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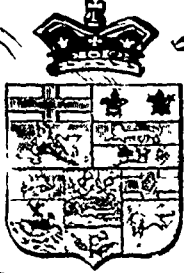
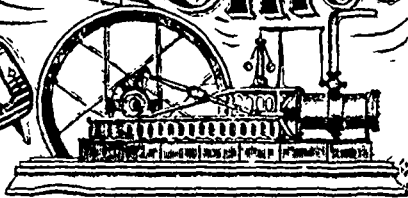
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INVENTIONS PATENTED.

No. 7930. Apparatus for Propelling Cars.

(Appareil de propulsion des wagons.)

John B. Tibbitt-Hosack, N.Y. U.S., 25th September, 1877, for 5 years.

Claim.—1st The driving wheels suspended in an inclined plane and capable of acting separately and independently of the momentum of the car for propelling or retarding the car. 2nd The inclined wheels I supported by arms L and driven by friction wheels H. 3rd The combination of the ways B, slides C, ways D, supports E, spring G, and shafts F. 4th The combination of the inclined wheels I having axles J, the pivoted boxes K and arms L. 5th The inclined wheels I when acted upon directly by the motive power that drives the car. 6th The wheels I placed on inclined axles, and employed in retarding the car.

No. 7931. Process of Treating Blood for Making Articles of Ornament.

(Procédé de traitement du sang pour la fabrication des objets d'ornement.)

Jonathan Bliss, Jersey City, N.J., and Franklin O. Badger, Brooklyn, N.Y., U.S., 25th September, 1877, for 5 years.

Claim.—The process of treating blood for making articles of use or ornament by reducing it to a dry and powdered or fine condition and subjecting it to a heat and pressure in suitable moulds or dies with or without the use of bone-dust or glue.

No. 7932. Manufacture of Pigments.

(Fabrication des coloris.)

Henry Knight, Liverpool, Eng., 25th September, 1877, for 5 years.

Claim.—1st. The combination of a, sulphide of zinc b, sulphate of barium, or of calcium and magnesium in the form of oxide or otherwise as a pigment; 2nd The use of magnesia oxide, in combination with other salts or oxides of metals in the manufacture of pigments.

No. 7933. Improvements on Vacuum Railway Brakes.

(Perfectionnements aux freins de railroads à vide.)

John D. Johnson, Richmond, Que., 25th September, 1877, for 5 years.

Claim.—The combination, in the fire box of a locomotive, of the water line guard a and metallic and, in some cases, water line guide G with the delivery tubes or nozzles of a vacuum railway brake.

No. 7934. Fork for Loading Loose Grain.

(Fourche pour charger le grain délié.)

Bartholomew S. Wells, Byron, Ont., 25th September, 1877, for 5 years.

Claim.—The fork A and handle B pivoted at a to the braces C C', in combination with bars D D', cord, strap or chain E, pulley F, rod or arm G, cross piece H, and coil spring I.

No. 7935. Process of Waterproofing Paper.

(Procédé pour imperméabiliser le papier.)

Daniel Felton, Manchester, Eng., 25th September, 1877, for 5 years.

Claim.—1st. The art of waterproofing paper and other ligneous tissues by impregnating them with a soluble salt or salts of zinc or cadmium in combination with ammonia. 2nd Treating them with a solution of bi-chromate or chromate of potash, soda, or alumina, combined with one of glue, gelatin or other like substance. 3rd Treating them with a solution of acetate of sulphate or chloride of alumina.

No. 7936. Fire Escape. (Sauvegarde d'incendie.)

James Amess, Rossmount, Ont. 25th September, 1877 for 5 years.

Claim.—The hinged clamp B, or its equivalent, provided with friction rollers F F and G, and handle D, in combination with the rope A passing through and a similarly constructed clamp C provided with a stirrup E, and connected to the clamp C by the ropes or cords H.

No. 7937. Improvements on Reaping Machines.

(Perfectionnements aux moissonneuses.)

Nicholas W. Brown, Whitby, Ont., 25th September, 1877, for 5 years.

Claim.—1st The sliding post C, as constructed with the foot iron L, bolted to the finger bar M, also the stud h working in the slotted lever A, the combination of the main box B with the slide boxes D formed of one casting and bolted to the frame G, the combination of the sliding post C and the boxes D with the foot iron L, secured to the sliding post a d finger bar, also the stud h at the upper end of post in connection with the lifting slotted spring lever A and ratchet bracket B. 2nd The solid swivel rake head J with the latch g of one casting the pivot revolving rake arm b, the combination of the rake head J with the revolving rake arm b latch g, recess j, coil spring H with washer and pin, and steel pivot e on which the rake head swings around when automatically released, also the swinging lever cam; 3rd. The combination of the tilting lever L, ratchet iron M, rocking shaft O and link P with the frame G and tongue N. 4th The spring lifting lever Q pivoted at n, in combination with the ratchet iron S and slide iron R.

No. 7938. Grindstone Frame.

(Bâti de meule à aiguiser.)

Stephen T. Packham, Newmarket, Ont., 25th September, 1877, for 5 years.

Claim.—The combination of the flanged casting D, standards C C, brackets E E with angularly placed leg sockets L, and the sprung legs G, 2nd The journal caps C' C' provided with the straps C, in combination with the standards C provided with grooves C'. 3rd. The axle B provided with the segmental projecting thread B', in combination with the journal caps C'.

No. 7939. Improvements on Motor Springs.

(Perfectionnements aux axes ressorts moteurs.)

Isaac Solomon, Solomon's Island, Md. U.S., 25th September, 1877, for 5 years.

Claim.—In combination with a coiled motor spring an auxiliary spring applied to its inner end or to any point between its two extremities.

No. 7940. Improvements on Railway Rail Keys.

(Perfectionnements aux clés des rails de railroads.)

Edward Burstow, London, Eng., 25th September, 1877, for 5 years.

Claim.—1st. Making the key for fixing the rails of railways with the grain of the wood at right angles to the length of the rail, 2nd. The combination of a block of wood with the grain, with a metal wedge or wedges.

No. 7941. Improvements on Oil Stoves.

(Perfectionnements aux poêles à pétrole.)

David Shields, Sing-Sing and Robert Z. Liddle, Albany N.Y., U.S., 25th September, 1877, for 5 years.

Claim.—1st. The combination in an oil burning stove of a base or frame, with a heating or cooking drum the bearing of which on the said frame or base is through the medium of sharp-edged pointed projections; 2nd. The combination of the heating or cooking drum having projections a and set screws X with bearings on the base for the said screws; 3rd. The combination of the reservoir, and a body or layer of plaster or other non-conducting substance with the air passage B; 4th The combination of the reservoir, the plate H made detachable from the reservoir, and the wick tube C carried by the said plate; 5th. The reservoir plate H and wick tube, all combined and made movable on the stand. 6th The combination of the reservoir B and its flanges b' with the grooved guides a' on the standards of the base. 7th The combination of the base and its standards and the reservoir B with a rack or basket L or other equivalent support interposed between the said standards and reservoir. 8th. The combination of the reservoir and its support L, having flanges b' with the guides on the base; 9th. In an oil

burning stove, a metal reservoir B, the lower portion of which is without seams or joints; 10th. The combination of the drum D and its openings e, with the inverted dome or cone G; 11th. The combination of the drum E, inverted cone or dome G, a dome or cone F, and annular space f; 12th. The combination of the drum E, its two domes or cones, and annular space f, with the openings e in the drum; 13th. The combination of the drum E, its inverted cone or dome G, and the openings e¹ and e² above said cone or dome; 14th. The combination of the cooking drum with the chamber having walls extending in one direction to the edges of an opening in the drum; 15th. The combination of the cooking drum with the jacket P; 16th. The combination of the heating or cooking drum, and the base A, with a turn buckle d₃ or other equivalent movable support.

No. 7942. Musical Flying Top.

(*Toupie musicale volante.*)

Elisha Mets, Rochester, N.Y., U.S., 27th September, 1877, for 5 years.

Claim.—1st. The bisected conical body B B₁ held together by the stem P forming the pintle p₁ and the wings W; 2nd. The body B B₁ and wings W, in combination with handle H having orifice o, perforations n and socket s; 3rd. The wings W provided with the whistle l, in combination with the rim G.

No. 7943. Process for the Manufacture of Lime and Cement.

(*Procédé de fabrication de la chaux et du ciment.*)

Uriah Cummings, Buffalo, N.Y., U.S., 27th September, 1877, for 5 years.

Claim.—The injection of a carbonized air spray directly upon the stone at a red-heat, and subsequently as specified.

No. 7944. Improvements in Animal Traps.

(*Perfectionnement aux ratières.*)

John H. Morris, Seward, Neb., U.S., 27th September, 1877, for 15 years.

Claim.—1st. The combination of the hinged gate B and tilting platform C with the end or ends of passage A; 2nd. The combination of the passage D, box E, and drop gate F, with the passage A, provided at one or both ends with a hinged gate B and a tilting platform C.

No. 7945. Hydro-Carbon Burner and Gas Generator.

(*Poêle à hydro-carburé et générateur à gaz.*)

Charles Holland, Chicago, Ill., U.S., 27th September, 1877, for 5 years.

Claim.—1st. The dome-shaped retort A, provided with the coiled pipe I arranged on the top and ends of the retort, and communicating with the gas receiver M; 2nd. The dome-shaped retort A, in combination with the induct pipes K L N, steam-pipe G, coiled pipe I, gas receiver M having outlet pipe J, pipe H having burner e and the upper burner O; 3rd. The steam-pipe G perforated on its upper surface, and provided with the union joints or couplings P.

No. 7946. Improvements in Measuring Rules.

(*Perfectionnements dans les règles de mesurage.*)

Emery D. Waterbury, Rockford, Ill., U.S., 27th September, 1877, for 5 years.

Claim.—The combination of the pieces A and B, stationary clasp C and swivel clasp D, with screw a and thumb-nut G.

No. 7947. Improvements on Oil Stoves.

(*Perfectionnements aux poêles à pétrole.*)

David Shields, Sing-Sing, N.Y., U.S., 27th September, 1877, for 5 years.

Claim.—1st. The combination of the heating or cooking drum, and its V-shaped projections i, with bearings on the base for the said projections; 2nd. The combination of the reservoir B, perforated casing h and plate H; 3rd. The combination of the bottom plate or diaphragm I, the two domes D Dr, with intervening air space and air passages d d₁; 4th. The combination of the drum E having near its upper edge openings e with the convex cap Et, with a central depression S.

No. 7948. Improvements in Double-Acting Hinges.

(*Perfectionnements aux pentures à double-action.*)

Ashel A. Stimson and Charles T. Sabin, Montpelier, Vermont, U.S., 27th September, 1877, for 5 years.

Claim.—1st. The plates A A', each having upon one side a pintle and upon the other side a slotted knuckle or socket, in combination with the links or jointed rod B B', having a stop f bearing against the rear side of the plate A, and provided with a spring h bearing against the rear side of the plate A'; 2nd. The two-part double-acting spring hinge, consisting of plates or leaves A A', one having the pintle a upon its upper surface, and directly below the same slotted knuckles or sockets at a', and the other a similar arrangement a₂ a₂' and slotted knuckles or sockets a₃ a₃' upon its lower surface, in combination with suitable connecting mechanism; 3rd. A hinge plate having lateral flanges embracing the jamb, and angular flanges abutting against the door casing; 4th. In a double-acting hinge, the leaves A A' provided with the fixed flange C and the adjustable flange C'; 5th. The hinge leaves A A' having the flanges C C', rendered adjustable by means of the perforated ears l, slots m m', and screws n n'.

No. 7949. Improvements on Lace Fastenings.

(*Perfectionnements aux willets de chaussures.*)

Thomas A. McDonald, Durham, N.S., 27th September, 1877, for 5 years.

Claim.—The combination of the lace A passing spirally through the eyeslets G in the flap F, in combination with and passing over the hooks C, and fastened by the fastener D.

No. 7950. Improvements in Ice Creepers.

(*Perfectionnements aux crampons de chaussures.*)

Samuel Horsford, Halifax, N.S., 27th September, 1877, for 5 years.

Claim.—1st. The joints E, swivel-joints F, combined with springs G and sole-fasteners C; 2nd. The heel frame B with swing joint J, heel fastener D and heel fastening points K, combined with points H, screw fastener I and sole frame A.

No. 7951. Improvements on Telegraph Alarm-Boxes.

(*Perfectionnements aux boîtes à télégraphe d'alarme.*)

Sigismund Mohr, Quebec, Que., 27th September, 1877, for 5 years.

Claim.—1st. The switch F or its equivalent, in combination with the connections H H; 2nd. The combination of a belt, or sounder, with the switch F, spring F₁, connections H H and insulators I, with any district alarm telegraph machine.

No. 7952. Spring-Bed Bottom.

(*Fond de lit à ressorts.*)

Harcourt Mott, (Assignee of William M. Edmans), Troy, N.Y., U.S., 2nd October, 1877, for 5 years.

Claim.—1st. The forked or branched wire springs D having their lower ends bent upward, to enter the lower sides of end rails B of the bed bottom, having their middle parts curved inward, and their angles bent upward to enter holes in the spring slots of the bed bottom; 2nd. The combination of the wire springs D and the cleats E, with the end rails B, the side rails A and the spring slots C.

No. 7953. Improvements on Cigarette Machines.

(*Perfectionnements aux machines à cigarettes.*)

William Buchanan and David C. Lyall, N.Y., U.S., (Assignees of David W. De Forest), 2nd October, 1877, for 5 years.

Claim.—1st. A flexible reciprocating apron D and the combination of belts for giving motion to rollers d d'; 2nd. The belts K, having one end attached to a drawing lever B and the opposite to a yielding means S, in combination with rollers d d' and apron D; 3rd. The adjustable tension frame C, in combination with apron D and frame B E; 4th. The rod L, foot rack T, in combination with tension frame C, frames B E and apron D; 5th. The belts K K₁, in combination with frame B and springs S.

No. 7954. Improvements in Doors.

(*Perfectionnements dans les portes.*)

Robert W. Semple and George A. Shaw, Toronto, Ont., 2nd October, 1877, for 5 years.

Claim.—A door stop arranged to permit the door connected therewith to open to the outside of an apartment in the ordinary way, and mounted on the door jamb in such manner that upon a certain given outward pressure being applied to the door, the stop will be forced clear of the opening, permitting the door to open to the outside.

No. 7955. Improvements on Fruit Pickers.

(*Perfectionnements aux cueilleurs de fruits.*)

John Sayer and Augustus Gerlach, Monroe, Mich., U.S., 2nd October, 1877, for 5 years.

Claim.—1st. The combination of the handle A, slide rod B, spring jaws C, connected by inside links with the rod, the cutter D, the fixed handle-hoop E and the tube F; 2nd. The combination of the stop-pins b and straps d, the former on slide rod B and the latter on handle A.

No. 7956. Improvements on Railway Brakes.

(*Perfectionnements aux freins de railroUTES.*)

Albert F. Gus and George F. Field, Boston, Mass., U.S., 2nd October, 1877, for 5 years.

Claim.—1st. The combination with the spool, the brake-chain and brake-lever to operate the brake-beam and shoes, of an auxiliary brake-lever loosely connected with the chain, and interposed between it and the brake lever; 2nd. The combination with the clutches and their operating levers o p, of the pivoted horizontal lever z and the links u v, connected therewith at different sides of its fulcrum, to operate the clutch-levers positively and simultaneously; 3rd. The combination with the car-body and sheaves h j, of the brake chain, its winding spool, the auxiliary brake-lever connected with the main brake-lever and the pivoted sheave i, arranged on a bight of the chain between the sheaves h j; 4th. The application to the axle of a caboose car, of a spool and chain and clutches, to apply the brakes to the cars in operative connection with caboose car and the chain carried by its spool; 5th. The combination of the following elements, viz: a spool, loose upon one of the axles of a car, suitable friction-clutch mechanism for connecting said spool and axle to rotate together, brake-beams operated by reason of their connection with said spool, a rod extending longitudinally under the car and provided with loose drum and fixed friction collars, and mechanism to rotate the rod from an axle, and devices by means of which the rotation of the rod is made to cause the application of the friction-clutches to the spool, to thereby operate the brakes; 6th. A shaft extended longitudinally under the car, and provided with irregular ends and sockets to rigidly connect together shafts under different cars, and with universal joints at suitable intervals, and a loose drum frictionally connected to the shaft, in combination with mechanism by means of which the rod can be rotated from one of the axles of the locomotive or tender; 7th. The combination of the axle, the pinion 26, the loose pinion 27, the shaft 16, and clutching mechanism to cause the shaft 16 to rotate with the pinion 27; 8th. In combination of the shaft 16, axle d₃, bevel-gears c₃ d₄, adapted to be engaged or disengaged, gears a₄ b₅, and a shaft and hand-wheel 37, to operate the brakes by hand; 9th. The combination of the drum 15, collars 17, 18, shafts 16 and nut.

No. 7957. Improvements in Farm Gates.*(Perfectionnements dans les barrières de fermes.)*

Joseph E. Stong, Newtonbrook, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The levers H H, provided with handles R R and pivoted within notches cut into the ends of the posts F F, in such a manner that the short ends of the said levers H H overlap each other between the posts F F, in combination with the rods J J, lifting bars I, and gate D; 2nd. The base board A provided with cross-ties B B and post C, secured by the wedge E, in combination with the lever posts F F, post P, the bars N and I, forming as combined a frame for holding the gate D; 3rd. The top rail M provided with spring guards S S, in combination with the posts F F; 4th. The recessed post U to receive the stile T, and provided with a pierced sheet metal guard G, in combination with the pin e secured to stile T.

No. 7958. Combined Divider and Siding Hook.*(Compass-trussequin.)*

Homer Sherman, Flushing, Mich., U. S., 5th October, 1877, for 5 years.

Claim.—The combination of the siding hook A having a straight back a fixed point B at one end, and a half-knuckle joint at the other end, with the pivoted divider-leg B₁ provided with a half-knuckle joint.

No. 7959. Improvement on Reclining Chairs.*(Perfectionnement des pliants.)*

Numon N. Horton, Kansas, Miss., U. S., 5th October, 1877, for 5 years.

Claim.—1st. The angular arms H and head rest I rigidly connected together and hinged to the back E; 2nd. The bow-shaped crank lever F, in combination with the uprights G, back E, arms H, supporting pawl J, and rack K; 3rd. The combination of the uprights G, constructed with knuckle-joints and the hinged back E, and arms H, to provide for setting the back forward; 4th. The combination of the back E, arms H, and jointed uprights G, and a suitable supporting-frame with the stop Q, so that said stop will be retracted by the tipping forward of said back; 5th. The combination of the hinged back E, arms H, uprights G, crank lever F, supporting pawl J, and lever M for retracting said pawl; 6th. The spider having arms for attachment to the seat frame D and bearings for the shafts which form the pivot of the uprights G; 7th. The leg-rest N, in combination with the hinged supporting arm O, working in a slot in the stem of the spider C, and with the lever P for elevating said supporting arm when the leg-rest is to be lowered.

No. 7960. Improvements in Iron Fences.*(Perfectionnements dans les clôtures en fer.)*

Hiram Jones, St. Thomas, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The iron post A with the flange B for driving and stiffening the same; 2nd. The block or wedge D; 3rd. The perforated strip C.

No. 7961. Improvements on Temporary Binders.*(Perfectionnements aux serre-papier.)*

George W. Emerson, Kenton, Ohio., U. S., 5th October, 1887, for 5 years.

Claim.—1st. The combination with the covers A, of the binding wires b having projecting loops m and rivetted on each side to the covers, and forming fastenings from which the binding strands cannot slip on said wires; 2nd. The combination with the cover A, of the binding wire b spaced from and running parallel to the edge of said cover, secured by the re-entering loops d to said cover, and having the fastening loops m; 3rd. The combination with the covers A and binding wires b, having protecting loops m and rivetted to their contiguous inner margins, of the spaced cleats H secured to one of the covers in line with the loops m aforesaid, and a filing thread secured at one end to said loops and being passed through the sheets and loop coiled around the said cleats.

No. 7962. Improvements on Thill Couplings.*(Perfectionnements aux ajustages de limonnières.)*

Luther C. Spencer and Philander Barrett, Rochester, N.Y., U. S., 5th October, 1877, for 5 years.

Claim.—1st. The draw-irons of vehicle thills or poles, provided with a detachable joint, separate and independent of the ordinary coupling joint; 2nd. In combination with the thill stock A and hinged shank B, the sliding annulus or clamp C; 3rd. In combination with the stock A, shank B and clamp C, the locking clutch b; 4th. In combination with the clamp C, stock A and shank B, the dowel e and its corresponding recess, either with or without the enlargement or shoulders a on the head a.

No. 7963. Improvements on Electric Lamps.*(Perfectionnements aux lampes électriques.)*

Paul Jablochhoff, Paris, France, 5th October, 1877, for 5 years.

Claim.—1st. An electric candle consisting of two parallel conducting rods of carbon or metal a, separated from each other by an insulating substance which is consumed along with them; 2nd. The use for separating the parallel rods above referred to, of compact substances difficult of fusion, such as kaolin, ingredients of glass or porcelain, powdered mixtures of earthy or siliceous substances; 3rd. An electric candlestick having two insulated wire jaws A j, arranged to hold and establish electric communication with the electric candle referred to in the preceding claims; 4th. The method of subdividing electric light by arranging several electric candles in one circuit, with or without the use of relays; 5th. The method of lighting an electric candle, or several such candles arranged in one electric circuit, by means of a pulverulent match; 6th. The method of varying the colour and lustre of the electric light, by introducing metallic and other powders in the insulating material.

No. 7964. Improvements on Shoe Sole Buffers.*(Perfectionnements aux usties de cordonnerie.)*

Josiah W. Rogers, Salem, Mass., U. S., 5th October, 1877, for 5 years.

Claim.—1st. An elastic abrasive circular pad, so extended in radial directions laterally from its holder as to be capable of being bent in the extension, upward, toward, or against the side of such holder; 2nd. The abra-

sive pad holder, consisting of two conic frusta A D, shank C, screw d and nut E thereto; 3rd. A circular layer a of abrasive material, and a pad covering b and a stuffing c, with the cones or frusta A D of the pad holder; 4th. A shoe sole buffer composed of a circular abrasive pad and a holder therefor.

No. 7965. Felt Hardening Machine.*(Machine à durcir le feutre.)*

John Keats, London, Eng., 5th October, 1877, for 15 years.

Claim.—1st. The combination of the lower platen B₁ and lever C, with the upper platen B connected to said lever by a pivot d, which provides for the rise and fall of the said platen B with a jaw-like action, and also provides for the vertical self-adjustment of the said platen to keep itself parallel with the lower platen B₁; 2nd. The combination of the two platens B B₁, the lever C, with which the said platens are respectively connected, and the eccentric F operating within the yoke, a fork of said lever; 3rd. The combination of the platens B B₁, lever C, eccentric F, shaft E and treadle G, connected with the upper platen in rear of the lever C.

No. 7966. Machine for Chamelling Shoe Soles.*(Machine à faire les gravures des semelles de chaussures.)*

John Keats, London, Eng., 5th October, 1877, for 15 years.

Claim.—1st. The combination with the rocking frame G, moving about an axis parallel with the axes of the feed wheels, of a cutter-carrying and guide bracket or piece S having bottom upward and downward, and a horizontal adjustment relatively to said rocking frame, and a knife having a horizontal adjustment, not only with reference to the said rocking frame, but also with reference to said bracket; 2nd. The combination with the rocking frame which carries the upper feed wheel, of a machine for chamelling or preparing the soles of boots and shoes, of the slide B, adjustable in said frame, the knife carrying and guiding bracket S, adjustable in said slide, the knife K, sliding freely through said bracket, and mechanism connected with said bracket, for varying the position of said knife relatively to the guiding face of said bracket; 3rd. The combination with the frame G, rocking on an axis parallel with the axes of the feed-wheels and the cutter carrying and guide bracket S attached to said frame G, of the knife K sliding through said bracket, the lever R attached to said bracket and connected with the said knife, and the slide T and pin k connected with said lever R.

No. 7967. Heel Plate for Boots and Shoes.*(Plaque pour les talons de chaussures.)*

Levi W. Buxton and John P. Greeley, Nashua, N. H., U. S., 5th October, 1877, for 5 years.

Claim.—1st. A heel plate for shoes and boots having the radial ribs b on its upper surface and the three equidistant holes g in the central space e; 2nd. The rubber cushion C for a heel plate, consisting of the flat sector-shaped body h and the downwardly projecting stud K; 3rd. The combination with the radially-ribbed heel plate A, of the sectional ring of cushions C having stud K projecting downward through an annular series of holes in said plate; 4th. A heel plate for shoes and boots having the radial ribs b on its upper surface, the cushions projecting through it, and the spurs z on its underside.

No. 7968. Improvements in Fences.*(Perfectionnements dans les clôtures.)*

John Vance, Forest, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The post A connected by a skirting board B, in combination with the wires E knicked by the staples F; 2nd. The ditches C and bank D on each side, and in combination with a wood and wire fence; 3rd. The vertical wire H bound around the wires E, in combination with the pin I and small post J.

No. 7969. Improvements on Dumping Waggon.*(Perfectionnements aux wagons à bascule.)*

Henry Leggett, Renfrew, Ont., 5th October, 1877, for 5 years.

Claim.—The frame A constructed with tilting boxes or sections D supported pivotally on transverse rods E, bearing on the plates F and board E₁, the several sections arranged and operating as set forth.

No. 7970. Method of Preparing Hay.*(Mode de traitement du foin.)*

John B. Lafitte, New Orleans, La., U. S., 5th October, 1877, for 5 years.

Claim.—The hay which by compression has been reduced to solid food by the destruction of its air cells and its tubular structure.

No. 7971. Carriage Shaft and Pole Coupling.*(Ajustage des limonnières et des timons de voitures.)*

John E. Hadden, Picton, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The combination of the solid cylindrical headed shaft iron I H with the coupling box; 2nd. The combination of the coupling box, having the lower part A, the flange D, the cap E and the oil cup G; 3rd. The combination of the flange D with the cap E.

No. 7972. Improvements in Lamps.*(Perfectionnements dans les lampes.)*

Edward M. Lowdon, New York, U. S., 5th October, 1877, for 5 years.

Claim.—1st. The combination of the reservoir A₁ having the vent-hole, the supply tube b₁, both as a syphon or otherwise, wick-tube C and vent-tube d; 2nd. The combination of the syphon supply-tube b₁, the wick-tube C and vent-tube d; passing through a cylinder or top, having or not having the vent hole in itself, or any attachment thereto, and by which cylinder or top the said combination can be used on a lamp font.

No. 7973. Improvements on Nut Locks.*(Perfectionnements dans les noix de sûreté.)*

Kinzey C. Naylor, New Sharon, Iowa, U. S., 5th October, 1877, for 5 years.

Claim.—1st. The nut C, provided with the slotted sleeve D, the wall thereof increased in thickness, at the end farthest from the nut, and screw threaded internally and externally, in combination with the clamp nut D; 2nd. The combination with the clamp nut D¹, of the nut C provided with the slotted and tapering sleeve D, having the internal screw-thread running in opposite direction to the external screw-thread; 3rd. The nut C, provided with the slotted sleeve D, having the exterior screw-threads running in a direction opposite to the interior screw-threads, in combination with the clamp-nut D.

No. 7974. Improvements on Erasers.*(Perfectionnements aux grattoirs.)*

Samuel Darling, Providence, R. I., U. S., 5th October, 1877, for 5 years.

Claim.—1st. An eraser made of pure or prepared rubber and provided with a bevelled or tapering end; 2nd. The combination with the pointed eraser of the brush C; 3rd. The combination with the rubber eraser a, provided with the brush c and ferrule d.

No. 7975. Improvements on Grain Bags.*(Perfectionnements aux sacs à grain.)*

Joshua Collins, Montreal, Que., 5th October, 1877, for 5 years.

Claim.—1st. In combination with a bag for holding grain, &c., a funnel secured in, at or near the mouth of the bag and operating to close the same; 2nd. The combination of the bag X and funnel F, with rings and hook or buttons, &c., for securing same as described.

No. 7976. Machine for Making Baskets.*(Machine à faire des paniers.)*

James Churohill, Thomas H. Churchill and William Churohill, Uxbridge, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The rack and pinion A with lever B; 2nd. The tilting axle E; 3rd. The use of the truss-hoop for setting the shape of the splints; 4th. The revolving bottom disk, and weaving apron H.

No. 7977. Improvements on Boots and Shoes.*(Perfectionnements aux chaussures.)*

Charles Edwards, Jamaica, N. Y., U. S., 5th October, 1877, for 5 years.

Claim.—1st. The detachable sole B provided with a rim or plate d to fit upon a plate l attached to the inner sole of the shoe; 2nd. The metallic plate l, in combination with the inner sole B for the purpose of holding the said detachable sole B; 3rd. The heel J consisting of the stationary lifts o; and the detachable outer lift or attached to the metal plate s and secured to the said stationary lifts o; 4th. The detachable sole B provided with a metal plate f, combined and arranged in relation to the shank h, for the purpose of holding the rear end of the said sole in position, and of forming a close and flush joint between the two; 5th. The detachable sole B provided with a countersunk plate e, in combination with the pin g; 6th. The plate l, consisting of two or more thicknesses or leaves of different lengths, and arranged in relation to the plate I and the instep of the shoe; 7th. The detachable sole B provided with a raised rim or plate d extending along its edges and the plate l secured to the inner sole b, in combination with suitable devices for the purpose of fastening the rear end of the said sole.

No. 7978. Paper Bag Machine.*(Machine à sacs de papier.)*

Thomas R. Rhoder, Westminster, Ont., 5th October, 1877, for 5 years.

Claim.—1st. The devices for feeding and folding the paper in the machine consisting of the rollers F H, standards G, discs or wheels K, arches L, guide M, sword N and pressure rollers O r and s, operated by crank B and main shaft D; 2nd. The cutting apparatus consisting of the serrated knife S, serrated edge of sword N, striking bar T, rods U, guides V, coil springs W, shaft Y, wheel and finger a, projecting plate b and additional coil spring c; 3rd. The devices for pasting the sides of paper, consisting of the grooved wheel d and paste-box e, in combination with roller H; 4th. The apparatus for pasting and closing bottoms, consisting of the paste-rollers f, pivoted plate g, guides k, rods t j k, plate p and finger o, controlled and operated by bar l, shaft Y and eccentric n.

No. 7979. Machine for Making Barrels.*(Machine à faire des barils.)*

James Tomlinson, Goderich, Ont., 5th October, 1877, for 5 years.

Claim.—1st. In combination with the slotted metal drum D and its heads D¹ D², of the eccentric shaft G and links f f, for expanding and contracting the covering D of said drum; 2nd. The combination of the press-roll with the collapsible drum; 3rd. The combination of the press-roll and a series of hoop-guides with the collapsible rotary drum; 4th. The combination of the equalizing saws and their swinging-frame with the rotary collapsible drum.

No. 7980. Mode of Hanging Doors and Blinds.*(Mode de poseage des portes et persiennes.)*

Edwin Prescott, Hampton Falls, N. H., U. S., 5th October, 1877, for 5 years.

Claim.—1st. The combination with a door of cross levers pivoted at one end, one to the door and the other to the building, and connected at their other ends, one by a stud with a guide, and the other with a radius bar, the pivoted point of the latter with one of the crossed levers, being arranged to pass between the stud on the one lever, and the pivoted point of the two levers; 2nd. The combination with a door, of pivoted crossed door, and post levers, a stud, a guide, and a radius bar, connected with each other and with the door and building, whereby all the levers to sustain and project the door are arranged on the same side of the door, and all the points of connection are made within the space bounded by the bottom and top of the door; 3rd. The combination with the door lever and its stud, of a guide having sides arranged to co-operate with the stud, to assist in retaining the door in

any desired position; 4th. The combination with one member of the pair of crossed levers, of a radius bar, bent or shaped to permit the bar to be connected with the lower end of the door midway between the extreme points of movement of the other end of the radius bar, and to permit the passage of such other end of the radius bar between the stud and the crossing points of the two levers; 5th. The combination of a blind or door and pivoted crossed levers, connected, each at one end positively and at the other end loosely, with the blind or door and casing or building over which the blind or door moves, and adapted to completely sustain the blind or door during its movement; 6th. The blind or door and its projections at the back, in combination with the holding device, 7th. A sliding blind or door and levers to sustain and direct it, in combination with a blind holding or locking device, adapted to hold a blind, and with a crank or handle to operate the locking device from within a room or building; 8th. The blind or door and its levers d₁ d₂, pivoted together and connected with the blind and casing, in combination with guide-strips connected with the top and bottom of the door, and with pins and hooks at the sides of the strips, to prevent movement of the blind or door away from or toward the casing; 9th. The combination of the two pivoted crossed levers, one adapted at one end to be connected with a post or fixed part of a building and to move at its other end, vertically with relation to a door, and the other adapted to be connected at one end with the door and to move vertically over the post or a fixed part of a building at the opposite side of the lever, the movable end of one lever being also arranged to pass between the pivotal points of the two levers and the connecting point of the end of the other lever.

No. 7981. Improvements in Sewing Machines.*(Perfectionnements dans les machines à coudre.)*

William Muir, Montreal, Que., (Assignee of David M. Smyth), 5th October, 1877, (Extension of Patent No. 1681), for 5 years.

No. 7982. Improvements in Sewing Machines.*(Perfectionnements dans les machines à coudre.)*

William Muir, Montreal, Que., (Assignee of David M. Smyth), 5th October, 1877, (Extension of Patent No. 1681), for 5 years.

No. 7983. Improvements in Spring Mattresses.*(Perfectionnements dans les matelas à ressorts.)*

Edwin L. Bushnell, Poughkeepsie, N. Y., U. S., 9th October, 1877, (Extension of Patent No. 1716), for 5 years.

No. 7984. Improvements on Milk Pans.*(Perfectionnements aux boîtes à lait.)*

Bruce C. Bort, Chateauguay, N. Y., U. S., 9th October, 1877, for 5 years.

Claim.—The ice chamber B with holes G, combined with a water reservoir H having partitions C of increasing heights, and with outlets D and perforations F, combined with the milk pan A provided with milk outlet E.

No. 7985. Improvements on Rotary Churns.*(Perfectionnements aux barattes rotatoires.)*

Bruce C. Bort, Chateauguay, N. Y., U. S., 9th October, 1877, for 5 years.

Claim.—1st. The peculiarly indented breakers and perforated breakers solidly fitted to the inside of the cylinder; 2nd. The application of a close fitting cap or cover over the gearings, churns and combined therewith.

No. 7986. Improvements on Dash Churns.*(Perfectionnements aux barattes à piston.)*

Allen C. Otty and Archibald J. Elliott, Rothesay, N. B., 9th October, 1877, for 5 years.

Claim.—The combination of the dashers and their attachment to the handle or shaft A.

No. 7987. Improvements on Wagon Racks.*(Perfectionnements aux râteliers de wagons.)*

Alphens McCallum, Kars, and James F. Cass, L'Original, Ont., 9th October, 1877, for 5 years.

Claim.—1st. The dove-tail sockets B and brackets H, in combination with a wagon body A; 2nd. The dove-tail sockets B, fastened to the wagon box by rods C passing transversely therethrough and secured by nuts D; 3rd. The sockets B¹ and plate F fastened to the sides of the box A by short bolts E, said plate F having a screw projection passing through the bottom of the box, and underlying bar K and secured by a nut G.

No. 7988. Harvesting Machine. (Moissonneuse.)

Robert Thomson and Alfred R. Williams, Stratford, Ont., (Assignees of Orville Cooley), 9th October, 1877, for 5 years.

Claim.—1st. The main frame D H; 2nd. The combination of standards forming a part of the main frame, and having concave upper ends with tubular bearings for the shafting, and with staples p extending down to, or through the frame, by which the tubular bearings are strapped in place upon the standards; 3rd. The combination of continuously rotating main pinion shaft, driven from the traction wheel with the cutter shaft and rake shaft, and with the backing ratchet r₂, by which both the cutter and rake are simultaneously stopped or driven; 4th. The yoke Y combined with the traction wheel, the main frame and the pinion shaft; 5th. The combination of the lifting bar U, the tongue, the bracket T and the rack bar V or its equivalent; 6th. The combination of the lifting bar U, the tongue, the bracket T, and the supporting bar L; 7th. The combination of the two adjustable supporting bars, with the lifting bars, bracket and tongue; 8th. The combination of the yoke, the bracket, the lifting bar, and the front supporting bar; 9th. The combination of the yoke, the bracket, the lifting bar, and the rear supporting bar; 10th. The combination of the two adjustable supporting bars, with the yoke, bracket, and lifting bar; 11th. The combination of the driver's seat having its leverage back of the centre of oscillation of the main frame, and the adjusting and supporting bracket T having its leverage forward of said centre, for the purpose of balancing the frame;

13th. An inclined bar mounted upon the tongue and an arm of the driving wheel axle, and having the weight of the main frame adjustably suspended from it; 13th. A yoke by which the main frame is adapted to oscillate around the axle of the driving wheel as a centre combined with a supporting arm attached to said axle independently of the yoke, whereby the frame is supported, raised and lowered upon the arm, and held to the centre by the yoke.

No. 7989. Improvements on Harvesting Machines.

(*Perfectionnements aux moissonneuses.*)

Robert Thomson and Alfred R. Williams, Stratford, Ont., (Assignees of Orville Cooley), 9th October, 1877, for 5 years.

Claim.—1st. The rake cam R, mounted or supported so that it may be swung or turned laterally, independently of the rake standard base B and wheel b; 2nd. The swivel base plate F, provided with slots, in combination with the supports a and cam R; 3rd. The plate C, supporting base plate F and rake standard base B, arranged successively one upon the other, and held together by the bolts a.

No. 7990. Improvements in Harvester Pitmans. (*Perfectionnements aux bielles de moissonneuses.*)

Robert Thomson and Alfred R. Williams, Stratford, Ont., (Assignees of Orville Cooley), 9th October, 1877, for 5 years.

Claim.—1st. The corrugated or furrowed straps b and plates p; 2nd. The furrowed straps b provided with the slots a; 3rd. The pivoted crank pin box B, in combination with the driving crank and notched or furrowed pitman straps b; 4th. A crank pin box provided with an oil chamber e and outlet duct above the centre of bearing, in combination with the crank pin.

No. 7991. Improvements in Wringing Machines.

(*Perfectionnements dans les essoreuses.*)

John Kinleyside and Matthew Wilson, Hamilton, Ont., 9th October, 1877, for 5 years.

Claim.—1st. The lever beams D, in connection with the springs C, and rollers A and B; 2nd. The spring C, in connection with the bearings I on frame L, and the bearing H on the beams D; 3rd. The fulcrum F, in connection with the beams D, springs C, and frame L; 4th. The porcelain cement covering on the frame L.

No. 7992. Improvements on Wash Boards.

(*Perfectionnements aux planches à savonner.*)

William F. Wilkins and James T. Sawyer, Montreal, Que., 9th October, 1877, for 5 years.

Claim.—1st. The combination of the springs d e, with the rounds c and side pieces b; 2nd. The combination of the different parts, constructed as described.

No. 7993. Improvements in Wood Working Machines.

(*Perfectionnements dans les machines à travailler le bois.*)

William Weaver, Greenwich, N.Y., Lyander Flagg, Central Falls, R.I., U.S., and Peter Mitchell, Montreal, Que., 11th October 1877, for 5 years.

Claim.—1st. The combination, in a wood working machine, of mechanism for scroll sawing, with a shaft or other means for operating a planer, circular saw, borer or moulding knife, with feed apparatus for same; 2nd. The combination of the flanged pulley E, receiving motion in any usual way, and the pulley G, with two or more belts F and the shaft H; 3rd. In combination with the scroll saw, the rock shaft K acting through the strap L, discs M and M', shaft M', and pitman R, to give it a positive movement; 4th. In combination with the scroll saw and frame N, the guides n n and bearings O O'; 5th. In combination with the rock shaft K, the shaft S, with pulleys D and T, and pitman S'; 6th. The shaft S, carried in loose bearings and having its outer end raised or lowered by means of lever arm X, to throw the pulley T in and out of gear, with the pulley D; 7th. The combination with the feed rollers U U', driven by proper gearing, of a lever U' worked from the side of the machine, and operating by means of a friction clutch to throw the same in and out of gear.

No. 7994. Process and Apparatus for Treating Refractory Ores.

(*Procédé et appareil pour traiter les minerais réfractaires.*)

Henry F. Howell, Sarnia, Ont., 15th October, 1877, for 5 years.

Claim.—1st. The process of treating sulphurets arsenical ores, and other refractory ores, for the purposes of desulphurizing them, and expelling the volatile elements by mixing with the pulverized ore carbonaceous matter, and forcing through the combined mass, comminuted streams of the heated air, or steam, or both; 2nd. The combination with pulverized sulphurets and arsenical, and other refractory ores, previous to their desulphurization and volatilization, of carbonaceous matter for the purposes described; 3rd. The combination with sulphurets and arsenical, and other refractory ores, when pulverized and mixed with carbonaceous matter, of salt or salt and water; 4th. The treatment of sulphurets, the use of jets of steam, mechanically driven through the ore, for the purpose of graduating the temperature and preventing the ore from clogging; 5th. The apparatus for the treatment of refractory ores, consisting of a retort for holding the charge, set above a furnace, provided with means for the introduction therein of finely divided streams of heated air or steam, or both, and so arranged that the mass contained therein shall not come in direct contact with the heated bottom plate.

No. 7995. Improvements on Railway Gates.

(*Perfectionnements aux barrières de railroutes.*)

Edward Garon, Sherbrooke, Que., 15th October, 1877, for 5 years.

Claim.—The combination of the double frame A with the gears B B, and the pulleys C C with the chains D and rollers E; also the handles K and pivots C.

No. 7996. Still for Rectifying Spirits.

(*Alambic pour raffiner les spiritueux.*)

Joseph Kast, Buffalo, N.Y., U.S., 15th October, 1877, for 5 years.

Claim.—1st. The combination with the vessel A, of the pipe B, threeway-cock B, pipe B', separator F, pipe J, having the stop-cock K and the pipe L; 2nd. A separator consisting essentially of that tapering shell G, provided with the shell G', having both its extremities arranged to fit the said exterior shell G, and thereby to afford water space f around the said interior shell; 3rd. The combination with the vessel F, of the inclined perforated diaphragm 2 and the screw plug g, located with the lower part of said vessel F; 4th. The separator F consisting essentially of two connected shells G G', provided with the spiral water passage f, the inclined perforated diaphragm 2, horizontal perforated diaphragm 3, deflector I, head l and the filling-pipe S; 5th. The combination with the vessel A, of the steam-coil C, supply-pipe B', diaphragm l and the separator F; 6th. The combination with the shells G G', of the spiral f', whereby the ascending current of water is caused to move spirally upwards; 7th. The combination with the receiver N, of the annular receiver P; 8th. The combination with the vessel A and the separator F, of the pipe B, whereby, by admitting a current of steam within said vessel, the entire apparatus can be cleaned without removing the contents of said separator.

No. 7997. Improvements in Smelting Furnaces. (*Perfectionnements aux fourneaux de fusion.*)

Alfred F. Holmes, Chicago, Ill., U.S., 15th October, 1877, for 5 years.

Claim.—1st. One or more flues A leading from the combustion chamber B, or its equivalent, and provided with openings or channels b; 2nd. The grate E and escape flues A, or their equivalent, in combination with a combustion chamber B; 3rd. The injectors F discharging into the auxiliary chambers G, in combination with the chamber B.

No. 7998. Improvements on Sewing Machines.

(*Perfectionnements aux machines à coudre.*)

John Keats, London, Eng., 15th October, 1877, for 15 years.

Claim.—1st. The combination with a rotary shuttle, of a shuttle holder in which the said shuttle rotates, but with which it remains in positive bearing contact during the passage over it of the loop of the needle thread; 2nd. The combination with a rotary shuttle, of a shuttle holder composed of two forks between which the nose of the shuttle works; 3rd. The combination of a rotary shuttle of conical form and a shuttle holder having a shuttle bearing or shuttle bearings of corresponding conical form in which the shuttle fits closely; 4th. The combination of a rotary shuttle and a forked shuttle holder within which the said shuttle works, of a bearing e' provided outside of the fork and a corresponding bearing surface e' provided inside of the shuttle nose; 5th. The combination of a rotary shuttle and a hooked needle, both arranged above the support on the upper surface of which the material to be sewed is supported; 6th. The combination for driving a rotary shuttle, of a rotary spindle, sliding pins carried by the said spindle for operating in direct contact with the shuttle, and a stationary cam surrounding the said spindle, for bringing the said pins into contact with and withdrawing them out of contact from the shuttle; 7th. The combination with the rotary shuttle of the rotary spindle E, carrying block E', pins t t', cam E', pinion F, toothed sector G, lever G and cam A; 8th. The combination with a rotary shuttle and a hooked needle, both arranged above the support on the upper side of which the material to be sewed is supported, of a loop opener J; 9th. The combination with the work supporting post of a sewing machine, of a whirl or thread carrier of spindle-like construction, having a bearing m in the upper part, and a bearing m' in the lower part of the said post; 10th. The combination with the thread carrier or whirl and a pinion on the same, of a toothed driving sector geared directly with the said pinion; 11th. The combination of a hooked needle and a whirl for laying the thread around or into the hook of said needle, of a rotary shuttle, the axis of rotation of which is parallel or approximately so with the path of the needle and with the axis of the whirl; 12th. The combination with a rotary whirl for laying the thread into the hook of the needle, of a work supporting device containing said whirl and having its upper part or head tapered, and containing a cavity n above the whirl and lateral openings v v' from said cavity; 13th. A feeding device having its feeding surface arranged at an angle to the work supporting surface and to the general surface of the work, and constituting a "side feed"; 14th. A feeding and pressing instrument having its feeding surface at an angle to its pressing surface.

No. 7999. Improvements on Burglar Alarms.

(*Perfectionnements aux alarme-voleurs.*)

Caleb C. Dusenbury, New York, U.S., 15th October, 1877, for 5 years.

Claim.—1st. An attachment to a door knob axle formed of the arm a, the arm c, with hook b and the circular end g; 2nd. An attachment to a window sash, formed of the tube C with gimlet point h, serving as journal for the arm d of the crank k with arm e.

No. 8000. Improvements in Sleeping Cars.

(*Perfectionnements dans les wagons-dortoirs.*)

Gustave Leve, Montreal, Que., 15th October, 1877, for 5 years.

Claim.—1st. The combination with a railway car, the oppboards D hung to the side walls when not in use, so as to appear part thereof and swing out at right angles to the sides, to partition off from the car a limited space; 2nd. In combination with the oppboards D swung out at right angles to the sides of the car, and secured by bolts G, the rods H carrying the curtains and resting in rings or hooks h; 3rd. In combination with the oppboards D swung out and secured by bolts G, the frames E E carried on stops e e'; 4th. In combination with the oppboards D, the door D'; 5th. In combination with any sleeping car, the windows F reaching to the roof; 6th. In combination with the oppboards D, the funnels I.

No. 8001. Improvements in Snow Ploughs.

(*Perfectionnements dans les charrues à neige.*)

Charles Peare, Unionville, Ont., 15th October, 1877, for 5 years.

Claim.—1st. The snow plough A having two spiral divergent concave chute formed by the plough sides E B, the said sides carrying upwardly and outwardly to the rear from a horizontal front apron C; 2nd. The plough A with spiral divergent concave chutes, adjustable apron C and adjustable hinged side wings E E.

No. 8002. Improvements on Stove Legs.*(Perfectionnements aux pieds de poêles.)*

Richard D. Ryerson, Clinton, Me., U.S., 15th October, 1877, for 5 years.

Claim.—1st. A stove leg A provided with horizontal webs a^2 in the cavity of its rear side, having screw-holes formed through them to receive the screw B, provided with a foot C and a polygonal collar upon its lower end; 2nd. The combination of the castor wheel D E with the recessed foot C, of the screw B secured into the screw holes in the webs a^2 formed in the cavity of the rear side of the leg A.

No. 8003. Improvements in Dry Air Refrigerating.*(Perfectionnements dans la réfrigération à air sec.)*

Kennard Knott, London, Eng., 15th October, 1877, for 5 years.

Claim.—1st. A refrigerator car or store room in which the required low temperature is produced from any suitable chemical agents, or any known process for producing cold enclosed within an air tight tank or receiver, and built within the car or store room which is made air tight and non-conducting, whereby the air in the said car or store room is cooled without coming into contact with the refrigerating agents; 2nd. The employment of gutters and waste pipe for collecting and discharging the moisture from the rime, which forms on the surface of the tank and pipes passing through the same, so that the air in the car or store room is kept constantly dry; 3rd. The coil of pipes in connection with the tank for utilizing to the full extent the refrigerating agents employed as described; 4th. The vertically placed gutters for collecting and discharging the moisture arising from the rime which forms on the said coil; 5th. The peculiar construction of the gutters E E' serving to collect the moisture, and at the same time allowing of the free circulation of the cold air.

No. 8004. Combined Bolter and Bran Duster.*(Blutoir et évantail à son.)*

Fernald G. Wallace, Jackson, and John Webster, Detroit, Mich., U.S., 15th October, 1877, for 5 years.

Claim.—1st. The combined feeder and cooler F and its curb F', in combination with a fan rotating in an enclosed screen cylinder; 2nd. The combination of the cooling feeder and a knocker with a fan rotating in an enclosed screen cylinder; 3rd. The combination of the cooling feeder, the knocker and the conveyer with a fan rotating in an enclosed screen cylinder.

No. 8005. Improvements on Water Closets.*(Perfectionnements aux cabinets à l'anglais.)*

John H. Keyser, New York, U.S., 15th October, 1877, for 5 years.

Claim.—1st. A non-corrosive valve seat to receive the foul-air or discharge-valve; 2nd. A drip-pan applied beneath a water-closet to receive the drippings, overflow and leakages of the closet, and provided with a suitable trap to carry off the same; The water valve cylinder or chamber attached to the outside of the upright cylinder and foul-air trap of the closet; 4th. A water supply valve of a water-closet, operated by a tappet lever; 5th. The independent over-flow and sink-trap arranged with a water-closet; 6th. The solid plunger D provided with packing d and arranged in the upright cylinder B; 7th. The water valve H held closed by means of a spring, and having an adjustable screw in the lower end of its stem.

No. 8006. Improvements on Shutters.*(Perfectionnements aux persiennes.)*

Asher Bijur, New York, U.S., 15th October, 1877, for 5 years.

Claim.—1st. A shutter for inside and outside use, made of an outer shutter frame, with fixed cross-slats, and of an inner sliding and guided frame with similar slats, that open or close the openings of the outer frame; 2nd. A shutter for inside and outside use made of an outer grooved shutter frame, having fixed vertical slats, and of an inner sliding and guided frame with fixed slats of slightly greater width than the openings of the outer frame, the inner frame being balanced by suitable devices.

No. 8007. Improvements on Ice Boxes.*(Perfectionnements aux boîtes à glace.)*

John E. Gauthier, Sandwich, Ont., 15th October, 1877, for 5 years.

Claim.—1st. The combination of ice compartments B B with zinc or other metal divisions for fish C C adjusted in grooves; 2nd. The combination of spaces D D with zinc piece or other metal in centre, together with perforations for current of air adjusted on grooves.

No. 8008. Improvements in Shooting Skiffs.*(Perfectionnements dans les esquifs de chasse.)*

George Warin, Toronto, Ont., 15th October, 1877, for 5 years.

Claim.—1st. The shooting skiff A, so shaped that when loaded the edge of its deck shall be level with the water line, in combination with the mirror screens J; 2nd. The adjustable wash-board C, in combination with a shooting skiff A; 3rd. The detachable screw G provided with suitable driving gear, in combination with a shooting skiff; 4th. The semi-circular piece f welded to the shank e and forming a flat sided row lock E.

No. 8009. Combined Wrist Check and Finger Guard for Piano Students.*(Guide-poignet et garde-doigts combinés pour les élèves de piano.)*

Margaret Sudderick, Buffalo, N. Y., U. S., 15th October, 1877, for 5 years.

Claim.—1st. The finger guard H and its extensors I; 2nd. The wrist check E, in combination with its extensors F F; 3rd. The right and left fixed plates A A, in combination with the wrist check F F and finger guard H I.

No. 8010. Harvesting Machine.*(Faucheuse-moissonneuse.)*

William A. Kirby, Auburn, N. Y., U. S., 15th October, 1877, (Extension of Patent No. 1700), for 5 years.

No. 8011. Harvesting Machine.*(Faucheuse-moissonneuse.)*

William A. Kirby, Auburn, N. Y., U.S., 16th October, 1877, (Extension of Patent No. 1700), for 5 years.

No. 8012. Improvements in Wood Pulping Engines.*(Perfectionnements aux piles à cylindre.)*

Jefferson Chase, Orange, Mass., U.S., 16th October, 1877, for 5 years.

Claim.—1st. The combination with a suitable curb or case, of two stones, the operative face of one of which is flat or practically flat, while that of the opposite stone is largely concave, the object being to provide an immediate chamber which gradually diminishes in depth from its centre outward; 2nd. The combination with the case or curb of two stones whose adjoining, or operative faces are formed as described, so that the intermediate space or chamber gradually lessens in depth from the centre outward, while the upward stone is pierced axially to admit of passage of wood to the said chamber; 3rd. The combination with the upper stone J and its supporting ring, of the adjusting and confining devices, whereby the position of the stone with respect to its ring and to the curb of engines is adjusted to compensate for the wear of the two stones; 4th. In the reduction of wood to pulp, the use of primary crushing engine consisting principally of rollers A2 A2 for crushing the wood prior to its introduction to the grinding engine.

No. 8013. Process for Producing Waterproof Gum.*(Procédé de production de la gomme hydrofuge.)*

Daniel M. Lamb, New York, U. S., 16th October, 1877, for 5 years.

Claim.—1st. The method of preparing milk weed for utilization, consisting in taking the same after it has fully matured, and in a dry and bleached state, reducing the same to chaff by a cutting operation, and then subjecting it to pulping and fermenting operations for the softening and partial decomposition of the woody matter, and for the successive removal of free oil or fatty matter, in order that water-proof gum may be extracted therefrom, free or nearly free from the coloring matter of the green stalk and from excess of hydrogen; 2nd. The method of extracting water-proof gum from fermented milk weed pulp without adulteration, consisting in grinding or bruising said pulp after it has been dried, in order to liberate the gum particles, and then applying bisulphide of carbon to dissolve and carry off the latter; 3rd. The method of recovering the bisulphide of carbon for re-use in the production of milk-weed gum, consisting in, first applying water to the solution or pulp, and then steam-heat through the mediums of water; 4th. The combined process of producing milk-weed gum, consisting in reducing the dry weed successively to chaff and pulp, then fermenting, drying and grinding the same, and finally extracting the liberated gum-particles by the repeated use of bisulphide of carbon as a solvent; 5th. The product of the said process, consisting of milk-weed gum free from excess of hydrogen, and having a trace of sulphur as left therein by the bisulphide of carbon used in its extraction.

No. 8014. Railway Steam Brake.*(Frein à vapeur de railroute.)*

John B. Hyde, Milton, Ont., 16th October, 1877, for 5 years.

Claim.—1st. In combination with the tender A, of the cylinder B and piston rod C connected by a pipe L to the locomotive for the purpose of braking cars; 2nd. In combination with a car, of a brake rod D attached to the bottom of a car and to the brakes by rods or chains I, and springs J, and acted on by a piston rod C of the cylinder B, for braking cars by steam from the locomotive; 3rd. The combination of the cylinder B, piston rod C, steam pipe L, brake rod D, brakes H H, rods or chains I, springs J, all constructed to operate brakes by the engine driver.

No. 8015. Improvements on Printing Presses.*(Perfectionnements aux presses d'imprimerie.)*

Thomas S. Bowman, St. Louis, Mo., U. S., 16th October, 1877, for 5 years.

Claim.—1st. The combination of the ratchet F having the recesses f f, and the pawl G, having the projection g and extension g'; 2nd. The pawl G or other part having an extension g' that moves outwardly from the periphery of the number wheel or wheels, causing a separation of the paper and the wheel or wheels, in advance of the rotation of the latter after the impression is printed; 3rd. The combination of the ratchet F having the recesses f f and the pawl G having the projection g and extension g'; 4th. The projection g', arranged at the side of the unit wheel for the purpose of printing a period or other mark; 5th. The combination of the cases A and M, the arm v having the projection v and the wheel C having the stops e e e; 6th. The locking device b which in addition to locking the wheel between the impressions, co-operates with the means O O used in lifting the number wheels.

No. 8016. Improvements on Gates.*(Perfectionnements aux barrières.)*

Henry A. Stearns, Lincoln, R.I., U.S., 16th October, 1877, for 5 years.

Claim.—1st. The combination with a gate standard of a bifurcated and counterbalanced gate-bar, the two arms of which are supported on the same shaft at each side of the standard; 2nd. The standard A and a bifurcated and counterbalanced gate-bar extending across the whole width of the gate opening; 3rd. The combination of two gates, each consisting of a standard and a bifurcated and counterbalanced gate-bar, extending across the whole width of the gate opening, with means by which both gates may be operated simultaneously or successively; 4th. The combination with a gate, of a ratchet d, pawl e and conical f, arranged to sound an alarm when the gate is being closed; 5th. The combination with the hollow standard A arranged to contain the actuating mechanism, of the adjustable connecting tube g forming the guide for the connecting mechanism, and the tube or tunnel h arranged to contain and protect the connecting mechanism.

No. 8017. Improvements on Gas Lamps.*(Perfectionnements aux lampes à gaz.)*

Robert W. Park, Philadelphia, Pa., U.S., 16th October, 1877, for 5 years.

Claim.—1st. The reservoir A formed with a central opening B in which is inserted a retort C from which heat is conveyed to the contents of said reservoir; 2nd. In combination with the reservoir A, the inclosed retort C having arms D which penetrate the inner wall of said reservoir, and tubular communicating passages *c c*; 3rd. The burner H composed of the collar *h* and perforated wings *h*; having shoulders or ledges *h*; 4th. The combination of the reservoir A, retort C, having communicating passages *c* and arms D, wick tube E and burner H; 5th. The method of burning hydro-carbon liquid by partially volatilizing it in an air-tight reservoir, conducting it thence to a packed retort, where it is completely volatilized, and then supplying it in a gaseous form at the point of combustion, whence heat is conducted to produce volatilization in said reservoir and retort; 6th. In combination with the reservoir A, the coil *c* or equivalent communication forming a communication between the bottom of said reservoir and the bottom of the retort C; 7th. In combination with the retort C, the copper chimney or tube M for conveying heat to the said retort from the burner; 8th. The combination of the retort C, tubes I and L having openings *r* and *l*, burner stem L₁ having openings *l* and chimney or heat conveyer M; 9th. The combination of reservoir A, retort C, intermediate communication *c*, tubes I and L, burner L₁ and chimney or heat conveyer M; 10th. In a hydro-carbon vapour burner the combination of a reservoir and retort, arranged so that the liquid contents of said reservoir will come in contact with the walls of said retort, so as to secure ready vaporization; 11th. In combination with the reservoir A, a retort C extended into said reservoir and formed with openings *c* for the passage of the vaporized oil or gas; 12th. The tubes W W proceeding downwardly from the burner stem and arranged for the conduct of gas, to form jets for heating the top of the reservoir; 13th. In combination with the downwardly extending gas tubes W W, the expansion chamber V having exits *u u* for the issuance of jets for heating the top of the reservoir; 14th. In combination with the tubes W W and reservoir A, the ribs *a* for receiving the impingement of the gas heating jets; 15th. In a hydro-carbon gas lamp, reservoir A having a top A₃ constructed to form a trough or pan for the reception of liquid; 16th. In combination with the reservoir A and heating tubes *u u*, the cap T forming a chamber T above the reservoir; 17th. In combination with a reservoir A, the heating pendants A₂ hanging from the top A₃ or passing through the latter; 18th. A hydro-carbon vapour lamp having a burner provided with jet apertures and a reservoir arranged in relation thereto, so that the jets from said apertures shall heat the top of said reservoir, either by direct contact or through the ribs *a*; 19th. In combination with the retort C, an expansion chamber V mounted thereon and formed with jet orifices V, so that gas issuing from said orifices will impinge upon and heat said retort.

No. 8018. Improvements on Sewing Machines.*(Perfectionnements aux machines à coudre.)*

Marshall H. Pearson, Leeds, Eng., 16th October, 1877, for 5 years.

Claim.—1st. The novel arrangement and combination of bath *a*, jets *b*, tanks *c*, lever *e*, cup *g*, slide lever *h*, adjustable rod *i* and nut *j*; 2nd. The novel arrangement and combination of bath *a*, tube *b*, tank *c*, tube *e*, receiver *f* and external shell *g*; 3rd. The novel arrangement and combination of small arm *a*, lever *b*, cylinder *c*, tank *d*, large bath *e*, adjustable dam plate *f*, spring *g* and set screw *h*; 5th. The arrangement, construction and combination of the means or apparatus employed for dipping the needles of sewing machines into molten wax.

No. 8019. Improvements on Spark Arresters.*(Perfectionnements aux arrêtés-flammèches.)*

William Rushton, Atlanta, Ga., U. S., 16th October, 1877, for 5 years.

Claim.—1st. The combination in a locomotive of a nozzle *x* communicating with the boiler and a pipe or opening F, arranged at the bottom of the casing opposite the nozzle, to leave an intervening receptacle for the sparks; 2nd. The combination of the stack, the discharge opening F and valve *e*; 3rd. The combination of the nozzle *e* and pipe E attached to the boiler head by a globe valve inside of the cab, at or near or level with the upper guage cock; 4th. The combination of the saddle B bolted to the boiler, and ring B₁ bolted to the stack and secured detachably to the saddle; 5th. The combination of the stack A and inner liner J protecting both the side and top of the stack; 6th. The combination with the stack of an imperforated curtain I; 7th. The combination with the stack having the inclined bonnet *a* and curtain *b*, of a liner J₁ having at the upper edge a flange *c* free from contact with the outer casing, the whole arranged to form a space Y, the mouth of which is presented at an angle to the curtain; 8th. The liner provided at the upper edge with an inclined flange *c* supported only at one edge, and having external lugs *e* arranged on vertical lines; 9th. The combination with the stack of the smoke guide L.

No. 8020. Tube Welding Machine.*(Machine à souder les tuyaux.)*

Thomas H. Roberts, Stratford, Ont., 16th October, 1877, for 5 years.

Claim.—1st. The hammer frame A consisting of the girder A₁, blocks A₂ A₃, cylinder H and brackets E E, all combined, arranged and supported upon longitudinal timbers provided with wheels for transporting the machine from place to place; 2nd. The combination of the valve I operated by the hammer, the cylinder H, piston H₂, steam pipe K and exhaust pipe K₁, cylinder extension piece H₁; 3rd. An automatic self-supporting mandrel attachment for power hammers, consisting of the fixed standard L with rectangular section L₁, adjustable block L₂ with mandrel spindle sockets N N₁, spiral springs M and adjusting and locking nuts M₁; 4th. The mandrel P adjustably supported on a fixed standard, in combination with the dies of a power hammer.

No. 8021. Improvements in Fire Escapes.*(Perfectionnements dans les sauteurs d'incendie.)*

Charles A. Gregory, Montreal, Que., 16th October, 1877, for 5 years.

Claim.—1st. A grasping bar or pulley handle having at either end forked extensions, in which are journaled three or more loose sheaves over and

under which the cord passes; 2nd. In combination with one or both of the extensions A, A₂, the ring G; 3rd. In combination with the grasping bar or pulley handle and cord, the tubes H and I; 4th. The combination of the grasping bar or pulley handle, with loose sheaves or pulleys, the cord, tube H and I, and screw E with or without snap-hook D.

No. 8022. Improvements on Hay Rakes.*(Perfectionnements aux râteaux à foin.)*

Hiram F. Smith, Richmond, Mich., U.S., 16th October, 1877, for 5 years.

Claim.—1st. The combination of the frame A, hinged or pivoted at its upper end, frame *m*, shaft *h*, hanger *l*, segmental rack 2, matching gear *o* and lever *s*, whereby the lower end of the frame *a* can be moved nearer to or farther from the rake-teeth; 2nd. The combination of the frame *m*, cross-beam 8, springs 9, standards *u*, beams *v*, levers *x* and springs *y*.

No. 8023. Gas Motor Engine.*(Machine à moteur à gaz.)*

Nicolaus A. Otto, Deutz, Germ., Francis W. Crossley and William J. Crossley, Manchester, Eng., 16th October, 1877, for 5 years.

Claim.—1st. A gas-motor engine wherein a weak or diluted uniform mixture of combustible gas and air, in the cylinder, is ignited by the flame resulting from a strong or undiluted mixture of gas and air contained in a separate passage or chamber; 2nd. A gas-motor engine wherein an equilibrium of pressure is established between the compressed charge in the interior of the cylinder, and the slide chamber containing the igniting flame just before the latter opens to the cylinder; 3rd. A gas-motor engine wherein the close contact between the slide and the face on which it works, is effected by the gaseous pressure inside the cylinder, so that the slide is relieved of pressure at all times, when such close contact is not required; 4th. The central passage I to the cylinder operating in combination with the slide F, gas pipe M and valve M₁, lever N and cam N₁ N₂, for first introducing a weak charge of gas and air into the cylinder, and then a strong charge into the said passage; 5th. The passage I made to project centrally into the cylinder, whereby the air and gas entering through the same become uniformly mixed with each other and with the gases already contained in the cylinder; 6th. A gas-motor engine wherein the charge is under compression, the passage J₁ in the slide communicating with the cavity *f*₃ and so formed as to communicate with the interior of the cylinder, just before the cavity *f*₃ communicates directly therewith, in order to establish an equilibrium of pressure between the cylinder and the slide cavity; 7th. The cylinder R communicating with the cylinder B and having a piston R₂, acting on a lever K₄, so as to press the slide against the cylinder face when excess of pressure exists in the cylinder B; 8th. A cam for working the gas-valve, arranged to be slid by the governor entirely to one side of the lever of the gas-valve when the engine runs too fast, so that the cam can not effect the opening of the gas-valve until the speed of the engine is reduced; 9th. A cam for working the gas-valve, arranged to be slid by the governor entirely to one side of the lever of the gas-valve when the engine stops, so that the cam can not be in position for holding the gas-valve open when the engine stops; 10th. In combination with a sliding cam, a strut for temporarily holding the cam in position for actuating the gas-valve, while the engine is being started; 11th. A gas-motor engine wherein the combustible charge is drawn in by one outstroke of the piston and compressed by the following instroke, the provision of a device whereby the exhaust valve is opened, when the piston has partly performed its first compressing stroke on starting the engine, such device being put out of gear when the engine is started; 12th. The before described improved gas-motor engine wherein a weak combustible charge in the cylinder is fired, by a strong combustible charge in a separate passage, in combination with means for establishing an equilibrium of pressure, between the cylinder and the slide cavity containing the igniting flame, and for causing the pressure in the cylinder to effect the requisite close contact between the slide and the face against which it works.

No. 8024. Improvements in Harvesters.*(Perfectionnements dans les faucheuses-moissonneuses.)*

William F. Goodwin, Stelton, N.J., U.S., 17th October, 1877, for 5 years.

Claim.—1st. The combination with the driving wheel provided with the ratchet teeth *a*, of the arm C rigidly connected with the axle, the pawl *c* and the tripping link D *d*, for withdrawing the pawl from the ratchet teeth and permitting the wheel A to revolve without actuating the cutters; 2nd. The combination of the segment D₁, yokes E E₁ and the crank shaft for operating the pawl *c*; 3rd. The reciprocating screw-movement consisting of the parts K, each of which faces is formed of two series of intersecting warped surfaces of the reciprocating helicoid, and the nut or casing which is rigidly attached to the axle and acts as a cam block, its inner faces being suited to the conformation of the part K; 4th. In combination with the helicoid part K, the sleeves K₁, flange M and bifurcated lever N N₁; 5th. In combination with the bifurcated lever N N₁, the adjustable standard O O₁; 6th. The combination with the bifurcated lever N N₁ and trunnions *m m*, of the bushings *n*₃ *n*₃; 7th. The combination with the lever N N₁ and main frame, of a friction roller to support the front vibrating end of the lever upon the main frame; 8th. In combination with the lever N N₁ and tubular standard O O₁, the pivot O₂ connected to and oscillating with the lever; 9th. In combination with the bifurcated lever N N₁ composed of bars or plates of metal, the buffers *n*₅ secured in boxes or sockets cast upon the frame; 11th. The combination of the flange M provided with the arm M₁, the track *b*₂ and a friction roller to support the flange against rotary thrust; 12th. The combination with the main axle, of the sleeve L₂ provided with the ribs *l*₂ and the part L₁ of the nut section, whereby said sleeve is made to support the one end of the axle upon a driving wheel, to support the locking devices, and to support and drive the nut section; 13th. The combination of the main axle, the main frame adjustable longitudinally thereon and carrying the fixed lever pivot, with the vibrating lever; 14th. A cast metal harvester frame, provided with a drooping front portion adapted to sweep the cut grass from the path of one of the supporting wheels; 15th. A cast metal harvester frame provided with a grooved standard *b*, in combination with the leading wheel R mounted upon the adjustable plate R₁ which slides in the grooved standard *b*; 16th. Cutter frame S S₁ S₂, provided with slots to receive the finger bar and the cutter; 17th. The pivot pin *s* provided with the lugs *s*₁, in combination with the slot *b*₄ having the shoulder *b*₅ at lower end; 18th. The combination with the cutting apparatus, of the lifting lever V V₁ provided with the notch *e*₂ and the tilting lever; 19th. The frame

provided with a chamber *b*_x divided longitudinally into two parts, a globular self-adjusting ring *b*_x mounted upon the main axle within the chamber, and bolts or set screws securing the two parts of the chamber together upon the globular ring; 20th. The tubular part *B*¹ *B*² of the frame provided with the chamber *b*_x in combination with the globular ring *b*_x, rollers *b*_{xx} and bolts or set screws securing the two parts of the chamber together upon the globular ring; 21st. The main axle *A*¹ having a collar rigidly attached thereto between the driving wheels, in combination with the main frame provided with abutments or shoulders on opposite sides of said collar, whereby the desired longitudinal position of the main frame relative to the axle may be maintained; 22nd. The main frame provided with a chamber *S*¹ having abutments *z*₁ *z*₂ in combination with the axle *A*¹, collar *z*, followers *z*₁ *z*₂, keys *z*₃ *z*₄ and set screws *z*₅ *z*₆; 23rd. The part *L*¹ of the nut provided with the expanded flaring part *l* to collect and return the oil; 24th. The main frame provided with the rearwardly projecting arms or brackets *B*₃ provided with holes *u*₁ in combination with the tongue frame or draft frame provided with arms *U*¹ having pivots *u*₂; 25th. The combination of a locking latch with the arm *U*¹ and bracket *B*₃; 26th. The yoke *K* made in one piece in the form of a hook to extend in rear of the axle and rest upon the sleeve *C*, in combination with the yoke *E*¹ for actuating the segment *D*¹, and adapted to be removed from the sleeve *C* without taking off the driving wheel; 27th. The draft frame provided with the central ribs *r*₃ and the lips or ribs *r*₂ *r*₃, one upon each side of ribs *r*₃ and of less height, in combination with the seat spring *X* and springs *z*₁ *z*₂ arranged in recesses formed by ribs *r*₂ *r*₃ to permit a rocking lateral motion of the seat; 28th. A guard *Y* formed of a rod or bar of metal, and provided with legs *y*₁ *y*₂ by means of which it may be mounted upon the frame of the machine, independently of the seat or seat support; 29th. The pitman or connecting bar *P* divided horizontally, the line of division at the socket being upon an angle to the line of thrust or travel of the cutters.

No. 8025. Art of Heating Sad Irons.

(*Art de chauffer les fers à repasser.*)

Holland B. Evans, (Co-inventor with, and Assignee of, Wilson Kestler,) St Charles, Mo., U.S., 17th October, 1877, for 5 years.

Claim.—1st. The sliding board *C* whether propelled by rope and pulleys, or by wheel and cog, having the hinged bar *d*, in combination with the arm *D* hinged to the iron *F* and handles *a*¹; 2nd. The board *C* sliding in grooves in the elevated portion *m*, and having the hinged bar *d*, in combination with the hinged arm *D*, iron *F*, handle arm *a*¹ and guide rod *t*; 3rd. The iron *F* combined as set forth.

No. 8026. Improvements on Speaking

Telegraphs. (*Perfectionnements aux télégraphes parlants.*)

Thomas A. Edison, Menlo Park, N.J., U.S., 17th October, 1877, for 5 years.

Claim.—1st. In an instrument for transmitting electric impulses by sound, a diaphragm or tympan of mica; 2nd. The combination with a diaphragm or tympan, of an electric tension regulator for varying the resistance in a closed circuit; 3rd. The combination in an electric instrument actuated by sound, of a diaphragm or tympan, a conductor and an electric tension regulator composed of elastic fibre, and electric conducting material; 4th. The combination with the diaphragm and electric conductor, of the cork-disc and tension regulator; 5th. In a telegraph operated by sound, the transmission and reproduction of the human voice, by increasing and decreasing the resistance of the circuit; 6th. The combination with a diaphragm or tympan, of electrolytic fluid and electrodes, the latter being vibrated by the diaphragm, and varying the resistance in the electric circuit; 7th. In an instrument for transmitting sounds by electricity, a resonant case having an opening or edge against which the consonant sounds act; 8th. In combination with the diaphragm or tympan, and the electric tension regulator, the adjusting screw or variable presser to regulate the resistance of the tension regulator in the electric circuit; 9th. The combination with the diaphragm in a speaking telegraph instrument, of a moving surface and a recording mechanism actuated by the diaphragm or tympan; 10th. The combination with a receiving diaphragm or tympan, in telegraph operated by sound, of a moving surface, a point or pen, and a connection from the same to the diaphragm; 11th. The combination in an instrument for receiving sounds electrically of an electro-magnet, and armature plate; 12th. The combination in the telegraphic circuit of two or more tympan, or resonant box, and one or more circuit closers to each tympan; 13th. The combination with the diaphragm of a resonant case, of circuit connections at both sides of the diaphragm and a battery; 14th. In resonant box or case, a diaphragm and flexible circuit connections, whereby the instrument is made portable and can be placed to the mouth in speaking; 15th. An electro-magnet and resonant plate, or diaphragm, provided with a handle and flexible conductors; 16th. The receiving instrument consisting of an electro-magnet, a case and a loose metallic plate, arranged and operated to act as a call, or to receive the message; 17th. One or more contact points of yielding material, that produce a rise and fall of tension proportioned to the pressure exerted by the diaphragm; 18th. A receiving instrument provided with a resonant surface, in combination with a frictional surface moved by power, and acting in connection with the electric current to vibrate such resonant receiver, and produce tones corresponding to those at the transmitting apparatus; 19th. The combination with a thermo-electric pile, of a vulcanite or hard rubber diaphragm; 20th. The method of recording the undulations of the diaphragm or yielding material, and the reproduction of sound by such material acting upon a diaphragm to communicate to the same vibrations similar to the original ones; 21st. The combination with the diaphragm and tension-regulator, of a magnetized tongue and an iron plate upon the diaphragm; 22nd. In combination with the diaphragm, operated by sound, an electro-magnet, a valve and a chamber of compressed air or gases to reproduce the sounds, in louder tones; 23rd. The method of preparing fibre for electric tension regulators, by conducting or semi-conducting material, associated intimately with such fibre; 24th. In an instrument for receiving sound telegraphically, a plate loose at its edges and supported upon a post or standard.

No. 8027. Machine for Turnip Topping and Rooting.

(*Machine à émonder les navets.*)

John Leonard, Uxbridge, Ont., 23rd October, 1877, for 5 years.

Claim.—1st. The combination of the toppler *G* in connection with lever *C*, and grubber *F* in connection with screener *E*; 2nd. The combination of the potato mound toppler *J* in connection with handle *C*, and grubber *F* in connection with screener *E*.

No. 8028. Improvements on Wheeled Harrows.

(*Perfectionnements aux herbes à roues.*)

Edward J. Lockwood, Danbury, Ohio, U.S., 24th October, 1877, for 5 years.

Claim.—In combination with the arrow-frame adjusted at its four corners, the perforated central bar *J*, lever *S*, chain *d*, pulleys *e* and lever *L*¹, for regulating the same.

No. 8029. Machine for Setting Seams in Pipe Elbows.

(*Machine à faire les coutures des couds de tuyaux.*)

Greene Choate, East Saginaw, Mich., U.S., 24th October, 1877, for 5 years.

Claim.—The two armed standard *A*, the collars *B*, the spring *C*, the blocks and plate *D*, *E*, and the threadle rods *F*.

No. 8030. Manufacture of Felted Boots and Shoes.

(*Fabrication des chaussures en feutre.*)

John Batley, John Keats, and James Neil, London, Eng., 24th October, 1877, for 15 years.

Claim.—1st. The flat pliable former made with a bevelled or chamfered and thinned edge; 2nd. The pliable former made of two or more thicknesses of absorbent cloth having interposed between them a layer of india rubber or other waterproof material; 3rd. For the manufacture of shoes and other coverings for the feet of felted fibrous material, in a flat pliable former of a shape to conform or approximate to the side profile of the foot or foot and leg.

No. 8031. Improvement on Heating Stoves.

(*Perfectionnement des poêles de chauffage.*)

Jeremiah Dwyer and George H. Barbour, Detroit, Mich., U.S., 24th October, 1877, for 5 years.

Claim.—The portable culinary attachment *B* adapted to fit the back and flue case, or exit of a magazine heating stove.

No. 8032. Improvement on Turbines.

(*Perfectionnements des turbines.*)

John H. Staples, Boston, Mass., U.S., 24th October, 1877, for 5 years.

Claim.—The combination of the turbine induction ring *A* provided with flanged guides and one or more series of inducts, with the series of separate gates *f* and their supporting arms *g* and ring *h*, arranged with said ring *A* and its inducts and guides.

No. 8033. Improvement in Lubricating Compounds.

(*Perfectionnements dans les composés lubrifiants.*)

George G. Munger, Rochester, N.Y., U.S., 24th October, 1877, for 5 years.

Claim.—1st. The combination with a lubricating oil and with plumbago, soapstone or other similar solid substance therein, or with a mixture of any two or more of them of myrtle wax, or of Japan wax, either or both for the purpose of holding in suspension in, and disseminating through the oil such solid substance or substances, said materials being used with or without soda or other form of alkali, or with or without tallow, or with or without water; 2nd. The compound composed of the lubricating oil and plumbago, soapstone or other similar solid substance, or a mixture of any two or more of them and myrtle wax or Japan wax, either or both with or without soda or other form of alkali, or with or without tallow, or with or without water.

No. 8034. Improvements on Washing Machines.

(*Perfectionnements aux machines à laver.*)

Martin W. Robinson, Somerville, Mass., U.S., 24th October, 1877, for 5 years.

Claim.—In combination with the tub *A* and its wash-board, or corrugated lining *B*, the notched dasher *C* and its recessed supporting arms *D*, springs *e* and stops *g*; in combination with the tub *A* and its wash-board, or corrugated lining *B*, and with the dasher *C* and its recessed supporting arms *D*, springs *e* and stops *g*, the cranks *i*, connecting rods *k*, fly wheel *l*, cranked shaft *m* and the pedal *o*.

No. 8035. Improvements on Balloons.

(*Perfectionnements aux ballons.*)

Count A. Apraxine, Saint-Petersburgh, Russia, 24th October, 1877, for 5 years.

Claim.—The adjunction to ordinary aerostats as at *a* of one or several secondary balloons as at *b*, so arranged as to be actuated by the aeronaut or by a mechanical equivalent.

No. 8036. Improvement on Curtain Cord Fasteners.

(*Perfectionnement aux arrêto-cordons de rideaux.*)

Nathan Campbell, Rochester, N.Y., U.S., 24th October, 1877, for 6 years.

Claim.—1st. The case *A*, ratchet slide *B* and key *C*, the ratchet teeth being upon one edge of the slide, and engaging with a fixed tooth or teeth on the inside of the case *A*, and the key resting between the opposite edge of the slide and the edge of the case; 2nd. The ratchet slide *B* constructed with the knob *d* forming a bearing for the curtain cord, and the side lugs *d*¹ *d*² for keeping the cord in place.

No. 8037. Improvements on Boring Machines.

(*Perfectionnements aux machines à forer.*)

James D. Shoots, Horseheads, N.Y., U.S., 24th October, 1877, for 5 years.

Claim.—1st. An auger *C* for boring the hole, and a reamer *D* for reaming or completing the same, when the auger projects beyond the reamer and the two parts revolve in the different directions at different rates of speed; 2nd. In combination with the table *G* provided with rack bar *d*, of the feed shaft *L*, run from the auger shaft, the worm *H* secured on said shaft, and the hinged bar *J* with lever *O* for throwing the worm in and out of gear.

No. 8038. Improvements on Waggon-Trestles.*(Perfectionnements aux avant-trains de wagons.)*

Laurin M. Fitch, Leonardsville, and Louis Roth, Rome, N.Y., U.S., 26th October, 1877, for 5 years.

Claim.—1st. The waggon platform trestle consisting of the centre bar B and the transverse bar D, arranged at right angles with each other, under the centre of the fifth wheel circle C, the head block A and the side timbers C C, diverging in direct lines therefrom, and extending to the draft-clevises, the diagonal brace iron F F, attached to centre and side timbers, and the lateral draft iron attached to head block and side-bars, all said iron supporting the transverse bar, and extending beyond the ends of the side timbers to form the draft clevises; 2nd. The bridge-iron L passing under the centre bar B and secured to the transverse bar D, and the ends to the side timbers C C for trussing the intersection of the said bars.

No. 8039. Improvements on Shears for Cutting Sheet Metal.*(Perfectionnements aux cisailles pour le métal en feuille.)*

Greene Choate, East Saginaw, Mich., U.S., 26th October, 1877, for 5 years.

Claim.—1st. Shears having cutting edges formed on an ogee or reversed curve; 2nd. The bed A having the curved cutting edge *a b*, arm *c* and guide pins *g*, and the curved shear blade B having arms *d*, in combination as shown.

No. 8040. Improvements on Milk Pans.*(Perfectionnements aux boîtes à lait.)*

William Fleeton, West Shefford, Cassius S. Wells and Mark O. Thompson, Cowansville, Que., 26th October, 1877, for 5 years.

Claim.—The combination of the pan A, with the partition in one corner and the hole *b* in its bottom, with the jacket B provided with the overflow *d* and tap *e*.

No. 8041. Improvement in the Art of Ornamenting Glass.*(Perfectionnement dans l'art d'ornier le verre.)*

William C. Barnes and Edward R. Kent, Hamilton, Ont., 26th October, 1877, for 5 years.

Claim.—The improved art or process of ornamenting glass, by means of wooden patterns through the instrumentality, and in combination with a sand blast.

No. 8042. Improvement on Animal Traps.*(Perfectionnement des ratières.)*

Chauncey M. Orton, Glens Falls, N.Y., U.S., 26th October, 1877, for 5 years.

Claim.—The combination of the sliding partition B having an opening formed through it, the drop bridge C, the weighted wire E F, with the box A, the plate D having an opening formed through it, and the door G provided with a flange *g* for setting and re-setting the trap.

No. 8043. Improvements on a Sawing Machine.*(Perfectionnements à une scierie.)*

Horace McCoy, Brome, Que., 26th October, 1877, for 5 years.

Claim.—1st. The combination of swinging rod D, cross-piece C, upright B, with shoes or flanges F and the track or curved bed *g*; 2nd. The coupling of the saw shaft L with crank shaft J, and crank shaft I with swinging rod D.

No. 8044. Improvements on Metallic Laths.*(Perfectionnements aux lattes métalliques.)*

Albert B. Lawler, Lewis J. Carpenter and John H. Lawler, Frederickville, Ill., U.S., 26th October, 1877, for 5 years.

Claim.—1st. A sheet metal lath having formed in it folds or crimps, and provided with openings formed by punching out tongues or lips; 2nd. The metallic sheets A having formed in them the folds or crimps *b*.

No. 8045. Improvements on Punching Machines.*(Perfectionnements aux machines à poinçonner.)*

Greene Choate, East Saginaw, Mich., U.S., 26th October, 1877, for 5 years.

Claim.—1st. The bed A, in combination with the stop and guide pins *c f j*, the dies *a*, guide B, punches C, bar B, and lever *g*; 2nd. The combination of the springs *e* with the punches *c*.

No. 8046. Improvements on Corrugated Tubes and Plates.*(Perfectionnements aux tubes et aux plaques ridés.)*

Samson Fox, Leeds Forge, Eng., 26th October, 1877, for 5 years.

Claim.—1st. The process of corrugating by drawing the corrugations out of the sectional thickness of the plate of which the tube is formed; 2nd. The roll A constructed in sections N and N, with its prolonged axle, made so as with its drawing wheel to counterbalance the overhanging groove or corrugated part of the roll, when its movable and bearing D D is opened; 3rd. The use, in combination of the prolonged roll A, the bearings B C, the end bearing constructed in parts D D, arranged to be moved away from the axis of the roll, and the hand-wheels K K and screws K₂ K₃ for operating the said parts D, so as to leave one end of the said roll free, to enable the tube to be corrugated to be slipped on to the roll A; 4th. In combination with the prolonged top roll A, its bearings B C and D, and means for operating the latter, the lower roll A, mounted in bearings E F having a vertical movement in the housings C, and the system of levers and links L L, L₂ arranged to be actuated by steam, hydraulic, or other power connected to the part M;

5th. In combination with the main rolls A A, and means for adjusting and operating them, the additional rolls O O, one on each side of the "bight" of the main rolls A A, the slides P P, P₂ P₃, gearing Q, connecting shafts R and other parts constructed, arranged and operating as described, for causing the side rolls O O to approach or recede from the main rolls A A, by turning the hand wheels S; 6th. The modified apparatus, wherein the corrugations are produced by dies T W representing segmental sections of the rolls A A, one such section T being placed in front of, and fixed to the pillar or post U, and the other W fixed opposite thereto on a slide V having reciprocating horizontal motion imparted to it, whereby the segmental die W is made to approach and recede from the die T, so that the metal of the tubes or plates is corrugated by the two dies; 7th. The described modification, wherein the segmental corrugated dies are arranged respectively, inside the segmentally formed box or cylinder Y, and outside the internal expanding block *a* made in section, the expansion of the said internal block being effected as explained.

No. 8047. Improvements in Machines for Binding Grain.*(Perfectionnement dans les machines à lier le grain.)*

William A. Kirby, Anbura, N.Y., U.S., 26th October, 1877, for 5 years.

Claim.—The combination of a stationary plate, interposed between the twister and cutter.

No. 8048. Improvements on Corset Skirt Supporters.*(Perfectionnements aux trosses-jupons.)*

Levi S. Weed, New Haven, Ct., U.S., 26th October, 1877, for 5 years.

Claim.—1st. The combination, in a skirt supporter, of a corset or bustle, of the vertical stays, the skirt supporting springs and the auxiliary pockets that enclose the lower ends of the stays and springs; 2nd. The combination, with the pockets and stays, of a corset or bustle, said pockets having exit openings, of the skirt supporting springs and auxiliary pockets which enclose the lower ends of the stays and springs, and prevent the tearing of the exit openings of the stay pockets.

No. 8049. Apparatus for Lighting and Extinguishing Gas Lamps by Electricity.*(Appareil pour allumer et éteindre les lampes à gaz par l'électricité.)*

Saint George L. Fox, London Eng., 31st October, 1877, for 5 years.

Claim.—1st. The combination with the gas or stop cock of each lamp, a permanent magnet *a* made to turn on an axis or pivot, by means of an elastic current, so as to open or close the cock; 2nd. In combination with the burner *o* *k* and plug *e*, of the cock, the pivoted permanent magnet *a* and the induction coil *l*, with its primary and secondary coils or wires; 3rd. In combination with the pivoted magnet *a*, induction coil *l*, and plug *e*, the hollow frame *b*, for conducting the gas from the gas pipe, to the cock; 4th. The projections *p p* on the magnet *a*, in combination with the pin *l* or equivalent on the plug *e*; 5th. The tapered plug *e* supported by the pin or pivot *m*, and with or without the groove *n*; 6th. The mode or manner of igniting gas lamps by setting up a powerful current, by means of a condenser of very large surface, through wires connected with such lamps, and then causing such current to cease abruptly, so that a secondary discharge takes place at each burner and the gas is thereby ignited.

No. 8050. Improvement in Adjustable Seats.*(Perfectionnement dans les pliants.)*

Bickford N. Heinenway, Rockland, Me., U.S., 27th October, 1877. (Extension of Patent No. 1728.) for 5 years.

No. 8051. Improvement in School Desks.*(Perfectionnement dans les pupitres d'écoles.)*

Bickford N. Heinenway, Rockland, Me., U.S., 27th October, 1877. (Extension of Patent No. 1730.) for 5 years.

No. 8052. Improvements on Cracker Machines.*(Perfectionnements aux machines à biscuits.)*

Augustus Ruger, Buffalo, N.Y., U.S., (co-inventor with, and Assignee of, Isaac H. Shaver), 31st October, 1877, for 5 years.

Claim.—1st. In a cracker and lozenge machine, the series of punches D D, and operating in connection with the punch plate *g* having the punch openings *h* therein; 2nd. The combination of the series of hollow punches D D and the solid clearers *a a* working therein; 3rd. The slide E operated by suitable devices, and in combination with the punches D D and punch plates *g h*; 4th. In a cracker machine, the combination of the post *c*, arm *d*, pivoted thereto, and also to the plate *b*, the trip pawl *f*, the clearers *a a* and punches D D; 5th. The combination with the sliding table E and the cutters D D, the raising and dropping bars M M, the pivoted cams P P and the rack arms Q Q, for raising and dropping the sliding table; 6th. The cross apron R, in combination with the scrap apron O, and operating simultaneously therewith.

No. 8053. Improvements on Smoothing and Glossing Fabrics.*(Perfectionnement dans le repassage des tissus.)*

John F. Frese, Baltimore, Md., U.S., 2nd November, 1877, for 5 years.

Claim.—1st. The metal faced board B, adjustably applied to standards A; 2nd. The method of smoothing fabrics, by stretching them while damp over a smooth metallic surface, and drying them under tension.

No. 8054. Improvements on Spring Hinges.*(Perfectionnements aux pivots à ressorts.)*

Lorenz Bommer, Brooklyn, N.Y., U.S., 2nd November, 1877, for 5 years.

Claim.—1st. In a spring butt-hinge, the combination with the swinging and stationary flanges or wings A A having seats B, the seats of the swinging flange having fixed top and bottom buttons of a centre pin rivetted to the buttons, and of a spiral spring secured to a fixed and movable pin socket, of the stationary flange; 2nd. In a butt-hinge, the swinging flange or wing plate, being cast in one piece with the ornamental top and bottom buttons of the hinge; 3rd. The stationary flange A having a fixed lower and detachable top socket, both provided with annular recesses, in combination with a flanged incasing sleeve D rivetted to plate A.

No. 8055. Apparatus for Mashing and Grinding Materials for Distilleries.*(Appareil pour écraser et moulin les matières de distilleries.)*

Gustav Ellenberger, Darmstadt, Germany, 2nd November, 1877, for 5 years.

Claim.—1st. The reduction and mashing of vegetable substances, and preparing the same for fermentation, the process which consists in, first subjecting said substances (which have not been divided or reduced or crushed previously) to steam under pressure, afterwards grinding the same while hot in a steam jacket vessel to a fine pulpy mass, and when said mass is partially cooled adding the requisite malt, which is followed by artificial cooling and the addition of yeast; 2nd. The production of a preparation of malt in the form of malt milk, by means of the described apparatus, in such manner that malt and water are introduced into the mashing tub and subjected to the action of the drum; 3rd. The intimate incorporation of said malt milk with the mash in the same mashing tub; 4th. The steam chamber having a conical bottom, in combination with the apparatus for introducing uniformly steam into the said steam chamber; 5th. The combination with the steam chamber, of the mashing tub, in such manner that the steam chamber is placed above or on the side of the mashing tub; 6th. In combination with a steam chamber and mashing tub, the pipe r and the exhaust pipe, provided with the cone and an injector apparatus; 7th. In a mash machine, the drum with knives or teeth cast or screwed on the same; 8th. The drum, in combination with its shaft running in bearings, which are placed in eccentric movable boxes; 9th. In a mash tub provided with a central division plate, the inclined raised partition situated behind the revolving drum; 10th. A mash tub provided with a central division plate, recess situated before the revolving drum; 11th. The mashing tub provided with a partition plate, double sides and bottom, elevated inclined partition recess, revolving drum, bed plate and movable plate; 12th. The opening h which can be closed, in combination with the slide z.

No. 8056. Improvements on Gates.*(Perfectionnements aux barrières.)*

Jacob Von Hickman, Springport, Ind., U.S., (Assignee of Charles T. Harris), 2nd November, 1877, for 5 years.

Claim.—1st. In a sliding gate, the travellers d centrally secured in the lower ends of the bars D, the periphery of the rear traveller being slightly

above, and that of the forward traveller below the lower ends of said bars, in combination with the track f; 2nd. The double gate posts E, in combination with the gate A provided with the travellers d and inclined track f.

No. 8057. Improvements on Milk Coolers.*(Perfectionnements aux boîtes à lait.)*

Henry A. Hamm, Cazenovia, N.Y., U.S., 2nd November, 1877, for 5 years.

Claim.—1st. The combination and arrangement with a milk-pan set within a water pan, having a water outlet underneath the milk pan, of a water inlet arranged around the exterior of the pan at o: near the top thereof, to apply the cold water first at the top of the pan and uniformly on all sides; 2nd. The arrangement with the milk pan A within the tank B, and having a water space around its sides and bottom, of the perforated pipe p extended around the pan inside the water tank, at the top of its vertical sides, and the perforated pipe d arranged longitudinally central underneath the pan.

No. 8058. Improvements on Folding Seats.*(Perfectionnements aux pliants.)*

John S. Kapple, Cleveland, Ohio, U.S., 2nd November, 1877, for 5 years.

Claim.—1st. A seat formed with a stationary back and uprights A, a folding seat bottom C, hinged leg support and a swinging brace, the latter pivoted to a rigid cross-bar; 2nd. The combination with the folding seat bottom C and folding leg support G, of folding side arms or supports B; 3rd. In combination with the side arms provided with the slotted lugs c c, the seat bottom C provided with tapering lugs or pins e e; 4th. In combination with the seat bottom and leg support, of the wedge hinge I J; 5th. The combination with the folding seat bottom and hinged leg support, of the hat rest E, the latter supported on a swinging brace that is pivoted to a rigid cross-bar; 6th. The seat having sides and seat bottom, adapted to fold against the seat back and folding foot rest, or kneeling board; 7th. A seat constructed with folding sides, seat bottom, hat rest and foot rest; 8th. The combination in a single seat, of folding seat bottom, folding leg support, folding hat rest and folding side arms; 9th. A concave or grooved concavity for the reception of the ends of the back slats of a seat, whereby said seat may be set upon a curve or circle; 10th. The combination of the back slats of a seat, made curved or otherwise, with a groove or concave recess for the reception of the ends of the slat; 11th. The seat casting provided with the hinge A, recess p and curved recess, for the reception of the slats; 12th. The piece consisting of an angle iron affording a rest and an abutment to the bottom as well as seat, and provided with a lug or projection e; 13th. The spindle or link consisting of the single casting, so formed as to admit of a free and unobstructed movement of the parts of the seat when folded, and at the same affording a means of attachment for a hat rest.

Lists of Patents issued up to 27th November, 1877, but not yet Officially published in the Patent Office Record.

No. 8059. J. C. Allen, (Assignee of J. Fowler, R. K. Smither, all of Buffalo, N.Y., U.S.A.), "Bougies," 2nd November, 1877.

No. 8060. J. Greacen, New York, U.S.A., "Wringer Roll," 2nd November, 1877.

No. 8061. J. H. Green, Canandaigua, N.Y., U.S.A., "Improved Threshing Machine," 2nd November, 1877.

No. 8062. M. A. Marten and E. H. Winchell, both of Chicago, Ill., U.S.A., "Car Ventilator," 2nd November, 1877.

No. 8063. A. C. Norcross, Boston, Mass., U.S.A., "Regulator for Steam Boilers," 2nd November, 1877.

No. 8064. T. R. Hyde, Westerly, R.I., U.S.A., "Wooden Soled Shoe," 2nd November, 1877.

No. 8065. A. L. Munsen, New York, U.S.A., "Automatic Screw Machine," 2nd November, 1877.

No. 8066. C. Maggio, Montreal, Que., "Soap," 2nd November, 1877.

No. 8067. A. Berry, Waterloo, Que., "Car Truck," 2nd November, 1877.

No. 8068. W. W. Whitcomb and S. A. Brackett, both of Boston, Mass., U.S.A., "Self-stayed Seam," 2nd November, 1877.

No. 8069. H. Aitken, Falkirk, Scot., "Process of Making Illuminating Gas," (Re-issue of Patent No. 4613), 2nd November, 1877.

No. 8070. W. G. Warden, Philadelphia, Pa., U.S.A., "Ship for Transporting Petroleum, &c.," (Extension of Patent No. 1736), 2nd November, 1877.

No. 8071. J. Grover and T. Grover, Toronto, Ont., (Assignees of N. T. Worthingley, Brunswick, Me., U.S.A.), "Washing Machine," (Extension of Patent No. 1753), 7th November, 1877.

No. 8072. C. Barber, Meaford, Ont., "Turbine Water Wheel," (Extension of Patent No. 1743), 7th November, 1877.

No. 8073. F. C. Lillis, (Assignee of L. A. Kebasz,) Lockport, N.Y., U.S.A., "Faucet," 7th November, 1877.

No. 8074. C. F. A. Hinrichs, (Assignee of C. Reistle, of Brooklyn, N.Y., U.S.A.), "Lamps and Mineral Wicks for same," 7th November, 1877.

No. 8075. C. T. Brandon, Toronto, Ont., "Automatic Leg Planer and Groover," 8th November, 1877.

No. 8076. H. F. Howell, Sarnia, Ont., "Apparatus for Treating Ores," 9th November, 1877.

No. 8077. T. H. Fuller, Boston, Mass., U.S.A., "Horse Shoe Nail Machine," (Extension of Patent No. 1757), 10th November, 1877.

No. 8078. T. H. Fuller, Boston, Mass., U.S.A., "Horse Shoe Nail Machine," (Extension of Patent No. 1758), 10th November, 1877.

No. 8079. T. H. Fuller, Boston, Mass., U.S.A., "Horse Shoe Nail Machine," (Extension of Patent No. 1759), 12th November, 1877.

No. 8080. G. M. Cossitt and N. Cossitt, Brockville, Ont., (Assignees of C. M. Titus, Ithaca, N.Y., U.S.A.), "Wheeled Horse Rake," (Extension of Patent No. 1700), 13th November, 1877.

No. 8081. A. Hamlin, Almonte, Ont., "Dog Power," 13th November, 1877.

No. 8082. F. Dietrich, Murten, Switzerland, "Improvements in the Treatment of the Residuous of Wine Making," 13th November, 1877.

No. 8083. A. Israel and J. Hull, Kinniswick, Miss., U.S.A., "Clothes Wringer," 13th November, 1877.

No. 8084. J. Magee, Chelsea, Mass., U.S.A., "Sink Trap," 13th November, 1877.

No. 8085. C. Dion, Chambly Basin, Que., J. Baylis, Montreal, Que., "Improvements in Stoves and Furnaces," 13th November, 1877.

No. 8086. E. Hamer and J. Metcalfe, Aberystwith, Wales, and E. Davies, Pontypridd, Glamorgan, Wales, "Steam Injector," 13th November, 1877.

No. 8087. G. Marskell, (Assignee of C. C. Roe), both of Hamilton, Ont., "Steam Engine," 13th November, 1877.

No. 8088. C. E. Alden and D. Bruist, Philadelphia, Pa., U.S.A., "Broad Cast Seed Sower," 13th November, 1877.

No. 8089. A. Braterick and F. Cook, Dashwood, Ont., "Machine for Cutting Iron and other Metals," 13th November, 1877.

No. 8090. F. Ward, Rockford, Ill., U.S.A., (Assignee of E. L. Church, Walworth, Wis., U.S.A.), "Hay Elevator and Carrier," 13th November, 1877.

No. 8091. E. H. Brower, Carson City, Mich., U.S.A., "Bench Vice," 13th November, 1877.

No. 8092. E. Andrews, Williamsport, Pa., U.S.A., "Saw Frame," 13th November, 1877.

No. 8093. M. L. Smith, Arkona, Ont., "Clothes and Fruit Dryer," (Extension of Patent No. 1791), 14th November, 1877.

No. 8094. J. Parkyn, T. Pringle and J. Ogilvie, Montreal, Que., "Separator," (Extension of Patent No. 1793), 14th November, 1877.

- No. 8095. A. Willson, Belle Ewart, Ont., "Car Coupler and Buffer," (Extension of Patent No. 1799,) 14th November, 1877.
- No. 8096. A. Kline, Bond Head, Ont., "Straw Carrier." (Extension of Patent No. 1805,) 14th November, 1877.
- No. 8097. L. F. Bungay and T. Merritt, Norwich, Ont., (Assignees of B. K. Walton, Fergna, Ont.), "Gang Plow," (Extension of Patent No. 1843), 14th November, 1877.
- No. 8098. A. B. Lipsey, West Hoboken, N.J., U.S.A., "Wrench," 16th November, 1877.
- No. 8099. W. Nugent, New York, U.S.A., "Water Filter," 16th November, 1877.
- No. 8100. T. J. Sawyer, Pacific, Miss., U.S.A., "Railroad Nut Lock," 16th November, 1877.
- No. 8101. A. E. Mook, East Pembroke, N.Y., U.S.A., "Bird Cage," 16th November, 1877.
- No. 8102. T. H. Richardson, Bangor, Me., U.S.A., "Circular Sawing Machine," 16th November, 1877.
- No. 8103. T. H. Brown, Brantford, Ont., "Threshing Machine Sifter," 16th November, 1877.
- No. 8104. W. H. Phillip and T. Hawthorn, London, Ont., "Hand Stamp," 16th November, 1877.
- No. 8105. A. W. Morgan, Buffalo, N.Y., U.S.A., "Street Stop Cock Box for Gas and Water," 16th November, 1877.
- No. 8106. W. T. Christy, St. Louis, Miss., U.S.A., "Brick Kiln," 16th November, 1877.
- No. 8107. P. Sweeny, New York, U.S.A., "Lubricating Compound," 16th November, 1877.
- No. 8108. C. E. Brown, Jackson, Mich., U.S.A., "Spring Bed Bottom," 16th November, 1877.
- No. 8109. C. Wheeler, the younger, Auburn, N.Y., U.S.A., "Reaping and Mowing Machine," (Extension of Patent No. 3608), 17th November, 1877.
- No. 8110. C. Wheeler, the younger, Auburn, N.Y., U.S.A., "Reaping and Mowing Machine," (Extension of Patent No. 3608), 17th November, 1877.
- No. 8111. C. Wheeler, the younger, Auburn, N.Y., U.S.A., "Cutting Apparatus for Harvesters," (Extension of Patent No. 4617), 17th Nov., 1877.
- No. 8112. C. Wheeler, the younger, Auburn, N.Y., U.S.A., "Cutting Apparatus for Harvesters," (Extension of Patent No. 4617), 17th November, 1877.
- No. 8113. J. Dreper, Whitby, Ont., "Stovepipe Joint, (Extension of Patent No. 5934), 17th November, 1877.
- No. 8114. J. Dreper, Whitby, Ont., "Stovepipe Joint," (Extension of Patent No. 5934), 17th November, 1877.
- No. 8115. G. Bettschen, Wilmot, Ont., "Cultivator," 17th November, 1877.
- No. 8116. J. Batley, Kensington Park Gardens, J. Keats, Wood Green, and J. Neil, Worship Street, all in Middlesex Co., England, "Boot and Shoe Last," 17th November, 1877.
- No. 8117. J. C. Mackey, Grand Rapids, Mich., and W. H. Harbit, Chicago, Ill., U.S.A., "Strips for Patching Sheet Metal," 17th November, 1877.
- No. 8118. B. T. Babbitt, New York, U.S.A., "Air Compressor," 17th November, 1877.
- No. 8119. J. L. Pelletier, Montreal, Que., "Boot Linings," 17th November, 1877.
- No. 8120. F. W. Eames, Watertown, N.Y., U.S.A., "Coupling for Vacuum Brakes," 17th November, 1877.
- No. 8121. J. Johnston, and B. Taylor, Toronto, Ont., "Portable Bath," 17th November, 1877.
- No. 8122. L. Goddu, Winchester, Mass., U.S.A., "Nailing and Lasting Machine," 17th November, 1877.
- No. 8123. J. B. Slichter, Chicago, Ill., U.S.A., "Ship Bottom Compound," 17th November, 1877.
- No. 8124. J. B. Slichter, Chicago, Ill., U.S.A., "Liquor for Saturating Felt for Roofing," 17th November, 1877.
- No. 8125. G. L. Thorne, and G. C. Farnsworth, Buffalo, N.Y., U.S.A., "Heater," 17th November, 1877.
- No. 8126. C. F. Bunnel, Chatham, Ont., "Horse and Cattle Food," 17th November, 1877.
- No. 8127. E. B. Viets, Boston, Mass., U.S.A., "Apparatus for Shaping Pantaloons," 17th November, 1877.
- No. 8128. J. A. Murray, Yarmouth, N.S. (Assignee of J. H. Thorp, New York, U.S.A.), "Artificial Stone," 17th November, 1877.
- No. 8129. J. H. Bainton, Tiverton, Ont., "Whiffletree," 17th November, 1877.
- No. 8130. M. J. Austin, Bonham, Texas, U.S.A., "Ditching Machine," 17th November, 1877.
- No. 8131. A. Reckie, Wilfred, Ont., "Tilting Motion," (Extension of Patent No. 1817,) 21st November, 1877.
- No. 8132. G. Wilson, Montreal, Que., "Chair," 23rd November, 1877.
- No. 8133. A. Steinbach, Vienna, Austria, "Self-tightener for Saddle Girths," (Extension of Patent No. 7717,) 27th November, 1877.
- No. 8134. A. Steinbach, Vienna, Austria, "Self-tightener for Saddle Girths," (Extension of Patent No. 7716,) 27th November, 1877.

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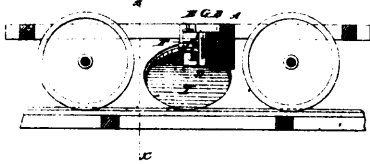
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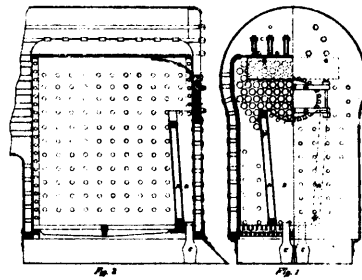
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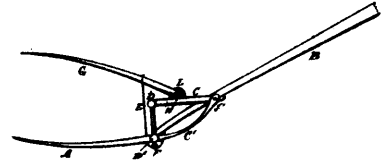
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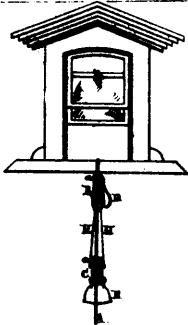
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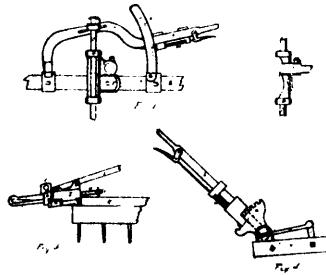
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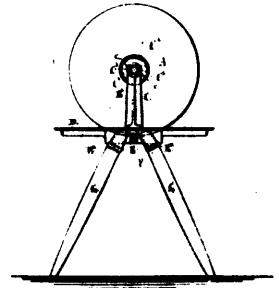
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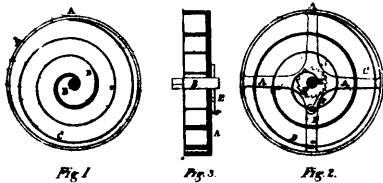
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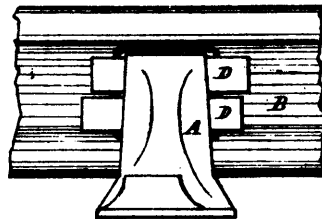
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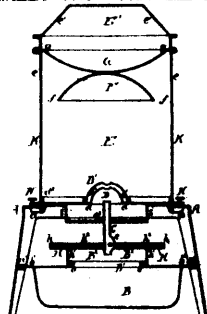
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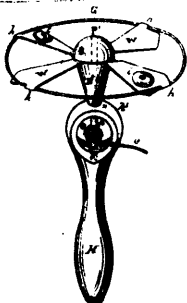
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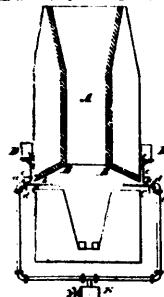
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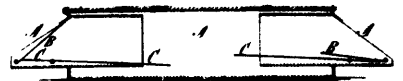
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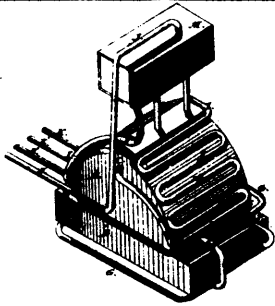
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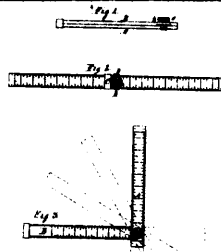
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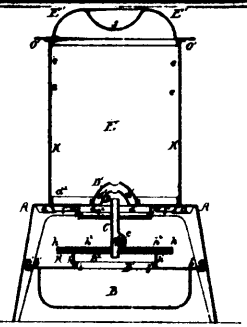
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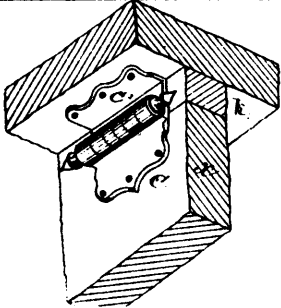
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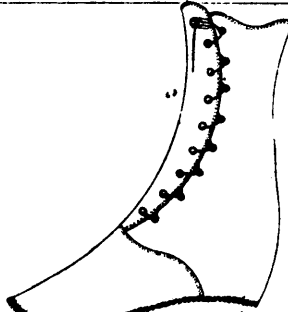
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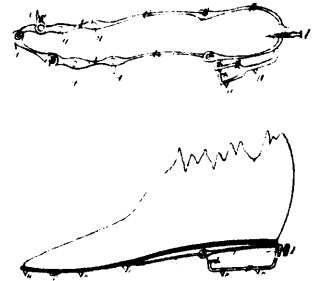
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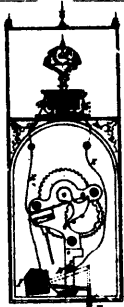
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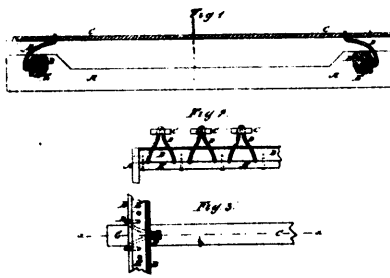
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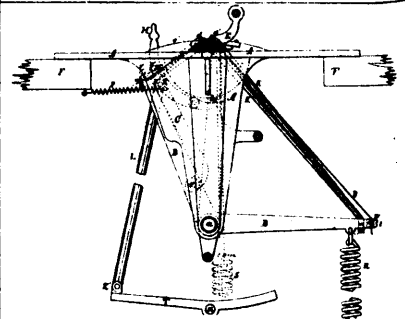
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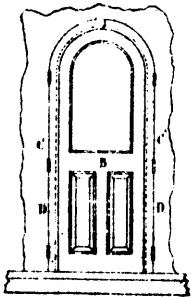
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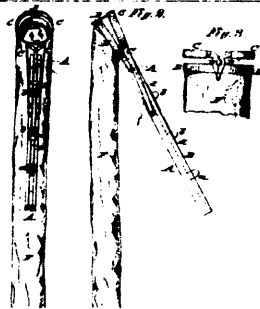
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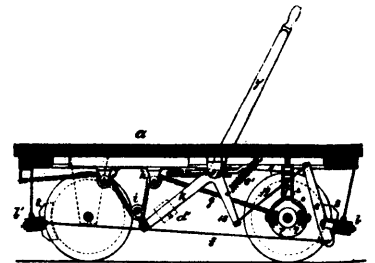
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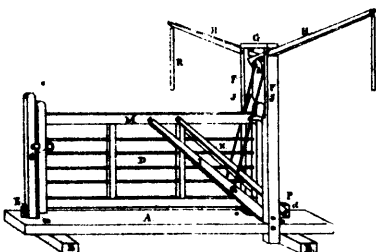
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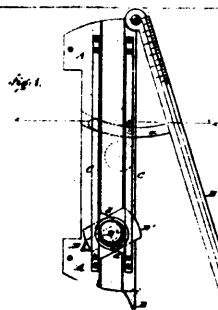
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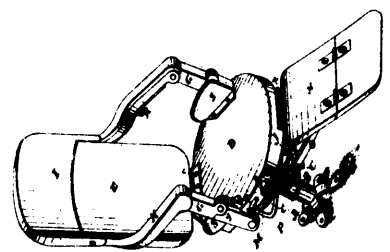
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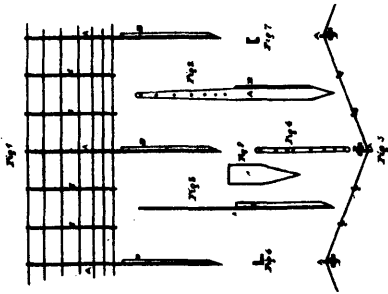
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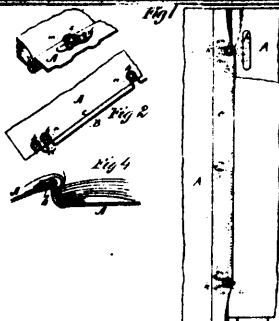
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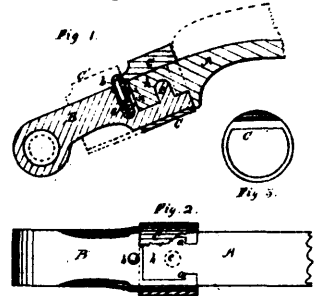
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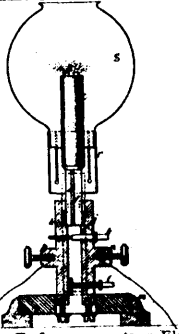
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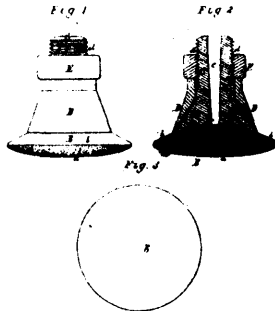
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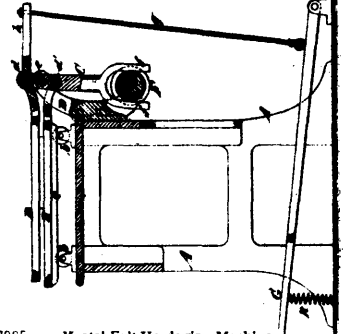
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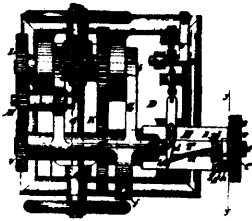
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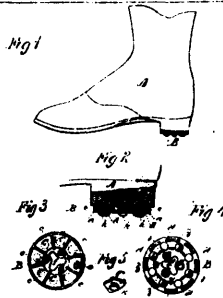
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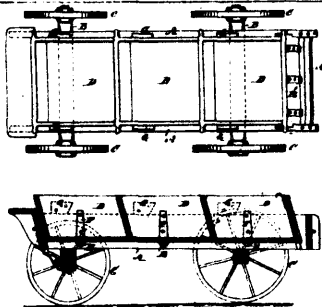
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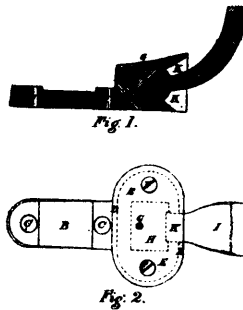
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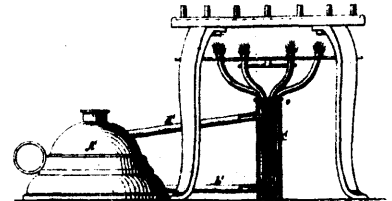
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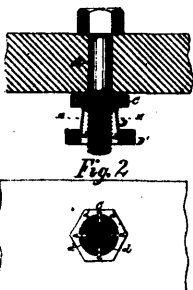
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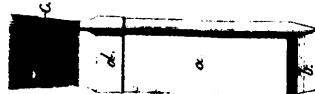
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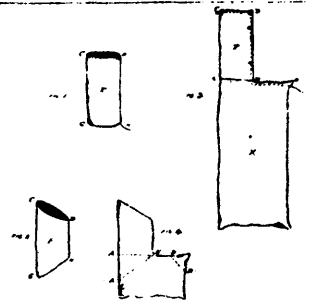
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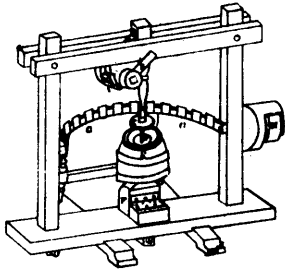
7973 Naylor's Improvements on Nut Locks.



7974 Darling's Improvements on Erasers.



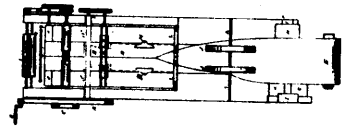
7975 Collins' Improvements on Grain Bags.



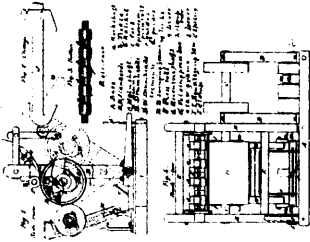
7976 Churchill's Machine for Making Baskets.



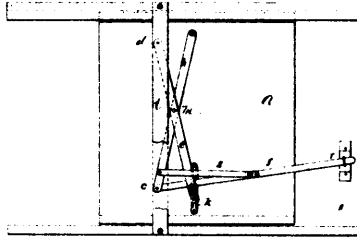
7977 Edwards' Improvements on Boots and Shoes.



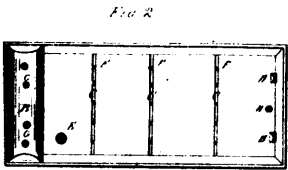
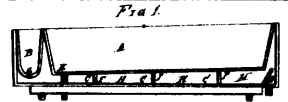
7978 Rhoder's Paper Bag Machine.



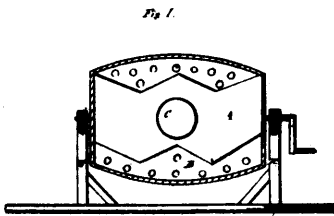
7979 Tomlinson's Machine for Making Barrels.



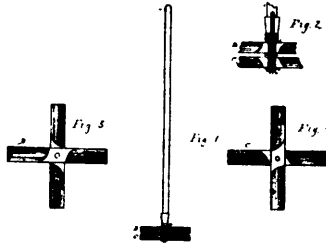
7980 Prescott's Mode of Hanging Doors and Blinds.



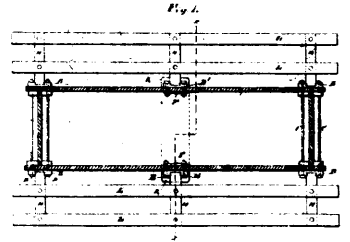
7984 Bort's Improvements on Milk Pans.



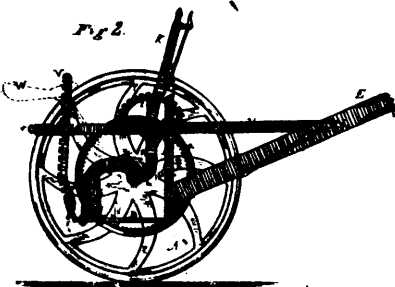
7985 Bort's Improvements on Rotary Churns.



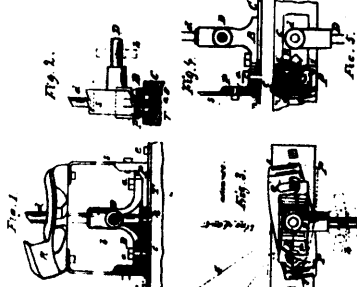
7986 Otty & Elliott's Improvements on Dash Churns.



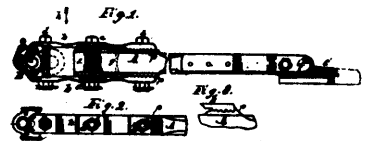
7987 McCallum & Cass' Improvements on Waggon Racks.



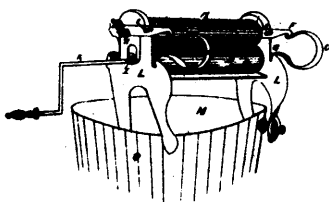
7988 Cooley's Harvesting Machine.



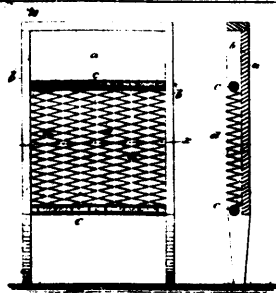
7989 Cooley's Improvements on Harvesting Machines.



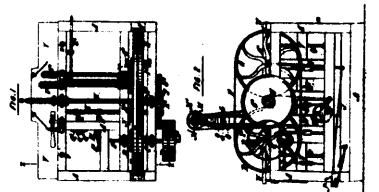
7990 Cooley's Improvements in Harvester Pitmans.



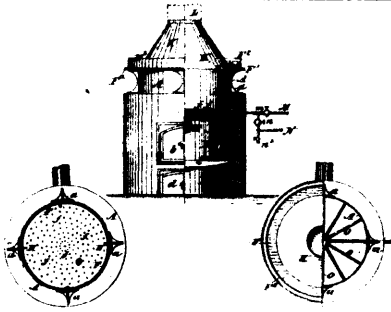
7991 Kinleyside & Wilson's Improvements in Wringing Machines.



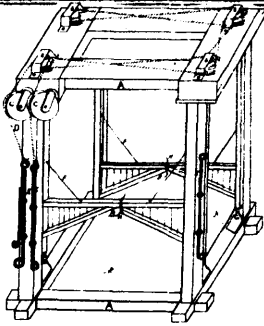
7992 Wilkins & Sawyer's Improvements on Wash Boards.



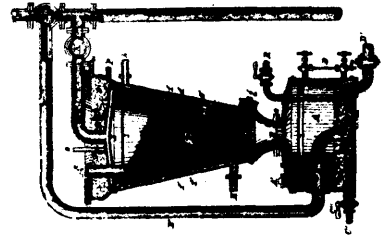
7993 Weaver & Mitchell's Improvements in Wood Working Machines.



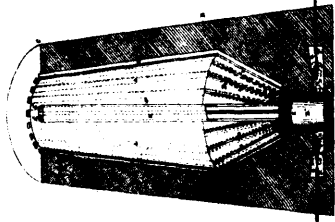
7994 Howell's Process and Apparatus for Treating Refractory Ores.



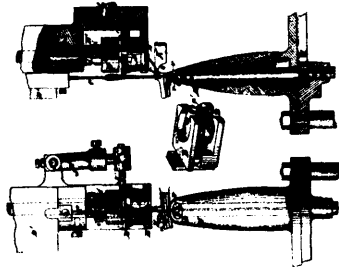
7995 Garon's Improvements on Railway Gates.



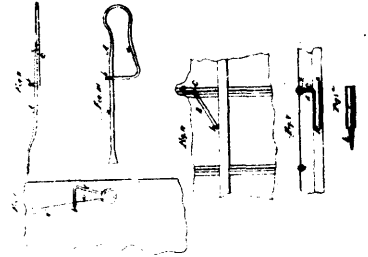
7996 Kast's Still for Rectifying Spirits.



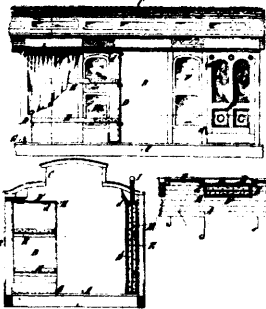
7997 Holmes' Improvements in Smelting Furnaces.



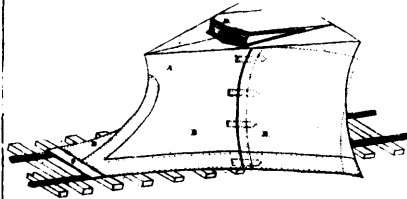
7998 Keats' Improvements on Sewing Machines.



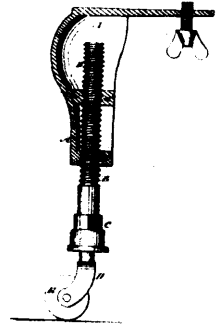
7999 Dusenbury's Improvements on Burglar Alarms.



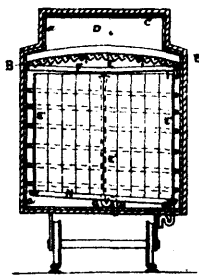
8000 Leve's Improvements in Sleeping Cars.



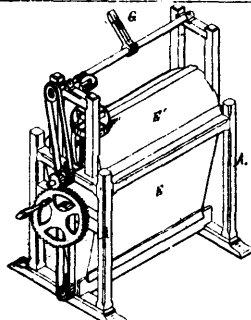
8001 Peare's Improvements in Snow Ploughs.



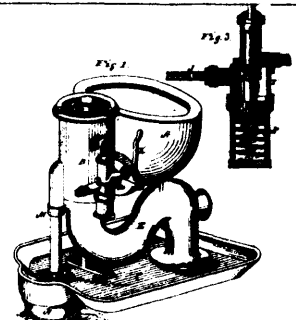
8002 Ryerson's Improvements on Stove Legs.



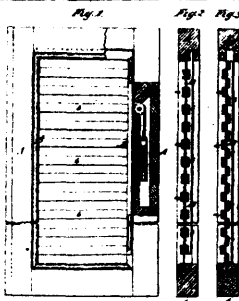
8003 Knott's Improvements in Dry Air Refrigerating.



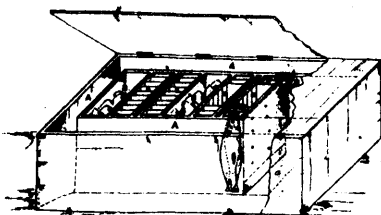
8004 Wallace & Webster's Combined Bolter and Bran Duster.



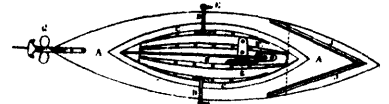
8005 Kcyser's Improvements on Water Closets.



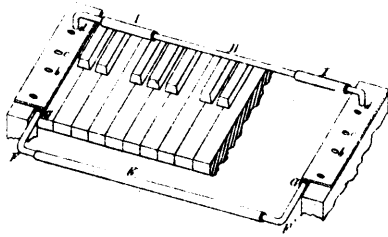
8006 Bljor's Improvements on Shutters.



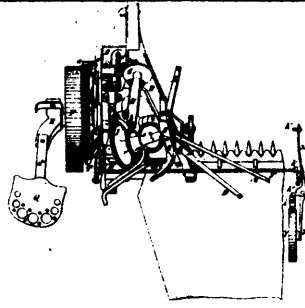
8007 Gauthier's Improvements on Ice Boxes.



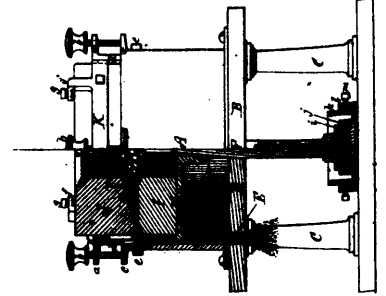
8008 Warin's Improvements in Shooting Skiffs.



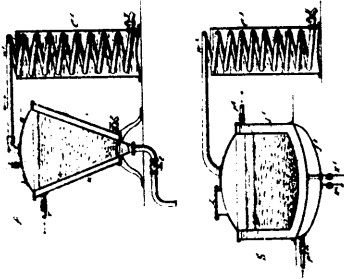
8009 Sudderick's Combined Wrist Check and Finger Guard for Piano Students.



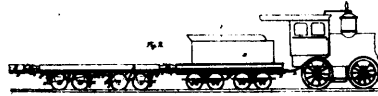
8010 Kirby's Harvesting Machine.



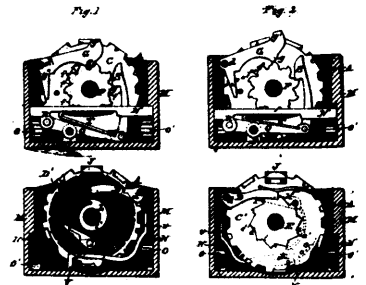
8012 Chase's Improvements in Wood Pulping Engines.



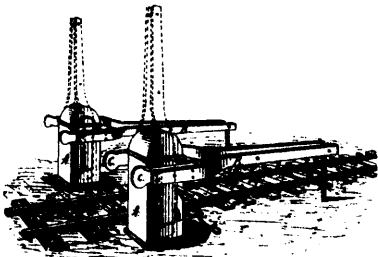
8013 Lamb's Process for Producing Waterproof Gum.



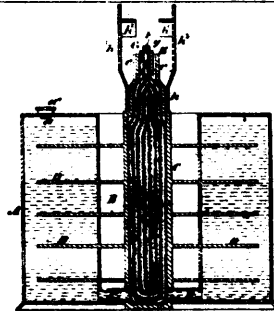
8014 Hyde's Railway Steam Brake.



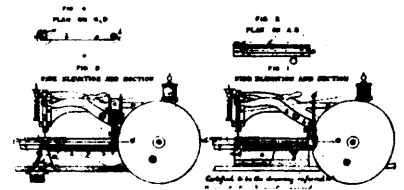
8015 Bowman's Improvements on Printing Presses.



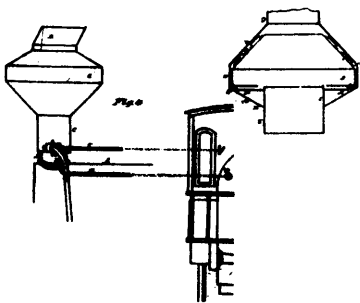
8016 Stearns' Improvements on Gates.



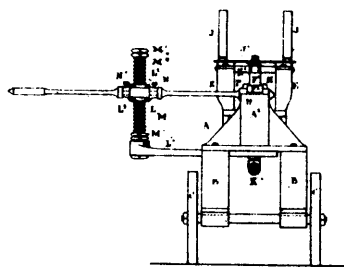
8017 Parks' Improvements on Gas Lamps.



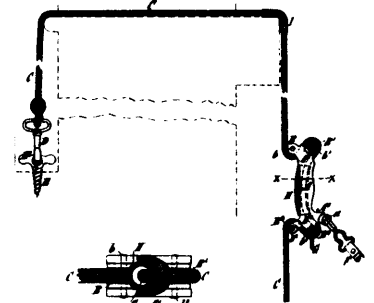
8018 Pearson's Improvements on Sewing Machines.



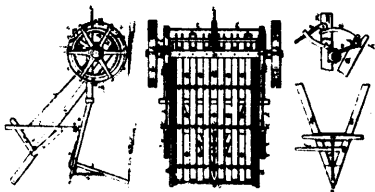
8019 Rushton's Improvements on Sparks Arresters.



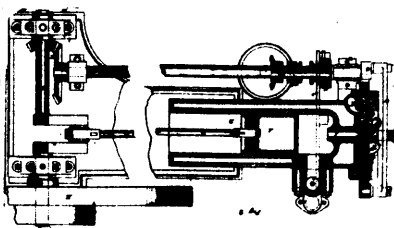
8020 Roberts' Tube Welding Machine.



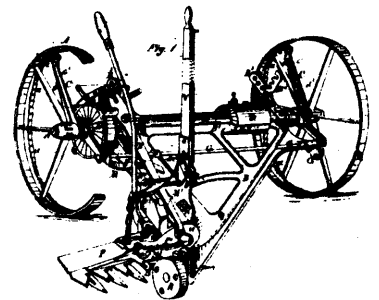
8021 Gregory's Improvements in Fire Escapes.



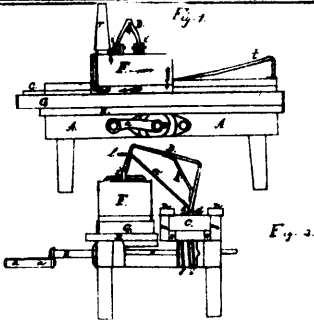
8022 Smith's Improvements on Hay Rakes.



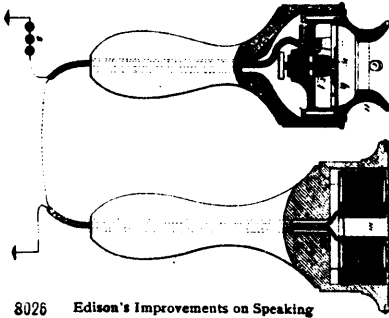
8023 Otto & Crossley's Gas Motor Engine.



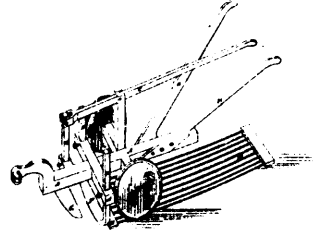
8024 Goodwin's Improvements in Harvesters.



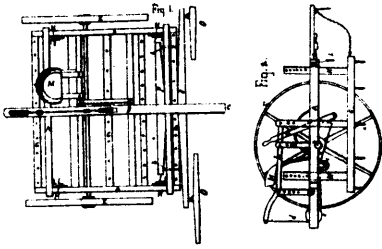
8025 Kestler's Art of Heating Sad Irons.



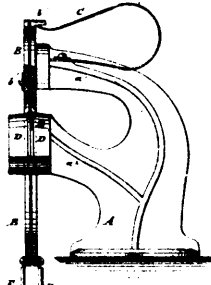
8026 Edison's Improvements on Speaking Telegraphs.



8027 Leonard's Machine for Turnip Topping and Rooting.



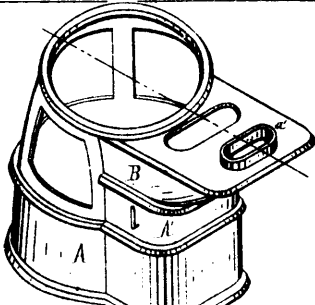
8028 Lockwood's Improvements on Wheeled Harrows.



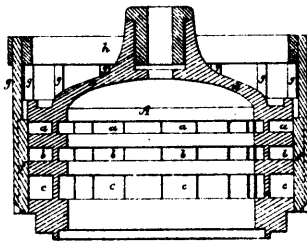
8029 Choate's Machine for Setting Seams in Pipe Elbows.



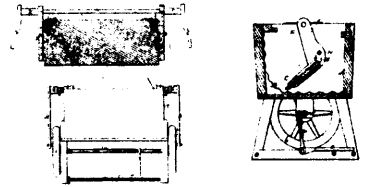
8030 Batley, Keats & Neil's Manufacture of Felted Boots and Shoes.



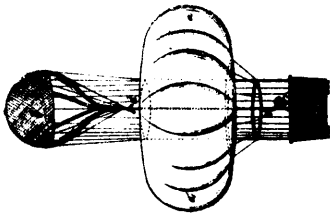
8031 Dwyet & Barbour's Improvement on Heating Stoves.



8032 Staples' Improvement on Turbines.



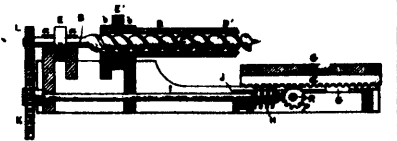
8034 Robinson's Improvements on Washing Machines.



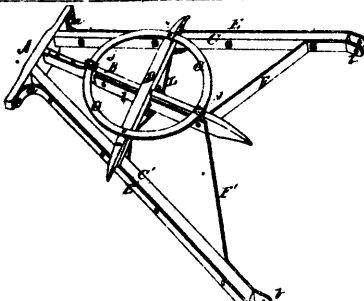
8035 Apraxine's Improvements on Balloons.



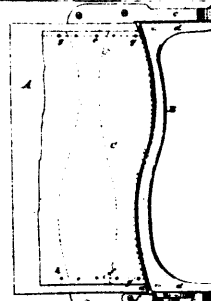
8036 Campbell's Improvement on Curtain Cord Fasteners.



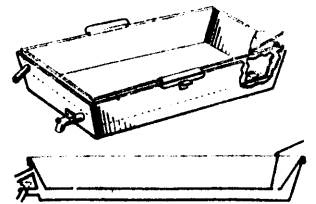
8037 Shoots' Improvements on Boring Machines.



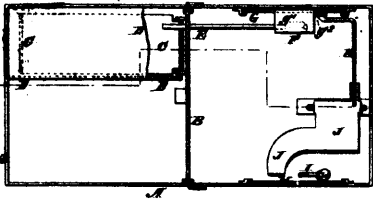
8038 Fitch & Roth's Improvements on Wagon-Trestles.



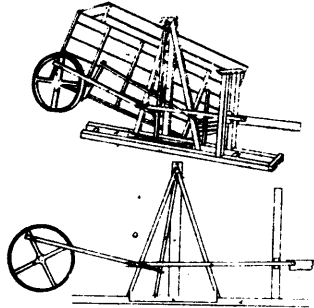
8039 Choate's Improvements on Shears for Cutting Sheet Metal.



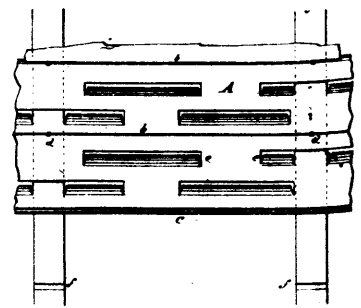
8040 Thompson's Improvements on Milk Pans.



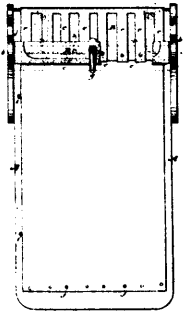
8042 Orton's Improvement on Animal Traps.



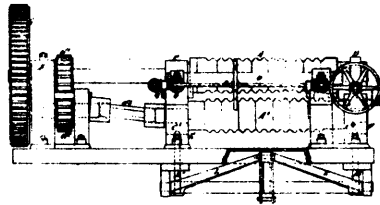
8043 McCoy's Improvements on a Sawing Machine



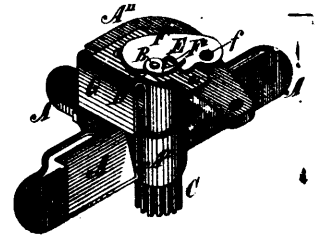
8044 Lawler & Carpenter's Improvements on Metallic Laths.



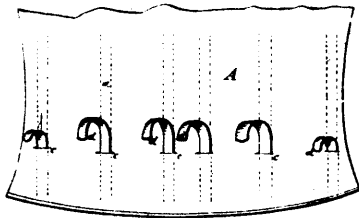
8045 Choate's Improvements on Punching Machines.



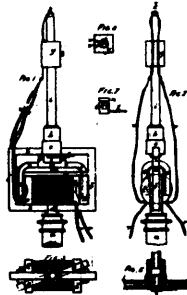
8046 Fox's Improvements on Corrugated Tubes and Plates.



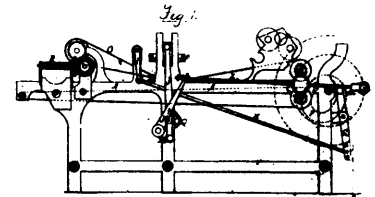
8047 Kirby's Improvements in Machines for Binding Grain.



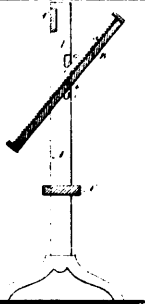
8048 Weed's Improvements on Corset Skirt Supporters.



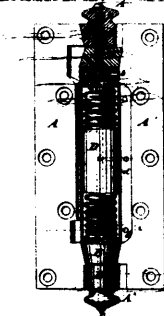
8049 Fox's Apparatus for Lighting and Extinguishing Gas Lamps by Electricity.



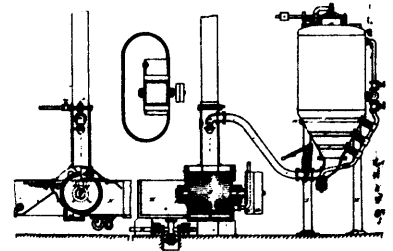
8052 Ruger's Improvements on Craker Machine.



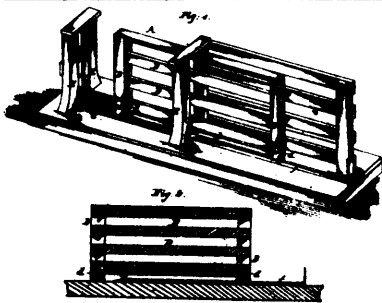
8053 Frese's Improvements on Smoothing and Glossing Fabrics.



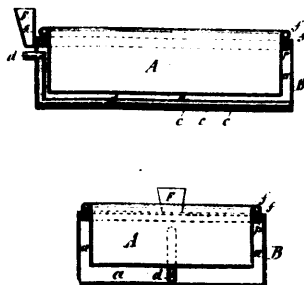
8054 Bommer's Improvements on Spring Hinges.



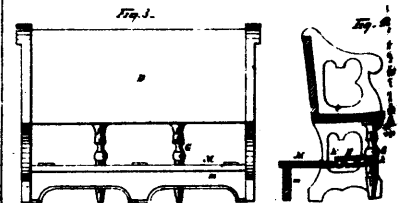
8055 Ellenberger's Apparatus for Mashing and Grinding Materials for Distilleries.



8056 Harris' Improvements on Gates.



8057 Hanqum's Improvements on Milk Coolers.



8058 Kapplo's Improvements on Folding Seats.