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INVENTIONS PATENTED.

No. 10,015. Improvements on Whip-holders.

(Perfectionnements aux porte-fouets.)

Jas. Lowth, Chicago, Ill., U. S., 28th May, 1879, for 5 years

Claim.—1st In a whip holder and in combination with a shell H, an adjustable throat section T, adapted to be closed upon a whip handle, by the insertion of said whip handle and opened by the withdrawal of the same, 2nd In a whip holder and in combination with a shell H, the pivoted spindle B provided with the inclined wing D and the adjustable throat or jaw T.

No. 10,016. Improvements on Fire-Engines.

(Perfectionnements aux pompes à incendie.)

Alexander S. Walbridge, Mystic, Que., 28th May, 1879, for 5 years.

Claim.—1st. In combination with the valve chambers I I I, connected by suction pipes F and force pipes J J, the pump cylinders D D D, radially arranged, having plungers with linged plunger rods N, connecting with a vertical crank O, at the radial centre, suitably stepped and journalled, whereby when the crank is operated by sweeps V in a capstan head T and intermediate gearing the plunger rods successively pass the crank centre, 2nd The adjustable sliding leg L for supporting the front end of the engine when detached from the front truck. 3rd The stay rods W, hooked to the engine and having an eye at the opposite end for staking to the ground, to steady the engine when pumping. 4th The front truck frame, having a hose reel 9 mounted thereon and connected to the engine by draw bars 10, and king bolt 11. 5th The front truck frame, supporting the forward end of the engine, having the draft bar 4 and removable thills 7, whereby one or three horses abreast can be employed to draw the machine, and the thills used for working the engine. 6th The plunger rods N, having a detachable connection with the crank O, whereby one or more of the pumps D can be thrown out of gear.

No. 10,017. Improvements on Watch Cases.

(Perfectionnements aux boîtiers des montres.)

Ezra C Fitch New-York, U. S., 28th May, 1879, for 5 years.

Claim.—1st. An open face stem winding watch case formed in one seamless concave shell open in front to receive the movement. 2nd An open face watch case, formed in one seamless concave shell open in front to receive the movement and provided with a threaded edge on its face in combination with a bezel provided with a correspondingly threaded edge to screw upon the face of the case. 3rd In combination with an enclosing watch case, the outswinging ring B adapted to contain the movement and linged to the margin of the enclosing case. 4th In combination with an enclosing watch case, the outswinging ring B linged to the case at the base of the stem and adapted to contain a stem winding movement with its winding stud arranged in line with the winding key of the stem. 5th The combination, with an enclosing watch case having the margin of its face provided with a threaded and shouldered rim, of the bezel B having its rim formed with an internal thread and corresponding bevel edge or shoulder to screw upon that of the case and form a tight joint therewith. 6th In a watch case the combination of the removable cap D adapted to be tightly fitted over the stem of the case to enclose the winding knob or other operative device thereon.

No. 10,018. Process and Apparatus for Deodorizing Petroleum Oil.

(Procédé et appareil pour désinfecter le pétrole.)

Henry F. Howell, Sarnia, Ont., 28th May, 1879, for 5 years.

Claim.—1st The treatment of crude petroleum and other oils, by subjecting them to the action of chlorine or other gas, in such manner that a certain

proportion of the hydrogen element is replaced by an equivalent of the gas, and. The treatment of crude petroleum and other oils, by subjecting them to the action of chlorine gas which substitutes itself for an equivalent quantity of the hydrogen element in said oils, 3rd. The process of treating crude petroleum and other oils, by subjecting them to the action of chlorine gas, saturating such gas with water or other liquid by which its affinity for the hydrogen in the oil is developed and made active, 4th. An apparatus for treating crude petroleum or other oils, consisting of a closed cistern or retort provided with the following features: an oil inlet and discharge, a gas inlet and discharge, an outlet for removal of sediment or impurities, preferably, a transparent test tube and thermometer, and, when in use, a body of water or other liquid surrounding the gas escape ports of the feed pipe.

No. 10,019. Enamelled Cast Iron Wares.

(Fontes moulées émaillées.)

Eben C Quimby and Enoch Baldwin, Stourport, England, 28th May, 1879, for 5 years.

Claim.—The improved manufacture of enamelled cast iron ware (more or less mottled or spotted, as desired) by the application, to the clean surface of the cast iron, of the above described composition or glass, consisting of borax and silica in equal, or about equal proportions, and more or less of the other above named ingredients.

No. 10,020. Improvements on Horse Rakes.

(Perfectionnements aux râteaux à cheval.)

William P Clark and Charles E Clark, Belmont, N. Y., U. S., 28th May, 1879, for 5 years

Claim.—1st The combination with a pivoted rake and a revolving axle, of a crank arm hung loosely at, or on the said axle and connected with the rake, together with a clutch, one half of which is fixed to the axle, and the other half connected with the crank and capable of being thrown into engagement with the clutch of the axle to partly revolve the crank and raise the rake. 2nd The combination with a pivoted rake and a revolving axle actuated by driving wheels, of a crank arm hung loosely at, or on the axle and connected with the rake, together with a clutch arranged to couple the said crank with the axle and with a clutch actuating device adapted to lock the clutch in engagement when depressed, arranged in the path of the crank so that the continued revolution of the crank trips, the said clutching device disengages the clutch and allows the crank and rake to drop after a partial revolution and elevation of the same. 3rd The combination, with a pivoted rake head and a divided axle actuated by the driving wheels, of a double crank hung loosely at or on the meeting ends of the divisions of the axle and connected with the rake, together with independent clutches arranged on each side of the crank, on each division of the axle, and adapted to couple each side of the crank to each half of the axle, so that the rake may be automatically raised by the power applied from either wheel. 4th The combination of a pivoted rake, and a revolving axle provided with a device which is connected with the rake and capable of being clutched to the axle to effect the automatic lifting of the rake, with the locking spreading toggles h i and spring arms g, or equivalent, arranged to actuate the clutches and couple the said lifting device with the axle, in such manner that the clutches become locked in gear till the moment of trip or release. 5th In combination with the rake operating lever b f and connecting rod a, the toggles e d. 6th In combination with the hand lever which is arranged to lift the rake head, the fulcrum block k provided with a socket in front of the lever which is fitted with an elastic recoil cushion. 7th In combination with rake teeth having their pivotal ends bent at right angles, a tooth holder, or socket, formed of metallic tubular sections adapted to be fixed at their base on the rake frame, and formed with lateral openings by which the tooth pivots may be inserted in the tubular bore of the sockets and through which the working ends play, the said tubular sections being adapted to be arranged in longitudinal series, end to end on the rake frame, so that the position of one prevents the removal of teeth in the other.

No. 10,021. Improvements in Telephones.

(Perfectionnements aux téléphones.)

Francis Blake, jr., Weston, Mass., U. S., 28th May, 1879, for 15 years.

Claim.—1st. The method for holding the diaphragm of a telephone by means of springs pressing against one of its surfaces. 2nd. A spring forming or carrying one electrode of the circuit of a telephone and constantly pressing against the other electrode and diaphragm, to maintain the required initial

Pressure between the electrodes and yield to the movements of the diaphragm; 3rd. The adjusting lever D for regulating the tension of the spring d, which carries one of the electrodes e and the initial pressure between the two electrodes e e' and against the diaphragm; 4th. The combination of the two electrodes by means of springs acting against each other, to maintain the electrodes in contact when forced away from the diaphragm; 5th. The yielding weight g connected with the movable electrode e' to resist the movement of the diaphragm and modify by its inertia the variation of pressure between the two electrodes.

No. 10,022. Improvements in the Preparation of Peas. (*Perfectionnements dans l'apprêtage des pois.*)

Henry H. Beach, Rome, N. Y., U. S., 28th May, 1879, for 5 years.
Claim.—As a new article of manufacture, cooked and flattened peas.

No. 10,023. Improvements on Clothes Wringers. (*Perfectionnements aux essoreuses à linge.*)

Patrick H. Cooney, Erie, Penn., U. S., 28th May, 1879, for 5 years.
Claim.—1st. In a combined wash bench and wringer, the frame composed of the parts A B &c., with rungs D² D³ D⁴, hooks M N O and hook brace b; 2nd. A tub bench provided with legs C which are provided with means whereby they may be detached from the top of the bench, by swinging them from the position they occupy when sustaining the bench; 3rd. In combination with legs C, hooks N O and rungs D² D³, the horizontal bar A; 4th. In a combined wash bench and wringer machine, the means whereby the weight of the tub shall serve to draw the said rollers together; 5th. The combination of the treadle F, levers E and A, and rollers I I'; 6th. The drip trough of a wringer machine composed of the parts J K L; 7th. The combination, within a combined wash bench and wringer, of the bars A, uprights C B, rungs D, D² D³ D⁴ D⁵, hooks M N O, hook brace b, levers E and A, hooks e a g h, stirrup irons H and rollers I I'.

No. 10,024. Improvements on Incased Barrels. (*Perfectionnements aux barils doublés.*)

Alphonso W. Blye, Syracuse, N. Y., U. S., 28th May, 1879, for 5 years.
Claim.—1st. The straight metal cylinder A, having inward grooves formed by the outward beads b b, in combination with the metal heads B B having their concave sides outward and their edges fitted into said grooves and sealed; 2nd. The combination of the concave metal heads B B, the straight metal cylinder A, having the beads b b forming inward grooves to receive and seal the edges of said concave heads, the plano-convex heads F F and the metal end rings H H; 3rd. A wood incased metal barrel having the inner metal heads B, the outer wooden heads and the beads b, the inner grooves of which and the circumference of the wooden heads join and give the proper support and seat to the circumference of the metal heads having their concave sides outward; 4th. The combination, with the metal cylinder A having inward grooves in its body, the metal heads B B, inwardly curved and fitted into said body grooves, and the outer heads F F, of the outer staves C, their binding hoops E E' and the inner bilging bands D.

No. 10,025. Improvements on Machines for Sawing Stone. (*Perfectionnements aux machines à scier la pierre.*)

George Jennings and John L. Robellaz, New Albany, Ind., U. S., 28th May, 1879, for 5 years.
Claim.—1st. The head block I with rollers i i, and adjustable bar J, with the saw F secured thereto; 2nd. The combination of the head block I with perforated arm K, slide L, slotted and hinged guide O, and adjusting screw R.

No. 10,026. Improvements on Boiler Injectors. (*Perfectionnements aux injecteurs des chaudières.*)

William B. Mack, Boston, Mass., U. S., 28th May, 1879, for 5 years.
Claim.—1st. An injector provided with an attachable and detachable delivery cone; 2nd. In an injector, the section a of the casing made in a single casting; 3rd. In an injector, the overflow or waste pipe attachment having a shoulder o, combined with the shouldered nut or coupling which connects the attachment to the injector; 4th. In an injector, the adjustable conical regulating valve combined with a suitable seat located in the water supply pipe.

No. 10,027. Improvements on Wrenches for Bung Bushes. (*Perfectionnements aux clés pour les dés des bondes.*)

George B. Cornell, Chicago, Ill., U. S., 28th May, 1879 (Extension of Patent No. 3,681), for 5 years.

No. 10,028. Improvements on Carriage Wheels. (*Perfectionnements aux roues des voitures.*)

George N. Bourque, Sherbrooke, Que., 28th May, 1879, for 5 years.
Claim.—The spoke A, the socket B, clip C with spur D, all in combination, and the felloe E having a small hole.

No. 10,029. Improvements on Windmill Pumps. (*Perfectionnements aux pompes à vent.*)

George M. Beard, Angola, Ind., U. S., 28th May, 1879, for 5 years.
Claim.—In the combination of the wind wheel, a rope or chain, a weighted lever that is connected to a piston moving in the cylinder, a water pipe and a tank having a float valve.

No. 10,030. Improvements on Churns.

(*Perfectionnements aux barattes.*)

Issac W. Plewes, Lynedock, Ont., 28th May, 1879, for 5 years.

Claim.—1st. An oscillating churn body C, suspended from a stand composed of two A-shaped side frames B by angular shaped irons E E, pivoted through the apex by a pin or bolt F; 2nd. The oscillating churn body composed of wooden sides G and sheet metal bottom, ends and top H, with transverse bolts K to hold the sheet metal removably in the grooved sides; 3rd. The oscillating churn body C, having rounded ends, and a volute scroll portion d at top.

No. 10,031. Method of Developing Electric Light. (*Méthode pour produire la lumière électrique.*)

Thomas A. Edison, Menlo Park, N. Y., U. S., 28th May, 1879, for 5 years.

Claim.—1st. The combination, with an electric light, of a thermal circuit regulator, to lessen the electric action in the light, when the maximum intensity has been attained; 2nd. The combination, with the electric light, of a circuit closing lever operated by heat from the electric current or from the light, and a shunt or short circuit to direct the current or a portion thereof from the light; 3rd. The combination, with the electric light and a resistance, of a circuit closer operated by heat, and serving to place more or less resistance in the circuit of the electric light; 4th. The combination, with an electric light, of a diaphragm operated by the expansion of a gas or fluid, in proportion to the temperature of the light to regulate the electric current; 5th. The combination, with a vibrating body similar to a tuning fork, of mechanism for maintaining the vibration and magnets, cores and helices, whereby a secondary current is set up, so as to convert mechanical motion into electric force or the reverse; 6th. The combination, with electric lights, of means for regulating the electric current to the same, in proportion to the heat evolved in the light, so as to prevent injury to the apparatus.

No. 10,032. Improvements on Gas Carbureters. (*Perfectionnements aux carburateurs à gaz.*)

Edward A. C. Pew, Welland, and Richard W. Scott, Ottawa, Ont., 28th May, 1879, for 5 years.

Claim.—1st. The carbureting vessel constructed of the horizontal outer and inner concentric cylinders a b, the latter having the chamber k and the innermost cylinder l m having perforations, and the absorbent material surrounding it; 2nd. The carbureting cylinder b having central vertical partition c, and the smaller perforated cylinder having chambers l m, separated by vertical perforated partition p, and the absorbent material placed around said smaller cylinder, whereby the air first enters chamber k, and thence passes successively into chambers m l; 3rd. In an air forcing apparatus, for use in connection with a carbureting vessel, the combination, with pump A, of the receiver having the elastic top formed of a sheet of rubber, and a lever or weight arranged to press upon said top; 4th. In an air forcing apparatus, for use in connection with a carbureting vessel, the combination of a lever with the motor, the air pump proper and an air receiver having a rising and falling top, said lever being arranged to come in contact with a wheel of the motor, and act as a brake when the pressure in the receiver becomes sufficient to raise its top; 5th. In an air forcing apparatus, the combination of the rod G, the adjustable collar f, the guide H and brake lever D hinged on a fixed fulcrum, the elastic top F of the receiver and the motor and air pump proper.

No. 10,033. Apparatus for Throwing Targets.

(*Appareil pour abaisser les cibles.*)

John G. Mole, Batavia, Ill., U. S., 28th May, 1879, for 5 years.

Claim.—1st. The axle F with hub g, long arm h and short arm i, with recess i', in combination with the strap T, spring U, cylinder D, standard B and platform A; 2nd. The spring thrower R, provided with cup S and fastened to arm h, in combination with the trip lever N, rod k, trigger lever P, straps V T, axle F, standard B and cylinder D.

No. 10,034. Improvements on Bag Trucks.

(*Perfectionnements aux camions porte-sacs.*)

Anthony Kline, Middleton, Ont., 7th June, 1879, for 5 years.

Claim.—1st. A bag truck constructed of solid base board A attached to axle block D; 2nd. The axle block D, having grooved channel formed in it for receiving the axle c, covered by detachable cap E; 3rd. In combination with base board A, the handles B B and holder C having double edge a b; 4th. The base board A, handles B B and holder C, in combination with the axle block D and covering cap E; 5th. The mode of attaching one of the traction wheels F rigidly to the axle c, while the other G is loosely pivoted thereon.

No. 10,035. Machine for Sharpening Reaper Knives. (*Machine à émousser les couteaux des moissonneuses.*)

Peter Williams, London, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The combination of the frame A, stone B and chain wheels C D; 2nd. The combination of eccentric F provided with slot I, wrist pin H, pitman G and upright J; 3rd. The combination of the knife rest L L, box N, thumb screw M, knuckle joint O and weight R.

No. 10,036. Improvements on Screw Machines. (*Perfectionnements aux machines à vis.*)

Emery Parker, New Britain, and Horace K. Jones, Hartford, Conn., U. S., 7th June, 1879, for 15 years.

Claim.—1st. The combination, in a screw blank holder, of a pair of jaws, fitted to receive the head of a blank and to engage with the shank thereof beneath the head, with an ejector which co-operates with the jaws in hold-

ing the head of the blank, and also operates as an ejector; 2nd. A blank holder for screw threading and pointing machines, embodying, in combination, a pair of gripping jaws, a recessed seat for the head of a blank and an ejector.

No. 10,037. Improvements on Reaper Knife Grinders. (*Perfectionnements aux rémouleurs des couteaux de moissonneuses.*)

John Burns, Ottawa, Ont., 7th June, 1879, for 5 years.

Claim—The combination of the bolt C, knife holder F, plate I and diagonal pressure screw H clamping the knife J.

No. 10,038. Washing Machine. (*Machine à laver.*)

Majorique Rousseau, St. Michel, Que., 7th June, 1879, for 5 years.

Résumé—La combinaison de la boîte cylindrique C avec les traverses G tournant sur l'essieu N, aussi la combinaison de la cuve A avec la boîte B et son couvercle J, demi circulaire figuré pour empêcher l'eau de se répandre.

No. 10,039. Improvements on Lightning Conductors. (*Perfectionnements aux paratonnerres.*)

Henry W. Spang, Reading, Penn., U. S., 7th June, 1879, for 5 years.

Claim—1st. The combination of metallic conductors, arranged in downward and direct lines beneath the wooden sheathing, or rafters, or slate covering of the roof of a building, or of a steeple or other elevated object, with the air terminal or elevated metallic conductors thereon, and the rain pipes or vertical conductors leading from the eaves of the roof to the earth; 2nd. The combination of sheet metal bands or conductors F G H, arranged with the chimney-cap A, the rods B C, the gutter or trough D, and the rain-pipe E; 3rd. In the combination of the air-terminal rod B, with the rafter or cross-piece L and bar N.

No. 10,040. Improvements on Motor Engines. (*Perfectionnements aux machines motrices.*)

Eusebius J. Molera and John C. Cebrian, San Francisco, Cal., U. S., 7th June, 1879, for 5 years.

Claim—1st. In a motor engine, actuated by gas or vapour in a state of tension, the combination with concentric piston chambers H H, and a double acting hydraulic device C operated by a liquid piston, of valve mechanism governing the supply and exhaust of the motive fluid together with a float device D, movable with said piston, and adapted to operate said valve mechanism; 2nd. In a motor engine, actuated by gas or vapour, in a state of tension, the combination with concentric liquid piston chambers H H, and a plunger C, working within the inner one thereof, and connected with the driving parts of a valve-stem C, which extends down within said inner chamber, and is adapted to operate the valve motion, in supplying and exhausting the motive fluid, said valve stem being alternately raised and lowered by engagement of stops, formed at suitable points thereon, with the plunger; 3rd. In a motor engine in which an hydraulic device connected with the driving parts is actuated by the expansion force of certain gases or vapours, the combination with the liquid piston chambers H H, having suitable inter-communication of a valve chest B, located above the same and valve stem C, which latter, by engagement with the hydraulic device, operates the valve motion within said valve chest; 4th. In a motor engine, in which an hydraulic device connected with the driving parts is actuated by the expansive force of certain gases or vapours, the combination with the liquid piston of an independent liquid interposed between the latter and the hydraulic device, said piston having no chemical action relative either to said liquid or motive fluid; 5th. In a motor, the combination with a liquid piston, of a float, diaphragm disk or equivalent device c, movable therewith and adapted to actuate the valves which govern the inlet and outlet of the motive fluid; 6th. In a motor provided with liquid pistons (one or more), the combination with the piston chambers of a valve chest B, and valve arranged therein or thereon, so that the valve stems shall project through the chest only into the piston chambers; 7th. In a motor engine operating with elastic pistons, the combination with a piston chamber H, provided with supply and exhaust valves, and a plunger C, which latter connects by plunger rod E, with the driving mechanism of a second piston chamber H, having constant communication with the first chamber, and also with the pipe which supplies both said chamber with a suitable motive fluid in a state of tension; said plunger rod E being of such transverse sectional area relative to the chamber in which it works, that the effective strokes of the plunger respectively following the alternate supply and exhaust of the motive fluid, may be alike equal or variable as desired; 8th. The combination of the two chambers H H, valve chest B, valve E, liquid piston K X, float D, wheel case F, valves *t u v w*, and the revolving wheel; 9th. The method of operating machinery, consisting in applying the motive fluid alternately, to one of a pair of solid elastic pistons K K, through the medium of valves, which are operated by said pistons, and then transmitting the power from the pistons through the medium of a liquid, the flow of which is controlled by the movement of the pistons in the manner explained; 10th. In a motor, the combination with a centrally disposed valve chest N, the opposite surfaces of which serve as surfaces for confining the motive fluid in one direction, said valve chest provided with valves, the stems of which are constructed and adapted to project from the opposite surfaces of the valve chest, of solid elastic pistons K K, attached to the centrally disposed valve chest, and movable toward and from the same; 11th. In a motor, the combination of a centrally disposed valve-chest N, solid elastic pistons K K, attached thereto, valves for governing the inlet and outlet of motive fluid operated by the pistons, and a transmitting liquid interposed between the pistons and the device to be driven; 12th. In a motor, the combination of a valve-chest N, having valves which are moved by the solid elastic pistons K K, and chambers surrounding said pistons, and provided with inlet and outlet ports for the transmitting liquid, which ports are governed by valves adapted to be operated by the pistons; 13th. In a motor, the combination with the solid elastic K K, of liquid chambers located exteriorly thereto, and adapted to receive and discharge the transmitting liquid; 14th. The combination, with the solid elastic pistons K K, adapted to receive and transmit motion, of a valve chest located so that the valve stems shall project only into the chambers formed within said pistons; 15th. In a motor, the combination with centrally disposed valve chest N, the opposite surfaces of which serve to confine the motive fluid in one direction, of an unyielding outer covering and intermediate elastic pistons K K.

No. 10,041. System of Pumping and Cooling.

(*Mode de pomper et rafraîchir.*)

Eusebius J. Molera and John C. Cebrian, San Francisco, Cal., U. S., 7th June, 1879, for 5 years.

Claim—1st. A process of pumping consisting in expanding a suitable gas or vapour, passing it out under due regulation into a pumping chamber exhausting the same, and finally condensing it preparatory to being subjected to a similar repeated process; 2nd. A process of cooling and ventilation, for mines and subterranean shafts, consisting in expanding a suitable gas or vapour to a due degree of tension within said shaft or mine, and then passing the same out therefrom under confinement through a draft opening or conduit; 3rd. A combined process of pumping and cooling consisting in raising a suitable gas or vapour to a due degree of tension, introducing the same into a pumping chamber, exhausting the gas and passing said exhaust gas under confinement through a draft opening, previous to condensing it; 4th. A process of pumping consisting in subjecting a liquid piston within a pumping chamber, to the pressure of an expansional gas or vapour, which latter is introduced into said pumping chamber under due regulation; 5th. In a system of pumping by means of the expansional power of certain gases or vapours, the combination with a gas vessel or boiler H₃, intermediate connection and suitable valve mechanism of a pumping chamber D₃, which is adapted to be operated by a liquid piston; 6th. In an apparatus, for pumping by means of the expansional power of certain gases or vapours, the combination with a suitable vessel or boiler H₃, in which the latter are heated, of one or more pumping chambers D₃ together with intermediate connections and valve mechanism; 7th. In apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a suitable gas vessel or boiler H₃, and one or more pumping chambers D₃ connected therewith under valve controlling communication of a condenser K₃, and exhaust pipe connection leading from said chamber or chambers thereto; 8th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas vessel or boiler H₃, one or more pumping chambers D₃, a condenser K₃, and a suitable intermediate connection of mechanism adapted to liquify the gas; 9th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas vessel or boiler H₃, one or more pumping chambers D₃, a condenser and intermediate connections of a force pump L₃, and a receiver Q₃, adapted to liquify the gas and store the same in said liquid condition; 10th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a suitable gas vessel or boiler H₃, located within a mine or subterranean shaft, of a condenser K₃ located above the same, and pipe connection controlled by valve mechanism between the same, said pipe connection being placed within a draft opening or conduit H₃; 11th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas boiler H₃, one or more pumping chambers D₃, a condenser K₃ and intermediate connections of a receiver Q₃, and pipe connection N₃ between the same and the gas boiler, said pipe being provided with suitable valve mechanism; 12th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas boiler H₃ located within a mine or subterranean shaft, of a receiver Q₃, in which the gas after being once used is stored in the form of a liquid or a solution preparatory to being again used, together with a pipe N₃ connecting said boiler and receiver, and which is provided with a valve adapted to be moved by valve rod and float mechanism operating within said boiler; 13th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas boiler H₃, located within a mine or subterranean shaft, and a condenser K₃ located above the same, of pipe connection between the two, and suitable safety valve mechanism, said pipe *a* communicating with the top or upper body of the boiler; 14th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas boiler H₃, located within a mine or subterranean shaft, and a condenser or absorber K₃ located above the same, of a pipe connection and suitable valve mechanism between the two, said pipe K communicating with the bottom or lower body of the boiler; 15th. In an apparatus for pumping by means of the expansional power of certain gases or vapours, the combination with a gas boiler H₃, one or more pumping chambers D₃ and intermediate connections of suitable valve-chests C₃ and valve mechanism, the latter being adapted to feed and exhaust gas in alternate succession respectively into and from said chamber or chambers; 16th. In an apparatus for pumping by means of the expansional power of certain gases, the combination with a gas boiler H₃, a pumping chamber D₃, and intermediate connection of gas inlet and gas exhaust valves C₃ C₃, said valves being adapted to be closed and opened in alternate succession; 17th. In an apparatus for pumping by means of the expansional power of certain gases, the combination with gas boiler H₃, intermediate connection, and a pumping chamber D₃ formed with gas inlet and exhaust ports governed by suitable valve mechanism, of respective water feed, and discharge pipes T₃; 18th. In an apparatus for pumping by means of the expansional power of certain gases, the combination with a gas boiler H₃, intermediate connection, and a pumping chamber D₃ of respective gas inlet and gas exhaust valves C₃ C₃, a valve rod to which the stems of said valves are secured, and a float adapted to close or open the latter; 19th. In an apparatus for pumping by means of the expansional power of certain gases, the combination with a pumping chamber D₃ provided with suitable water feed and water discharge mechanism, of gas inlet and exhaust valves C₃ C₃, whose stems are secured to a common valve rod, said rod being formed with stops *d* *d* located at suitable points therein, with which the float is adapted to engage and thereby respectively close and open said valves; 20th. In an apparatus for pumping by means of the expansional power of certain gases, the combination with one or more pumping chambers D₃ and gas exhaust pipes, of a draft pipe or pipes G₃ connecting the same with suitable condensing mechanism, said draft pipe or pipes being located within a draft opening H₃ leading from the surface ground down within a mine or subterranean shaft.

No. 10,042. Improvements in Motor Engines.

(*Perfectionnements aux machines motrices.*)

Eusebius J. Molera and John C. Cebrian, San Francisco, Cal., U. S., 7th June, 1879, for 5 years.

Claim—1st. The combination with a boiler E₂, having a vapour ejection port, one or more at the upper end thereof, of a horizontally moving screw H₂ attached to the driving shaft B₂ of the motor, and located within the

upper portion of said boiler; 2nd. The combination with a screw H² actuated in rotation by the pressure of gas or vapour and a labial drum C₂, secured thereto, of a chamber or casing D₂ in which the latter rotates, together with suitable packing inserted between said drum and chamber; 3rd. The combination with a chamber or casing D₂ having communication with the boiler and a screw H₂, actuated in rotation within the former by the tension of gas or vapour, of a condenser or dissolver T₂, together with connections of the same, respectively with said chamber and boiler; 4th. The combination with a screw H₂ actuated in rotation within a chamber or casing D₂, by the tension of gas or vapour, and a boiler E₂, of a condenser or dissolver T₂, connecting with the education end of said chamber, and having communication also with the upper body of the boiler; 5th. The combination with a screw H₂ actuated in rotation within a chamber or casing D₂, by the tension of gas or vapour, a boiler E₂ and a condenser or dissolver T₂, of pipe communications B₂ G₂ of the latter, respectively with the upper and lower body of the boiler, and the education end of said screw chamber; 6th. The combination with a screw H₂ actuated in rotation by the tension of a gas or vapour, and secured to a tubular axial shaft B₂, of a condenser or dissolver T₂ having communication with the upper body of the boiler through said shaft; 7th. The combination with a chamber or casing D₂ provided with a screw A₂ which is actuated in rotation by gas or vapour, of a condenser or dissolver T₂, connecting with the education end of said chamber and mechanism H₂ adapted to force the motive fluid therefrom into the boiler; 8th. In a motor engine provided with a screw H₂, which is rotated by gas or vapour in a state of tension, the combination with a condenser or dissolver T₂ and pipe connection of the same B₂, with a boiler, of an inverted screw H₂ located longitudinally within said pipe and free therefrom, the same being adapted to force the motive fluid into said boiler; 9th. The combination with a screw H₂, actuated in rotation by the tension of gas or vapour, and secured to a tubular axial shaft B₂, which latter provides communication between the boiler T₂ and condenser or dissolver, of a screw H₂, located within said shaft and adapted to force the fluid from said condenser or dissolver into the boiler; 10th. In a motor engine, the combination with a screw H₂ actuated in rotation by the tension of gas or vapour, and a tubular axial shaft B₂, to which is secured, and which provides communication between the boiler and the condenser or dissolver T₂, of a fixed screw H₂ longitudinally within said shaft and free therefrom, said screw having its thread formed the reverse of the thread of the rotating screw H₂; 11th. In a motor engine actuated by the expansive force of certain gases or vapours against a screw, the combination with the screw chamber or space D₂, of a perforated plate or diaphragm K₂ inclosing its fluid induction end, and adjustable valve mechanism controlling said perforations or openings, the same being adapted to automatically govern the supply of the motive fluid into said screw chamber or open space; 12th. In a motor engine actuated by the expansive force of certain gases or vapours against a rotating screw, a governor consisting in the combination with the screw chamber or space D₂, of adjustable devices adapted to control the passage of the motive fluid therein, together with governor connecting mechanism; 13th. In a motor engine actuated by the expansive force of certain gases or vapours against a rotating screw, the combination with the screw chamber D₂, having communication at its education end with a condenser or dissolver T₂, of a governor located at the opposite and education end of said chamber, whereby the passage of motive fluid into the latter is controlled.

No. 10,043. Improvement on Toys.

(*Perfectionnement aux jouets.*)

Charles C. Johnson, Springfield, Vt., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The combination in a toy, of two or more tops, spun simultaneously by the same string; 2nd. The combination with one or more tops, of a bar or stick, into which they are set, a resistance piece and the cord operating them.

No. 10,044. Cooking and Heating Apparatus.

(*Appareil de cuisine et de chauffage.*)

John H. Graves, Rochester, N. Y., U. S., 7th June, 1879, for 5 years.

Claim.—1st. In an oil burning stove, the combination of the oil ring A, provided with the centre opening a, the cylinder c resting over said opening, and wick tubes B B proceeding inwardly and upwardly from the oil ring and extending through said centre opening; 2nd. The combination with the wick tubes B B, of the separate burners E E, provided with bearing plates f f fitted over the open ends of said wick tubes, and provided with suitable locking attachments whereby they are made removable; 3rd. The locking attachment of the burners composed of the side flanges k k, tongues l, grooves m, the side lugs n n o and cross pins p q, all combined as specified; 4th. The cone plate D provided with cones f f and constructed with slots g g near the outer edge, for admitting cold air to the cylinder outside the cones; 5th. The cap G, constructed with the elevated skeleton frame H, provided with the oval rings t t, for the attachment of the tops of the chimneys; 6th. The combination with the frame H provided with the oval rings t t, of the chimneys I I, provided with side openings w w; 7th. The combination with the chimneys I I, of the conical jacket J, closing the space from the sides of the cylinder too near the top of the chimneys, and serving to concentrate the draft within the cylinder close to the tops of the chimneys; 8th. The combination of the cold air inlets g g, in the cone plate, the heat radiating chimneys within the stove, and the conical jacket within the cylinder and near the tops of the chimneys; 9th. The combination with the oil ring A provided with openings z z, of the covers K K either imperforated or provided with a perforated or wire cloth screen b₂, for the purpose of ventilating the oil ring, allowing free escape of the gas from the same, and preventing ignition of the oil; 10th. The wood blocks f₂ f₂ resting in sockets on top of the oil ring A, forming non-conductors to prevent the transmission of heat from the stove downward to the oil ring; 11th. In combination with the top of an oil stove, the open-bottomed heating drum L, constructed with the chimney v, enclosing jacket K₂, with discharge holes n₂ n₂, and the cross tube p₂ and the connecting vertical tube r₂.

No. 10,045. Improvements on Sinks.

(*Perfectionnements aux éviers.*)

John Law and David Darville, London, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The mode of attaching flange J, or body of outlet pipe F, to trough I; 2nd. The combination of nut G with tapered base outlet pipe F, with cone-shaped face and thread a, and waste pipe H.

No. 10,046. Improvements on Lemon Squeezers.

(*Perfectionnements aux pressoirs à citron.*)

Isaac Williams and Josephine P. Fanning (Assignees of John Fanning), Brooklyn, N. Y., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The convex perforated bed to receive the lemon, in combination with a concave presser; 2nd. The convex bed with a rim around the same, and perforated, in combination with the concentrator below the perforated bed to receive the juice, and pass the same to the tumbler or other vessel; 3rd. The combination of the convex perforated bed a, concentrator c, supporting ring e, standard d, guide rods n, cup and actuating mechanism; 4th. The combination of the removable convex perforated bed, the supporting ring e, standard d, lever g, link l and presser cup.

No. 10,047. Improvements on Water Filters.

(*Perfectionnements aux filtres à eau.*)

James H. Davis, John C. Davis, Josiah D. Cook and James A. Haigh (Assignees of John N. Stevens), Toledo, Ohio, U. S., 7th June, 1879, for 5 years.

Claim.—An upward filtering device as set forth, viz: receiving chamber A, influent pipe N, discharge faucet I, perforations L K, holding down bar b, sponge chamber D and perforations d, clear water reservoir B, in combination with delivery pipe and faucet H, and air pipe P.

No. 10,048. Manufacture of Slag Glass.

(*Fabrication du verre de crasse.*)

Edward Bishop, London, (Assignee of Bashley Britten, Red Hill), England, 7th June, 1879, for 5 years.

Claim.—The process of treating slag hot as it runs from the smelting furnace, for the manufacture of glass or vitreous material.

No. 10,049. Improvements on Horse Shoes.

(*Perfectionnements aux fers à cheval.*)

Luther H. Bellamy, North-Augusta, Ont., 7th June, 1879, for 5 years.

Claim.—The combination of the body a and the spring sole b, having the arch c, web d and calk e.

No. 10,050. Improvements in Soldering Machines.

(*Perfectionnements aux machines à souder.*)

William Farwell (Assignee of Peter Dillon and John Cleary), Sherbrooke, Que., 7th June, 1879, for 5 years.

Claim.—1st. A gas generator R, in combination with a solder bath T, inserted within it or in contact with it; 2. A solder bath T in combination with a gas generator R, and having in connection therewith, one or more soldering bolts t₂; 3rd. A circular rotary table I with moulds L L, and clips M M attached to it, made to revolve around a stationary circular centre-piece C, with a cam cut groove on its surface and a cam cut groove on its edge, all in combination with a soldering apparatus, consisting of a gas generator R, containing a solder bath T supplied with a soldering bolt t₂; 4th. A gas generator R, containing a solder bath T, supplied with a soldering bolt t₂, connected by a sliding bar H to a lever F, attached to a shaft G, in combination with a main shaft D and driving wheel E, working by means of gears, o, o₂ o₃ o₄ o₅ J and shafts P₁ P₂, a rotary table I, having attached to it moulds L L, with bevelled clips M M, the latter operating on shafts m₁ m₂, to serve as hinges, moved by cranks m₂ m₂, travelling in a cam cut groove on the edge of a centre piece C; 5th. A sliding bar H, formed with an under wedge-shaped piece a, to operate as a lift, attached in such manner as to raise the bar in its backward motion and to let it descend to the horizontal line in its forward motion; 6th. A mould L, with shaft l and truck b₂, in combination with a pair of bevelled clips M M to fold around the moulds on hinges or shafts m₁ m₂; 7th. Bevelled clips M M with shafts or hinges m₁ m₂ and the latter is so made as, by travelling in a cam cut groove, to fold and open the clips M M closely around a circular mould; 8th. A hollow box W, consisting of an upright hollow tube to receive wire solder, and attached to and upon a horizontal tube, into which the pieces of wire solder drop, and are moved forward to the seam, by means of a slide W₂ working in the horizontal tube of the box; 9th. A hollow box W, as described; or made in other equivalent form, in combination with a soldering apparatus consisting of gas generator R, with soldering bolt t₂, but which in such case may be made without a solder bath, and with burners projecting through and below the gas pot, so that the flame shall strike against the soldering bolt; 10th. The combination of a rotary table E, section H, with a number of hollow spindles G, to serve as holders with their operating mechanism; 11th. A rotary table E, section H, with a hollow spindle G, to serve as a holder worked by mechanism, in combination with a soldering apparatus consisting of a gas generator R, with solder bath T and soldering bolt t₂; 12th. A spindle G, with internal grips g g, and shaft h, with bevelled end j at the upper end, to work the grips; 13th. A spindle G, with internal grips g g, shaft h with bevelled end j, all in combination, by means of the coupling t, with the shaft m and mechanism attached to the main shaft H, by which the spindle G is made to rotate under the end of the soldering bolt of the soldering apparatus; 14th. A machine with a main shaft D, having on it a gear o₁ and a driving wheel E, the former of in combination with a circular rotary table I, supplied with moulds L L, clips M M, made to revolve around a centre-piece C, and the latter driving wheel E in combination, by means of lever F and sliding bar H, or other equivalent mechanism, with a soldering apparatus, consisting of a gas generator R, solder bath T and soldering bolt t₂; 15th. A soldering apparatus, consisting of a gas generator R, with gas tubes and burners s₂, projecting below the gas generator I, in such manner as to throw the flame and heat directly upon the lower extremity of the soldering tool t₂.

No. 10,051. Machine for Jointing Staves.

(*Machine pour joindre les douves.*)

John A. Seaman, Chicago, Ill., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The former D, composed of the jaws b b, plate c c, pivots d d, pin F and cap E, in combination with the endless saw C; 2nd. The combina-

tion of the saw C, former D, pin F, arm K, with vertical lever J, arm L, adjustable guide bar H and the feed table a; 3rd. The combination of the band or endless saw with a guide or former, the saw running through the same, for the purpose of receiving the desired curvature required in jointing staves.

No. 10,052. Lozenge Machine. (*Machine à pastilles.*)

Thomas Robertson, Toronto, Ont., (Extension of Patent No. 3620), 7th June, 1879, for 5 years.

No. 10,053. Machine for Measuring and Weighing Skins. (*Machine pour mesurer et peser les peaux.*)

David T. Winter and Charles E. Teague, Peabody, Mass., U. S., 7th June, 1879, for 5 years.

Claim.—1st. A stationary slatted table having longer continuous openings between the slats, to permit the descent of rows of measuring weights; 2nd. The counterpoised measuring lever table D, having a system of suspended weights and fulcrumed at or near its rear, and flexibly connected at its front with the balance or indicating apparatus; 3rd. In combination, the lever table D and a weighted lever-arm supported above such table and serving to aid in lifting it; 4th. A system of graduated weights suspended from the under side of the lever table or beam, and having those of each row heavier than those of its next adjacent forward row; 5th. A system of weights suspended from the under side of the lever table or beam, and having those of each row hang lower than those of its next adjacent forward row; 6th. In combination with the fulcrumed table or beam, the weighted rod or lever Q, the guide pulley s and its stationary standard or support; 7th. The counterpoised or balanced lever table D, having its rear-most or counterpoise weight located thereon, at a point or in a plane above that of the fulcrum or pivotal points of such table, and serving thus to hold it up when raised, and to keep it level when lowered; 8th. In combination with the fulcrumed table or beam, a system of weights suspended therefrom, the stationary slatted table and a device for clamping this table to the weighted rod or lever.

No. 10,054. Machine for Driving Nails in Boots and Shoes. (*Machine pour chasser les clous des chaussures.*)

Samuel Shepherd, Erastus D. Whitcomb, Nashua, N. H.; Timothy A. Coolidge, Marlboro, and Homer Rogers, Boston, Mass., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The combination with the nail hopper and the driveway of a machine, for nailing boots and shoes, of a spiral carrier extending from the hopper to a point at or near the drive way, and a raceway, located over the carrier and in close proximity thereto, whereby the upper ends of the nails are held in proper positions by the raceway, and the lower end supported upon the shaft of the carrier and the nails transported from the hopper to the driveway by the spirals of the carrier; 2nd. The eccentric shaft N, in combination with the movable plate M and raceway Q; 3rd. The combination of the raceway Q, the trough L L and the movable plate M; 4th. The combination of the raceway Q, of the spring plate I; 5th. The plate or shield T, in combination with the springs U V, attached respectively to opposite sides of the raceway and arranged at the end of the latter, near the driveway for the nails.

No. 10,055. Machine for Grading and Ditching. (*Machine pour niveler et fossoyer.*)

Stephen E. Smith (Assignee of Charles C. Skinner), Eau-Claire, Wis., U. S., 7th June, 1879, for 15 years.

Claim.—1st. The combination with the arrow-shaped knife E and side knives F, of the fingers G; 2nd. The combination with an elevator H, composed of a series of plates h, connected together by links h², of a series of overlapping supporting wheels or pulleys h¹⁰; 3rd. A grading or ditching machine supported on axles B C, geared together by means of an endless chain; 4th. The combination with cutters, of the land side M, placed in the rear of the side cutters F and divided by a hinge m², into two sections, the rear one being horizontally adjustable in relation to the forward section; 5th. The combination of the wheels B, constructed with flanged sections b² b², connected together by strips b³; 6th. The combination of a side carrier J, pivoted at an angle to the machine, and provided with an endless chain, of plates l l, supported at each end on revolving axis, and intermediately by an overlapping series of pulleys, wheels or rollers.

No. 10,056. Spark Extinguisher. (*Extincteur de flamme.*)

John Abell, Woodbridge, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The combination with the annular water receptacle B₂, of the centrally placed smoke deflecting cone C, provided with a central independent discharge for the exhaust steam; 2nd. The combination with the lower water receptacle, of an upper water receptacle formed on the top of the deflecting cone; 3rd. An upper and lower water receptacle arranged, in relation to each other and the smoke current, in such manner that the water fed into the upper receptacle shall overflow into the lower receptacle in a thin curtain through which the smoke and other products of combustion must pass; 4th. The combination of the upper and lower water receptacles, the deflecting cone provided with a central independent steam outlet, the domed cover and the grating placed above all, whereby the smoke and sparks are deflected twice into water, thereby ensuring the extinguishment and arrest of the sparks.

No. 10,057. Improvements on Adjustable Axles. (*Perfectionnements aux essieux mobiles.*)

Orrin B. Thompson, Jersey, Ohio, U. S., 7th June, 1879, for 15 years.

Claim.—1st. The combination, with the threaded spindle, of one or more sleeves or collars independently adjustable thereon, and adapted to lengthen or shorten the bearing surface; 2nd. The combination with the threaded

spindle, of one or more independently adjustable sleeves or collars, arranged and adapted to form an adjustable shoulder or collar for a bearing for either the box or nut.

No. 10,058. Improvements on Welt Shoe Machines. (*Perfectionnements aux machines à souliers à trépointe.*)

Joseph S. Turner, Rockland, Mass., U. S., 7th June, 1879, for 5 years.

Claim.—1st. In a machine for perforating a welt and outer sole, two awls adapted to simultaneously penetrate the welt and outer sole, combined with a rest or support for the shoe while being acted upon by the awls; 2nd. Two awls adapted to simultaneously enter and pass through the said welt and outer sole, combined with a rest for the shoe and a gauge to co-operate either with the upper or with the channel, to place the series of perforations at the desired distance from the upper; 3rd. Two awls to perforate the welt and outer sole in opposite directions, combined with a gauge adapted to bear upon the upper near the welt, and mechanism to move the said gauge toward and from the path of movement of the awls; 4th. A pivoted gauge to bear against the upper near the welt and stops to determine the movement of the fulcrum pins of the gauge, toward or from the path of movement of the awls; 5th. Two awls and a support for the boot or shoe, combined with two independent pressers to bear upon the material, at the front and the rear end of the awls, and mechanism to raise and lower the pressers; 6th. Two awls to simultaneously enter and penetrate the welt and outer sole, combined with two feet *et*, to support the material, one of the said feet being adapted to yield and remain in the channel of the outer sole, notwithstanding the curvatures in the channel; 7th. A pivoted rest, or foot *et*, provided with a shoe-supporting surface and a ledge l₉, to enter and open the channel in the outer sole, combined with a spring to maintain the foot in upright position, but yet permit it to yield toward and from the centre of oscillation of the awls; 8th. Two cutters or blades to enter from opposite sides and trim the outer sole, or outer sole and welt, parallel with the series of perforations made therein; 9th. Two curved awls and two curved cutters, having substantially coincident centres of oscillation, combined with a rest or support for the material; 10th. The combination with mechanism for perforating a welt and outer sole, and mechanism to trim them parallel with the series of perforations of a channel guide and support for the boot or shoe, and a presser to operate as described; 11th. The combination with mechanism to perforate a welt and outer sole, of two cutters to enter the sole from opposite sides, and a rest or support for the material, and a gauge to bear against the upper near the welt to regulate the distance from the upper of the perforations made by the awls; 12th. In a machine for simultaneously perforating and trimming a welt and outer sole, an awl and cutter having coincident centres of vibration or movement combined with mechanism to move the awl and cutter-carrier horizontally when the awl and cutter engage the welt and sole, to feed the boot or shoe forward; 13th. Two awls and two cutters to enter the welt and outer sole from opposite sides to perforate and trim them, combined with a fixed rest or foot, and a movable rest or foot provided with a channel gauge; 14th. Two awls to perforate and two cutters to trim a welt and outer sole, at the desired distance from the upper, combined with mechanism to operate the awl and cutter carriers, to permit the cutters to almost meet and subsequently to move one cutter forward while the other is retracted, to cut that portion of the sole which rests between the cutters, when they nearly approach each other; 15th. The combination with a perforating awl and a laterally or horizontally moving carriage to cause the awl to feed the material, of a handle or lever made movable between adjustable stops, adapted to arrest the lever at its two extremes of movement to produce and ensure a certain length of feed about the forepart of the boot or shoe, and a longer feed at the shank; 16th. A cutting blade to penetrate the welt or upper side of the sole, combined with a second cutter to cut into and trim the sole from its wearing face; 17th. In a machine to simultaneously prick holes in, and trim the edge of a sole or welt on a last, a curved awl and a curved cutter, to enable the sole or welt to be perforated and trimmed at its concave or shank portion; 18th. In a machine to trim soles, a gauge to enter the channel in an outer sole and two cutters to enter the sole from its opposite faces or sides; 19th. A cutter to enter and trim a sole, combined with mechanism to move it laterally while in the sole, to assist in feeding the shoe after each cutting operation; 20th. The gauge C, to bear upon the upper at or near the welt, combined with a spring held rod or marker to mark the outer sole; 21st. The gauge to bear against the upper near the welt, and a device to mark or channel the bottom of the outer sole, combined with a vertically adjustable frame to provide for soles of different thickness; 22nd. The gauge to bear against the upper near the welt, and a device to mark or channel the outer sole, combined with a marker-holder made horizontally adjustable toward or from the face of the gauge; 23rd. That improvement in the art or method of making welted boots and shoes, to ensure a uniform projection of the welt and sole beyond the upper, and a uniform placing of the thread parallel with the sole and welt edge, which consists in employing the upper near the welt as a gauging surface, to determine the distance from the said upper, at which a piercing awl and cutter shall operate, the former to prick the sole and welt at a uniform distance from the upper, and the latter to cut them and remove the uneven unshaped edges of the welt and sole, at a uniform distance from the lines of perforations; 24th. That improvement in the art or method of making welted boots and shoes, which consists in lasting the upper upon the inner sole, attaching a welt to the upper and inner sole, applying a piece of leather for an outer sole to the welt and lasted upper, channeling the outer sole about the toe, ball and shank of the foot in a line at substantially concentric with the outline of the lasted upper, near the welt, then punching holes through the welt and outer sole, and simultaneously trimming the welt and the piece of leather for the outer sole, at a uniform distance from the upper, giving the said piece of leather the proper shape for the outer sole, according to the shape of the last and then sewing the welt and outer sole together by threads inserted through the said holes, the different steps being in the order.

No. 10,059. Improvements on Gas Regulators. (*Perfectionnements aux régulateurs à gaz.*)

James M. Williams, jr., Hamilton, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The openings D D, in connection with the tubes E E, on opposite sides of the chamber B; 2nd. The spring C in connection with the nut I, stem O, with the valve F, in connection with the diaphragm G.

No. 10,060. Improvements on Boot Fastenings. (*Perfectionnements aux hausses des chaussures.*)

Eli Rees, Merced, Cal., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The bars A B, pivoted at C and provided with clasps or locking devices D E, or equivalent fastenings; 2d. The modified form of fastening, consisting of bars A₁ B₁, with pivot C and joints a b and locking devices D E, or equivalents thereof; 3rd. In combination with a boot or shoe having an opening at and along the back or heel-seam, the two hinged or pivoted bars A B, provided with clasps or locking devices D E, or equivalent fastenings.

No. 10,061. Improvements on Car-Couplings. (*Perfectionnements aux attelages des wagons.*)

George R. Hamilton, Waynesville, Ohio, U. S., 7th June, 1879, for 5 years.

Claim.—The combination with the rigid hook on lower jaw and a link D, of the rear pivoted latch C, having a subjacent cavity to receive said hook and sides to bear on the link.

No. 10,062. Manufacture of Felt Hats. (*Fabrication des chapeaux de feutre.*)

Julius Heimann, New York, U. S., 7th June, 1879, for 5 years.

Claim.—1st. A felt or cloth hat or bonnet formed of narrow strips of cloth or felt, sewed concentrically together in the manner of straw goods; 2nd. The process for the manufacture of felt or cloth hats or bonnets, viz.: first cutting the cloth into long narrow strips and, then, stitching these strips concentrically on blocks or frames in the manner of straw sewing.

No. 10,063. Improvements in Boats. (*Perfectionnements aux bateaux.*)

John S. Stephenson, Ashburnham, Ont., 7th June, 1879, for 5 years.

Claim.—The construction of boats with ribs laid and fastened as described, and covered with paper or cotton, or other textile fabric.

No. 10,064. Improvements in Threshing Machines. (*Perfectionnements aux machines à battre.*)

John D. C. Bassett, Toronto, Ont., 7th June, 1879, for 5 years.

Claim.—An open elevator belt for threshing machines formed by the endless belts A A and cross slats B, or their equivalents, and operating in conjunction with the revolving belt E, slats D and board C, or their equivalents.

No. 10,065. Improvements on Oatmeal Machines. (*Perfectionnements aux machines à graver d'avoine.*)

Edward S. Higgins, Ottawa, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The combination of a revolving disk or cylinder C, having knives D, with hopper E, having a perforated bottom plate H, conforming to the sweep of the knives, operated by a to and fro sliding motion for cutting the groats; 2nd. The combination of the stones Q R, having a concave and convex face revolving in juxtaposition for finishing the granulated particles by attrition.

No. 10,066. Potato-Digging Machine. (*Machine pour arracher les patates.*)

John S. Cantelo, Grand River, P. E. I., 7th June, 1879, for 5 years.

Claim.—1st. The concave guide wheels a, having its axle b hinged to the upright c, and provided with the clever d; 2nd. The device for raising the shovel out of the ground, composed of lever f, cord or link h, swivel head e, located on spindle c, and the sliding head m₁, connected to the beam m₂, of the frame m m; 3rd. The combination of the frame m m, its adjustable axle k, and wheels l l i i and endless screen n; 4th. The combination of driving wheels i i, frame m m, endless screen n, rollers o o or o₁ and the adjustable shovel s, arranged to swing on the axis of front roller o₁; 5th. In the combination of driving wheels i i, frame m m, endless screen n, shovel s, and the rocking dirt breaker w w w₁; 6th. The combination of endless screen n, frame m m, adjustable shovel s, with its double wall side pieces v v; 7th. The combinations of frame m m, endless screen n, shovel s, with side pieces v v, lever t hinged to beam m, connecting link u and the standard t; 8th. In combination with frame m m, endless screen n, the adjustable shovel s, with its fenders z z z₁, having their rear ends movable in guides in the roller shaft o₁ i i; 9th. In combination with the frame m m, the adjustable axle k, with its perforations k₁ k₂ k₃, the adjustable seat l, with its supports l₁ l₂; 10th. In combination with the frame m m, endless screen n and adjustable shovel s, the reciprocating shaker 7, movable on adjustable fulcrum o s, set forth and provided with crooked prong e 12 12, with or without shorter prongs 13 13; 11th. The combination of endless screen n, its frame m m and shaker 7, screen bottom boxes 14 14 15 and their doors 16 16; 12th. The combination of frame m m, endless screen n, shovel s, wheels i i, shaker 7 and the adjustable weed gatherer 18.

No. 10,067. Improvements on Cultivator Ploughs. (*Perfectionnements aux charrues-cultivateurs.*)

Conrad Huehn, Berlin, Ont., 7th June, 1879, for 5 years.

Claim.—1st. The two parallel plow beams A A, combined adjustably by the posts H H, bars I I and draft bar G; 2nd. The mould board K, having a portion g projecting beyond the land side L of the plow, for shaping the side of the drill to the contour of the edge f.

No. 10,068. Improvements on Churns. (*Perfectionnements aux barattes.*)

Joseph Kearney, Woodstock, N. B., 7th June, 1879, for 5 years.

Claim.—The frame F and rests H, having retaining staples, in combination with cylinder A and hangers B.

No. 10,069. Improvement on Piston Packing. (*Perfectionnement aux garnitures de pistons.*)

Alexander McDonald, Halifax, N. S., 7th June, 1879, for 5 years.

Claim.—1st. The application of the serrated teeth d d, on the packing rings D D; 2nd. The application of lugs, feathers or stops E E, cast or otherwise secured to the packing rings D D, on the interior, in combination with the springs F.

No. 10,070. Machine for Transferring Grain. (*Machine à transférer le grain.*)

John T. Hough, Alonzo A. A. Hough and Samuel J. Barclay, Pittsburgh, Pa., U. S., 7th June, 1879, for 5 years.

Claim.—1st. Two drums, one of which is operated by suitable means, an endless belt passing over them, carrying curved faced buckets, in combination with and surrounded b a casing opening at one end into a chute, and at the other to form a self-feeding nose, whereby the buckets are adapted to pick up the grain from a level floor; 2nd. In combination with the drums, belt, buckets and casing, a leg D having longitudinal adjustment and pivoted to the casing whereby the leg may be lengthened or shortened at will; 3rd. The combination of casing A, endless belt C, buckets a and drums B B, with the chute E, having circular slots d.

No. 10,071. Improvements on Horse Collar Caps. (*Perfectionnements aux housses des colliers de cheval.*)

Dexter Curtis, Madison, Wis., U. S., 7th June, 1879, for 5 years.

Claim.—In combination with the cap A, formed of one piece of sheet metal, the cast metal loops D, having expanded feet and slotted plate B rivetted to the cap A holding the loops fixedly.

No. 10,072. Improvements on Steam Boilers. (*Perfectionnements aux chaudières à vapeur.*)

Alfred C. Harrison, Philadelphia, Pa., U. S., 7th June, 1879, for 5 years.

Claim.—1st. A regulating device in which a diaphragm or piston, exposed to the pressure of steam, is combined with a damper or throttle valve and with weights or equivalent loads, which will resist in succession the said diaphragm or piston as it rises under an excess of pressure of steam, and from which the piston or diaphragm will be relieved in succession as the excess of pressure of steam is reduced; 2nd. The combination of the diaphragm or piston, a lever connected to a damper or throttle valve and a series of weights, by which the said lever is loaded in succession as it rises; 3rd. The combination of a diaphragm or piston and lever, with a movable weight and with devices, whereby the said weight is caused to move outward from the fulcrum of the said lever, as the latter rises under an excess of pressure of steam; 4th. The combination of a diaphragm or piston, weighted lever and the rod through which the said diaphragm or piston acts on the lever with a device by which the said rod is caused to move nearer to the pivot of the lever as the latter rises.

No. 10,073. Improvement in Try Squares. (*Perfectionnement aux équerres mobiles.*)

Leroy S. Starrett, Athol, Mass., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The stock provided with the bar receiving recess and boss, with the clamp arranged in such recess and boss; 2nd. The combination of the hooked clamp provided with a screw on its shank and arranged with the bar and shank, of the counter bored nut and the helical spring placed therein and to act against the top of the boss; 3rd. The stock provided with the sheath to receive the scratch pin, and a friction spring to keep such pin in place, and also with the slide bar arranged within and applied to such stock; 4th. The stock provided with the spirit level and its guard arch, and the scratch pin sheath arranged in such stock, in combination with the slide bar and its clamping device applied to the stock; 5th. The slide bar made with divisions and scratch holes.

No. 10,074. Improvements on Beds, Cradles and Cribs. (*Perfectionnements aux lits, berceaux et barcelonnettes.*)

James L. McKeever, New-York, U. S., 7th June, 1879, for 5 years.

Claim.—1st. In a bed, the combination of the bent pieces B B, straight pieces C C, frame G, hood L composed of wire or other netting, pivoted cover g and h, and lever J; 2nd. A bed frame with straight sides and semi-circular ends, in combination with a semi-cylindrical covering of wire or other netting whose longer section turns back over the shorter; 3rd. The combination of the body M, hood O and pivoted cover P constructed of wire cloth or other netting, with the band N, hoop Q, legs R R, brace S, arms T T, extension loops i i, hooks k k, pins l l and hooks m m; 4th. In the construction of a rocking cradle, a semi-cylindrical body having rounded ends, of wire or other netting, in combination with a fixed hood and a pivoted cover of same material, the joints of which are packed with a soft elastic packing n and the supporting slats r r; 5th. In the construction of a crib a semi-cylindrical body with rounded ends and a fixed hood and a pivoted cover, all made of wire or other netting and supported by curved slats S S placed beneath the body, in combination with the rockers W W, standard X, hooks and staples t t, hooks V V, loops W W and cross-piece X₁; 6th. The semi-cylindrical cover, of wire or other netting, pivoted to a cradle, crib or bed; 7th. The bed, cradle and crib.

No. 10,075. Improvements in Nut Locks. (*Perfectionnements aux arrête-noix.*)

Frank B. Davis, Johnstown, Pa., U. S., 7th June, 1879, for 5 years.

Claim.—The wedge key F, in combination with the nuts D and the ribs b.

No. 10,076. Improvements on Strip-Cutting Machines. (*Perfectionnements aux machines à tailler les bandes.*)

David H. Burrell, James H. Ives, Rodney S. Whitman and David H. Burrell, Little Falls, (Assignees of James Naylor, Jr., Rochester, N. Y., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The knife B, having a sliding pivotal movement at one end and a circular motion at the other, in combination with the crank shaft D, the crank of which is directly connected with the knife carrier; 2nd. The cutting knife B, having a comparatively small movement for cutting the edge of the strip, in combination with the knife F having a greater scope of motion to cut its width and their operating shafts and gear; 3rd. The combination of the cutting knives, their driving gear and the shaft D E, the knives and shafts being set at an obtuse angle to each other, for the purpose of reducing friction and giving a free exit to the cut strip; 4th. The feeding screw H, operating upon the surface of the log to feed it forward; 5th. The toothed pawls L, acting upon the outer surface of the log, in combination with their operating mechanism consisting of the rock shaft J, its arms and the crank G upon the shaft D; 6th. The screw feed wheel H, operated by the knife B, in combination with the pawls L and their actuating mechanism, for the purpose of feeding the log; 7th. The horizontally moving centre M, provided with the eccentrics n, in combination with the pawls Q and rack R, for the purpose of moving the log horizontally to the cutters; 8th. The feeding devices, consisting of the vertically moving spring supported blocks U, in combination with the rotating centre chuck and cam S; 9th. The feeding devices, for rotating the log upon its axis, in combination with the mechanism for giving a horizontal movement to the same, while being cut into strips; 10th. The sectional knives B attached to their carrier by the convex holding plates c and bolts d to allow of their ready removal and re-attachment; 11th. The horizontally moving boxes O and O' in combination with the weights W and their connecting cables, for the purpose of automatically retracting the boxes; 12th. The inclined bed Y, in combination with the retracting centres and vertically cutting knife B', for the purpose of facilitating the introduction of the logs and removal of cores.

No. 10,077. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

John V. Schaaf, Bowmanville, Ont., 7th June, 1879, for 5 years.

Claim.—The serpentine projection marked C, producing the double motion, in combination with the knives E E, rollers G G, swivels H H and connecting rods D D D D.

No. 10,078. Manufacture of Corsets and Pads. (*Fabrication des corsets et matelas de poitrine.*)

John C. Tallman, New York, U. S., 7th June, 1879, for 5 years.

Claim.—1st. The combination, in a corset, of the steel c, front lace b, and intermediate elastic gore d; 2nd. A corset provided with a flexible tongue y, extending below the end of the steel and having connecting devices a; 3rd. The combination, in a corset, of the steel c, flexible tongue y, bones w and gore d extending downward in juxtaposition to said tongue; 4th. The combination, in a corset, of two series of cross bones f f' and intermediate flexible portion t at the hip; 5th. The series of bones f f' extending each upward from one edge of the under arm portion and converging toward the centre; 6th. The combination, with the transverse hip bones, of longitudinal bones i; 7th. A corset provided with lacings u adjacent to the breast receptacle; 8th. A corset provided with a laced opening z between the centre and hip at the back; 9th. The sheets or sections of fabric, each having the warp or weft only of stiff material and arranged with the stiff fibres of one section at an angle to those of the other section; 10th. A corset, formed in whole or in part of the described compound fabric, consisting of layers each with a warp or weft, only, of stiff material, arranged so that the stiff fibres of one layer are at angle to those of the other layer; 11th. A corset having sections of grass cloth or equivalent material, with edge bindings e lapped over and united; 12th. The strip t' combined with the lapped and bound sections; 13th. In a corset having grass cloth sections, the combination, with said sections, of flat blades of whalebone or other suitable substance, arranged immediately to the edges of said sections at an angle to the stiff fibres of the cloth; 14th. The combination, in a corset or bosom pad, of the sections or strips d', of textile fabric, stitched together and to a section or strip w' of grass cloth or other stiff fabric and a grass cloth section, secured by stitching at the front or rear of the strip d'; 15th. The combination, in a corset having grass cloth sections, of strips d' overlapping the edges of contiguous sections, at the outside thereof, and strips w' at the rear, secured to each other and to the sections, by stitching; 16th. A corset or pad consisting, in whole or part, of grass or china cloth tempered under heat and pressure.

No. 10,079. Improvements on Musical Instruments. (*Perfectionnements aux instruments de musique.*)

Mason J. Matthews, Boston, Mass., U. S., 7th June, 1879, for 15 years.

Claim.—1st. In combination with a wind chest, a reed box provided with a series of reeds, each turned to a different pitch, and a strip or sheet of paper, or other thin flexible material, having formed therein a series of perforations arranged to represent the various notes of a tune, the bars or plates E E secured one to each end of the wind chest, reed box, or wind chest and reed box and adapted to support a paper carrying roll at either end thereof; 2nd. The combination of the wind chest A, reed box B provided with a series of reeds, spring bars or plates E E, rolls F F', a strip or sheet of perforated paper H connected at each end to one of said rolls, and the frictional washer C C'; 3rd. A strip or sheet of paper, or other thin flexible material having, formed therein, a series of perforations arranged in the proper order to represent the various notes of a tune, and also having, formed in each end thereof, a single perforation, the edge of which is reinforced or strengthened as a means, in combination with a pin, of securing said strip or sheet of flexible material to the feeder carrying rolls; 4th. The combination of the wind chest A, reed box B provided with a series of reeds, a strip or sheet of perforated paper, or other flexible material, H and the two rolls or cylinders F F', each provided with a crank d and with means for readily attaching one end of

said strip or sheet of paper, or other flexible material thereto; 5th. The roll F or F' having, formed therein, the two longitudinal slits e f extending through, or nearly through, the same at right angles, or nearly so, to each other and having pivoted in one of said slits the lever G provided with the angular projection g; 6th. The two rolls F F', each provided with a crank and having formed therein the two longitudinal slits e f, in one of which is pivoted the lever hook G g, in combination with a wind chest, suitable means of supplying wind thereto, a reed box provided with a series of reeds and a strip or sheet of paper, or other thin flexible material, having formed therein a series of perforations j j and two reinforced openings l l.

No. 10,080. Improvements on Car Couplings. (*Perfectionnements aux attelages des wagons.*)

James H. Hills, Burlington, Vt., U. S., 7th June, 1879, for 5 years.

Claim.—1st. A twin automatic coupling formed of forked intermeshing draw heads, each having a tumbler or pawl pivoted at the entrance of the forked heads, on one side thereof, projecting therefrom inwardly and laterally and adapted, as the draw heads intermesh, to impinge, mutually yield, pass over and spring into engagement with each other, and thereby effect the coupling action by their direct engagement, without the intervention of additional catches or locks; 2nd. In an automatic twin coupling, the combination, with a forked intermeshing draw head, of the pawl c pivoted on the front end of one prong thereof, projecting laterally and inwardly therefrom and formed with a shoulder n on its pivoted end, to engage with the front of the draw head; 3rd. The combination, with a forked draw head, of the pivoted spring acted pawl c, formed with a recess m to receive and protect the spring.

No. 10,081. Improvements on Folding Tables. (*Perfectionnements aux tables brisées.*)

David Marble, Detroit, Mich., U. S., 7th June, 1879, for 5 years.

Claim.—In combination with the table A, frame B a c and legs B B, the bar D, adjustable shield F, slotted plate G with bolt b, thumb nut I and the hook H.

No. 10,082. Improvements on Musical Instruments. (*Perfectionnements aux instruments de musique.*)

Mason J. Matthews, Boston, Mass., U. S., 7th June, 1879, for 15 years.

Claim.—1st. In combination with a wind chest provided upon its upper side with a wind passage communicating therewith, a driving shaft or feed roll mounted upon the upper side of said wind chest, suitable wind moving bellows placed beneath said wind chest and a sheet or band of perforated paper passing over said wind chest and wind moving bellows, the detachable frame F, the secondary feed roll H having its bearings on said frame, the reed board G, provided with trunnion pins u u' fitted to and resting in the slots u in the side rails of the frame F, and the springs v v'; 2nd. The rocker shaft q provided at each end with a hook hasp q' and, at or near the middle of its length, with the operating lever or handle q, all formed from a single piece of wire.

No. 10,083. Improvements on Musical Instruments. (*Perfectionnements aux instruments de musique.*)

Mason J. Matthews, Boston, Mass., U. S., 7th June, 1879, for 15 years.

Claim.—1st. In combination with reeds and their air passages and a perforated sheet of paper, a series of valves constructed and arranged to be held in their seat or bed by the combined action of the said perforated sheet a d pneumatic pressure; 2nd. The combination of the friction rollers H P and perforated paper G with the valves c c; 3rd. In combination with a sheet of perforated paper and the valves c c, the hinged guide rails N N; 4th. A mechanical musical wind instrument having reeds and a sheet of paper suitably perforated to produce a tune in connection with valves, the reeds arranged in alternate positions in two rows; 5th. The combination of the reed chamber E provided with a series of reeds and wind passages, the pivoted bar F, a series of levers d, provided with angular or other suitable shaped push points d' and valves c, and pivoted to the bar F, and a sheet or band of perforated paper or other flexible material; 6th. In combination with a series of valves c, push points d' and a sheet or band of perforated paper G, the roll O adapted to strain the paper taut near the points of action upon the push points; 7th. A bar carrying spring fingers when arranged to be partially rotated about an axis to lift said spring fingers upward.

No. 10,084. Improvements in Steam Pumps. (*Perfectionnements aux pompes à vapeur.*)

Michael Schultz, Cincinnati, Ohio, U. S., 7th June, 1879, for 5 years.

Claim.—1st. In combination with the steam and pumping cylinders of a direct acting steam pump, the semi-cylindrical shell or frame J connecting the two wholly upon one side of their axial line; 2nd. In combination with the vertical frame and driving shaft of a direct acting steam pump, the brace I, 3rd. The roller G, in combination with the yoke A, crank wheel F and pin F'; 4th. The yoke A, provided with side flanges H, in combination with roller G; 5th. The continuous piston B cast with the yoke A in two parts; 6th. The combination, with the steam and pumping cylinders, of a direct acting steam pump and a yoke for transmitting motion to a governing fly wheel, the crank wheel F and the shaft having its bearings upon the same side of the piston; 7th. The ball and socket joint, as a connection for the valve stem and eccentric rod; 8th. The method of attaching and retaining the bolts for holding the glands or covers for the stuffing boxes.

No. 10,085. Improvements on Suppository Moulds. (*Perfectionnements aux moules des suppositoires.*)

Henry C. Archibald (Assignee of Henry R. Heyl), Philadelphia, Penn., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The mould E constructed of longitudinal sections, capable of being separated by lengthwise movements and seated between a shifting holder; 2nd. The combination of the sectional mould and shifting flask with

the hopper, whereby the mould, as it is shifted, shears with the lower part of the hopper; 3rd. The hopper B, plunger C, separable mould E and shifting flask D combined.

No. 10,086. Improvements on Cheese Hoops.

(*Perfectionnements aux moules à fromage.*)

Rodney S. Whitman, David H. Burrell and Walter W. Whitman (Assignees of George L. Freeman), Little-Falls, N. Y., U. S., 7th June, 1879, for 5 years.

Claim.—1st. The open expanding bandager, provided with hooks *e* or their equivalents, in combination with the hoop A; 2nd. The hoop A having a tapering lower body, with a part extending upward from the point a reversed in taper, smooth on the inside, and a bearing ring *b*; 3rd. The perforated follower D provided with an edge groove filled with packing; 4th. In the hoop A, the interchangeable devices C *e* D *g*; 5th. The hoop A, provided with bearing rings *b* and bottom B, in combination with the expanding and wedge section bandager.

No. 10,087. Improvements on Portable Elevators.

(*Perfectionnements aux élévateurs mobiles.*)

Alvin W. Lamphere, New-York, U. S., 7th June, 1879, for 5 years.

Claim.—1st. An elevator, provided with and driven by engines K permanently attached to the sides of its casing; 2nd. The combination of the rods E and the guides F G, or either of them, with the endless belt C and the casing A of the elevator; 3rd. An elevator formed of the casing A, provided with the guides F G and the balls M, the rollers B, the endless carrier C provided with the rods E, the cranks or crank wheels H, the connecting rods I, the piston rods J and the steam cylinders K with each other, to adapt the elevator to be conveniently handled.

No. 10,088. Improvements in Electric Lamps.

(*Perfectionnements aux lampes électriques.*)

William E. Sawyer, New York, and Albon Man, Brooklyn, N. Y., U. S., 10th June, 1879, for 15 years.

Claim.—1st. An electric lamp connected and charged in whole or in part, and supplied with suitable conductors and currents of electricity, and with burners of carbon or its equivalent, created, prepared and applied in whole or in part; 2nd. The method of preparing and creating the illuminating part of an electric lamp, consisting of electrically heating the same, while it is surrounded by a carbon gas or liquid; 3rd. The method of preparing the illuminating part of an electric lamp, consisting in, first, obtaining a solid deposit of carbon by electric action, and subsequently when the globe containing it is charged with a carbon preservative atmosphere, before the flow of such preservative atmosphere through the lamp has ceased, and before the lamp is finally sealed, heating the illuminating part by means of the electric current in order to expel impurities and occluded gases; 4th. The method of charging an electric lamp with a carbon preservative gas by intermittently passing a purified atmosphere, or an atmosphere undergoing purification, into the globe thereof, and thereby successfully diluting and purifying the contents thereof, until finally all, or nearly all, the oxygen is removed therefrom; 5th. The combination with the globe of an electric lamp containing nitrogen gas, of a cap G filled with melted beeswax or other liquid, which upon cooling hermetically seals the lamp; 6th. In an electric lamp, two tubular conductors *a*, each provided with a stop-cock; 7th. In the method of sealing a tubular conductor *a*, consisting of encasing it with a cap *c*, filled with melted beeswax or other liquid, which upon cooling hermetically seals the joint; 8th. The cap *c* provided with an insulated contact J, for the purpose of establishing the electrical connection of the lamp with the terminals of the conductors leading from the generator, when the lamp is set in a suitable holder; 9th. In an electric lamp, a fluted internal conductor *x*; 10th. The internal conductors of an electric lamp, arranged fluting and insulated at their heads by slips of mica or other insulating material; 11th. The internal conductors of an electric lamp so bound together as to insure solidity of construction; 12th. The combination of the diaphragm P, the standard J, sliding bar L, spring W, and stirrup V; 13th. The combination with the carbon piece M, of the hammer K and anvil L, each provided with platinum or iridium contact points N O; 14th. The method of charging the globe of an electric lamp with nitrogen, consisting of, first, exhausting the gaseous contents of the globe and then allowing the nitrogen to flow therein; 15th. The method of charging the globe of an electric lamp with nitrogen, consisting of first replacing the original gasses or contents of the globe with hydrogen, and then replacing the hydrogen with nitrogen gas; 16th. The method of charging the globe of an electric lamp with a carbon preservative atmosphere, consisting of heating the same so as to drive out occluded gasses, while the flow of the carbon preservative atmosphere through the globe continues; 17th. Two or more diaphragm disks P; 18th. An electric distributing system in which the current from a single generator, transmitted intermittently through two or more circuits, is rendered continuous in such circuits by induction apparatus energized by such intermittently transmitted current; 19th. The combination with an electric lamp lighting switch of an apparatus which operates to prevent the completion of the lamp circuit, when there is no current to energize the lamp; 20th. The combination with an electric lamp lighting switch, with an apparatus energized by the current which actuates the lamp, and that operates to prevent the opening of the lamp circuit to the flow of the current when there is no supply; 21st. The combination, with an electric lamp lighting switch, of an apparatus energized by the current, which actuates the lamp, and that operates when there is an interruption in the flow of the current, to close the circuit of the lamp against a sudden recurrence of such flow; 22nd. The combination with an electric lamp of a switching apparatus which, after an interruption of the flow of the current, operates to introduce a resistance into the circuit of such switching apparatus and the lamp, before the lamp can be lighted; 23rd. The combination with an electric lamp of a switching apparatus which, after an interruption of the flow of the current, operates to cut the lamp out of the circuit of such switching apparatus before it can be lighted; 24th. The combination with an electric lamp and a lamp lighting switch, of two electrical circuits connected therewith; the switch operating to reduce the resistance of one circuit and increase the resistance of the other, in such manner that at each reduction in the resistance of one circuit there will be an increase in the resistance of the other; 25th. The combination with an electric lamp and a lamp lighting switch, of electrical circuits, so arranged that as

the resistance in the circuit of the lamps is lessened, and consequently more current caused to flow through the lamp, the resistance of an extraneous channel or channels is increased, each reduction in the resistance of the lamp circuit being accompanied by such increase in the resistance of the extraneous channel or channels, that the resistance of the main or branch circuit, which contains the circuit of the lamp and the extraneous channel or channels, is maintained at a constant quantity or nearly so; 26th. In an electric distributing system, the combination with a switch, of the electro magnet F operating to change the circuit from a branch to a main; 27th. The combination with an electric lamp and a shunt or derived circuit around the lamp, of a switch, which operates to light the lamp by increasing the resistance of the shunt or derived circuit; 28th. The combination with one or more electric lamps, of a meter or register, showing the consumption or expenditure of current in operating the same; 29th. The combination with one or more electric lamps of a meter or register, showing the time during which the said lamp or lamps are operated; 30th. A meter or register of the consumption or expenditure of current in the operation of one or more electric lamps, consisting of a dial or dials actuated by the current; 31st. A meter or register of the consumption or expenditure of current, in the operation of one or more electric lamps, apparatus actuated by the current to indicate the time during which the operation of the same continues; 32nd. A meter or register of the consumption or expenditure of current, in the operation of one or more electric lamps, mechanism set in motion by the current upon the lighting of a lamp, and stopped upon the extinguishment of the same or all the lamps; 33rd. In a meter or register of the consumption or expenditure of current, in the operation of one or more electric lamps, the combination of the two pieces O C; 34th. In a meter or register of the consumption or expenditure of current, in the operation of one or more electric lamps, the combination with primary apparatus for setting a clock-work in motion, of secondary apparatus actuated by any one or more lamps to actuate the primary apparatus; 35th. In a meter or register of the consumption or expenditure of current in the operation of one or more electric lamps, the combination with such lamp or lamps of apparatus energized by the current operating such lamp or lamps.

No. 10,089. Process of Making Paper Pulp.

(*Procédé de fabrication de la pâte à papier.*)

John M. Allen, Marion, Mass., U. S., 13th June, 1879 (Extension of Patent No. 3569), for 5 years.

No. 10,090. Rotary Pump. (*Pompe rotatoire.*)

Charles C. Barnes, Sackville, N. B., 13th June, 1879, (Extension of Patent No. 3559), for 5 years.

No. 10,091. Improvements on Capstans and Windlasses. (*Perfectionnements aux cabestans aux guindeaux.*)

David N. B. Coffin, Jr., Newton, Mass., U. S., 13th June, 1879 (Extension of Patent No. 3707), for 5 years

No. 10,092. Improvements on Screws for Imparting Motion to Machinery. (*Perfectionnements aux vis pour communiquer le mouvement aux machines.*)

David N. B. Coffin, Jr., Newton, Mass., U. S., 13th June, 1879 (Extension of Patent No. 3650), for 5 years.

No. 10,093. Improvements in Saw-Mill Dogs.

(*Perfectionnements aux clameaux des scieries.*)

Henry E. Susand, William A. Susand, Berlin, Ont., and James H. Baker, Bay City (Assignees of Thomas Craney, Bay City), Mich., U. S., 13th June, 1879 (Extension of Patent No. 4781), for 5 years.

No. 10,094. Machine for Grinding Car Wheels.

(*Machine à remanuler les roues des wagons.*)

James H. Gowan, Carson, Nevada, U. S., 13th June, 1879, for 5 years.

Claim.—1st. The rotating, abrading wheels, or wheel provided with means for operating the same, in combination with mechanism for centering and rotating the chilled car wheels and axles, when firmly united together for the purpose of rendering the peripheries of said wheels accurately concentric with the axle bearings; 2nd. The ways E, bolted to the bed plate A, and provided with the T-shaped grooves *c c*, and central guide groove *c₁*, in the top of the ways E between the T-grooves, in combination with the tail stock F, having tongue *d* and T headed securing bolts *d*; 3rd. The plate H, bolted to the bed plate A, provided with a plurality of transverse T-shaped grooves *g* placed at equal distances from each other, for the purpose of giving a variable adjustment to suit axles of different lengths, in combination with the abrading wheel carriers and their supporting and adjusting mechanism; 4th. The bed plate A and supplementary bed *A₁*, in combination with the head stock B, mandrel C, spur C₁, standard B₁, shaft D, pinion D₁ and pulley D₂; 5th. The abrading wheel S, mounted upon the shaft R, in combination with the lubricated tool holder P, and its supporting and operating devices; 6th. In combination with the bed-plate A, the grooved H and base I, provided with screw studs or bolts *b*, in combination with the downward extension I₁ of the transverse plate J, said extension I₁ having in its enlarged flange segmental openings K, for the purpose of giving a limited horizontally rotating movement to the tool carrier.

No. 10,095. Improvements in Hoop Machines

(*Perfectionnements aux machines à cercles.*)

Rodney S. Whitman, David H. Burrell and Walter W. Whitman (Assignees of David H. Burrell and James Naylor, jr.), Little Falls, N. Y., U. S., 13th June, 1879, for 5 years.

Claim.—1st. The emery or sand wheels for dressing the hoop while passing through machine; 2nd. The crimping shoes to twist or contour the hoop, in combination with a feeding device, for the purpose of giving to a hoop sufficient flare to fit a bilged or tapered barrel or package;

3rd. The yielding guide J, in combination with the dressing wheel H, for the purpose of dressing the hoops during their progress through the machine; 4th. The combination of the flange or flanges of the wheels B B, and the rib or ribs of the yielding guide J, forming the means whereby the hoop is held in place laterally, while passing over the surface of the shoes; 5th. The smooth rollers, in combination with the crimping guide F, for the purpose of coiling box or other rims without steaming; 6th. The rollers G G, for the purpose of tempering and curving staves.

No. 10,096. Improvement in Oatmeal Machines. (*Perfectionnement aux machines à gruau d'avoine.*)

Samuel A. Fuller, Cleveland (Assignee of John F. Byers, Ravenna), Ohio, U. S., 13th June, 1879, for 5 years.

Claim.—1st. The alternate parallel bars e and x with their sides in continuous contact, and provided on their upper edges with knives c et, and depressions across the top of the bars for the escape of the meal; 2nd. The series of bars e , provided with knives c on their upper edges, in combination with bars x , provided with knives c on their upper edges; 3rd. The hopper h , having lateral slots s ; 4th. The hopper h having lateral slots s in its bottom, in combination with the bars e provided upon their upper edges with knives c , and the bars x provided upon their upper edges with the knives e .

No. 10,097. Improvements in Animal Traps. (*Perfectionnements aux pièges à vermine.*)

Thomas G. Rice (Co-inventor with John Thompson), Montreal, Que., 13th June, 1879, for 5 years.

Claim.—1st. The combination of the spring D, having link e_2 attached thereto, with the post B provided with pivoted pawl having projection e_2 and end c_3 with the catch a_1 ; 2nd. The combination of the spring D, link E, post B having pivoted pawl, also wire C and the guard a_2 ; 3rd. The spring D, provided with a caging b_2 also provided with a link E, in combination with the pivoted pawl having projection e_2 and end a_1 , wire C, post B, hook b_1 and reflecting guard a_2 .

No. 10,098. Improvements on Clothes Buttons. (*Perfectionnements aux boutons des hardes.*)

James B. Lamb and William Shoolbred, Ottawa, Ont., 13th June, 1879, for 5 years.

Claim.—1st. The combination of the body A, neck B having the flange C and the web D; 2nd. The combination of the body A, neck B and flange C with the thread bar b .

No. 10,099. Improvements in Hame Fasteners. (*Perfectionnements aux attache-attelles.*)

George A. Coulter, Omaha, Neb., U. S., 13th June, 1879, for 5 years.

Claim.—The combination, with loop B and retaining hook C, of the hooker lever D, bent at the angle specified and having the projection d , and its eye e extending back of same toward the median line of the shorter arm.

No. 10,100. Improvements on Scythe Fastenings. (*Perfectionnements aux manches des faux.*)

Albert W. Flanders, North-Grantham, N. H., U. S., 13th June, 1879, for 5 years.

Claim.—1st. The socket or ring b provided with a cross mortise e and teeth or corrugations d ; 2nd. The combination of the cam button h , with the socket or ring b having teeth or corrugations d and adapted to receive the toothed or corrugated shank of the scythe; 3rd. The scythe formed with a straight shank provided at its end with teeth or corrugations g .

No. 10,101. Improvements on Fanning Mills. (*Perfectionnements aux tarares-cribleurs.*)

William F. Honey, Osawa, Ont., 13th June, 1879, for 5 years.

Claim.—The combination of the adjustable screen B with the roller F and rack G.

No. 10,102. Improvements on Ice Cutters. (*Perfectionnements aux tranches à glace.*)

Horace B. Warren, Montreal, Que., 13th June, 1879, for 5 years.

Claim.—1st. The cutter A B C D; 2nd. The combination of sliding weight or ball E with cutter A B C D.

No. 10,103. Combined Collar, Muff and Bag. (*Pellerine, manchon et sac combinés.*)

Carl F. W. Salbach, Berlin, Prussia, 13th June, 1879, for 5 years.

Claim.—An improved garment combining collar, boa, muff, bag, purse or case connected with each other.

No. 10,104. Method of, and Apparatus for Cutting Chenille Cloth. (*Méthode et appareil pour tailler la chenille.*)

Robert N. Havers and Robert G. Geach, Bradford, Eng., 13th June, 1879, for 5 years.

Claim.—The arrangement and combination of the various parts of the apparatus for adjusting and regulating the cloth before it is passed over the knives to be cut, so that the warp of the same is kept in a straight line and at a uniform distance from the centre of the cutters or knives.

No. 10,105. Improvements on Farm Gates.

(*Perfectionnements aux barrières.*)

William H. Yocum, Selkirk, Ont., 13th June, 1879, for 5 years.

Claim.—The triangular frame C, hinged to the post B and provided with anti-friction rollers D E, to carry the gate A.

No. 10,106. Improvements on Door Hinges.

(*Perfectionnements aux pentures des portes.*)

Henry Collard, Gananoque, Ont., 13th June, 1879, for 5 years.

Claim.—1st. The combination of the bracket plate A, having pintle B wholly or partly encircled by an inclined cam rail C, and the shank D having a sleeved roller E and T-pipe termination F screwed thereon, for engagement with the pintle; 2nd. The strap or shank D fastened to, or inserted in the gate or door having a T-pipe coupling termination F and a roller E.

No. 10,107. Improvements on Cake Machines.

(*Perfectionnements aux machines à gâteaux.*)

Daniel M. Holmes, Arlington, N. J., U. S., 16th June, 1879, for 15 years.

Claim.—1st. The combination of the air tight pistons K, with the tubular cutters B, for pushing the cakes of dough off the said cutters by air pressure; 2nd. The combination of the sliding rack N, the sliding plate O, provided with the pivoted gear wheel Q, the stationary rack R and the standard P, with the cross bar M attached to the piston rods L, the cross bar D attached to the tubular cutter stems C, and the compartment A; 3rd. The combination of the push rods S, provided with the adjusting screws and nuts a_1 a_2 and the cams V, with the driving shaft W, and the cross-bar D that carries the tubular cutter stems and cutters C B; 4th. The combination of the sliding sleeves E, the connecting rods F and the lever G, with the cross-bar D that carries the tubular cutter stems and cutters, and with the push rods S; 5th. The combination of the hinged extension Z, with the frame U and with the endless apron X; 6th. The combination of the screws A₁ and the gear wheels B₁ C₁ and the shaft D₁, with the main frame U and the hinged extension Z; 7th. The combination of the cutter plates F₁ G₁, sliding at the same time in opposite directions, and provided with the slots or openings f_1 g_1 , the horizontal racks H₁, the gear wheels I₁ and the vertical racks J₁, with the compartment A, the cross bar D and the springs and rods H I; 8th. The combination of the pinch plates K₁ with the sliding cutters F₁ G₁, provided with the slots or openings f_1 g_1 ; 9th. The combination of the pins K₄ and the springs K₅, with the pinch plates K₁ and the cutter plates F₁ G₁.

No. 10,108. Throttle Valve. (*Soupape à gorge.*)

Henry Waitkeys, Syracuse, N. Y., U. S., 16th June, 1879 (Extension of Patent, No. 3578), for 5 years.

No. 10,109. Wash-Board. (*Planche à savonner.*)

Thomas D. Jones, Syracuse, N. Y., U. S., 16th June, 1879 (Extension of Patent, No. 3589), for 5 years.

No. 10,110. Improvements on Fish-Passes.

(*Perfectionnements aux passes migratoires.*)

James A. Grant, Halifax, N. S., 16th June, 1879, for 5 years.

Claim.—The mode of facilitating the passage of fish over river obstructions, by constructing an artificial water course, connecting with the river at a distance above and below such obstructions, to give a decline sufficient to allow of the passage of fish against the current of water in such channel and constructing across the river above the mouth of said channel a crib work to form a dead water entrance to the fish channel, and constructing across the river, below the entrance of said channel, a guard or strainer, to prevent the downward passage of fish over the obstruction.

No. 10,111. Improvements on Saw Mills.

(*Perfectionnements aux scieries.*)

William Gowen, Vansau, Wis., U. S., 18th June, 1879 (Extension of Patent, No. 3588), for 5 years.

No. 10,112. Improvements on Frame Erectors. (*Perfectionnements aux monte-charr-pentes.*)

Summit R. King, Alaiedou, Mich., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The machine for raising the bents of frame structures consisting of the frame A B B C having brace rods e e f f , cross brace b b , cap piece c , journal blocks d d , rest block G and clamp or clevis H, in combination with the hoisting drum D, rope i and pulleys a a a , the two last of which are united by the chain rest R; 2nd. The combination of the swinging upright I, having cross piece K carrying the pulleys o o , with the clamp block L having keeper M, pivoting pin g ; 3rd. The clamp block L provided on one side, with keeper M and pivot g and, on the other, with the contracting and expanding portion S S and t together with bolts r r r ; 4th. The combination of the hoisting frame A A B B C C, having drum D, with the adjustable tilting frame consisting of parts I K L and hoisting rope i .

No. 10,113. Improvements on Milk Refrigerators. (*Perfectionnements aux garde-lait.*)

Henry Aylmer, Melbourn, Que., 23rd June, 1879, for 5 years.

Claim.—The metal or composite tank A, for holding the cooling medium D together with the openings B made entirely through the tank with cased sides, the raised openings C, on the upper side, and the faucet E, at the bottom.

No. 10,114. Improvements in Treating Felts. (*Perfectionnements dans le traitement des peaux.*)

Samuel D. Castle, Bridgeport, Ct., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. Agitating the damp felts and simultaneously subjecting them to the action of currents of heated air; 2nd. The combination, with the

cylinder A, its double row of slats *b b* and intervening chamber *x*, pins *e* and case B, surrounding the lower portion of the cylinder and heated as specified; 3rd. The combination of the slotted cylinder A, revolving in the case B, and appliances for heating the air within said case; 4th. The combination, with the case B and pipes *h*, of the revolving cylinder A provided with one or more brushes; 5th. The described mode of treating pelts, consisting in first shearing the face to cut short the master hairs and then combing out the fine hair or fur; 6th. Subjecting the pelts to the action of a revolving card; 7th. As a new article of manufacture, a dressed pelt in which the master hairs are cut short and the fine hair is combed out to constitute the fur surface; 8th. The combination, in an apparatus for treating pelts, of the cutters and adjustable frame D; 9th. The combination of the revolving card B¹ and adjustable plate B², or its equivalent.

No. 10,115. Improvements in Cooking Stoves.

(*Perfectionnements aux poêles de cuisine.*)

Henry L. Howse, San-Francisco, Cal., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The stove having the grate or fire-place C and the oven G, with the flue H extending entirely around it, in combination with the plate F between the oven and the top; 2nd. The stove A, with its fire-place C, oven G and the plate F, in combination with the water back D, heated from both sides, and the air supply passage E; 3rd. The stove A, with its horizontal dividing plate F between the top of the stove and the oven, in combination with the oven G having its top extended to the back of the stove, whereby a flue H is formed extending entirely around the oven; 4th. The stove A, with the horizontal dividing plate F, escape flue J and the oven G having its top I extending to the back of the stove, whereby the heat is carried backward and forward above the oven and to the escape flue.

No. 10,116. Improvements in Creamers.

(*Perfectionnements aux boîtes à lait.*)

Sherman J. Ingalls, Dunham, Que., 23rd June, 1879, for 5 years.

Claim.—The combination of a partly closed convex top H, provided with a ventilating cover B, and having a concave bottom E, provided with a discharging spout F and heavy legs G.

No. 10,117. Improvements on School Desks.

(*Perfectionnements aux pupitres d'écoles.*)

Henry Merz, Milwaukee, Wis., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The standard A, having arc-shaped slots *a* and flanges *b*, in combination with the seat bracket D having bifurcated arc-shaped extension arm *d* and roller E; 2nd. The standard A, having arc-shaped slot *a* and flanges *b*, in combination with the seat bracket D having arc-shaped extension arm *d*, rubber lined roller E and rubber cushion *e*.

No. 10,118. Improvements on Row-locks.

(*Perfectionnements aux tolets.*)

John Forbes and James F. Thomas, Plainwell, Mich., U. S., 23rd June, 1879, for 5 years.

Claim.—The combination of a crooked or bent oar G, plates H H, with cups I I, and the post A with ball B.

No. 10,119. Improvements on Weather Strips.

(*Perfectionnements aux bourrelets des portes.*)

Laurence Scully, Meriden, Miss., U. S., 23rd June, 1879, for 5 years.

Claim.—The combination of door *a*, strip *b* and rubber *d*, the middle portion of the latter being immovably secured in a groove *c* in the bottom of door, the free edges of the same extending out and yielding and folding in the operation of the door.

No. 10,120. Improvements on Anti-Friction Bearings.

(*Perfectionnements aux coussinets à anti-friction.*)

Stephen P. M. Tasker, Philadelphia, Pa., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The combination of a shaft A, provided with caps C D rotating with a hanger B, by means of a series of long rolls extending from cap to cap and lying between the hanger and shaft, and by means of two equal series of small rolls, each series similar in number to the long rolls and lying between the caps and the long rolls; 2nd. The two equal series of small rolls E F, enclosed within the shaft caps C D, in combination with the series of long rolls G, and serving to keep said long rolls apart each from the other.

No. 10,121. Improvements on Safety Lamps.

(*Perfectionnements aux lampes de sûreté.*)

Charles S. Westland, Providence, R. I., U. S., 23rd June, 1879, for 5 years.

Claim.—The combination, with a lamp for burning explosive or inflammable oils or fluids, of a closed receptacle containing carbonic acid gas under pressure, so located with relation to the burner that, in case of an explosion, the compressed gas will be liberated.

No. 10,122. Improvement on Steam Boilers.

(*Perfectionnement aux chaudières à vapeur.*)

Samuel J. Hayes, Edward T. Jeffery and Henry Schlocks, Chicago, Ill., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The method of purifying feed water for boilers by admitting or injecting it above the water into direct contact with the live or boiler steam, and into contact with the removable steam heated scrap pieces or plates, or other suitable material, before it descends into or mixes with the

boiler water; 2nd. The apparatus comprising the dome or other vessel placed upon or in combination with a boiler and communicating with the same through a suitable opening therein, and which dome or vessel contains scraps, plates or pieces supported on a perforated plate or otherwise, and into the steam space of which dome the water enters through a suitable feed pipe and nozzle; 3rd. The combination of the dome or tank *b*, injection pipe *d* and plates *e*, or other suitable substance, with a boiler *a*; 4th. The dome *b*, pipe *d* and plates *e*, or other suitable substance, in combination with the perforated plate *f*, opening *g* and boiler *a*.

No. 10,123. Machine for Setting Shoe Studs.

(*Machine à poser les boutons des souliers.*)

Mellen Bray, Newton, Mass., U. S., 23rd June, 1879, for 15 years.

Claim.—1st. A hopper into which the studs may be placed in bulk, in combination with a straight edged bar or plate, fitted to enter freely the groove cut in said stud to form its neck, extending across the interior of said hopper, and adapted to be moved in a path parallel with a portion of the inner surface of the hopper, and to pick up one or more of the studs by their necks, with their shanks all in one direction, and carry them to a higher level; 2nd. The combination of a hopper, into which the studs may be placed in bulk and adapted to be vibrated from a horizontal to an inclined position, and a straight edged bar or plate extending across the interior of said hopper and adapted to be moved up and down in a path parallel with a portion of the inner surface of the hopper, while the hopper is in a state of rest, to pick up one or more of the studs by their necks, with their shank ends all in one direction, and to be moved with the hopper as it is tilted into an inclined position; 3rd. The combination with a hopper into which the studs are placed in bulk, and a device adapted to pick up one or more studs by their necks with their shanks all in one direction, and to be tilted into an inclined position with said hopper, of an inclined chute or roadway having a groove or channel of an L-shape as shown, adapted to guide said studs towards the sitting tools and deliver them in a uniform position; 4th. The combination of a hopper into which said studs are placed in bulk, a thin straight edged bar or plate adapted to be reciprocated therein in a path parallel to the inner surface of one side of said hopper, and to pick up, by their necks, one or more of said studs with their shank ends all in one direction, and to be tilted into an inclined position with said hopper and an inclined chute or roadway adapted to receive the studs as they are discharged from the hopper with their axes in a horizontal position and the hook sides of their heads downward, and to gradually turn said studs, as they slide down said chute, into a position with their axes vertical or nearly so, with their tubular shanks upward, and the hook sides of their heads towards the front of the machine; 5th. The combination of the cylindrical hopper G, mounted in a horizontal position and adapted to be intermittently tilted endwise from said horizontal to an inclined position, and back again to said horizontal position, the curved bar or plate H, adapted to be intermittently moved from one position to another within said hopper, to pick up one or more of said studs by their necks, said studs resting on the edge *f*, of the curved plate H, with their shank ends all pointing toward the centre of the hopper; 6th. The pivoted frame E, cylindrical hopper G, oscillating curved plate H, having the thin straight edge *f*, all arranged and adapted to operate in combination to separate the studs, arrange them in the same regular order and position and discharge them successively from said hopper; 7th. The combination of the hopper G, shaft F, curved plate H, frame E, pulley I, endless belt J, pulleys K K', L, slotted lever L', curved slotted link M, pins N' j and lever D; 8th. The combination, in a machine for setting hook-headed shoe studs, of a hopper into which the studs are placed in bulk, with their shank ends all in one direction, at each upward movement thereof, and to be tilted with said hopper into an inclined position, an inclined chute or roadway adapted to receive said studs as they are discharged from the hopper with their axes in a horizontal position and the hook sides of their heads downward, and to gradually turn said studs as they slide down said chute into a vertical, or nearly vertical position, with the hook sides of their heads towards the front of the machine, and a horizontal roadway extending across or past the lower end of said inclined chute at right angles, or nearly so, thereto, and adapted to guide the studs in their passage from the foot of said inclined chute to a position beneath the clinching plunger, and to prevent said studs from being turned about their axes during such passage; 9th. In combination with a vertically reciprocating plunger adapted to clinch the tubular shank of a shoe lace stud, a horizontal channel, or roadway of suitable cross section to guide said studs by their necks and outer collars or heads, and prevent them from being turned therein, a reciprocating plunger adapted to feed said studs along said channel to a position under said clinching plunger, the abutment *t*, provided with the rearwardly projecting lip *u*, and notch *t*; 10th. In combination with the horizontal channel or roadway *s*, the inclined chute or roadway N, opening into said channel at right angles, or nearly so, thereto, and the feed-plunger S, adapted to be reciprocated in said channel *s*, and to feed a stud from the foot of said inclined chute to a position beneath the clinching plunger, the sliding block T, adapted to be moved across the channel *s*, just forward of the inclined chute N, by the spring *r*, and to be moved back by the forward motion of the feed-plunger; 11th. The combination, in a stud setting machine, of a hopper pivoted at or near its front end and adapted to be vibrated from a horizontal to an inclined position, and vice versa, and an inclined chute or roadway, about the end of which said hopper vibrates, and a stop to limit the downward movement of said hopper; 12th. The combination of the clinching plunger C, lever E, connecting rod O, lever P, shaft *o*, toothed gear or pinion D and the feed-plunger S, provided with a series of teeth upon one of its sides.

No. 10,124. Process of Treating Mixed Fibrous Materials for Separation.

(*Procédé de traitement des matières fibreuses mixtes, pour les séparer.*)

George M. Rice and Alfred L. Rice, Worcester, Mass., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. Subjecting the mixed fibrous material within a closed vessel or receiver and in dry condition to the direct action of chemically free chlorine *cl*, either in its pure gaseous form or when diluted or mixed with air, or any gas or substance for which it has no chemical affinity; 2nd. The process of exposing mixed fibrous material, enclosed in a vessel or receiver, and in dry condition, to the direct contact with chemically free chlorine *cl*, and subjecting the same to an elevated temperature.

No. 10,125. Machine for Pressing Injurious Acids and Salts out of Butter. (*Machine pour exprimer du beurre les acides et sels nuisibles.*)

William T. Battershill and Washington McCormick, London, Ont., 23rd June, 1879, for 5 years.

Claim.—1st. The grating I, having V-shaped slots or bars, either straight or curved, at the bottom of cylinder D, and in combination therewith for the purpose of forcing the butter downwards into the tank F placed beneath it; 2nd. The head bar C, and covering lugs H I, in combination with the frame and standards G G', lever A, screw B and cylinder D.

No. 10,126. Improvements on Milk Cans.

(*Perfectionnements aux bidons à lait.*)

Charles E. Kennedy, Coaticook, (Assignee of George A. Kennedy, Hatley,) Que., 23rd June, 1879, for 5 years.

Claim.—1st. The centre tube a; 2nd. The peculiar arrangement and style of the cover B, having the rim b, for retaining ice or water, and also having the turret c, the perforated top of which encircles the tube a; 3rd. The screw cap e, by which the tube a may be made to act as a regulating buoy by serving as an air chamber; 4th. The circular projection f, which serves to buoy and steady the can A, when in the water; 5th. The method of having a stream of water passing through the tube a, by means of a funnel, either by the gradual melting of ice, or by a stream of cool water; 6th. The combination of the can A, and cover B, with the centre tube a and screw cap e; 7th. The combination with a can A, of a cover B, having a rim b, for holding ice and water, also of the ventilating turret c.

No. 10,127. Baking Powder. (*Poudre à pâte.*)

Robert Campbell, Montreal, Que., 23rd June, 1879, for 5 years.

Claim.—A baking powder composed of a salt of ammonia, in combination with bi-carbonate of soda or potash, these being mixed in the proportion of their chemical equivalents, and having starch or flour added thereto as set forth.

No. 10,128. Improvements on Churns. (*Perfectionnements aux barattes.*)

Archibald D. Blodgett and Hiram C. Rowell, Berlin Falls, N. H., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The combination with the dasher-stem C, having pivot H, and shoulder I, in combination with the churn-bottom E, formed with a centrally located truncated conical projection F, having recess G; 2nd. The churn-barrel A, having ears K K, provided with thumb screws N, in combination with the removable cover J and the frame M having legs L L.

No. 10,129. Manufacture of Salt and Plant Therefor. (*Fabrication du sel et matériel pour cet objet.*)

John H. W. Biggs, Liverpool, Eng., 23rd June, 1879, for 5 years.

Claim.—1st. The arrangement of tables A, consisting of plates enclosing flues between them, placed vertically, horizontally, or at any angle, and preferably sufficiently far apart to get at them for repairs, in combination with scrapers and a contracted orifice or other impediment to the free escape of steam, thus causing violent ebullition and consequent breaking up of the crystals in smaller particles; 2nd. The process of drying salt, by first extracting the surplus water by centrifugal machines (coated with magnetic oxide, so as not to discolour the salt) and then when thus sufficiently desiccated as not to cake on the belts, passing the salt through a belt stove or other hot drying apparatus, where it is dried by heat and currents of air in the granular condition or in the form of nuts, bars, cakes or otherwise; 3rd. The system of producing extra fine salt and preparing it for export, so as to go into a small space, and yet afterwards assume its most generally useful condition of a very fine powder, by compressing it into blocks or concrete forms under hydraulic or other heavy pressure, after almost all the moisture has been extracted, by which means the crystalline texture is broken up and the salt capable of finer granulation, and then grinding those blocks when they arrive at their destination; 4th. The mode of evaporating brine, by means of currents of hot air and hot jackets over brine, in a series of pans placed, one above another, as exemplified at J, in the drawings; 5th. The mode of evaporating brine by currents of heated air (not products of combustion) passed over its surface, in combination with flues or air pipes for heating the same, as exemplified at Y, or in Figs. 16 and 17; 6th. The mode of storing and manipulating salt by compressing it, first into small cubes or nuts, so that it will not easily cake into a hard mass, storing it in this form and when required for use, grinding these nuts to a powder; 7th. The mode of, and apparatus for manipulating block salt, by bringing the blocks from the blocking machine on pieces of metal or wood on belts to the waggons, loading them on the same in tiers, and passing them through tunnel stores to dry them; 8th. The mode of, and machinery for bagging salt, by supporting the sacks by clips or other holders, on fixed or reciprocating frames, over or at the end of the waggon way, thoroughly shaking and compacting the salt in the manner described and running the waggon under or arranging it so that the platform of the waggon shall be oscillated or jerked up and down, while the sacks resting thereon are filling, so as to render the salt solid and compact, and yet leave the bags on the waggons ready to be carried off when completely filled; 9th. The mode of, and machinery for barrelling salt on the waggon, so that it can be shipped off without handlings, preferably placing each barrel on a turntable or pivot on the barrel or its mechanical substitute, a smooth plate, and giving them a reciprocating, rotating, or jerking motion on the waggon, while being filled; 10th. The belt stove for drying salt, arranged as shown; 11th. The mode of drying salt, by passing it along a slowly moving belt and transferring it from one portion of the belt to another, in such manner that both sides of the belt can be utilized as described; 12th. The mode of and apparatus for drying salt, by moving it with scrapers over hot plates; 13th. The various modes of, and apparatus for compressing salt into cubes or nuts, as illustrated; 14th. The apparatus for blocking salt, as illustrated; 15th. The looped sacks and mode of sewing same, as described.

No. 10,130. Improvements in Sawing Machines. (*Perfectionnements aux scieries.*)

William W. Giles, Cincinnati, Ohio, U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The combination of the foot levers or treadles; 2nd. The combination of the foot levers or treadles with the operating levers; 3rd. The combination of the foot levers or treadles with the spring seat board and operating lever; 4th. The combination of the foot levers or treadles, with the spring seat board, the operating lever and the sills of the machine; 5th. The combination of the foot levers and toggle-levers, with the seat board, sills and operating lever; 6th. Operating the saw by the weight and muscular force of the human body exerted through the medium of a hand lever, foot levers and a seat for the operator; 7th. A sawing machine, in which the saw is driven by the weight and muscular force of the operator's body; 8th. The treadles or foot levers of the machines, suspended by links from the rear pivot of the operating lever; 9th. The combination of the straight, or substantially straight treadles or foot levers with the operating lever and connections; 10th. The curved treadles pivoted to the seat board at its forward bend, and having its front end connected to the operating lever, and its rear end curved backward and downward within reach of the operator's foot; 11th. The combination of the curved treadles with the sawing machine; 12th. The combination of the rising and falling saddle, with the operating lever of the machine; 13th. The combination of the rising and falling saddle with the operating lever and treadles of the machine; 14th. The combination of the rising and falling saddle, with the seat board and operating lever of the machine; 15th. The combination of the rising and falling saddle, with the seat board, the operating lever, and the treadles of the machine; 16th. The saddle articulated or hung upon the seat board to rise and fall above the saw; 17th. The combination of a front weight and guide roller with the saw; 18th. The combination of an inner weight and guide roller, with the saw; 19th. The front weight and guide roller adapted for adjustment upon the saw in front of the log; 20th. The inner weight and guide roller adapted for adjustment in rear of the log; 21st. The wedge S, combined with the sawing machine; 22nd. The wedge S, combined with the frame of the front weight and guide roller.

No. 10,131. Improvements on Whiffletree Hooks. (*Perfectionnements aux crochets des pallonniers.*)

Newton, M. Bowen, Knightstown, and Nathaniel W. Koontz, Greensborough, Ind., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. In a whiffletree hook, in which are two separate chambers divided by the removable plate I, the combination with the movable tip C, of the centrally locking bolt D, said bolt being provided with a projection d, by which it is connected with a rod or strap in the separate chamber G; 2nd. In a whiffletree hook, in which are two separate chambers divided by the removable plate I, the combination of the movable tip C, locking bolt D, having projection d, spring E, ratchet bar F, and cogged lever H; 3rd. A whiffletree hook provided with a movable plate I, forming the division between the chamber in the ferrule, into which the end of the whiffletree enters, and the separate chamber G, in which the operating rod is situated; 4th. The movable tip or tumbler C and locking bolt D, in combination with the ferrule B, having a slotted end for the ferrule and formed for receiving the trace.

No. 10,132. Improvements on Rolling Mills.

(*Perfectionnements aux laminoirs.*)

Stephen P. M. Tasker, Philadelphia, Pa., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. In combination with a pair of rolls, adjustable collars E E'; 2nd. In combination with a series of two or more sets of vertical and of horizontal rolls, adjustable collars E E'; 3rd. In combination with a pair of rolls C C', shapers G G'; 4th. In combination with a series of two or more sets of vertical and of horizontal rolls, shapers G G'; 5th. In combination with a pair of rolls C C', adjustable collars E E' and shapers G G'; 6th. In combination with a series of sets of vertical and of horizontal rolls, adjustable collars E E' and shapers G G'; 7th. In combination with a series of two or more sets of vertical and of horizontal rolls provided with collars E E', guides H, coinciding to the pass formed by collars; 8th. In combination with a series of two or more sets of vertical and horizontal rolls provided with shapers and collars, guides A coinciding to the pass formed by the shapers and collars.

No. 10,133. Winnower and Separator.

(*Crible trieur.*)

Virginie Robillard née Lanand (Assignee of Ulysse J. Robillard), Beauport, Que., 23rd June, 1879, for 5 years.

Résumé.—1o. La combinaison et la disposition des traverses A B, des poteaux C, du linteau D, du sommier E et de la barre F; 2o. La combinaison de la boîte à assos ou tamis K, avec les tiges de suspension an, les tiges d'arrêt ou régulateurs b et le balancier f; 3o. La combinaison des tamis k z avec le plateau t, et la combinaison du tablier v avec le tamis m.

No. 10,134. Improvements on Hinges.

(*Perfectionnements aux pentures.*)

William H. Hart, New Britain, Conn., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The hinge having two thicknesses of metal coiled around the pintle at the knuckle joint, and two thicknesses at the portion which spans the junction of the leaf and knuckles, while the greater portion of the body of the leaves are of a single thickness; 2nd. The ordinary main leaf having a large coil left open on one side, in combination with the supplemental leaf with the small coil formed thereon, said small coil being inserted in the larger one, and the supplemental leaf extending outward through the opening in said large coil for a portion of, and on one side of the main leaf; 3rd. A hinge having two thicknesses of metal in the coil of its knuckle, the supplemental leaf, one end of which forms one thickness of metal in the knuckle, the body of which spans the junction of the main leaf and knuckle, and the outer end of which has a bent lug taking into the body of the leaf proper.

No. 10,135. Improvements on Marine Clocks.*(Perfectionnements aux horloges marines.)*

Henry H. Ham, Jr., and Elbridge G. Pierce, Jr., Portsmouth, N. H., U. S., 23rd June, 1879, for 5 years.

Claim.—1st. The striking wheel A, having pins arranged for striking ships bells, in combination with the locking plate B, attached to, and revolving with the same shaft as wheel A, and having irregularly increasing or decreasing sections; 2nd. In a marine clock striking the half-hour in the manner of ships bells, a lock-plate provided with sections increasing or decreasing irregularly; 3rd. The combination of the striking wheel A, having pins arranged as shown, studs e and locking plate B, connected for joint and simultaneous action; 4th. The stop wheel C, constructed and operating as described, in combination with the stop lever D, locking plate B and attached striking wheel A; 5th. The combination with the ordinary mechanism of a clock of the following elements, namely, a striking wheel provided with pins arranged as shown, a locking plate or its equivalent attached to, and revolving with said wheel, a stop wheel and a stop lever.

No. 10,136. Improvements on Refrigerators.*(Perfectionnements aux garde-manger.)*

Benjamin W. Gillett and Jerome D. Gillett, Jersey City, N. J., U. S., 23rd June, 1879, for 5 years.

Claim.—1st.—The arrangement, in combination with a refrigerating or preserving chamber for meats and other perishable articles, of a series of pipes operating either together or independently, whereby a cooling fluid may be conveyed to any part of said chamber, for the purpose of regulating the temperature therein at such point; 2nd. In combination with the refrigerating or preserving chamber A, and ice reservoir B, the pump or other forcing device D, supplied from the fluid receptacle C, and serving by means of the pipes or chambers D₃ D₄, to force the cooling fluid through any one or all of the circulating pipes E F G, provided with cocks or valves E₁ F₁ G₁; 3rd. In combination with the circulating pipes, of a refrigerating or preserving chamber, the drip pass I I, and troughs K K, whereby to collect and convey away the water dripping from the circulating pipes.

No. 10,137. Improvement on Sole Sewing Machines.*(Perfectionnements aux machines à coudre les semelles.)*

Charles Goodyear, Jr., New York, U. S., (Assignee of Christian Danoel Brooklyn, and Andrew Eppler, Jr., Lawrence, Mass.), U. S., 23rd June 1879, for 5 years.

Claim.—1st. A boot and shoe sewing machine, having a curved awl and needle, a channel gauge and device to hold it down positively against the sole combined with a support 15, and locking and releasing device to permit the support to yield to the varying thickness of material, and to remain locked in position to ensure the formation of loops of equal length as the needle and thread are drawn from the material; 2nd. The movable carriage j, and the channel-gauge and awl and its segment connected therewith, combined with means to operate the awl and channel gauge, to simultaneously engage the material, and means to move the carriage laterally or horizontally to thereby feed the material; 3rd. The channel-gauge, movable carriage j, and means to hold the channel-gauge down, while the needle operates to draw the loop of the thread out from the channel of the outer sole, combined with a work support and means to automatically release and lock it in position, according to the thickness of the sole and welt; 4th. The combination with the hooked needle and cast off, of gearing and lever, to operate the cast off positively; 5th. The lever 33, shaft 29, and pinion X thereon, combined with the adjustable pinion 30, to vary the throw of the cast off; 6th. In a sewing machine, a movable surface adapted to bear against one side of the material being sewed, and to change its position according to the variations in the thickness of the said material, and a thread tension device or wheel, combined with intermediate tension regulating mechanism, and connections adapted to be operated by the change of position of the said surface in contact with the material of various thickness, to thereby automatically vary the tension on the thread according to the varying thickness of the material; 7th. A channel gauge to enter the channel in front of the needle combined with a presser foot to operate upon the looped or enchain part of the stitch at the rear of the needle, and press the said enchain part of the stitch into the channel; 8th. The combination with a yielding support for the material and mechanism to lock and release it at the proper time, according to the thickness of the material, of a channel gauge and connected mechanism to cause it to be raised and lowered, and to be moved forward with the awl when feeding the material, and then backward; 9th. A curved needle and a curved awl and mechanism to reciprocate them about their axis located in the same line, combined with a work support 15, made movable about the axis located substantially in line with the axis of the needle and awl, and with locking and releasing devices for the said table; 10th. The support 15 and its holding bed and slide-bar 4 7, combined with the connecting links, the tension regulating device and a spring X₃.

No. 10,138. Concave Nail Fastening for Ships.*(Mode d'assujétir les clous à tête concave des navires.)*

Thomas W. Kirby, Grand-Haven, Mich., U. S., 24th June, 1879, for 5 years.

Claim.—1st. The nail C with concave sides and square top and bottom and having a tunnel c on the end, whereby a fastener is provided for dovetailing the streaks of the ceiling together at the seams, and also fastening the ceiling to the timbers; 2nd. In combination with the ceiling and timbers of a ship, the concave sided key nail C with tunnels c, for the purpose of fastening the streaks of the ceiling together and to the ships' timbers.

No. 10,139. Improvements on Hydro-Carbon Lamps.*(Perfectionnements aux lampes à hydro-carbures.)*

William E. Park, Philadelphia, Pa., U. S., 24th June, 1879, for 5 years.

Claim.—1st. The reservoir A having a central well opening A, said opening extending from top to bottom of the reservoir and forming a through passage for air admitted below as d bottom, and a passage way c, for the exit of the

gas, leading from the upper part of the said reservoir to a mixing chamber of pipe located in said central opening; 2nd. The combination of reservoir A with the concentric cylinders B C, having the space or passage c and inlet and outlet c and b, respectively; 3rd. The combination of reservoir A, hollow bridge F, combining nut G and mixing chamber D; 4th. In combination with a reservoir A having central passage A extending all the way through said reservoir, A having central passage A extending all the way through said reservoir, from top to bottom, the mixing chamber or gas pipe D having gas jet orifices d₂, for the purpose of playing upon the cylinder B; 5th. In combination with the reservoir A, having central passage A and mixing chamber or gas pipe D located therein and formed with jet openings d₂ and threaded adjustable disc H.

No. 10,140. Improvements on Sad Irons.*(Perfectionnements aux fers à repasser.)*

William Buck (Assignee of Richard W. Chamberlin,) Brantford, Ont., 24th June, 1879, for 5 years.

Claim.—1st. The combination tenon C, in cover B, with mortise or slot in the back end of bottom A, also the hollow space D, in cover B, to receive the stud cast on bottom A, also the snugs E; 2nd. The combination of the lock plate I, attached to cover B by screw K, with lock bolt M attached to knob L.

No. 10,141. Improvements on Sad Irons.*(Perfectionnements aux fers à repasser.)*

John W. Williams (co-inventor with Nathaniel E. Warren), and Adam C. Williams, Chagrin-Falls, Ohio, U. S., 24th June, 1879, for 5 years.

Claim. The combination, with the lug B, whose inner face is undercut, and the lug B₁, whose rear face is undercut, of the plate C having bearings, the counterpart of said undercut faces, and with which they engage together with the lever D, whose long arm engages with beveled inner face of lug B₁ and spring E which bears upwardly against the short arm of said lever.

No. 10,142. Combined Broad-Cast Seeder, Cultivator and Grain Drill.*(Semoir à la volée, cultivateur et semoir-traceur combinés.)*

Thomas Galloway and John Larsen, Oshawa, Ont., 24th June, 1879 (Re-issue of Patent No. 8,179).

Claim.—1st. The hopper C provided with divergent grain passages C₁ C₂ having swinging valves C₃ combined with the grain conductor tubes D with divergent branches D₁ D₂ and a scattering tube; 2nd. The distributors B and hoppers C having divergent grain passages C₁ C₂, swinging valves C₃ combined with the tube E and teeth G I; 3rd. The scattering tubes H supported on the grain conductor tubes, in such manner that they will yield to an obstruction and be automatically returned to their place, after the obstruction is passed; 4th. The pivoted supporter L having the hangers K combined with the drag bars of a broad cast seeder and grain drill and with braces N, brackets O and detachable bolts M for securing the combination; 5th. The combination of the distributors B, hoppers C with divergent grain passages C₁ C₂ and swinging valves C₃, grain conducting tubes D₁ D₂ E, scattering tubes H and teeth G I.

No. 10,143. Machine for Boring Brush Blocks.*(Machine pour percer les bois des brosses.)*

Clemence A. Mahle, Corry, Pa., U. S., 24th June, 1879, for 5 years.

Claim.—1st. The combination of the driving shaft b, journaled upon the centre of the supporting frame d, opposite the driving plate, and having a crank upon its inner end, with the driving plate f and the drill rods, the crank being applied to the driving plate at or near its centre, whereby the plate may be driven by a single crank; 2nd. The combination of the bearing j, carrier plate g and drill rods t, the said drill rods being arranged in groups, and the rods of each group placed at a different angle, whereby the different angled holes of each block are successively bored by the same machine; 3rd. The combination of the treadle k, lever l, connected thereto and having a weight connected to its rear end, cranked lever and moving block board; 4th. The movable block-board, having the fixed part s and the hinged adjustable part t.

No. 10,144. Improvements in Heel Stiffeners.*(Perfectionnements aux contre-forts des chaus-sures.)*

Guyon T. Fisher, Fowlerville, Mich., U. S., 24th June, 1879, for 5 years.

Claim.—The plate A, shank b, having elongated slot b, and the perforated inclined bottom flange C.

No. 10,145. Improvements on Vehicle Springs.*(Perfectionnements aux ressorts des voitures.)*

John Krehbiel, Williamsville, N. Y., U. S., 24th June, 1879, for 5 years.

Claim.—In vehicles, cars, &c., the combination, with the bolster A, of a series of undulated leaf springs, each being provided with two end curves D₁ D₂ and a centre curve D₃, said centre curve being less convex-concave than the end curves and the leaves placed with their curves in opposite directions, whereby the centre curve of one does not meet that of the next adjacent leaf; and whereby the spring is graduated in accord with the load bearing upon the series of leaves; 2nd. The combination, with the bolster A, of the spring-board C and the series of leaf springs D, said spring-board being provided with the guide rods E, engaging the guides E on the bolster A.

No. 10,146. Improvements in Knife Cleaning Machines.*(Perfectionnements aux machines à nettoyer les couteaux.)*

Charles Cowdery, Newent, England, 24th June, 1879, for 5 years.

Claim.—The use of rollers E E for distributing the emery or other material, one distributing the emery or other material to the other.

No. 10,147. Improvements in Tin Cans.*(Perfectionnements aux boîtes métalliques.)*

Charles C. Lane, New Westminster, B. C., 24th June, 1879, for 5 years.

Claim.—1st. A fish-shaped can to be made of four pieces of metal, two pieces for the head half and two pieces for the tail half, each two pieces to

be crimped together, the one half being slightly less in size than the other, thereby allowing for the size of the fish to be canned; 2nd. The solder strips V-shaped to aid in soldering the centre seam of the two halves; 3rd. The depression in the can A, for the purpose of contraction and expansion during the boiling or canning process, and to aid in packing and to enable such canned packages to lie properly on dealers shelves; 4th. The combination of the extension of the two halves of the cans, the V-shaped strip or solder, and the raised or embossed metal in combination with each other.

List of Patents issued up to 23rd July, 1879, but not yet Officially published in the Patent Office Record.

- No. 10,157. W. B. Barker, Hoboken, N. Y., U. S. A., "Marine Safety Signal," 24th June, 1879.
- No. 10,158. J. & A. Scott, Richmond, Que., "Pump," (Extension of Patent No. 3,616), 26th June, 1879.
- No. 10,159. G. W. Simons, St. Catharines, Ont., "Hingeless Gate," 26th June, 1879.
- No. 10,160. L. P. Crandall, Eau Claire, Wis., U. S. A., "Trace Fastener," 26th June, 1879.
- No. 10,161. S. C. Buchanan, Camden, Ark., U. S. A., "Liniment," 26th June, 1879.
- No. 10,162. E. H. Thurston, Ottawa, Ont., "Boat Upper," 26th June, 1879.
- No. 10,163. J. R. Haywood, Boston, Mass., U. S. A., "Oven," 26th June, 1879.
- No. 10,164. Sam. Noxon, Ingersoll, Ont., "Combined Drill and Seeder," 26th June, 1879.
- No. 10,165. Sam. Noxon, Ingersoll, Ont., "Grain Drill Teeth," 26th June, 1879.
- No. 10,166. S. G. L. Morrow, New Bloomfield, Miss., U. S. A., "Earth Scraper," 26th June, 1879.
- No. 10,167. S. Boyd, St. Catharines, Ont., "Ironing Board," 26th June, 1879.
- No. 10,168. G. S. Woodruff, Grand Rapids, Mich., U. S. A., "Gas Governor," 26th June, 1879.
- No. 10,169. J. Trent, New York, N. Y., U. S. A., "Burner for Kerosene Lamps," 26th June, 1879.
- No. 10,170. O. A. Stempel and J. C. S. Foss, Washington, Miss., U. S. A., "Composition and Process for Preserving Eggs," 26th June, 1879.
- No. 10,171. J. A. Shaefer, jr., W. Norman and R. W. Davies, (Assignees of J. A. Shaefer), New York, N. Y., U. S. A., "Process of Extracting Malt in the Manufacture of Lager Beer, Ales, &c.," 26th June, 1879.
- No. 10,172. J. Goodrich, Henry, Ill., U. S. A., "Wrench and Vise," 26th June, 1879.
- No. 10,173. E. W. Stephens, Erie, Penn., U. S. A., "Ore Concentrator," 26th June, 1879.
- No. 10,174. G. O. S. Conway and W. Owens, Stonefield, and H. R. Ives, Montreal, Que., "Improved Mowing and Reaping Machine," 2nd July, 1879.
- No. 10,175. H. W. Putnam, Bennington, Vt. (Assignee of C. de Quillfeldt, New York, N. Y., U. S. A.), "Bottle Stopper" (Extension of Patent No. 5,629), 2nd July, 1879.
- No. 10,176. H. W. Putnam, Bennington, Vt., U. S. A. (Assignee of C. de Quillfeldt, New York, N. Y., U. S. A.), "Bottle Stopper" (Extension of Patent No. 5,629), 3rd July, 1879.
- No. 10,177. The Detroit Stove Works, (Assignee of J. Dwyer), Detroit, Mich., U. S. A., "Stove" (Extension of Patent No. 3,705), 3rd July, 1879.
- No. 10,178. W. Harrison, London, Ont., "Self-Binding Attachment for Reaping Machines," 3rd July, 1879.
- No. 10,179. J. Canas, Allanburg, Ont., "Hydraulic Dredge," 3rd July, 1879.
- No. 10,180. J. Blakeley, Toronto, Ont., "Car Axle Box," 3rd July, 1879.
- No. 10,181. W. Weaver, Phoenixville, Penn., U. S. A., "Rock Drill, Well Borer and Prospector," 3rd July, 1879.
- No. 10,182. L. Eckert and J. M. Harvey, Constantine, Mich., U. S. A., "Barrel Swinger," 3rd July, 1879.
- No. 10,183. J. R. Arnold, Ottawa, Ont., "Excessive Pressure Signal," 3rd July, 1879.
- No. 10,184. P. E. Drake, Belle Ewart, Ont., "Free Protector," 3rd July, 1879.
- No. 10,185. J. P. Mauny, Rockford, Ill., U. S. A., "Harvester," 3rd July, 1879.
- No. 10,186. L. M. and M. D. Chipley, St. Louis, Miss., U. S. A., "Improved Corset," 3rd July, 1879.
- No. 10,187. W. Ryder, Philadelphia, Penn., U. S. A., "Continuous Hydro-carbon Oil Still," 3rd July, 1879.
- No. 10,188. D. McC. Smyth, Hartford, Conn., U. S. A., "Book Sewing Machine," 3rd July, 1879.
- No. 10,189. J. K. Anderson and A. P. W. Grass (Assignees of J. Daul, Buffalo, N. Y., U. S. A.), "Petroleum Rectifier," 3rd July, 1879.
- No. 10,190. S. Crabb, Courtland, and J. N. Forshee, Tilsonburg, Ont., "Seat Fastener for Waggon, &c.," 3rd July, 1879.
- No. 10,191. P. Craford, Buckhorn, Ont., "Bee Hive," 3rd July, 1879.
- No. 10,192. H. Beautey, Quebec, Que., "Screw and Nut Brace," 3rd July, 1879.
- No. 10,193. R. J. Creelman and A. Kay, Georgetown, Ont., "Knitting Machine," 3rd July, 1879.
- No. 10,194. Jno. Edgar, Sacramento, Cal., U. S. A., "Self-Feeder for Threshing Machines," 3rd July, 1879.
- No. 10,195. F. G. Johnson, New York, N. Y., U. S. A., "Lawn Mower," 3rd July, 1879.
- No. 10,196. W. W. Giles, Chicago, Ill., U. S. A., "Sawing Machine," 3rd July, 1879.
- No. 10,197. F. Thompson, Wakefield, and W. H. Williamson, Leeds, England, "Middlings Purifier," 3rd July, 1879.
- No. 10,198. W. Cratzer & D. F. Keagy, Woodbury, Penn., U. S. A., "Threshing Machine," 9th July, 1879.
- No. 10,199. M. S. Lyon, Annada, Mich., U. S. A., "Fruit Drier," 9th July, 1879.
- No. 10,200. J. R. Winters, Chambersburgh, Penn., and V. C. Murray, New York, N. Y., U. S. A., "Fire Escape Ladder and Hose Conductor," 9th July, 1879.
- No. 10,201. S. P. Pantou, of Milton, and A. F. Holmes, Napanee, O., "Mailing Machine," 9th July, 1879.
- No. 10,202. J. F. Bennett, Pittsburg, Penn., U. S. A., "Blast Furnace," 9th July, 1879.
- No. 10,203. S. Dennis, Bagota, Columbia Dt., U. S. A., "Devices for Transmitting Motion," 9th July, 1879.
- No. 10,204. S. A. Touse, Sutter Creek, Cal., U. S. A., "Piston Packing," 9th July, 1879.
- No. 10,205. J. W. G. Whitney & B. Morton (Assignees of J. J. Lappin), "Self-Acting Car Coupler" (Extension of Patent No. 3634), 9th July, 1879.
- No. 10,206. D. J. Moore, Ganauoque, O., "Pole Holder for Fishing Poles," 9th July, 1879.
- No. 10,207. R. M. Kennedy, Pittsburg, Penn., U. S. A., "Combined Plaster and Pad," 9th July, 1879.
- No. 10,208. M. Johnson, Lockport, N. Y., U. S. A., "Hand Truck," 9th July, 1879.
- No. 10,209. J. Drynan, Ramsey, O., "Land Roller," 9th July, 1879.
- No. 10,210. J. W. Holmes, Wheatville, N. Y., U. S. A., "Sun Dial or Solar Chronometers," 9th July, 1879.
- No. 10,211. E. H. Ashcroft, Lynn, Mass., (Assignee of D. Sullivan, Bangor, Me., U. S. A.), "Compound Tubular Steam Boiler," 9th July, 1879.
- No. 10,212. J. T. Clarkson T. G. W. Morrill, Amesburg, Mass., U. S. A., "Improved Pung and Sleigh," 9th July, 1879.
- No. 10,213. W. E. Lindop & W. A. Cooper, St. Thomas, O., and B. F. Powelson & A. Mueller, Detroit, Mich., U. S. A. (Assignees of J. B. Obernetter, Munich, Bavaria, Germany), "Photo Mechanical Printing," 9th July, 1879.
- No. 10,214. C. C. Bradley, Syracuse, New York, U. S. A., "Harvester Pitman," 9th July, 1879.
- No. 10,215. J. P. Weyer, Elmira, N. Y., U. S. A., "Car Starter," 9th July, 1879.
- No. 10,216. J. B. Yeagley, Indianapolis, Ind., U. S. A., "Sash Holder and Lock Combined," 9th July, 1879.
- No. 10,217. J. Reynolds, Dayton, Ohio, U. S. A., "Improvement in Book Making," 9th July, 1879.
- No. 10,218. E. Wiseman, Laton, England, "Straw Plait Sewing Machine," 9th July, 1879.
- No. 10,219. A. Bartholomew, Wt. Springfield, Mass., U. S. A., "Broadcast Seed Sower," 9th July, 1879.
- No. 10,220. J. A. Crone, Georgetown, O., "Grain Separator," 9th July, 1879.
- No. 10,221. W. Morrison, Toronto, O., "Chemical Fire Engine," 9th July, 1879.
- No. 10,222. E. Bowslough, Grimsby, O., "Window Blind," 9th July, 1879.
- No. 10,223. A. P. Benjamin, Waterville, Me., U. S. A., "Horse Power," 11th July, 1879.
- No. 10,224. J. Authors, Toronto, O., "Rotating Hook Sewing Machine," 11th July, 1879.
- No. 10,225. D. S. Conner, Montreal, Q., (Assignee of S. F. Wasby, South Kensington, England), "Improved means of augmenting the volume of sound of Piano-Fortes, &c.," 11th July, 1879.

- No. 10,226 W. B. Switt, Montreal, Q., "Silk Cleaning Apparatus," 11th July, 1879.
- No. 10,227 G. S. Cranston, Syracuse, N. Y., U. S. A., "Buckwheat Hulling Machine," 11th July, 1879.
- No. 10,228 E. S. Mauny and P. Carter, Beauharnois, Q., "Feather Renovator," 11th July, 1879.
- No. 10,229 T. S. Chapman, Marblston, Q., "Snow Plough," 14th July, 1879.
- No. 10,230 J. Crist, Blenheim, O. Fence," 14th July, 1879.
- No. 10,231 L. Talcott, Minetto, N. Y., U. S. A., "Convertible Waggon Back," 14th July, 1879.
- No. 10,232 J. L. Lay, Paris, France, "Torpedo Boat," 14th July, 1879.
- No. 10,233 E. Hamer and J. Metcalfe, Aberystwyth, and E. Davies, Llanduam, England, "Injector for Steam Boilers, &c.," 14th July, 1879.
- No. 10,234 H. Reichmann and U. K. Arnold, San Francisco, Cal., U. S. A., "Direct Acting Engine and Drilling Apparatus," 14th July, 1879.
- No. 10,235 J. DuBois, Williamsport, Pa., U. S. A., "Lumber Worker," 14th July, 1879.
- No. 10,236 A. D. Cable and W. M. Rice, Montreal, Que., "Clothes Wringer and Mangle," 14th July, 1879.
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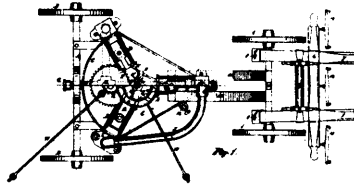
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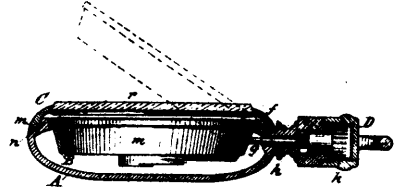
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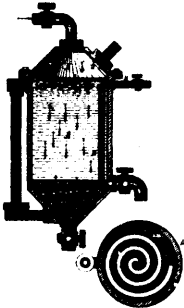
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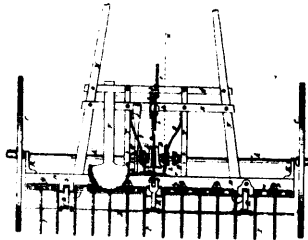
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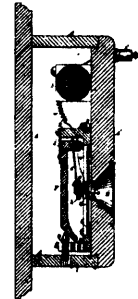
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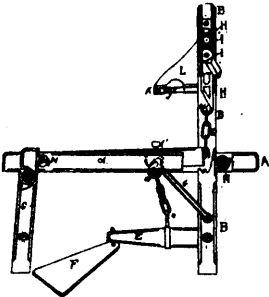
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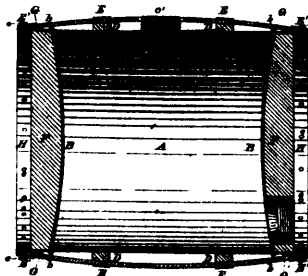
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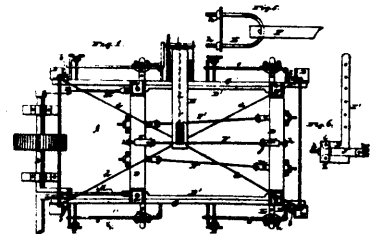
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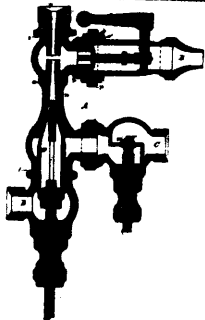
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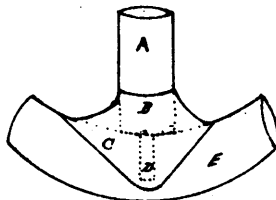
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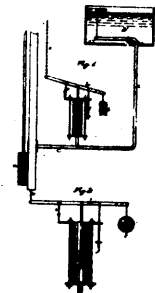
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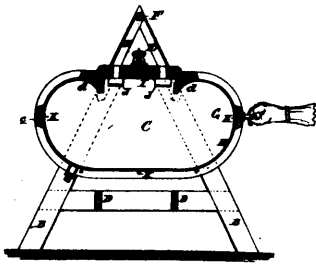
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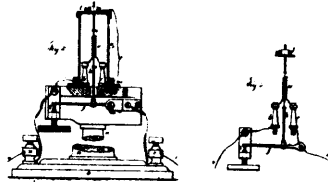
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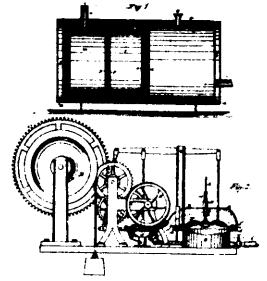
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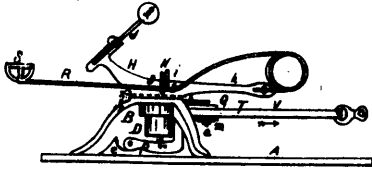
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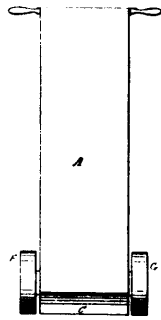
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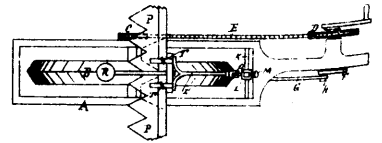
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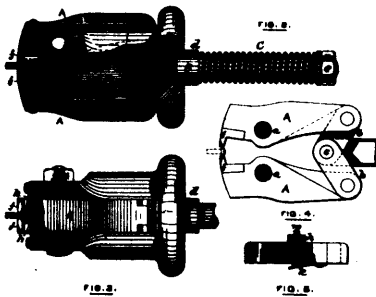
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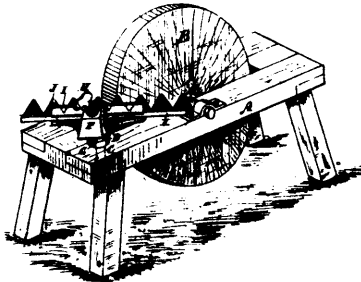
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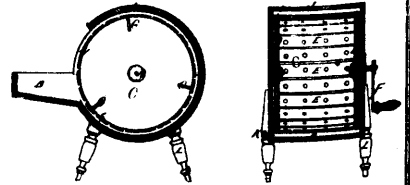
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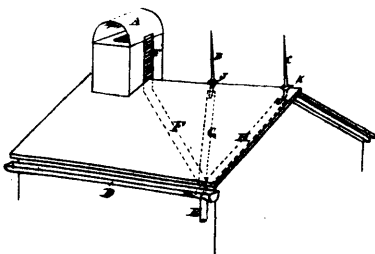
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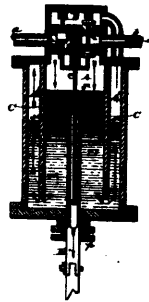
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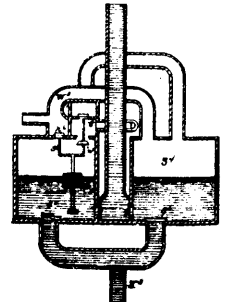
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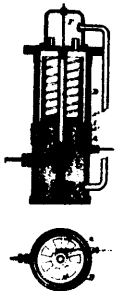
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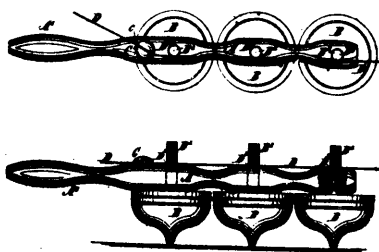
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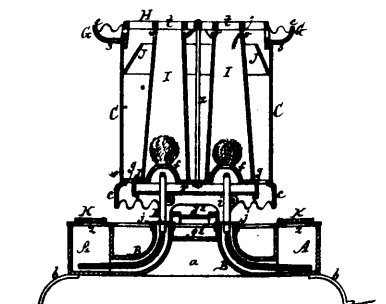
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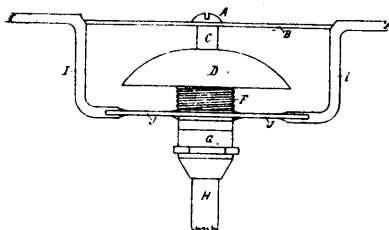
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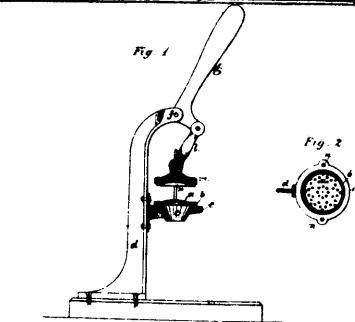
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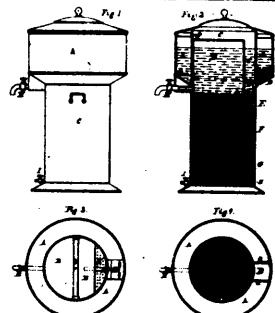
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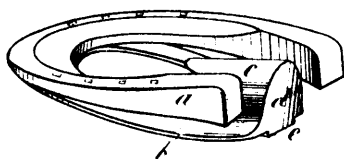
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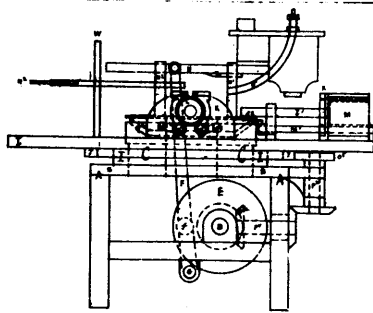
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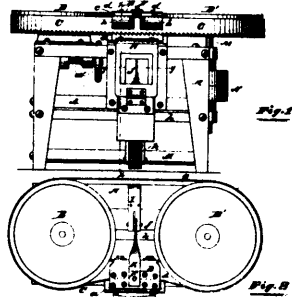
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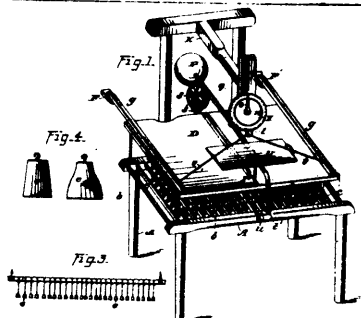
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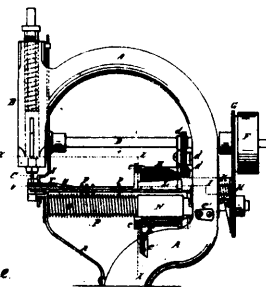
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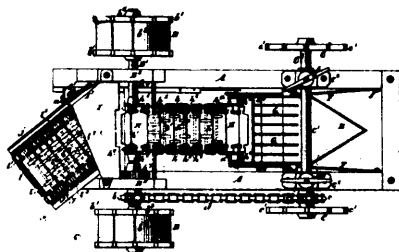
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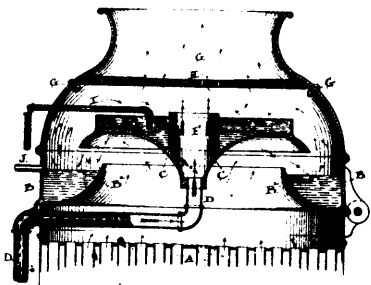
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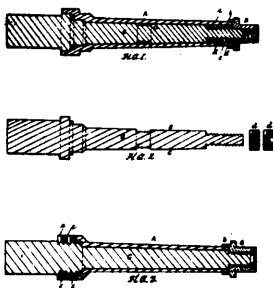
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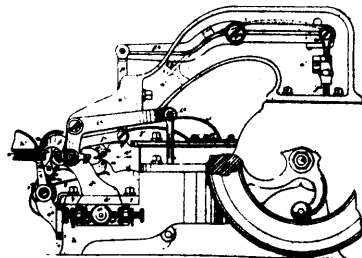
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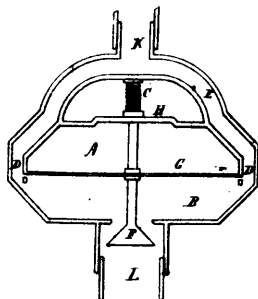
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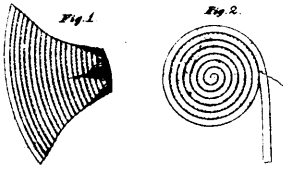
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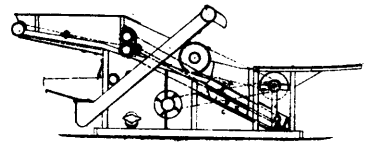
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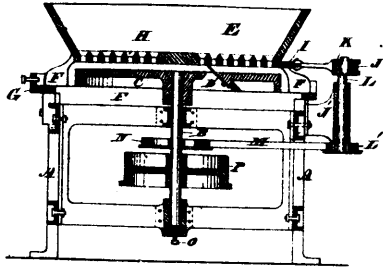
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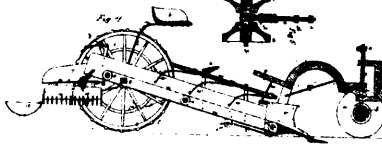
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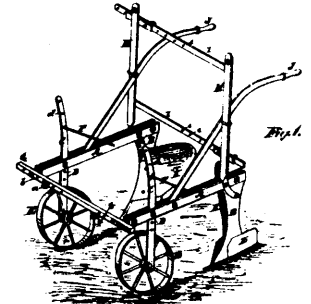
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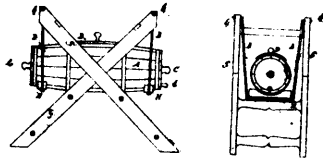
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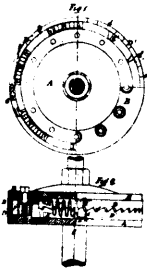
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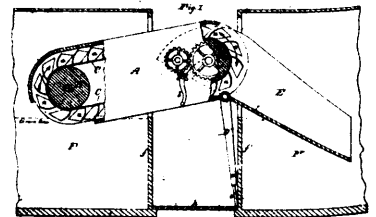
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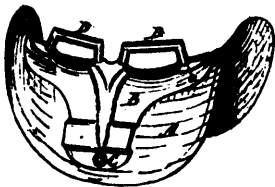
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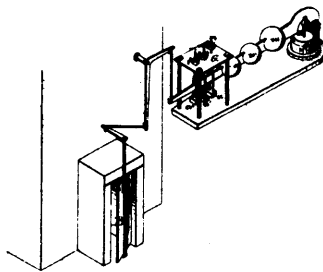
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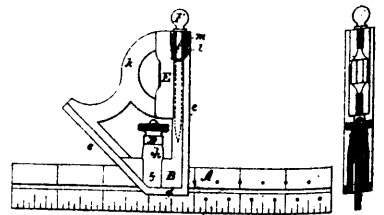
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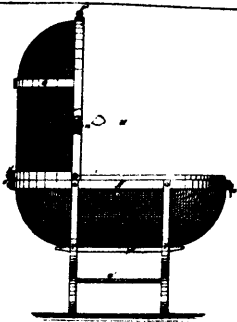
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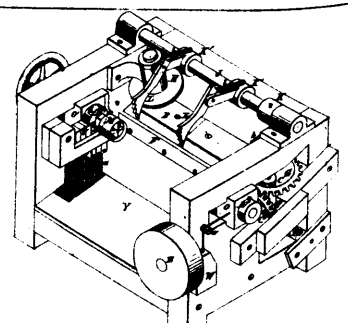
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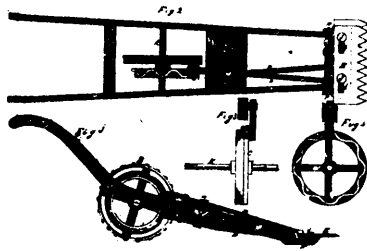
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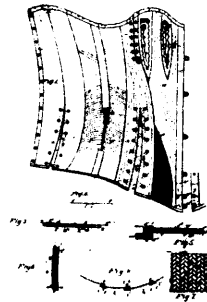
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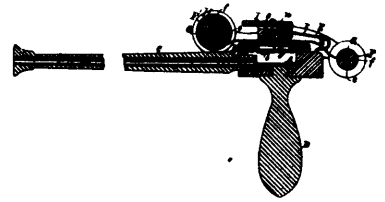
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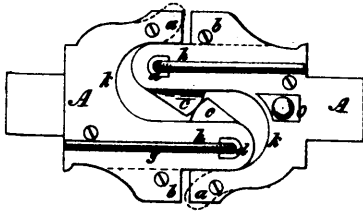
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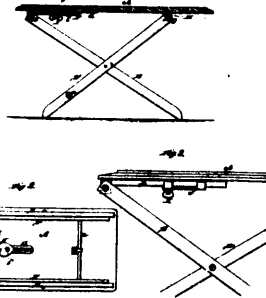
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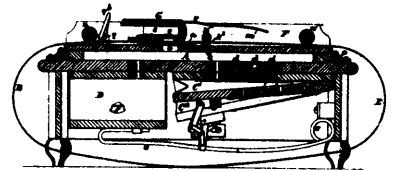
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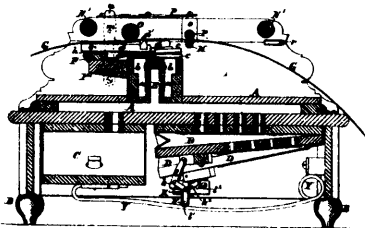
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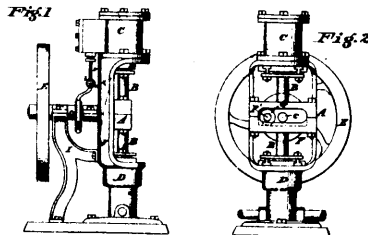
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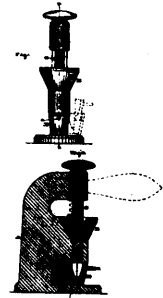
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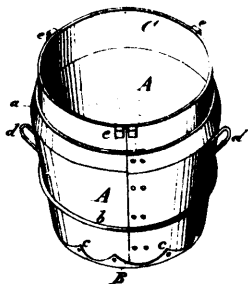
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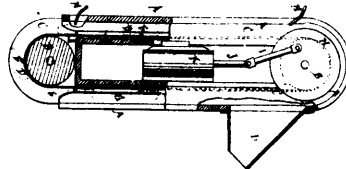
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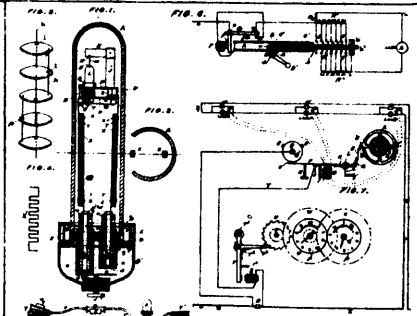
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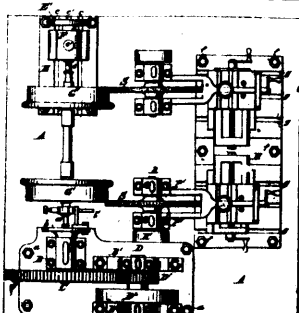
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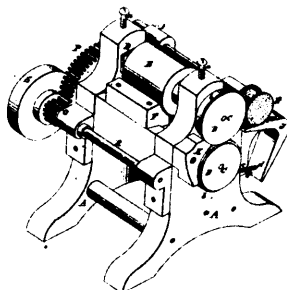
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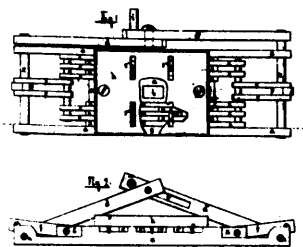
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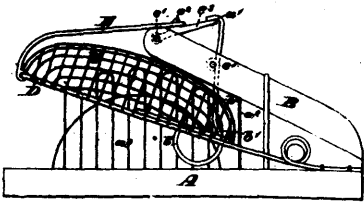
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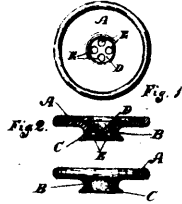
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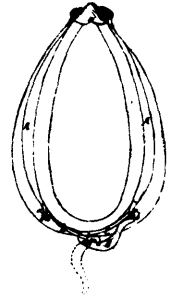
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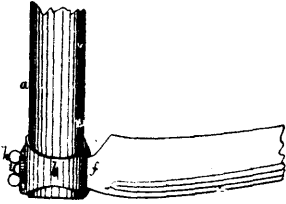
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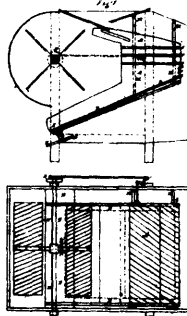
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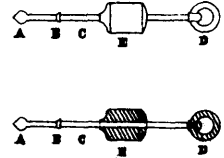
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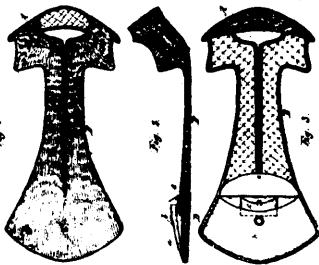
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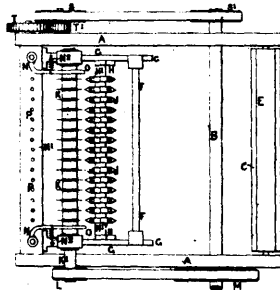
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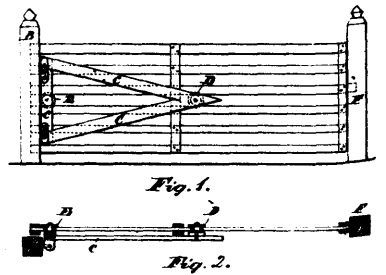
10102 Warren's Improvements on Ice Cutters.



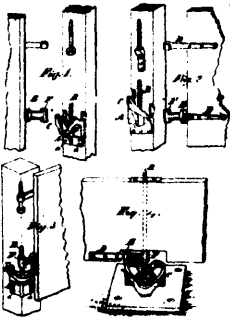
10103 Salbach's Combined Collar, Muff and Bag.



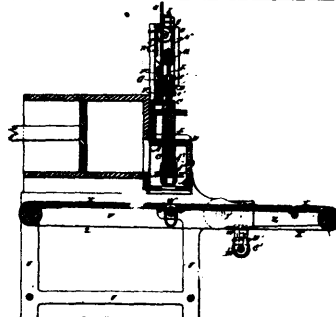
10104 Havers & Geach's Method of, and Apparatus for, Cutting Chenille Cloth



10105 Yocom's Improvements on Farm Gates.



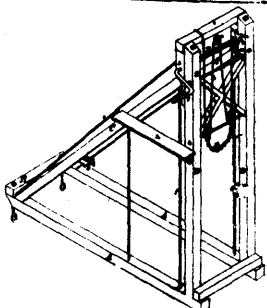
10106 Collard's Improvements on Door Hinges.



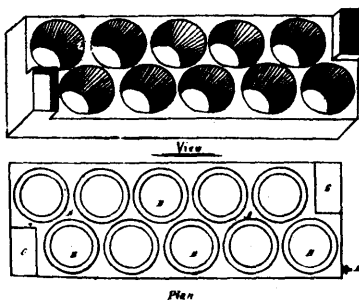
10107 Holmes's Improvements on Cake Machines.



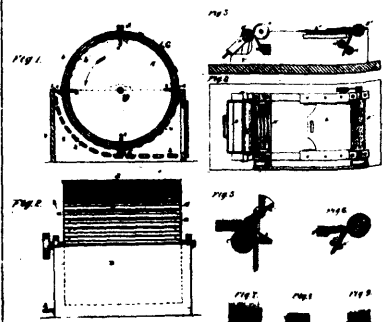
10110 Grant's Improvements on Fish-Passes.



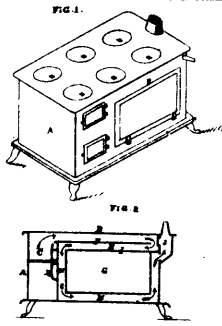
10112 King's Improvements on Frame Erectors.



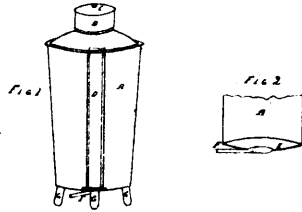
10113 Aylmer's Improvements on Milk Refrigerators.



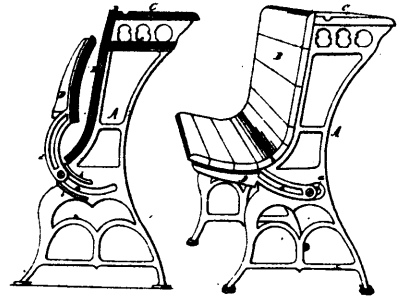
10114 Castle's Improvements in Treating Pelts.



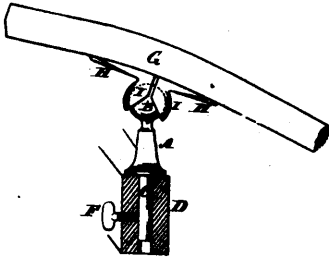
10115 Howse's Improvements in Cooking Stoves.



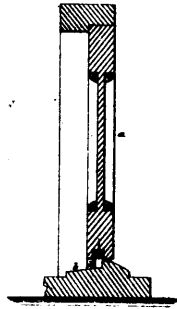
10116 Ingalls's Improvements in Creamers.



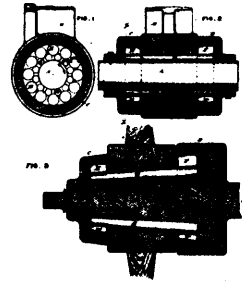
10117 Merz's Improvements on School Desks.



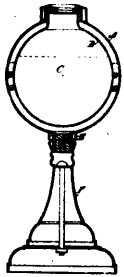
10118 Forbes & Thomas's Improvements on Row Locks.



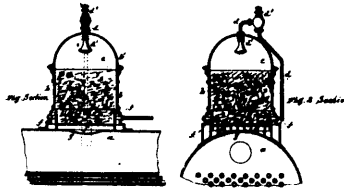
10119 Scully's Improvements on Weather Strips.



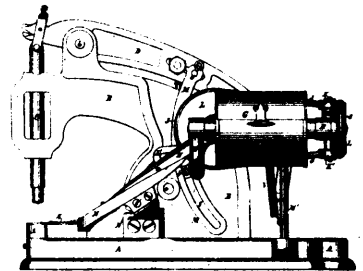
10120 Tasker's Improvements on Anti-Friction Bearings.



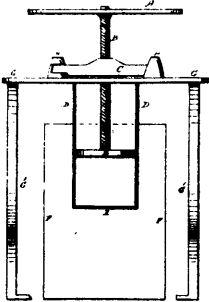
10121 Westland's Improvements on Safety Lamps.



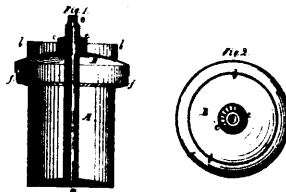
10122 Hayes, Jeffery & Schlacks's Improvement on Steam Boilers.



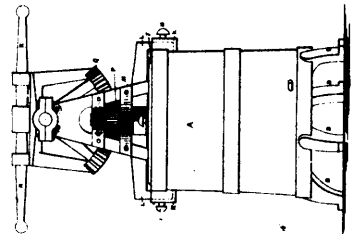
10123 Bray's Machine for Setting Shoe Studs.



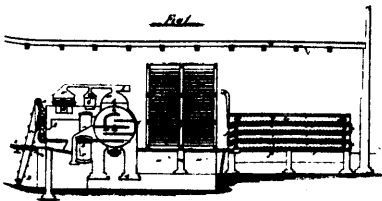
10125 Battershill's Machine for Pressing Injurious Acids and Salts out of Butter.



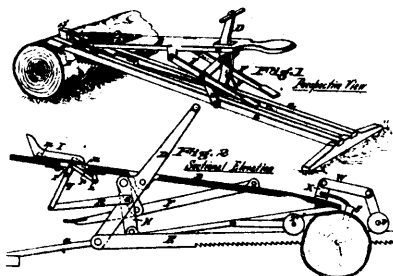
10126 Kennedy's Improvements on Milk Cans.



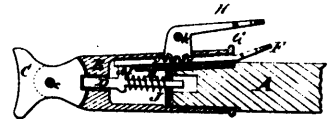
10128 Blodgett & Rowell's Improvements on Churns.



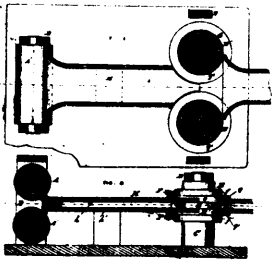
10129 Biggs's Manufacture of Salt and Plant therefor.



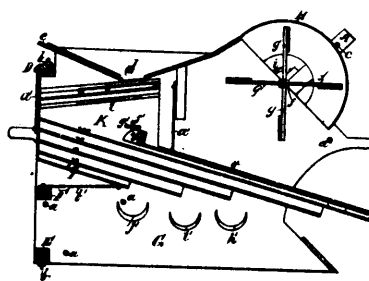
10130 Giles's Improvements in Sawing Machines.



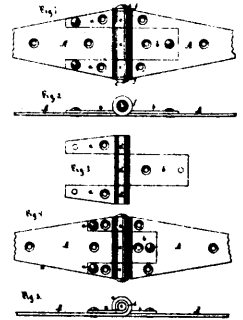
10131 Bowen & Koontz's Improvements on Whiffle-tree Hooks.



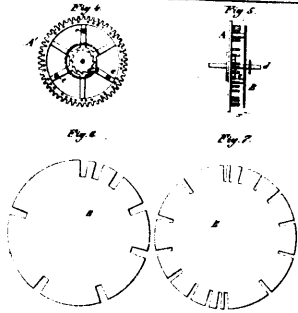
10132 Tasker's Improvements on Rolling Mills.



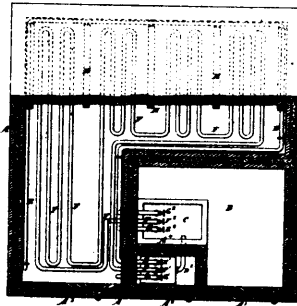
10133 Robillard's Winnower and Separator.



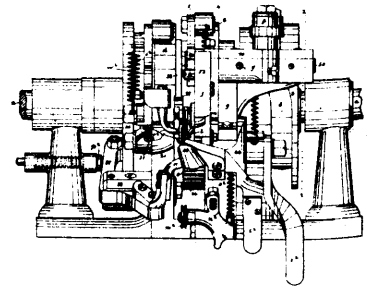
10134 Hart's Improvements on Hinges.



10135 Ham's Improvements on Marine Clocks.



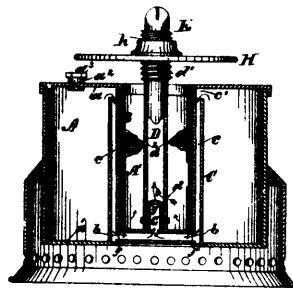
10136 Gillett's Improvements on Refrigerators.



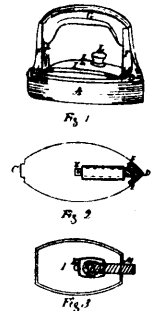
10137 Dancel & Eppler's Improvement on Sole Sewing Machines.



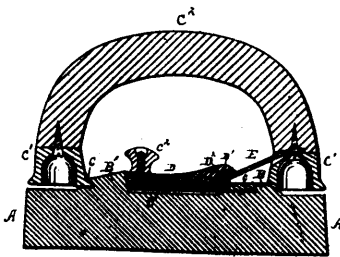
10138 Kirby's Concave Nail Fastening for Ships.



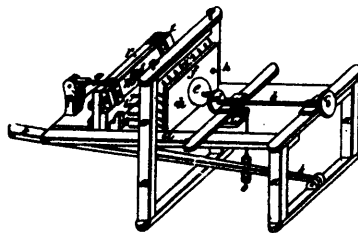
10139 Park's Improvements on Hydro-Carbon Lamps.



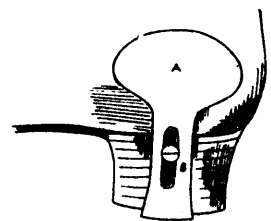
10140 Chamberlin's Improvements on Sad Irons



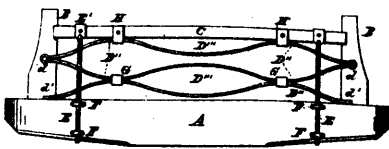
10141 Williams & Warren's Improvements on Sad Irons



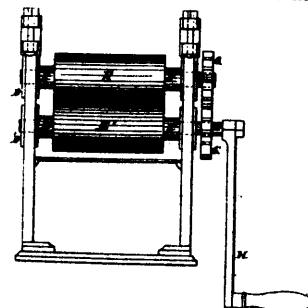
10143 Mahle's Machine for Boring Brush Blocks.



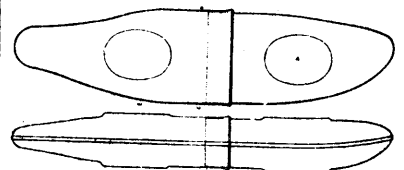
10144 Fisher's Improvements in Heel Stiffeners.



10145 Krehbiel's Improvements on Vehicle Springs.



10146 Cowdery's Improvements in Knife Cleaning Machines.



10147 Lane's Improvements in Tin Cans.