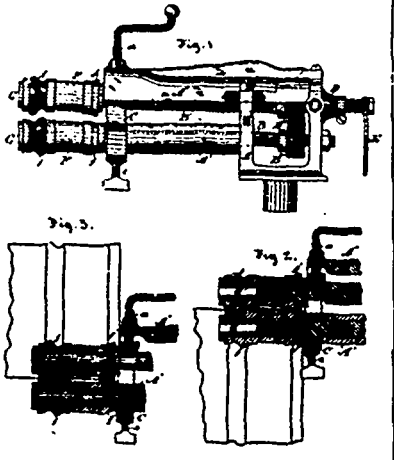
29819 Jones' Adjustable Pillow Sham Holder.



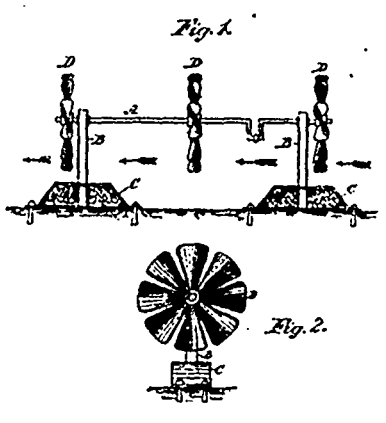
29820 Drake's Shingle Cutting Machine.



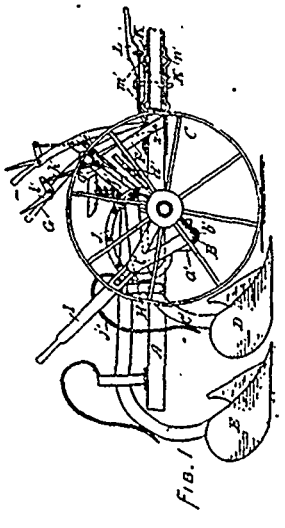
29822 Bergman's Electric Switch.



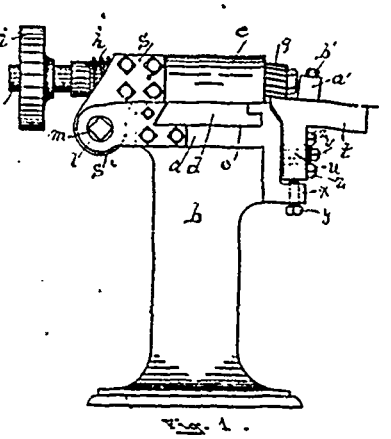
29823 House's Stove Pipe Beading Machine.



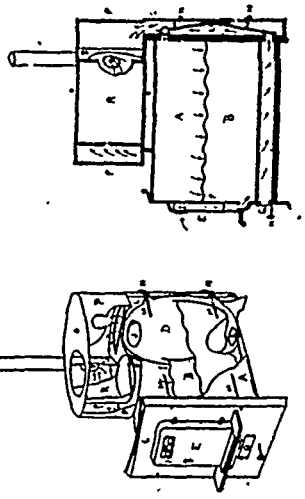
29824 McDonald's Submerged Current Motor.



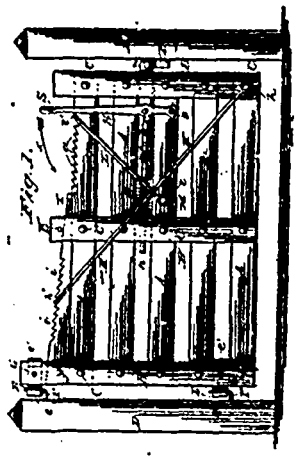
29825 Boulay's Sulky Plough.



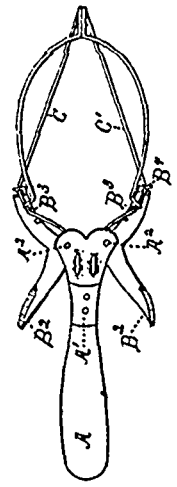
29826 Gregg's Milling Machine.



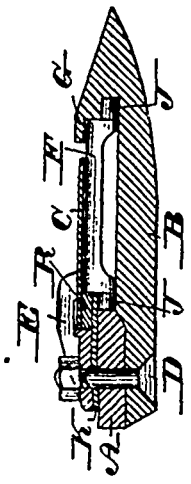
29827 Harland's Hot Air Furnace.



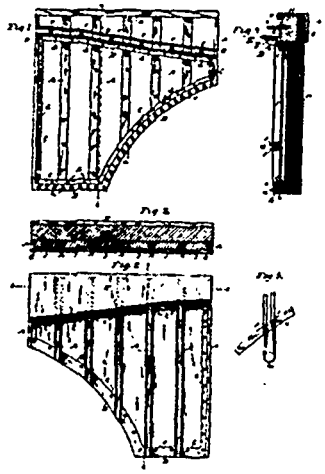
29829 Hatcher's Gate.



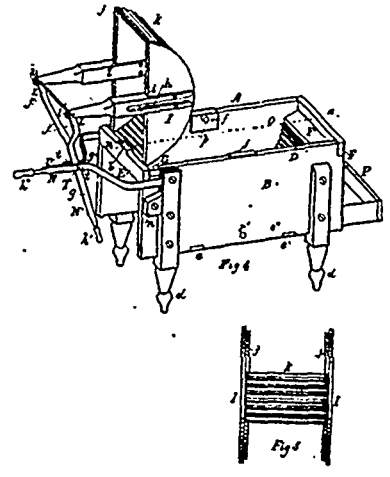
29830 Pomeroy's Pie Plate Lifter.



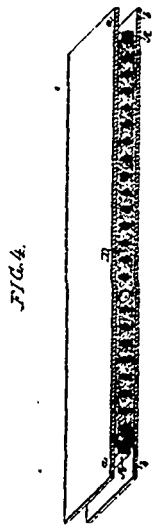
29831 Heydrick's Mowing and Reaping Machine.



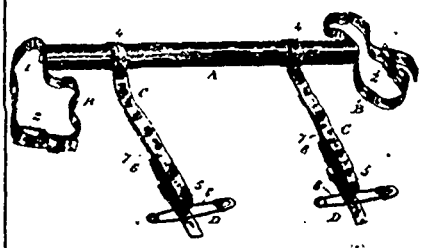
29832 McDonald's Frame for Upright Pianos.



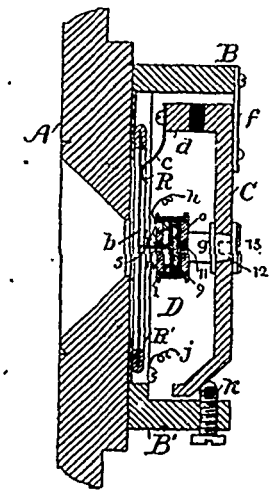
29833 Hornby & Lent's Washing Machine.



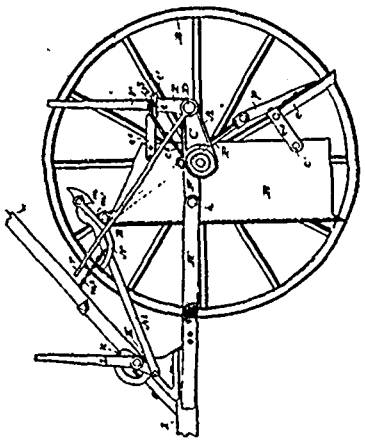
29834 Morris & Salom's Method of Filling Secondary Battery Plates.



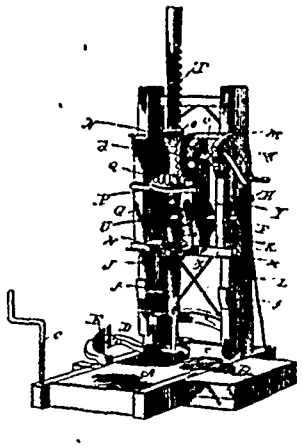
29835 Murray's Holder for Bed Covers.



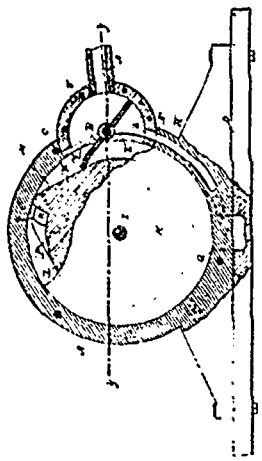
29836 Brown's Telephone Transmitter.



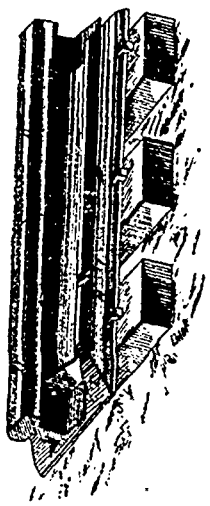
29837 Rathbun's Wheeled Scraper.



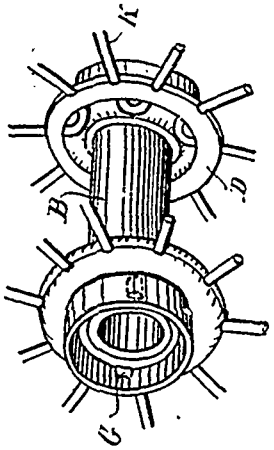
29838 Stanley's Post Hole Digger



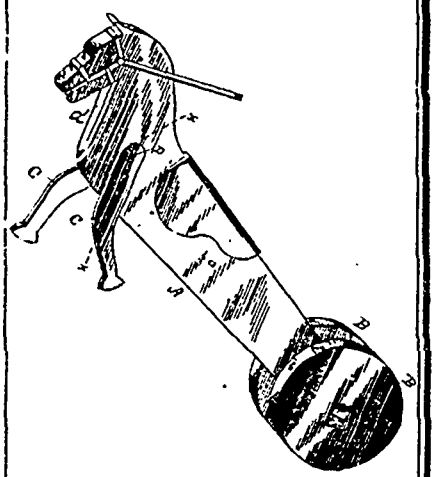
29839 Robertson's Rotary Engine



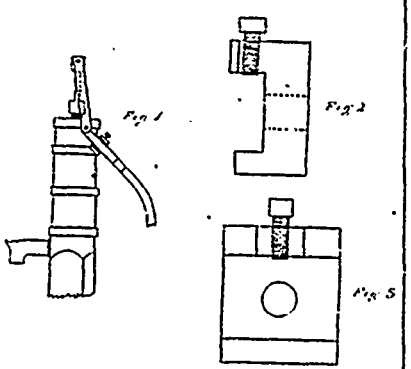
29840 Moody's Railroad Rail Joint.



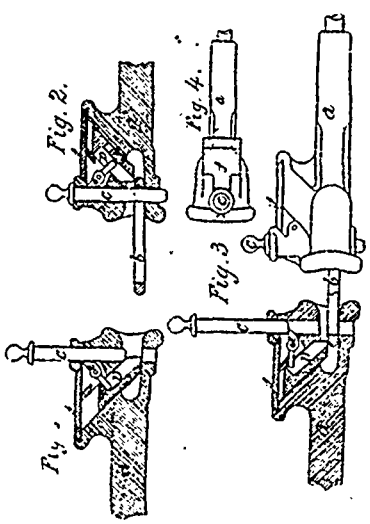
29841 Sharbonneau's Metal Wheel.



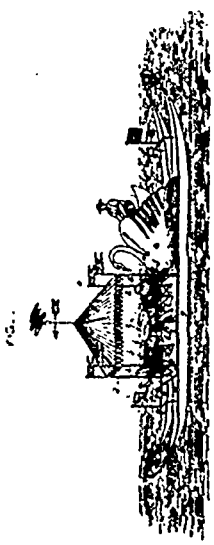
29842 Rooker's Toy.



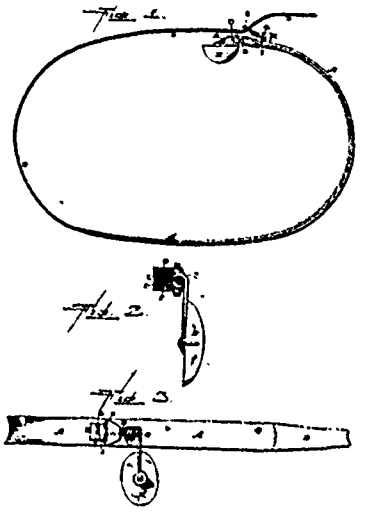
29843 Plews' Pump Handle



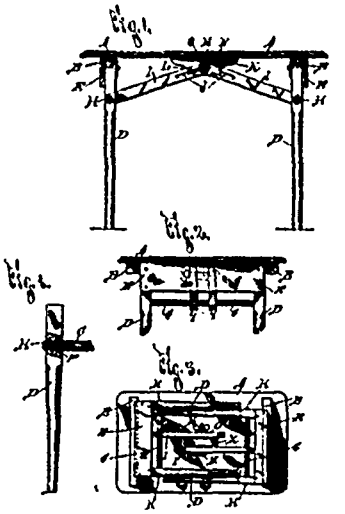
29844 Paterson's Car Coupling



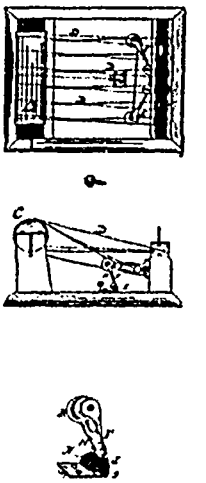
29845 Dolliver's Water Velocipede.



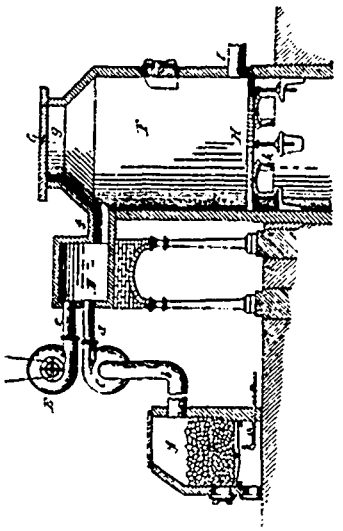
29846 Robinson's Truss.



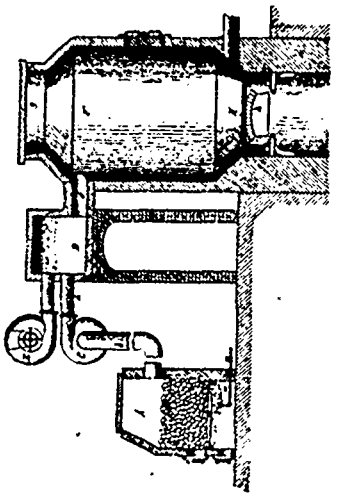
29847 Bon's Folding Table.



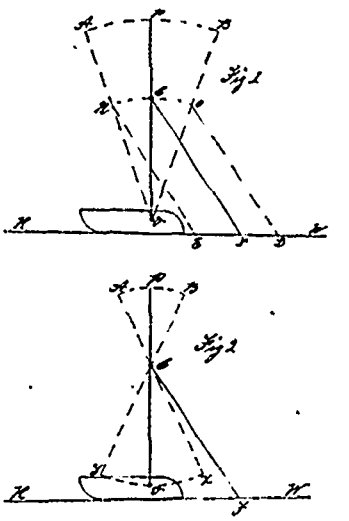
29849 Jones' Mode of taking up the Slack in, and Equalizing the Tension of the Band, etc.



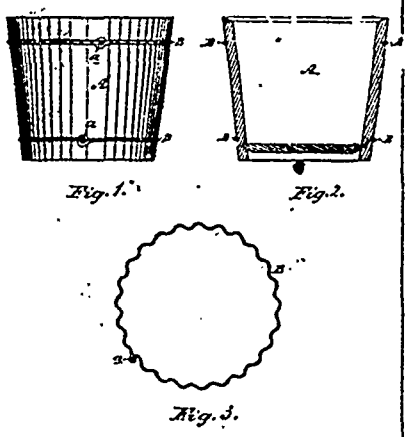
29850 Kayser's Process of Making Alkaline Silicates.



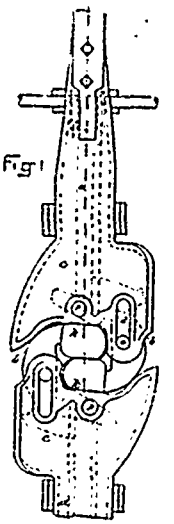
29851 Kayser's Process of Making Alkaline Silicates and Carbonates.



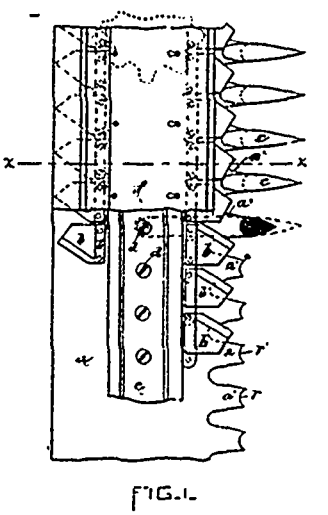
29852 Mather's Apparatus for Propelling Vehicles.



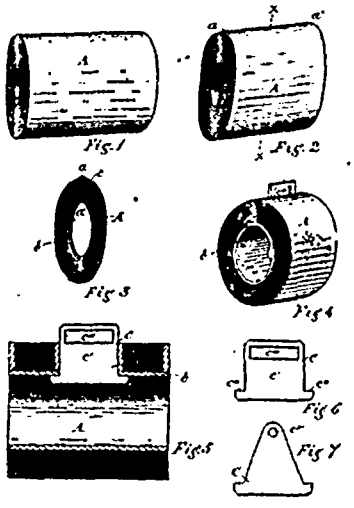
29853 Millon's Wooden Pail, Tub, etc.



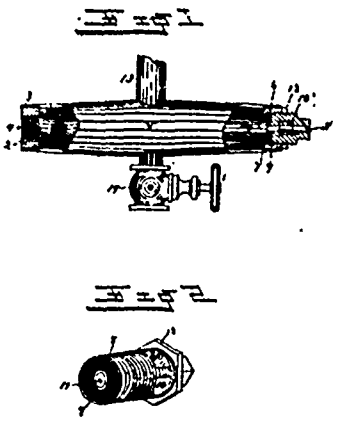
29854 Hix's Car Coupler.



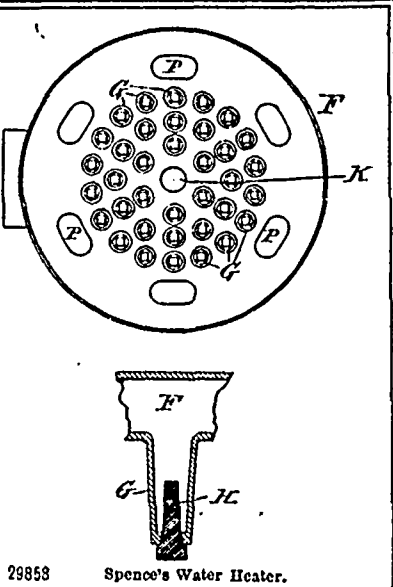
29855 Brown's Mowing Machine.



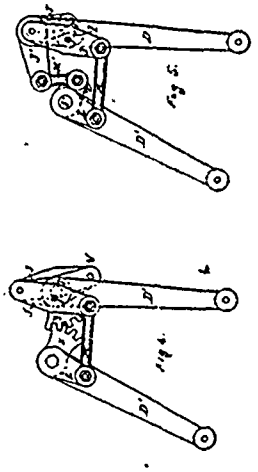
29856 Wheeler's Wrapping or Toilet Paper Roll.



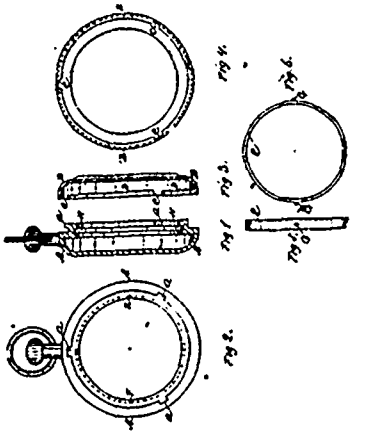
29857 Botsford's Steam Trap.



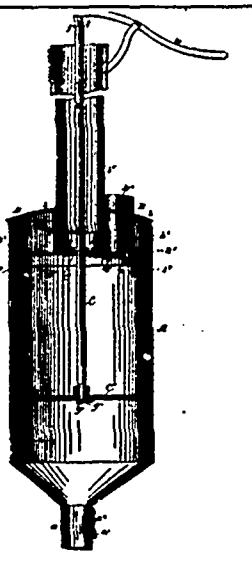
29858 Spence's Water Heater.



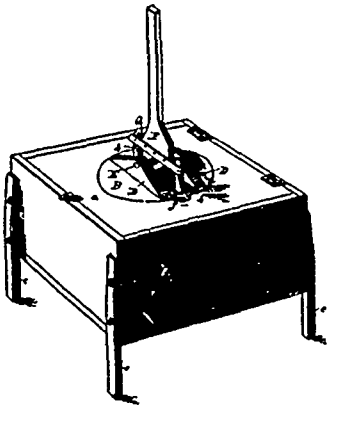
29859 Gaskill's Duplex Engine.



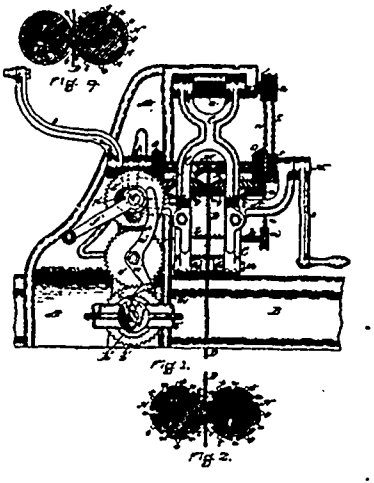
29860 Russell's Watch Case.



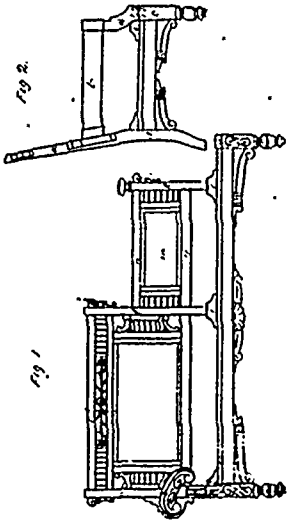
29861 Wells' Pump.



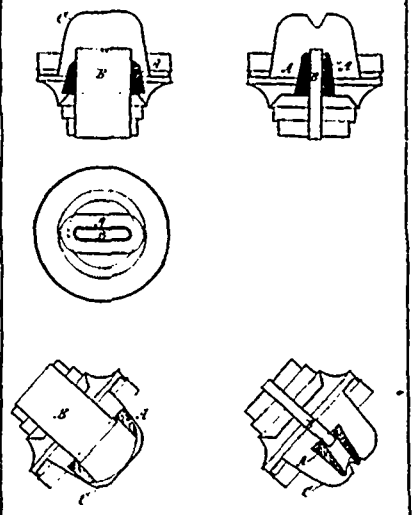
29862 Shepherd's Washing Machine.



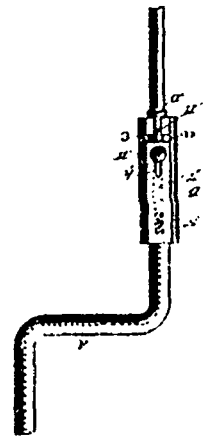
29863 Higley's Machine for Sawing and Drilling Railway Rails.



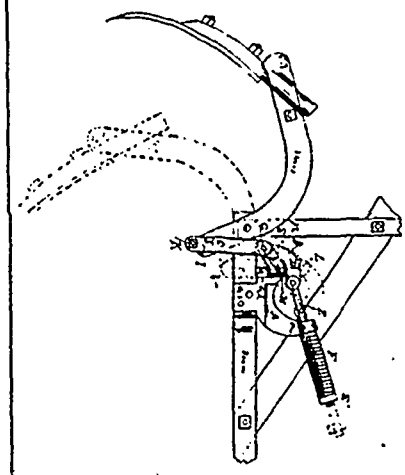
29864 Hibner & Doolittle's Manufacture of Sofas or Lounges.



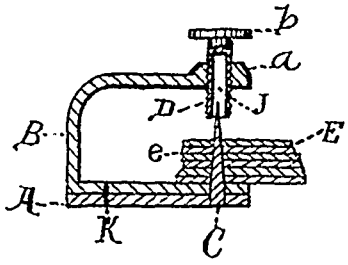
29865 Dehany's Extinguishing Lamp.



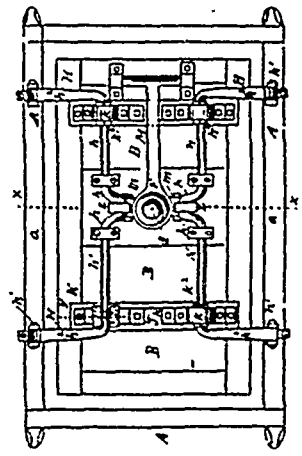
29866 Gravin & Cromer's Bit Brace.



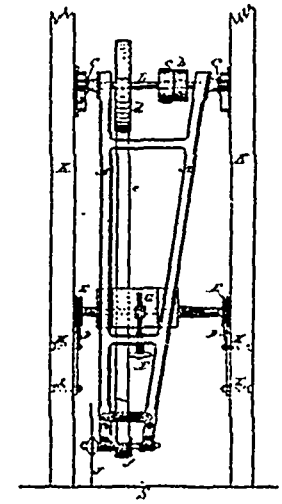
29867 Hartman's Spring Hoe Attachment for Cultivators, Seed Drills, etc.



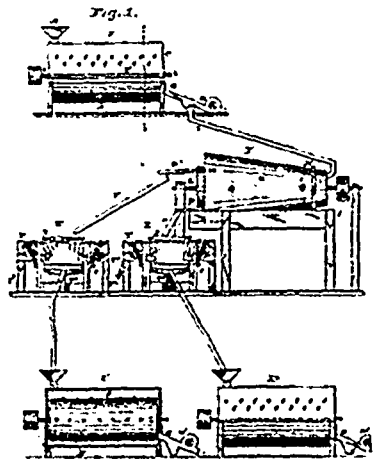
29868 Vedder's Chamois-Holder.



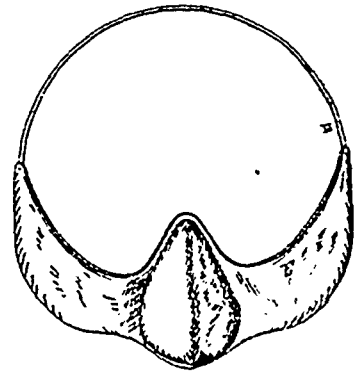
29869 Swan's Vehicle Spring.



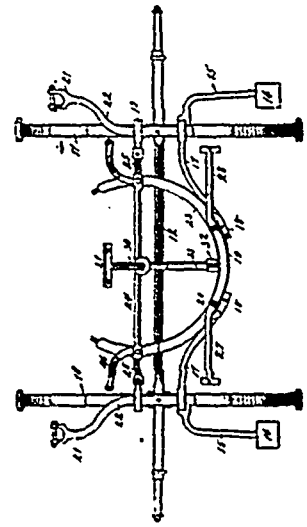
29870 Martin's Swing Saw.



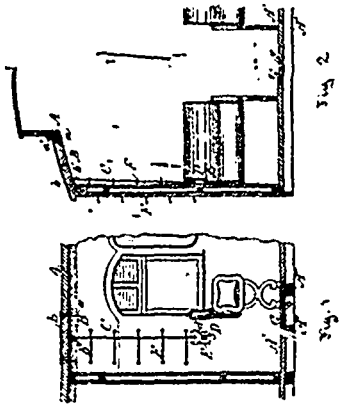
29871 Meikersman's Process of Hulling, Cleaning and Separating Grain



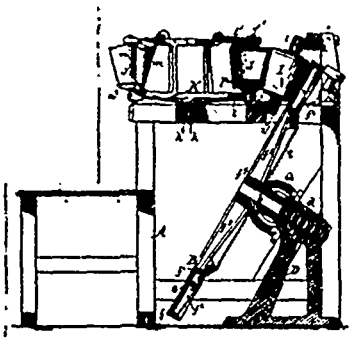
29872 Sentman's Nose Warmer or Protector.



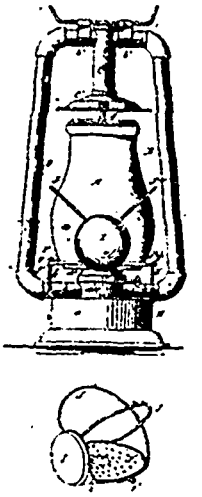
29873 Bock's Running Gear for Vehicles.



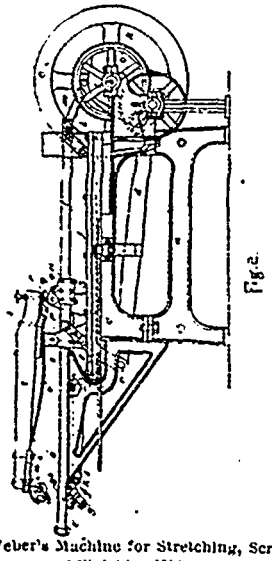
29874 Gilfillan's Safety Car.



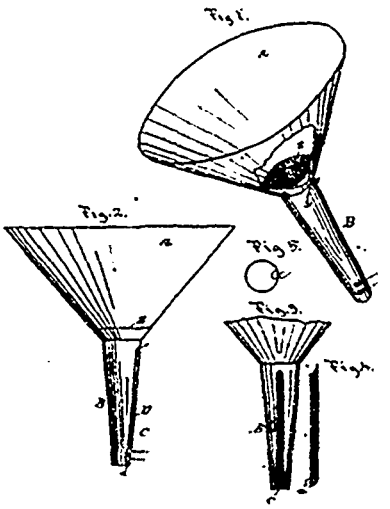
29875 Grinnell's Machine for forming Paper Vessels.



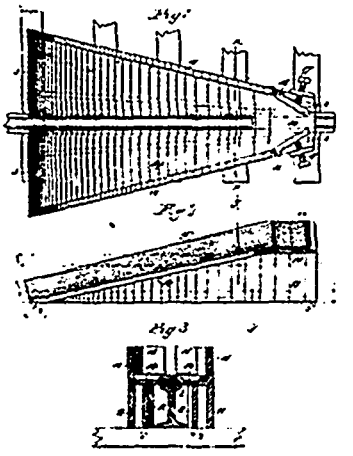
29876 Deitz's Tubular Lantern.



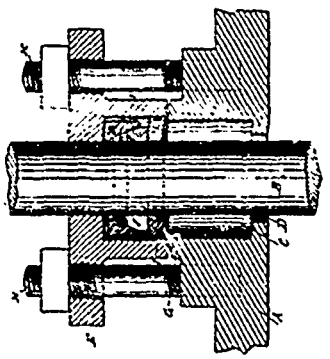
29877 Weber's Machine for Stretching, Scraping and Finishing Hides or Skins.



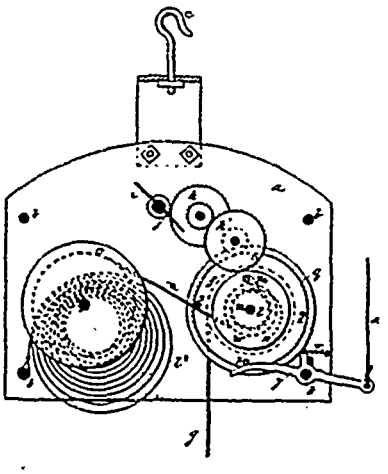
29878 Xander & Thomas' Bottle Funnel.



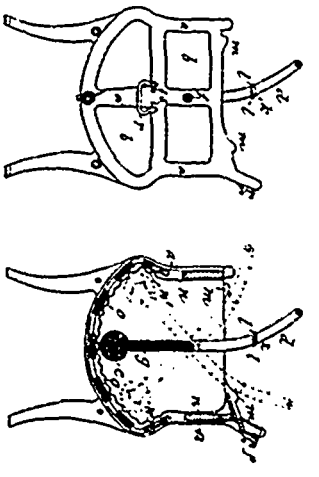
29879 Holliday's Car Replacer and Portable Switch.



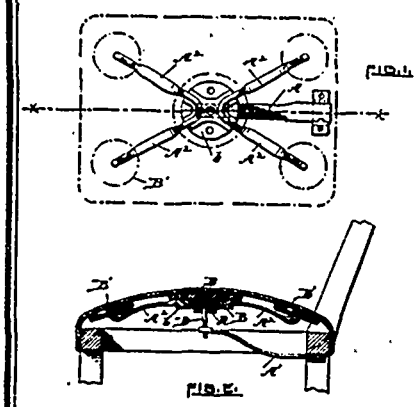
29880 Medrick's Stuffing Box for Steam Cylinders, etc.



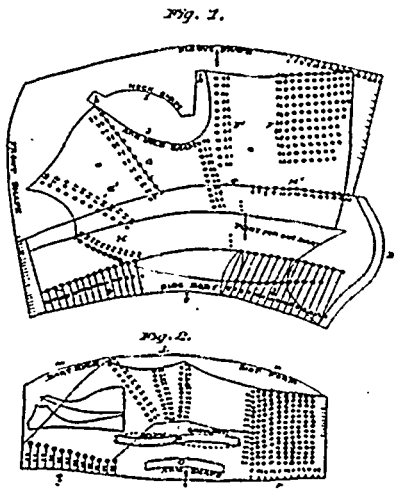
29881 Washburne's Fire Escape and Lowering Apparatus.



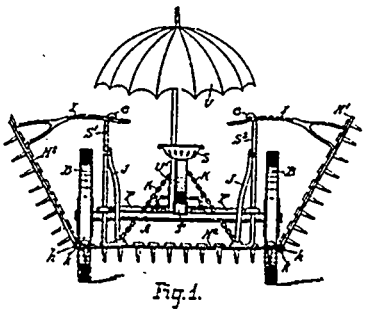
29882 Glinsman's Washing Machine.



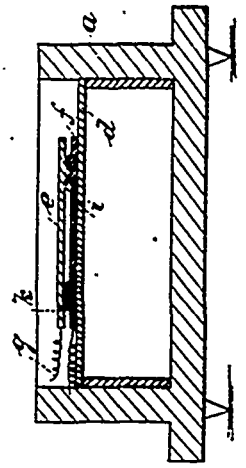
29883 Rippon's Seat or Couch Spring.



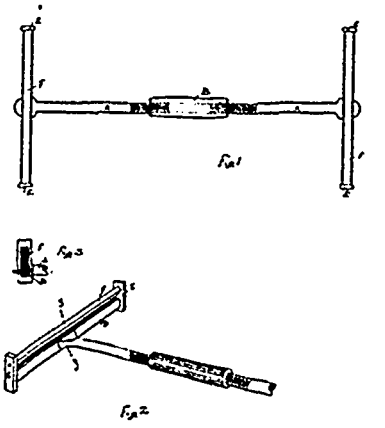
29884 Hawkins' Dress Cutting System.



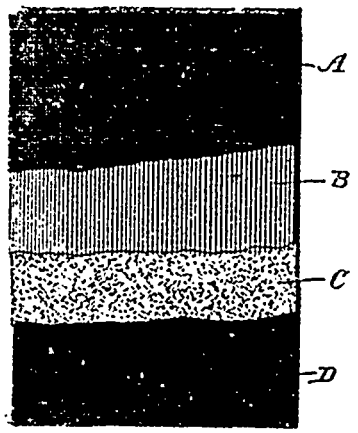
29885 Howitt's Sulky Harrow.



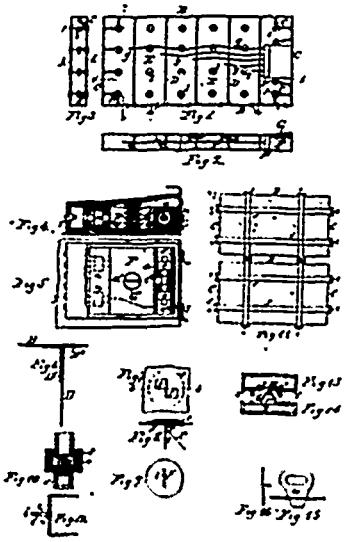
29886 Behr's Telephone Transmitter.



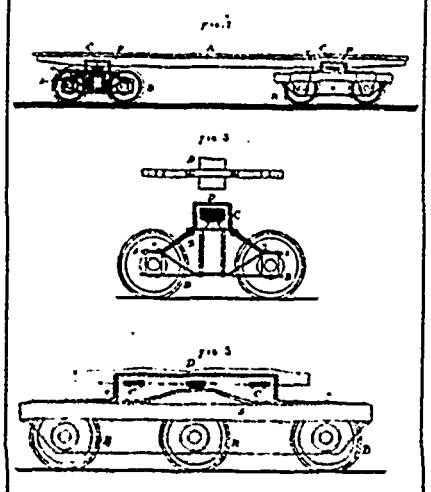
29887 Hutchinson's Trousers Stretcher.



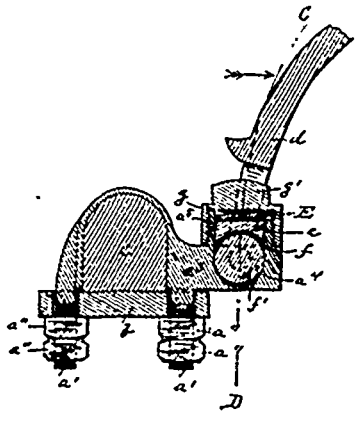
29888 Moseley's Foundations for Cards



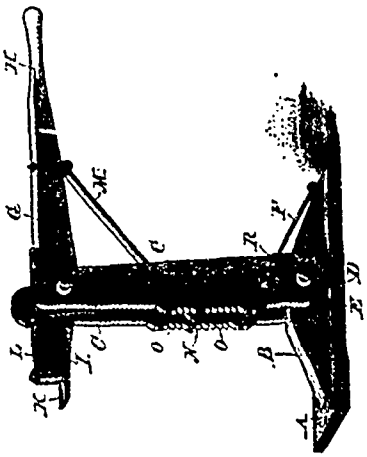
29889 Hargin's Air Mattress.



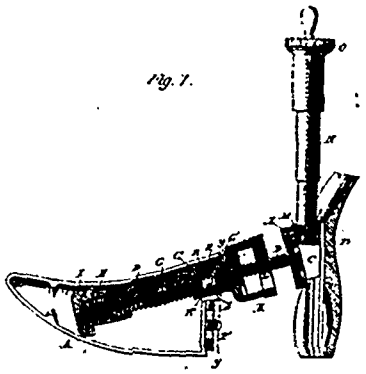
29890 Rainnie's Safety Appliance for Car Trucks.



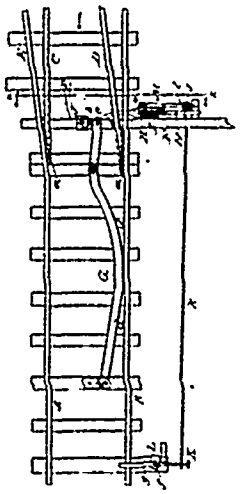
29891 Murray's Thill Coupling.



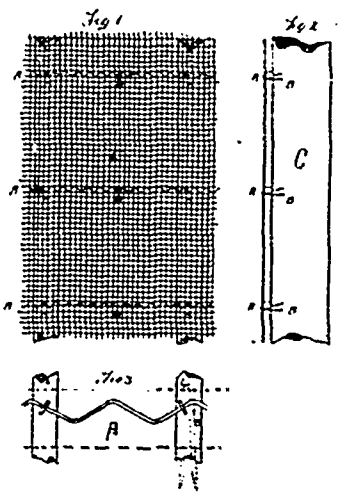
29892 Bodford's Waggon Jack.



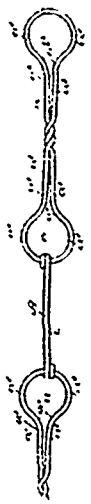
29893 Donovan's Boot or Shoe Stretcher



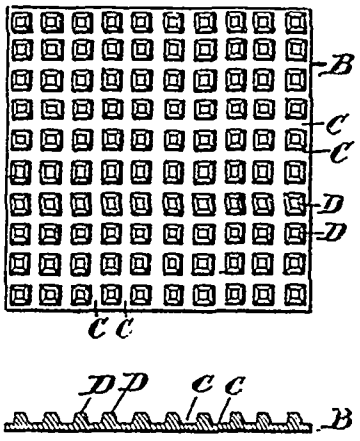
29894 Suffern's Railway Switch.



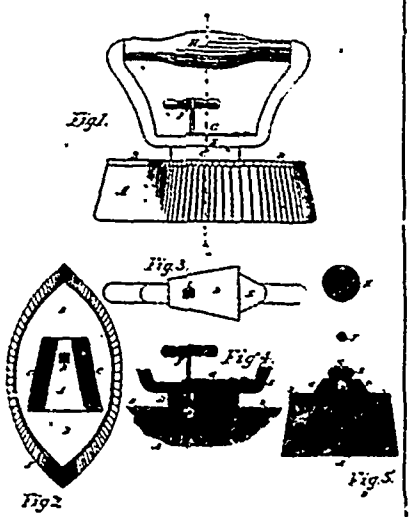
29895 Maw's Fire Proof Lathing.



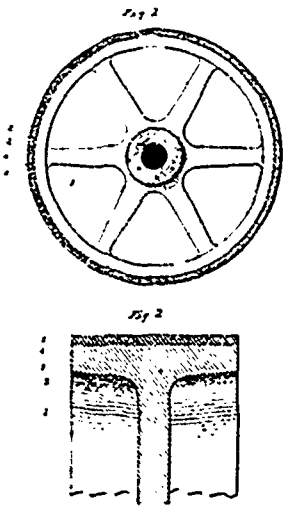
29896 Percival's Clothes Line.



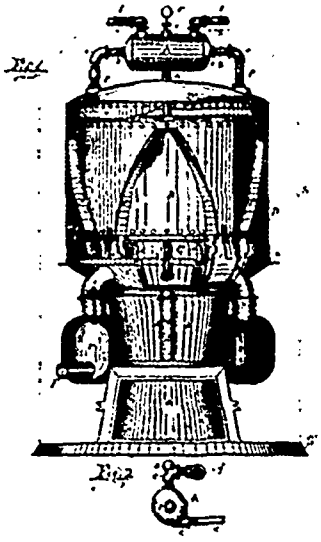
29897 Powell's Stove and Range Oven.



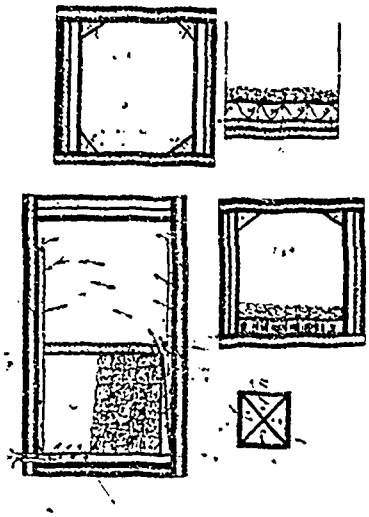
29898 Arlidge's Smoothing and Polishing Iron



29899 Fisher & Gallio's Mode of Covering Pulleys



29900 Pease's Steam and Hot Air Heater



29301 Macdougall's Refrigerator.

Fig. 1.

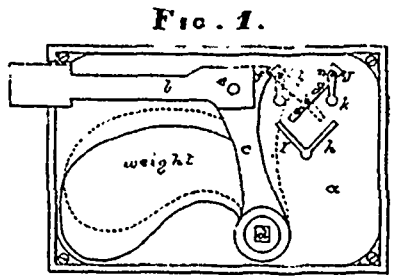
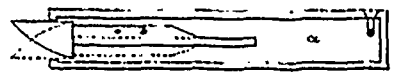
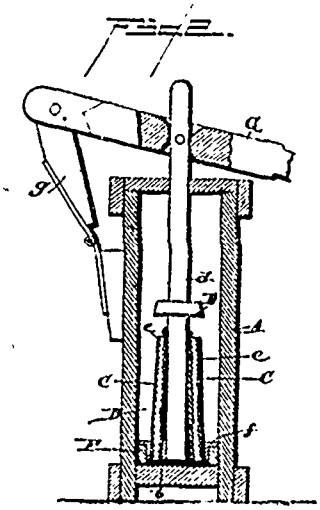


Fig. 2.



29302 Tye's Gravity Lock.



29303 Benjamin's Churn.

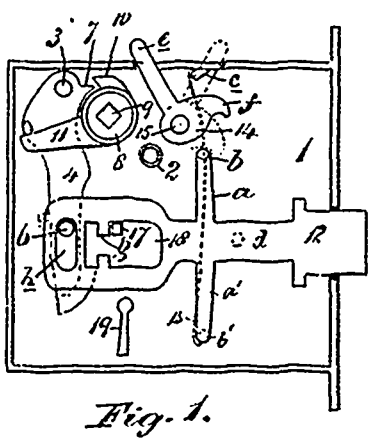
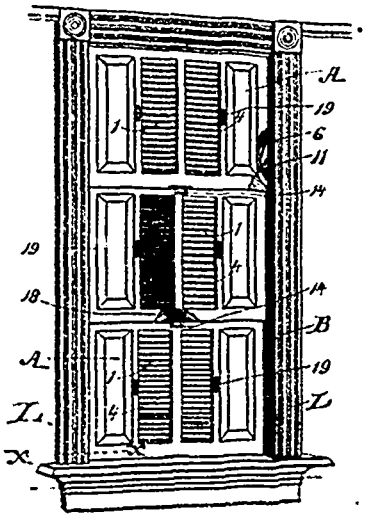
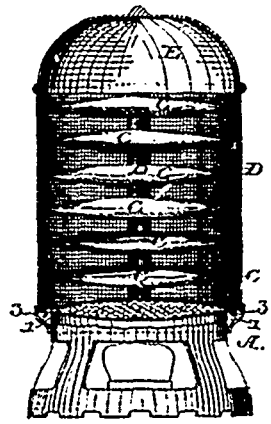


Fig. 1.

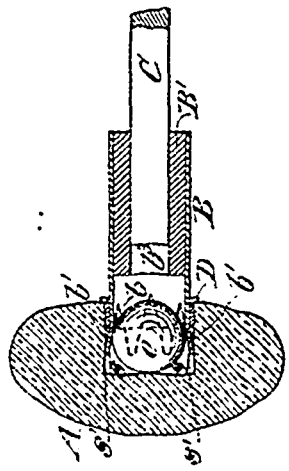
29304 Austin's Latch and Lock.



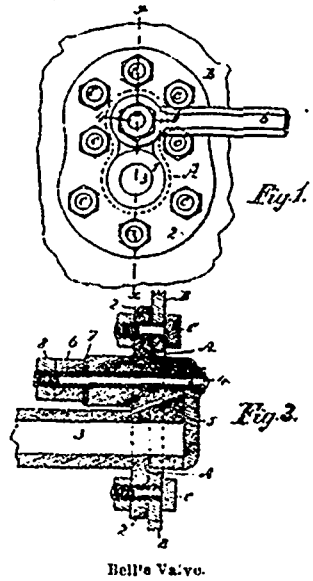
29305 Willer's Window Blind.



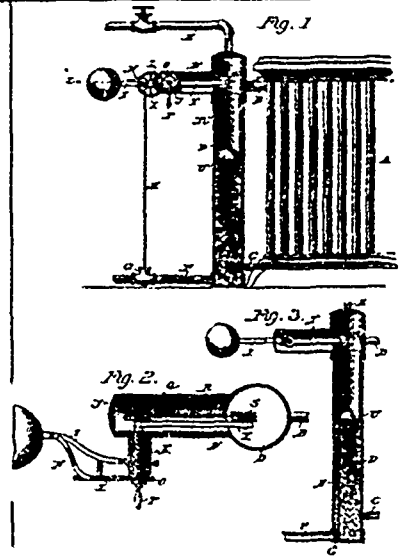
29306 Ferguson's Steam Generator and Radiator.



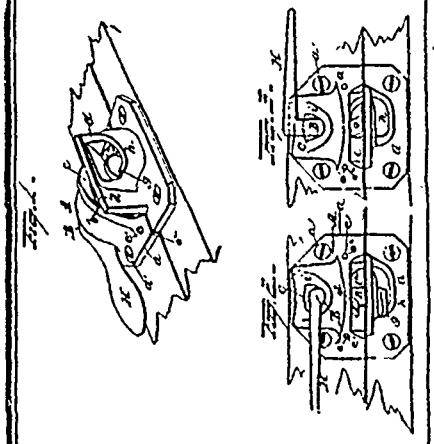
29307 Atwater's Door Knob and Shank.



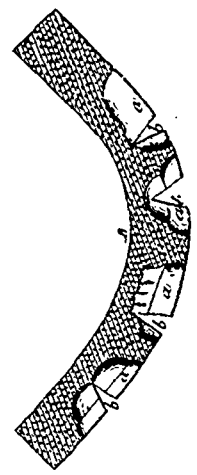
29308 Bell's Valve.



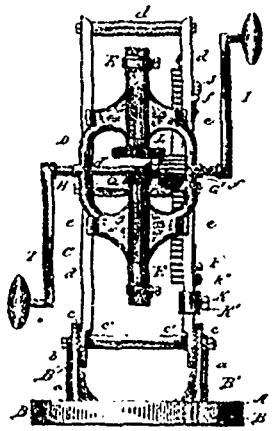
29309 Britt's Radiator Regulator.



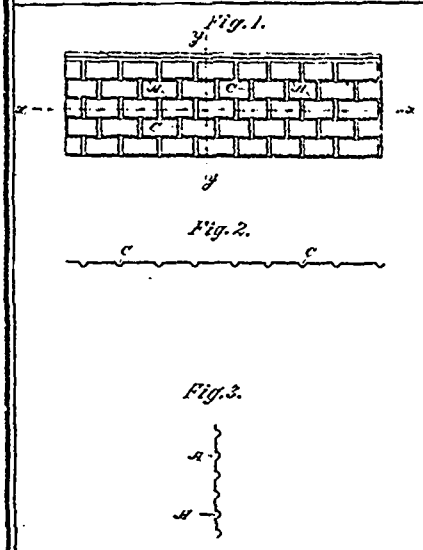
29910 Cooke's Window Fastener or Button.



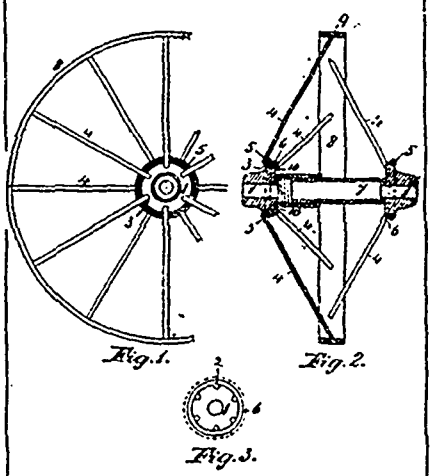
29911 Coleman's Mould for Confectionery.



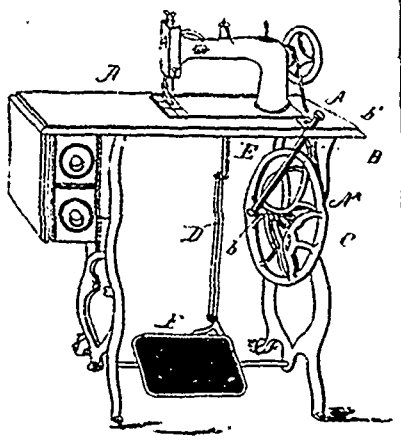
29912 Cloyd's Boring Machine.



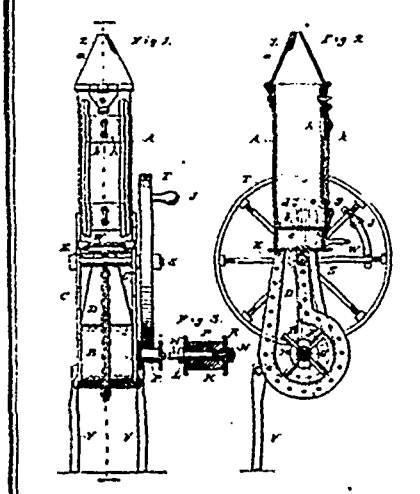
29913 Sagendorph's Metallic Siding for Buildings.



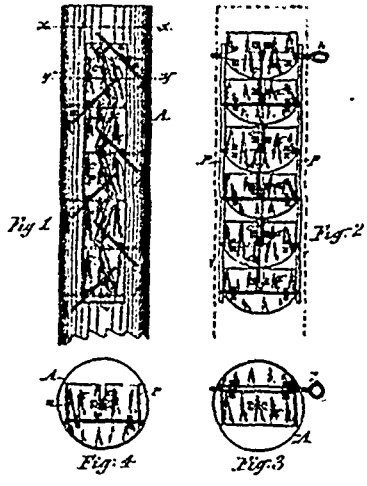
29914 Howell's Vehicle Wheel.



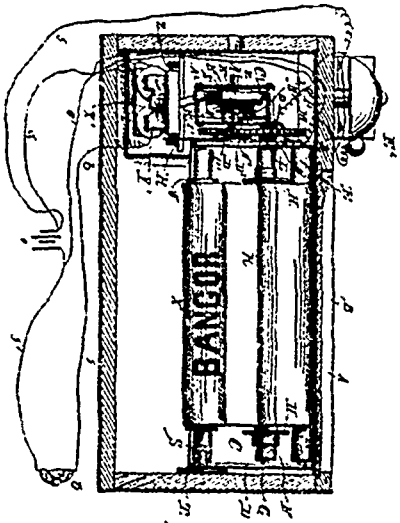
29915 Briggs' Motor for Sewing Machines



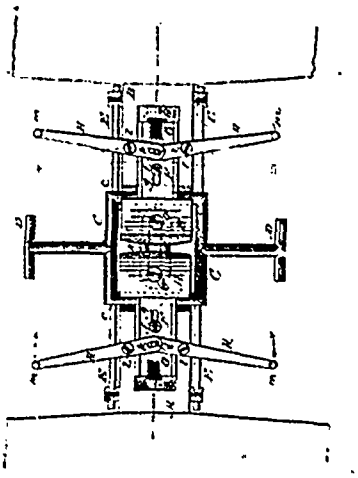
29916 Bolin's Smoking Machine.



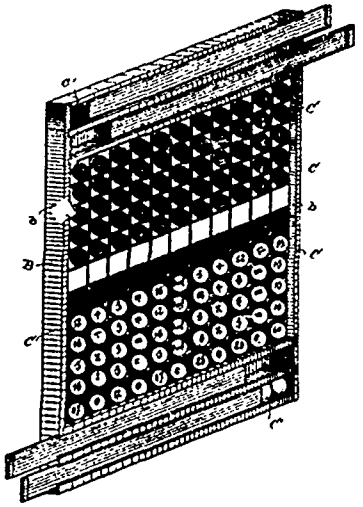
29917 Fenner's Stove Pipe Damper



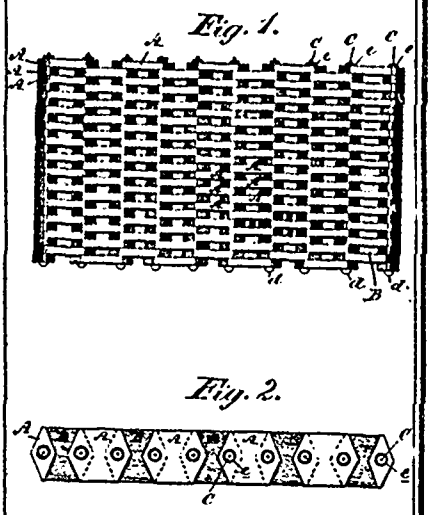
29918 Kirwan's Electric Railway Station Indicator.



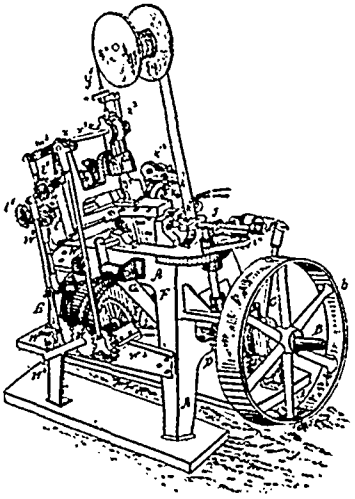
29919 Sommerfold's Car Coupling



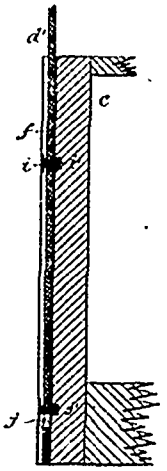
29920 Martano's Mathematical Games.



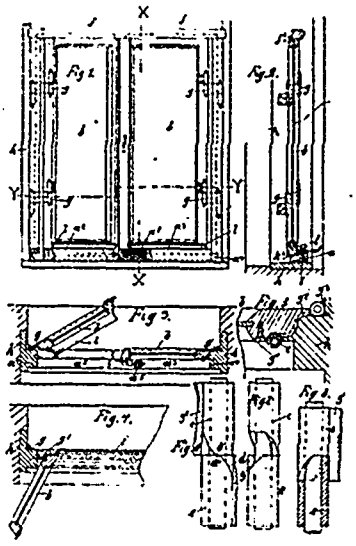
29922 Carr's Floor Mats and Matting.



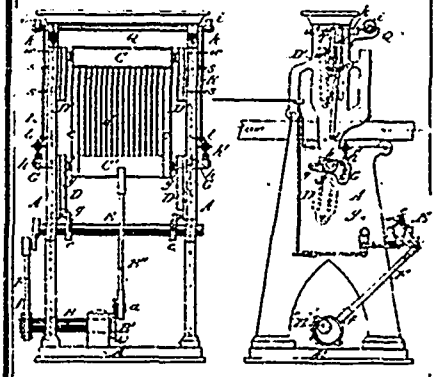
29923 Govier's Machines for Making Barbed Wire for Fences.



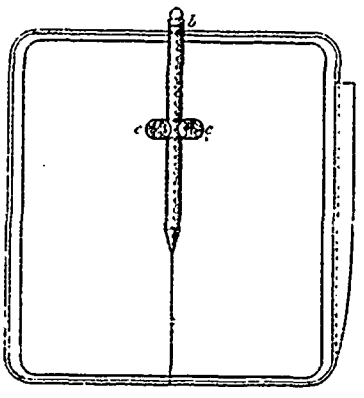
29924 Morgan's Connection of Sash Cards to window Sashes.



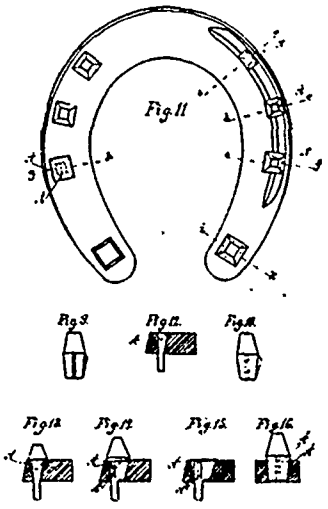
29925 Dollinor's Apparatus for opening windows.



29926 McEvilla's Reciprocating Saw Mills.



29927 Downes' Note Books, Memorandum and other similar books.



29928 Carstens' Horse Shoe Nails and Caulks.