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### INVENTIONS PATENTED.

#### No. 16,054. Improvements on Farm Gates. (Perfectionnements aux barrières.)

Ira W. Fidler, Mount Pleasant, Iowa, U. S., 2nd January, 1882; for 5 years.

*Claim.*—1st. The combination, with a sliding gate A, uprights B B and operating levers E E, of the toggle-lever composed of pivoted rod G and pivoted diverging bars F F, and the arms // connected together and curved or bent and pivotally connected to said diverging bars and operating levers. 2nd. The combination, with a sliding gate A, uprights B B and toggle-lever connecting said gate and uprights, of operating levers E E weighted at their inner ends and suitably connected to said toggle-lever.

#### No. 16,055. Improvements on Heating Apparatus. (Perfectionnements aux calorifères.)

Etienne Boucher, Sherbrooke, Que., 2nd January, 1883; for 5 years.

*Claim.*—The combination of the sides A provided with lugs F, the rear end B and the furnace front B' furnished with lugs and provided with a door and door frame grate D, drawer E, the drum G provided with inlet and outlet apertures at b and manhole a.

#### No. 16,056. Improvements on Dynamo or Magneto Electric Machines. (Perfectionnements aux machines électro-dynamiques ou magnétiques.)

William Hochhausen, New York, N. Y., U. S., 2nd January, 1883; for 5 years.

*Claim.*—1st. The combination, with a Pacinotti or ring armature and its collector brushes applied to the commutator cylinder upon the line joining the field of force poles, of addition contact points, surfaces, or brushes to cut out or short circuit those bobbins of the revolving armature which, in the revolution of the armature, are entering beneath the field of force poles and approaching the line upon which the current is taken from the machine. 2nd. A sectional armature adapted to be taken apart, to allow of the removal of its bobbins, constructed of a number of parallel curved or segmental shaped plates, the plates of adjoining sections being arranged to overlap one another at their ends and secured together by removable bolts or rods. 3rd. The combination of two or more sections of parallel segmental shaped plates overlapping one another at the ends of adjoining sections, insulating or non-magnetic material interposed between the poles at their overlapping portions, and bolts or rods of non-magnetic material for securing the plates together with the insulating material between them. 4th. An armature carrier constructed in sections, each consisting of a number of parallel curved, or segmental shaped plates magnetically insulated from one another and from the plates of the adjoining section. 5th. An armature carrier constructed of a number of parallel plates P shaped in cross section and disposed in the manner described.

#### No. 16,057. Improvements on Stove Pipe Dampers. (Perfectionnements aux clés des tuyaux de poêle.)

Levi Berger and William H. Berger, Camden, N. J., U. S., 2nd January, 1883; for 5 years.

*Claim.*—1st. A damper comprising a metal disk with a radial slot for the reception of a key, wedge or handle, said slot being open

throughout, whereby its sides may be sprung apart and which tend to contract upon such key wedge or handle. 2nd. The combination of a disk A having a radial slot B, and a key or wedge C inserted therein and held in place by the contractile tendency of the metal of the disk. 3rd. The disk A having radial slot B with flanges b b on each side thereof. 4th. The disk A having radial slot B with longitudinal ribbed sides. 5th. The disk A having a radial slot B and projections b b on either sides thereof projecting beyond the edge of said disk. 6th. The key or wedge C having a shank with longitudinally grooved sides and a handle c. 7th. The combination of a radially slotted disk and a longitudinally grooved key or wedge. 8th. The combination, with a slotted disk A, of a key or wedge radially adjustable therein so as to vary the pressure or friction between said parts and an interposed stove pipe.

#### No. 16,058. Improvements in Lead Traps or Cesspools. (Perfectionnements aux puisards.)

Alexander Chapman, Montreal, Que., 2nd January, 1883; for 5 years.

*Claim.*—1st. In a lead trap made up of separate inlet intermediate and discharge pipes and separate caps covering the bends, their meeting edges being joined together edge to edge without overlapping, and joined lead to lead without solder. 2nd. The method of closing the joints of traps made up of sections by burning said joints and joining lead to lead upon a metallic or non-combustible gaging.

#### No. 16,059. Improvements on Snow Ploughs. (Perfectionnements aux charrires à neige.)

Eric M. Hesselbom, Rushford, Min., U. S., 2nd January, 1883; for 5 years.

*Claim.*—1st. The combination, in a snow plough having two chutes F G H, whose exterior sides H flare outwardly from the bottom upward, of hinged sections I to the sides H. 2nd. The combination, in a snow plough having two chutes F G H, whose exterior sides H flare outwardly from the bottom upward, of jointed sections I to the sides H, and adjusting screws rods M connecting said sections I with support a. 3rd. The combination, with the chutes F G H, of the hinged sections I provided with the pieces // hinged to its upper end, the screw rods M and the arms N. 4th. The combination with chutes F G H, of guards P hinged to the top plate Q. 5th. The combination, with the chutes F G H and the top plate Q, of the hinged guards P, the rod S and staples F. 6th. The combination of two divergent chutes F G H and wings W, jointed at the ends of the chutes and having the operating slider Z, and connecting rods Y. 7th. The combination of two divergent chutes F G H, wings W, jointed at the ends of the chutes, adjusting slider Z, connecting rods Y and adjusting screw d. 8th. The combination of detachable braces l with the wings W, adjusting slider Z, connecting rods Y and screw d.

#### No. 16,060. Improvements in Roofing Cement. (Perfectionnements dans le ciment à toitures.)

William L. Mackby, Montreal, Que., 2nd January, 1883; for 5 years.

*Claim.*—A roofing cement or paint composed of powdered mica and limestone, mixed with coal tar, or other liquid bituminous substance.

#### No. 16,061. Improvements on Lanterns. (Perfectionnements aux lanternes.)

George C. Efield, Danforth, Me., U. S., 2nd January, 1883; for 5 years.

*Claim.*—1st. In a tubular lantern, the combination of the tube A parted in its lower horizontal sections a with the supporting wire C. 2nd. The combination of the lamp B provided with short horizontal tubes b, and the tubes A carrying the globe G matching the horizontal sections a of the tubes A with the horizontal tubes b. 3rd. The combination, with the lamp B, of the tubes A carrying the globe G, and the bent wire C attached to the tubes A and hinged to standards D projecting from the top of the lamp. 4th. The combination, with the lamp B, of the tubes A, the hinge wire C, the circularly bent wire E and the latch F. 5th. The combination, with the lamp B, of the

tubes A, the hinge wire C, the circularly bent wire E, the latch F and the locking rod H. 6th. The combination, with the lamp B, of the hinged tubes A, carrying the globe G and having their lower ends a cut off on a bevel to fit short bevelled projecting tubes b of the lamp B. 7th. The combination, with the globe G, hinged wire C and plate M, of the spiral springs X connecting said plate M and wire C. 8th. The combination, with the tubes A, of the swinging globe supporting plate M and the springs X.

**No. 16,062. Improvements in Dynamo-Electric Machines.** (*Perfectionnements aux machines Electro-Dynamiques.*)

Lord Elphinstone, Musselburgh, Scotland, and Charles W. Vincent, London, Eng., 3rd January, 1883; for 15 years.

*Claim.*—1st. Electrical connection with the source of the exciting current for the field magnets of a dynamo electric machine, a grouping tablet, or its equivalent, in which the coils of the several field magnets have their terminals, such terminals being so arranged as to permit of their being connected singly with the source of supply, or coupled up in series, or groups for the purpose of adjusting the resistance of the field magnets to suit the work in hand. 2nd. A field or fields composed of separate magnets, or magnets wound with distinct wires, for the purpose of enabling the exciting current to be passed around such magnets, singly or in groups, directly from a common source.

**No. 16,063. Improvements on Car-Couplings and Draw-Bars.** (*Perfectionnements aux accouplages des chars et aux barres de traction.*)

Elisha S. Cram and William F. Chase, Leconia, N. H. U. S., 3rd January, 1883; for 5 years.

*Claim.*—1st. The draw-bar woods or timbers H H attached to parallel platform sills, above the same, by notched joints and provided with mortises a a having linings h h in which play the follower blocks or cross-bars I J. 2nd. The combination of the sliding block N provided with the depressed or shouldered pin seat c on its front end and the coupling pin P with its enlarged part a and top stop t. 3rd. The combination of the sliding block N, coupling pin P, spring Q, rock shaft R with its connecting chain c, and the side levers S.

**No. 16,064. Improvements on Hollow Augers.** (*Perfectionnements aux fore-loirs.*)

Hilaire Paré, Sherbrooke, Que., and Arthur Skinner, New Haven, Conn., U. S., 3rd January, 1883; for 5 years.

*Claim.*—The multiplying cog-wheels K K with the connecting post M, also the centre arbor D.

**No. 16,065. Improvements on Car-Couplings.** (*Perfectionnements aux accouplages des chars.*)

Henry Marcheter and Theodore Martin, Wallaceburg, Ont., 3rd January, 1883; for 5 years.

*Claim.*—The combination of the chambers B C D E with the shuttles G J.

**No. 16,066. Improvements in Apparatus for Evaporating or Concentrating Liquids, and Saturating Liquids with Gases.** (*Perfectionnements aux appareils pour évaporer ou concentrer les liquides et les saturer de gaz.*)

Frederick B. Nichols and Herbert Thompson, Halifax, N. S., 3rd January, 1883; for 5 years.

*Claim.*—1st. A vessel, trough, or cell provided with siphon-slips, or thin strips of solid material bent over the edge of said vessel, whereby a continuous flow of liquid out of the vessel may be maintained. 2nd. The combination of a vessel, trough, or cell, provided with siphon-slips, with diffusion strips, or broad strips of thin material arranged to maintain a constant flow of liquid over their surfaces. 3rd. The evaporating apparatus consisting of troughs, vessels, or cells provided with siphon-slips, in combination with diffusion strips and means for applying heat to one or both sides of said diffusion strips. 4th. The evaporating apparatus composed of a series of troughs, or cells A, connected by longitudinal troughs d and provided with siphon slips and diffusion strips. 5th. A gas or vapour absorbing apparatus consisting of a vessel, trough, or cell, siphon slips and diffusion strip or strips, in combination with a gas-tight receptacle or chamber, having a gas pipe for supplying gas or vapor, and inlet and outlet for fluid provided with stop-cocks, or their equivalents. 6th. A granulated surface consisting of an aggregation of distinct grains, in combination with one, or all of the several parts of the apparatus.

**No. 16,067. Improvements on Grain Scourers.** (*Perfectionnements aux nettoyeurs des grains.*)

Daniel Mann, West Winfield, N. Y., U. S., 3rd January, 1883; for 5 years.

*Claim.*—1st. The combination, with two revolving disks D provided with the furrows d and a and secured one above the other, and the shaft B, of the stationary brushes E arranged in tangential lines whose obliquity is reserved to the tangential lines of the furrows in the disks D and the radial sweeps F. 2nd. The combination, with the revolving disk D provided with tangentially arranged furrows, of the stationary brushes E arranged in tangential lines having an opposite angularity to the lines of the disk furrows, the said disks and brushes being arranged in relation to each other as specified.

**No. 16,068. Improvements in Lunch Boxes.** (*Perfectionnements aux boîtes à collation.*)

The E. T. Barnum Wire and Iron Works, (assignees of William H. Gordon,) Detroit, Mich., U. S., 3rd January, 1883; for 5 years.

*Claim.*—1st. A cheese or lunch safe formed of a semi-cylindrical shell of wire cloth, or netting, plain semi-circular uprights, a door concentric with the cylinder, or nearly so, and pivoted by end blocks at, or near the axis of the cylinder. 2nd. A cheese or lunch safe formed of a semi-cylindrical shell of wire cloth or netting, plain semi-circular uprights, a door of wire cloth or netting, fastened to end blocks, which latter are pivoted at or near the axis of the cylinder, a revolving table within, and with a platform across the top.

**No. 16,069. Improvements in Grain Binders.** (*Perfectionnements aux lieuses à grain.*)

William Deering, Chicago, Ill., (assignee of John F. Appleby, Minneapolis, Minn.,) U. S., 3rd January, 1883; for 15 years.

*Claim.*—1st. The combination, with the cord receptacle and an adjustable tension device composed of the stationary part, or cheek 3, and a yielding part 4, of an eye-guide for giving direction to the draft of the cord designed to pass through said tension device, such that the draft of the cord will, in event of the presence of a knot or bunch thereon, operate to instantly pull the part 4 away from its mate. 2nd. The combination, with the means for exerting uniform tension on the cord, as it is drawn from the source of supply of the auxiliary tension device, or mechanism, to create an increased tension, at certain times, and regulated in its lines of action automatically by the binder mechanism. 3rd. In a self-binder, the automatic auxiliary tension mechanism to alternately create a tension on the cord and a slack therein, made in the process of applying the tension.

**No. 16,070. Improvements on Drilling Machines.** (*Perfectionnements aux machines à forer.*)

Andrew Jardine, Hespeler, Ont., 3rd January, 1883; (Extension of Patent No. 8306.)

**No. 16,071. Improvements on Mowing Machines.** (*Perfectionnements aux faucheuses.*)

Charles B. Frost, Francis T. Frost and Alexander Wood, (assignees of James Smith and Edward Patterson,) Smith's Falls, Ont., 3rd January, 1883; for 5 years.

*Claim.*—1st. The connection bar 8, formed in two sections and connected together by a joint 24 having axial motion longitudinally of the bar. 2nd. The connecting bar 8 formed in two sections, one section hinged to the frame of the machine, to lift from a horizontal towards a vertical position, and the other section connected thereto by a sleeve joint 24, whereby the section can be rocked to tilt the finger bar. 3rd. The connecting bar 8, constructed in two sections, one section having a rocking joint connection with the other section, and a hinged connection 16 with brace 13. 4th. The combination, with the draft tongue, of the rack frame 18, lever 17 fulcrumed thereto, link 20, post 19 and a sectional connecting bar 8, for tilting the finger bar. 5th. The shoe 9 provided with a wheel 22 journalled axially in line with the back of the finger bar on its inner end, in combination with a sectional connecting bar 8 attached to the shoe and having a rocking motion.

**No. 16,072. Improvements in Telephones.**

(*Perfectionnements dans les téléphones.*)

The European Electric Company, (assignee of Charles A. Hussey,) New York, U. S., 4th January, 1883; for 5 years.

*Claim.*—1st. The process of transmitting and reproducing speech, consisting in establishing and maintaining a pressure of air, gas or other fluid in excess of the atmospheric pressure, in a constantly closed tube or conduit, in imparting to said air, gas or fluid, impulses from sound waves and in utilizing said impulses for reproducing sound waves at a distant place. 2nd. The combination of a tube, means for establishing and maintaining a pressure of air or other gas or fluid in excess of atmospheric pressure in the tube, and a diaphragm capable of a vibratory motion for transmitting impulses imparted to it through the tube to a receiver for reproducing the same. 3rd. The combination, with a tube of electric conducting material, of a diaphragm capable of a vibratory motion for transmitting the impulses from sound waves through the same, and an electric telegraphic apparatus connected with the tube and utilizing it as a line conductor. 4th. The combination of a tube for the transmission of impulses from sound waves, diaphragms for transmitting the impulses from sound waves through the same, and concentrators attached to the diaphragms, for concentrating the effect of the sound waves on the centre of the diaphragms. 5th. The combination of a tube for the transmission of impulses for sound waves, means for establishing and maintaining a pressure of air, gas or fluid in excess of atmospheric pressure in the same, diaphragms for transmitting the impulses imparted to them, and a gauge for indicating the pressure in the tube.

**No. 16,073. Improvements in the Preparation of Whitewash.** (*Perfectionnements dans la préparation du lait de chaux.*)

Charles C. Hughes, Avondale, Penn., U. S., 5th January, 1883; for 5 years.

*Claim.*—1st. The method of making whitewash free from grit, said method consisting in mixing the lime with water, as usual, and then passing the liquid product through a grinding mill. 2nd. The method of making a whitewash free from grit and impurities, said method consisting in slacking the lime with water, as usual, then straining the slacked lime and finally passing it through a grinding mill. 3rd. The method of making whitewash and preparing the same for market, said mode consisting in mixing the lime with water, as usual, passing the

liquid product through a grinding mill, evaporating the product thus rendered smooth to the consistency of paste and packing the mass in cans or other vessels.

**No. 16,074. Improvements in Plastic Compounds for Roofing.** (*Perfectionnements aux compositions plastiques à toitures.*)

Charles Taylor, Joseph James and Enoch James, Montreal, Que., 5th January, 1883; for 5 years.

*Claim.*—A plastic compound for roofing and other like purposes, composed of actinolite ground to a consistency, in which the fibre is not destroyed, and coal tar or its chemical equivalent in the proportions specified.

**No. 16,075. Improvements on Thill and Pole Couplings.** (*Perfectionnements aux armons des limonnières et des timons des voitures.*)

Thomas J. Randall, Sing Sing, and George T. Clark, Malone, N. Y., U.S., 5th January, 1883; for 5 years.

*Claim.*—The shackle iron B provided with screw a and slot c, in combination with a clamping nut for said screw, and a thill iron or pole iron C having a notch or slot d and a hook b.

**No. 16,076. Improvements on Ploughs.** (*Perfectionnements aux charrues.*)

William A. Dean, Beamsville, Ont., 8th January, 1883; for 5 years.

*Claim.*—1st. The landside A formed with an upward curvature B at the heel. 2nd. The moldboard G formed with a portion from I to J having an edge parallel to and in the same plane as the lower edge of the landside, the upper portion curving to turn the furrow slice. 3rd. The share H extending from the point of the plow along the lower edge of the mold-board to the recessed portion L, said share having a continuous cutting edge.

**No. 16,077. Improvements on Portable Drilling Machines for Oil and Water Wells.** (*Perfectionnements aux machines portatives pour forer les puits d'huile et d'eau.*)

Robert M. Downie, Allegheny, Penn., U. S., 8th January, 1883; for 5 years.

*Claim.*—1st. The combination of the reel f and cog wheels S C and M, with the driving wheel R. 2nd. The combination of the driving wheel R, wheels S, rod T, beam a, spring and tube p.

**No. 16,078. Improvements on Bluing Paddles.** (*Perfectionnements aux palettes au bleu.*)

Archelaus E. Spencer, Chicago, Ill., U. S., 8th January, 1883; for 5 years.

*Claim.*—A paddle having a portion of its surface coated with bluing.

**No. 16,079. Composition of Matter for Coughs, etc.** (*Composition pour les rhumes, etc.*)

Thomas McCarroll and William A. Ellis, Meaford, Ont., 8th January, 1883; for 5 years.

*Claim.*—A composition of matter composed of wild cherry bark, senega root, squill root, ginger root, ipecacuanha root made into a tincture with diluted spirit, tartarated antimony, sulphate of morphia, extract of liquorice, white sugar, oil of aniseed, chloroform, alcohol and water.

**No. 16,080. Improvement on Water Filters.** (*Perfectionnement des filtres à eau.*)

John W. Bailey, Boston, Mass., U.S., 8th January, 1883; for 5 years.

*Claim.*—1st. The body A, disks L, M, K, duct E and tubes C D. 2nd. The tubes C D formed in the body of the filter.

**No. 16,081. Improvements on Suppositories.** (*Perfectionnements aux suppositoires.*)

Edwin H. Gibbs, New York, N.Y., U.S., 8th January, 1883; for 5 years.

*Claim.*—1st. A hollow suppository formed of butter of cacao or other analogous substance, and charged with medicine or nutriment. 2nd. The suppository A and stopper B.

**No. 16,082. Improvement on Pianos.** (*Perfectionnement des pianos.*)

Dennis McCarthy and George R. Davis, St. John, N. B., 8th January, 1883; for 5 years.

*Claim.*—1st. A glass finger board for pianos and similar musical instruments. 2nd. In a piano or similar musical instrument, a finger board faced or partly faced with glass. 3rd. A finger board faced or partly faced with mirror glass, whereby the board is prevented from being scratched and the instrument improved in appearance. 4th. In a finger board, the backing G so formed as to pack the glass K at its bottom and ends, and also cover the bottom piece E. 5th. The improved finger board, the same consisting of the body D, ends m, m,

bottom f, glass K and backing G. 6th. The improved finger board in combination with the name board C, the name board being so arranged as to cover and conceal the upper edge of the glass of the finger board.

**No. 16,083. Improvements in Lasting Tools.** (*Perfectionnements aux outils à mettre en forme.*)

Frederick Henderson, New Richmond, Ohio, U. S., 8th January, 1883; for 5 years.

*Claim.*—The tool having the arm B and jaw C combined with the arm A having the enlarged bearing portion a and finger a, and the jaw D having the pivoted shank d adapted to move in the open recess between the finger and the enlarged portion.

**No. 16,084. Improvements on Grinding Machines.** (*Perfectionnements aux machines des rémouleurs.*)

Frank M. Simmons, Detroit, Mich., U. S., 8th January, 1883; for 5 years.

*Claim.*—1st. In a pulley grinding machine, the combination, with an endwise movable shaft carrying a grinding wheel and a shaft arranged to carry, and provided with means for holding a pulley to be ground, of means for traversing the grinding wheel backward and forward automatically across the face of the pulley while grinding the same, and mechanism for adjusting the opposite edges of the face of the pulley alternately towards the grinding wheels. 2nd. In combination with an endwise movable shaft carrying an emery wheel, and a shaft carrying the pulley to be ground, a pair of head blocks carrying the bearings for the latter shaft, these head blocks being independently adjustable towards or from said emery wheel shaft. 3rd. The combination, with the grinding wheel and its endwise movable rotary shaft, and the pulley carrying shaft, of the shifting and reversing mechanism for changing the endwise motion of said grinding wheel shaft, a shipping lever for such mechanism and devices for automatically shifting said shipping lever. 4th. In combination with a shaft arranged to carry, and provided with means for holding a pulley to be ground, an endwise movable shaft carrying a grinding wheel, a sliding bar provided with means for engaging and moving said grinding wheel shaft, a nut and screw shaft which moves said sliding bar, a pair of cog-wheels on said screw shaft, an additional shaft having two loose pinions, one of which engages directly with one of said cog-wheels, and the other of which connects with the other cog-wheel through an intermediate pinion, a clutch arranged to lock either of said loose pinions to its shaft, a lever which moves said clutch, a sliding bar pivotally connected with said lever and arranged to shift the same, and a rack pinion and topping weight arranged to reverse the motion of the latter bar.

**No. 16,085. Improvements in Horse Shoe Nail Machines.** (*Perfectionnements aux machines à clou à cheval.*)

William Werts, Philadelphia, Penn., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination of the following instrumentalities namely: first, a concave anvil; second, a cranked shaft; third, an arm carried by the crank pin of the shaft and provided near one end with a forging roller; and fourth, a cranked rock-shaft, free to oscillate and having a crank pin carrying the opposite end of the said arm. 2nd. The combination of the anvil, the cranked shaft 3, the arm 5 carrying the forging roller, the cranked rock-shaft 9 connected to the said arm, and the vertically adjustable bearings adapted to the said shaft 9. 3rd. The combination of the anvil, the cranked shaft 3, the arm 5, the crank shaft 9, dies 23 and 25 and intervening mechanism, whereby the dies are operated from the said shaft 9. 4th. The combination of the rock shaft 9 and its arm 14 and 21, the guided reciprocating rods 18 and 18 adjustably connected to the said arms, the dies 23 and 25 and the above described knee joint connections of the rods with the dies. 5th. The combination of the reciprocating bars 18 18, the dies 23 and 25, the knee joint arm 21 and 22 and connected to the dies and to the bars, and the adjustable pin 28 to which the arm 21 is connected. 6th. The combination of the reciprocating rods 18, the dies 23 and 25, the knee-joint rods 21 and 22, and the adjustable studs 28 to which said rods 21 are connected. 7th. The combination of the anvil 30 having a concave face 32, the arm 5 and its forging roller, and the reciprocating dies 23 and 25 having undersides conforming to the face of the anvil, with the guides 26 and the adjustable guides 27. 8th. The combination of the anvil, the reciprocating dies 23 and 25, the pivoted arms 39 and 40 each carrying a knife 38 with automatic mechanism, whereby the said arms are at intervals elevated within range of the dies so as to be operated thereby. 9th. The combination of the anvil and reciprocated dies 23 and 25 and the knife carrying arms 39 and 40, with the lever 43, the intermittently rotated disk 50, the springs 56 and 57 and mechanism whereby the lever 43 is relieved at intervals from the pressure of the said spring 56. 10th. The combination of the lever 43 carrying the knife arms 39 and 40, the springs 56 and 57, the intermittently rotated shaft 51 and its notched disk 50, the shaft 60 geared to the said shaft 51 and having a disk 59 with pins 55. 11th. The combination of the following elements namely: first, the anvil reciprocated dies 23 and 25, and arm 5 carrying the forging roller; second, a guide plate 61 and mechanism for reciprocating the same; third, one or more pairs of cam levers for gripping the nail rod and releasing the same; and fourth, a device for permitting the same to be fed under friction. 12th. The combination of the guide plate 61, its cam levers and lug 65 with an intermittently rotated shaft carrying a disk or plate having projections 64, and with springs 63. 13th. The combination, with a horse shoe nail machine, of a heater through which the nail rod passes before reaching the forming mechanism. 14th. In a horse shoe nail machine of the character herein specified, a nail rod heater having an outer casing 72, lining 73 and pipes 74, adapted and arranged to conduct the fuel for consumption to the interior of the heater.

**No. 16,086. Improvements on Seals for Securing Car Doors and other Purposes.** (*Perfectionnements aux fermatures scellées pour assujétir les portes des chars et autres fins.*)

Edward J. Brooks, New York, N. Y., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. A tin and rivet seal composed of a strip having rivet holes in its respective ends, and a rivet fast thereon having its stem secured within one of said rivet holes and loosely fitted to the other.

**No. 16,087. Improvements on Seed Drill Distributors.** (*Perfectionnements aux distributeurs des semoirs en ligne.*)

John Bartlett, Oshawa, Ont., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination, with the seed cup K and the hollow distributing wheel N, of an interior actuating disk Q. 2nd. The combination, with the cut off slide b and the seed cup K, of a gauge slide e arranged in a recess of the cup K and below the slide b. 3rd. The combination, with the disk Q and slotted seed cup K, having a recess below the cut-off slide b, of the handle slotted gauge slide e and the screw f working through cup and gauge slide into slide b, to adapt the distributor to sow seeds and grains of different sizes and kinds.

**No. 16,088. Improvements on Moulding Machines.** (*Perfectionnements aux machines à mouler.*)

James Anderson, Boston, Mass., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. In the spiral molding machines, the bed B provided with revolving feed-screw i and centres a b, the worm shaft r, wheels arbor e and connections to the feed screw combined as described. 2nd. The revolving shaft a, bevel pinions m n, the swinging bracket n and threaded arm p, in combination with the feed screw i and work carrying bed B. 3rd. The suspended bracket n provided with threaded arm n and the pivoted arms o, in combination with the bed B and feed screw i. 4th. The bracket n provided with threaded arm n, pinions m n, shaft p, pivoted arms o, revolving shaft w and pulleys p q connected by belt, in combination with the work bed B and feed screw i. 5th. The combination of the revolving shaft w, friction driver h, hub d provided with arms e, arbor f and friction sleeves g carrying the cutters. 6th. The adjustable hub d provided with arms e, and arbor f carrying the cutter, in combination with the driving shaft a and driver h.

**No. 16,089. Improvements in Telephones.**

(*Perfectionnements dans les téléphones.*)

Henry B. P. Strangways, London, Eng., 10th January, 1883; for 15 years.

*Claim.*—1st. The combination, with the principal magnet B of a telephone transmitter or receiver, of a diaphragm tympan or plate D of wood, metal, or any material capable of rapid vibration to which is attached approximately, at right angles and near the centre thereof, a small magnet bar or piece of metal d capable of inductive action, and a helix or solenoid coil of wire such as E closely surrounding, but not touching the said piece of metal d, so that the latter may freely reciprocate or vibrate endways, opposite the principal magnet B and within such helix or solenoid coil of wire E, without touching it or the principal magnet B. 2nd. In combination with the pole piece B mounted on one leg of a horse-shoe or two-legged magnet B and a helix or coil around the said pole piece B, the diaphragm, or tympan D of wood, metal or other material capable of rapid vibration having a small magnet bar or piece of metal d capable of inductive action, attached at right angles thereto and arranged to reciprocate or vibrate, endways in a line with the axis of the pole or pole piece B through a hole in the other leg of the principal magnet B and within the helix or coil E, which closely surrounds, but does not touch the said piece d. 3rd. In combination, with the principal horse shoe, or two legged magnet B of a telephone transmitter or receiver, the diaphragm D, small magnet or piece of metal d capable of inductive action attached to said diaphragm and arranged to vibrate endways between, but without touching the two poles or pole pieces of said magnet B, and the helix or coil E closely surrounding, but not touching the small magnet bar or piece of metal d. 4th. A telephone receiver consisting essentially of a diaphragm tympan or plate such as D, a small magnet-bar or piece of metal d capable of inductive action attached to said diaphragm or plate D approximately at right angles thereto, a piece of iron rod or wire B preferably screwed at its inner end to facilitate its adjustment within the coil E surrounding the rod B and piece d, but not touching the latter, so that the diaphragm D and piece d are free to vibrate without touching either the piece of iron rod or wire B on the helix or coil E. 5th. In a telephone, whether used as a transmitter or receiver, a diaphragm tympan, or plate D of wood, metal or other material capable of rapid vibration, one or more small magnets bars or pieces of metal d attached to said diaphragm, or plate D at right angles thereto and arranged to vibrate freely opposite to, through or between, but without touching the poles, or pole, or pole piece, of the principal magnet or magnets, or its, or their equivalent B, and a helix or coil of wire closely surrounding, but not touching each of the said small magnets, or pieces of metal d, whereby the efficiency of the telephone is greatly increased. 6th. In a telephone, whether used as a transmitter or receiver, the combination of the diaphragm D of wood, metal or other material, capable of rapid vibration, a magnet or piece of metal capable of inductive action d attached to said diaphragm and of such small size as will not unduly check its vibration, and a solenoid coil, or helix E surrounding, but not touching the said piece of metal d. 7th. In a telephone, whether used as a transmitter or receiver, the combination of the diaphragm D of wood, metal, or other material, capable of rapid vibration, and the magnet or piece of metal, capable of inductive action d, attached to said diaphragm and of such small size as will not unduly check its vibration.

**No. 16,090. Improvements on Pumping Engines.** (*Perfectionnements aux machines à vapeur.*)

William A. Perry, Bay Ridge, N. Y., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination of a high pressure and an expanding cylinder co-operating upon one side of the engine with an expanding cylinder operating alone upon the opposite side, the whole being arranged and operated to produce an equal development of power upon both sides of the engine. 2nd. The combination, with the high pressure and expanding cylinders arranged upon one side of a duplex pumping engine, of the intermediate tank and single expanding cylinder operating alone upon the opposite side of the engine.

**No. 16,091. Improvement on Call Apparatus for Telephone Lines.** (*Perfectionnement des appareils d'appel pour les lignes téléphoniques.*)

James P. Stabber, Sandy Spring, Md., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. In a telephone line, a series of call instruments with travelling switches and motor magnets, all in the line, and local shunt circuits combined with a magneto-generator of electricity and a circuit closer for the operation of the same. 2nd. In a travelling switch, actuating electro-magnets for the same, and a circuit closer, all in the electric line combined with a series of station stops provided with ground connections to arrest the movement of said switch, short circuit the current and cut out the line, and means whereby said circuit closer may be controlled. 3rd. In a travelling switch, actuating electro-magnets and a circuit closer, all in the electric line, combined with a series of station keys, and a corresponding series of station stops, having ground connections controlled severally by said keys, to arrest the movements of said switch, and means whereby said keys severally control said circuit closer, so that, when either station key is moved, the circuit will be closed and said switch will be caused to move until arrested by the corresponding station stop, the current be short circuited and the line be cut out. 4th. The travelling switch H and its motor magnets in the electric line combined with a key T and stop W and ground connections for the same, and a circuit closer, whereby, when said key is depressed, the line circuit is closed on the generator, the switch H automatically moved to, and arrested by the stop W and the current then short circuited. 5th. In a generator, a circuit closer in the line conductor therefrom, a travelling switch which also forms part of the line, a key having a ground connection, a stop to arrest said switch and short circuit the current to the ground, and means whereby the motion of said key will also operate the circuit closer. 6th. In a telephone local call central office instrument, the combination essentially as follows: a magneto-generator, motor magnets, a travelling switch, all in the line circuit, a series of radial station key levers, stops severally controlled by said keys to arrest the switch, a ring against which said keys severally make contact to close the circuit, and a ground connection for said ring. 7th. In a telephone local call central office instrument, the combination of a magneto-generator without a commutator, motor magnets actuated by to and fro currents therefrom, a travelling switch in the line circuit a series of radial key levers severally mounted on a ring having a ground connection, and stops severally attached to said keys to arrest said switch, and a ring against which said keys make contact to close circuit, whereby the circuit is closed by depressing one of said key levers and contact of the travelling switch with the stop of said depressed lever will short circuit the current to the ground and cut out the line. 8th. In a local call key board, comprising a series of keys, each one whereof has a ground connection contact when depressed, and elastic stops to arrest the travelling switch and thereby short circuit the current and cut out the line, combined with a relief ring Z provided with its contact points a and temporary ground connections, whereby the electrical tension in the switch instrument is relieved. 9th. In a telephone local call instrument, a source of electric energy, motor magnets and a travelling switch in the line circuit actuated by said magnets, a unison detent shunt and a series of radial station stop key levers, whereby said switch may be arrested, combined with an indicator stop key F, whereby said switch may be moved to a position aside from its normal position of rest. 10th. The secondary circuit closing and switch key G, which does not form a part of the circuit conductor e d, combined with the contact switch spring k and contact closing spring d and the circuit connections. 11th. A series of call instruments and a magneto-generator to operate the local travelling switches of said instruments, combined with an intensity key y, contact points z and q and a magneto-generator l, provided with a single current commutator, whereby the current may be shifted from one generator to the other. 12th. In a telephone local call central office instrument, a travelling switch in the line circuit, a dial rim in the line circuit for contact with the same, a detent or unison shunt interposed in said rim, motor magnets to actuate said travelling switch, detent magnets, the armature spring whereof will not yield to the current which actuates the motor magnets, combined with two magneto-generators of different generative powers, and a suitable switch key whereby the weaker or stronger current may be passed to the line at will. 13th. In a telephone local call central office instrument, motor magnets, a vibrating armature, a travelling switch actuated thereby, combined with a series of radial key levers, provided with elastic stops, said key levers and stops being arranged with reference to the movements of said armature, so as to arrest said switch at or near the conclusion of a movement of said armature in the same direction, whereby a stronger current of the same polarity as the last operative current may be sent over the line to operate the local bell or detent magnets without moving either the vibrating armature or travelling switch from its position. 14th. The travelling switch of a telephone local call with its operative motor magnets, vibrating polarized armature, push and pull pawls and ratchet wheel combined with an escapement actuated by said armature, whereby the ratchet wheel is arrested prior to the engagement of said switch with, or disengagement from, the station shunt. 15th. The travelling switch H with its motor magnets and the vi-

brating armature, and push and pull pawls combined with the ratchet wheel G provided with the pin *v*, and the escapement arms *w* projecting from said armature. 16th. In a telephone local call, a travelling switch and dial rim in the line circuit combined with a unison shunt twice as long as the local station shunts, or thereabouts, whereby the travelling switch may be moved forward out of its normal position of rest without going off the unison shunt. 17th. In a telephone local call, a travelling switch in the line circuit with a local station, or bell shunt, combined with a telephone receiver in the bell shunt circuit, and an automatic switch whereby the current will be shunted to the bell magnets and line, when said receiver is hanging on its hook, or through said receiver to the line when said receiver has been taken off the hook. 18th. In a telephone local call, a travelling switch in the line circuit, a local station or bell shunt and a switch spring *i* in connection with said local shunt, combined with a pivoted hook lever whereon the telephone may hang when not in use, and contact springs *cm*, one or the other whereof is in contact with said spring *i* as said lever is up or down, and the current correspondingly shunted to the bell or to the telephone. 19th. In a telephone local call, a travelling switch in the line circuit, a unison shunt and a station bell shunt separated therefrom, suitable spring *i* and hook lever respectively in electrical connection with the bell shunt and detent shunt combined with the switch springs *at*, whereby the current may be automatically sent to the telephone from either the unison shunt or station bell shunt by the act of removing said telephone from its hook. 20th. In a telephone local call, a dial rim and a travelling switch in the line circuit combined with a local bell shunt on said dial, the length whereof is such that the index in passing must make at least two pauses upon said shunt. 21st. In a telephone local call central office instrument, comprising motor magnets, a dial travelling switch and a series of radial station keys combined with a protecting cover A' provided with perforations to permit the protrusion of the finger buttons B' and a transparent center over the dial.

**No. 16,092. Pomade or Unguent for the Restoration of Hair and Cure of Scalp Disorders.** (*Pomade on onguent pour activer la croissance des cheveux et guérir les maladies du cuir chevelu.*)

Rémi Prud'homme, Ottawa, Ont., 10th January, 1883; for 5 years.

*Claim.*—1st. The composition of matter to be used for the restoration of hair to bald scalps and for the cure of scalp disorders composed of Sebi Bovis, vaseline, Olei Ricini, Acidi Galici, Balsami Peruvian, Olei Caryophylli and Canella.

**No. 16,093. Improvements on Yarn Winding Machines.** (*Perfectionnements aux bobineuses.*)

Edmund Ashworth, Bolton-le-Moors, Eng., 10th January, 1883; for 5 years.

*Claim.*—1st. A vibrating lever *h* on which are mounted carriages *k*, which give motion to the yarn guide bars *d* and are connected with screw-shafts *l*, which move the carriage *k* nearer to the fulcrum or axis *o* of the lever, as the winding proceeds in order to produce coned ends on the cylindrical masses *d* of wound yarn. 2nd. The double armed lever *h* carrying studs or parts which cause the yarn guides bars *d* to traverse, and the rotating screw-shafts *l* for shifting the said studs or parts nearer to the axis of the vibrating lever *h*, whereby the traverse of the yarn guide bars *d* is lessened. 3rd. The lever *h*, the carriages *k* acting upon the yarn guide bars, the screw shafts *l* receiving movements by means of the ratchet wheel *o* and pawl *p*.

**No. 16,094. Improvements on Spark Arresters.** (*Perfectionnements arrête-flammèches.*)

Alexander Mitchell, Wilkes Barre, Penn., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination of the smoke box and its stack, the exhaust nozzle, the spark arresting screen in the smoke box, a spark receptacle located above the bottom of the smoke box, and a lift pipe communicating with the upper end of the receptacle and with the bottom of the smoke box. 2nd. The combination of the smoke box and its stack, the exhaust nozzle, the spark arresting screen in the smoke box, a spark receptacle located above the bottom of the smoke box, and a lift pipe surrounding the exhaust nozzle and having a branch communicating with the upper portion of each spark receptacle. 3rd. The combination of the smoke box and its stack, the exhaust nozzle, a spark receptacle, a lift pipe having a branch communicating with said spark receptacle, a screen extending from the lift pipe to the shell of the smoke box, and a screen extending to the exhaust nozzle from the inside of the lift pipe above the branch of the same. 4th. The combination of the smoke box and its stack, a spark arresting screen, a spark receptacle above the bottom of the smoke box, a lift pipe communicating with the bottom of the smoke box and the upper portion of the spark receptacle, a draft pipe *a* and a screen *b* interposed between the pipe *a* and the lift pipe and occupying such relation to the latter that the sparks impinge upon the screen as they emerge from the lift pipe. 5th. The combination of the smoke box, its spark arresting screen and stack, the lift pipe and a spark receptacle having a draft pipe *a*, a screen *b*, a nozzle *d* and an overflow *e*. 6th. The combination, with the exhaust nozzle and the shaft pipe *a*, of connecting pipes extending from the exhaust nozzle up to and entering the pipe *a*, so that the exhaust steam may be utilized to create a greater draft through the latter.

**No. 16,095. Improvements on Sockets for Electric Lamps.** (*Perfectionnements aux douilles des lampes électriques.*)

Edward H. Johnson, New York, N. Y., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. A socket for electric lamps formed of two detached parts, each of which is provided with contact plates for completing

circuit, when the plates are placed together. 2nd. The combination, with the detached parts described, one of which is grooved on its inner face, of a safety catch held in such groove and contact plates electrically connected by such safety catch. 3rd. In a circuit controller for electric lamps, a spring seated rod provided with a key or handle enlarged and forked at one end and containing a spring for holding the forked portions apart and contact plates. 4th. In a circuit controller, the combination of a rod having a stop or projection upon its body, a sleeve through which the rod passes provided with a spiral slot, in which the stop or projection takes and a spring within the sleeve forcing the rod normally beyond the sleeve and holding the circuit broken and contact plates. 5th. The combination, with interior insulating portions provided with circuit connections, of exterior metal portions forming a covering therefor.

**No. 16,096. Improvement in Artificial Cream.** (*Perfectionnements dans la crème artificielle.*)

David H. Burrell, Little Falls, N. Y., (Co-inventor with William Cooley, Waterbury, Vt.,) and Walter W. Whitman, Little Falls, N. Y., U. S., 10th January, 1883; for 15 years.

*Claim.*—1st. An artificial cream composed of an oleaginous substance mechanically blended, or otherwise incorporated with milk, buttermilk or cream. 2nd. The method of preparing an artificial cream or emulsion formed from oil or oleaginous substances and milk by mechanically mingling the same together.

**No. 16,097. Improvement in Hand Rakes.**

(*Perfectionnement des râteaux à main.*)

The Baker Manufacturing Company, (assignee of Charles D. Miller and George L. Eason.) Des Moines, Iowa, U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combined cleaning bar and frame composed of the bent wire or rod *a* adapted to be intertwined between rake teeth, and the frame *b* adapted to extend above the rake head. 2nd. The attachment for cleaning rakes composed of the combined cleaning bar and frame *abc* and the spring *g* adapted to be fastened to a rake handle. 3rd. A combined cleaning bar and frame adapted to surround and extend between or intertwine the teeth of a rake, a spring extending from said frame and adapted to be fastened to a rake handle arranged and combined relatively to each other and a rake.

**No. 16,098. Improvements on Grain Drills.**

(*Perfectionnements aux semoirs en ligne.*)

Peter H. Smith, Soldier Tshp, and William H. Poor, Topeka, U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination, with the frame for carrying the rollers of an axle provided at its opposite ends with spindles, and pivoted at its middle to the framing, and the two rollers placed on the spindles of the oscillating axle and arranged in rear of, and so that they will travel in the furrows formed by the shovels on the seeder frame. 2nd. In a roller attachment for grain drills, the combination with the frame of a series of rollers arranged in pairs, each pair being coupled to an adjacent pair and having an independent vertical movement or adjustment. 3rd. The combination of the pair of rollers *E*, the standard *o*, cross beam *g* having slots *g*, the pair of rollers *E*, support *h*, equalizer *h*, support *h* and seat bar *K*.

**No. 16,099. Improvements on Sash Fasteners and Holders.** (*Perfectionnements aux arrête-croisets.*)

John R. Montague, (Co-inventor with James T. Booker and Enoch C. Dinning,) Franklin, Ky., U. S., 10th January, 1883; for 5 years.

*Claim.*—The case A, dog B provided with arms *b*, serrated block or eccentric D pivoted in said arms, and spindle C.

**No. 16,100. Improvements on Door Knobs and Spindles.** (*Perfectionnements aux boutons et aux axes des boutons de portes.*)

William N. Mills and Alvin C. Van Meter, Truro, N. S., 10th January, 1883; for 5 years.

*Claim.*—A door knob and spindle attachment in which either knot is provided with a pawl arranged to engage with a toothed portion of a spindle to provide for the longitudinal adjustment of the knot on the spindle and for its retention thereon. 2nd. The combination of the spindle B having ratchet or other suitably shaped teeth on or near its opposite ends, the knobs A A constructed to turn with said spindle but admitting of their longitudinal adjustment thereon, and the springs or pawls C fitted to the knobs and arranged to engage with the teeth on the spindle. 3rd. In a door knob and spindle attachment, the locking spring or pawl C constructed with shank D and lip J for connection with its respective door knob on the spindle. 4th. The combination, with the spindle B having teeth on or near either or both of its ends, of either door knob A constructed with a chamber F in its shank, also with a side aperture E communicating with said chamber, and the locking springs or pawl C arranged for action within said chamber, in suitable relation to the side aperture, for release of the pawl from the spindle by a key inserted through said aperture.

**No. 16,101. Improvements on Portable Bathing Apparatus.** (*Perfectionnements aux baignoires portatives.*)

William Kendall and Theodore G. Conkling, Logansport, Ind., U. S., 10th January, 1883; for 5 years.

*Claim.*—1st. In combination with tub V having the handles U, the posts D having guide slots *d* for the wings P of adjustable reservoir E, and having slot *d* and pin *d* for hooked extremity *m* of hintel M. 2nd. In combination with the slotted guide posts D and vertically adjust-

able reservoir E, the guide wings P having dovetail shanks *p* that occupy sockets *e* on the reservoir sides. 3rd. The stand composed of base A, buttons B, feet C and posts D. 4th. In combination with the base A, the tub V having the described transverse cleats L. 5th. The tub V composed of sheet metal body G, and the composite bottom consisting of wooden slab H, whose top and ends are lined with sheet metal I, said bottom being secured in the body by solder joint *x*.

**No. 16,102. Unguent for Curing External Wounds.** (*Unguent pour guérir les blessures extérieures.*)

Francois X. Destrampe, St. Cathbert, Que., 10th January, 1883; (Extension of Patent No. 8451.)

**No. 16,103. Improvements on Sash Cord Fasteners.** (*Perfectionnements aux arrête-cordons des fenêtres.*)

William Goforth, Windsor, and Edwin S. West, Brownsville, Mo., U.S., 10th January, 1883; for 5 years.

*Claim.*—1st. The combination of the sash *a* constructed with the groove *a*, the outer or open side of which is made narrower than the inner portion and open at its top, the rod *b*, having the sash cord fastened thereto and adapted to be placed down in the groove *a*, and means for securing the said rod in the said groove. 2nd. The cord holding rod *b* having the cord *c* attached thereto and provided with the plate *b*, extended at right angles from its upper end, said plate being adapted to be turned under a screw head or equivalent construction projected from top of sash and secured to the rod within the groove *a*. 3rd. The combination of the sash *a* constructed with the groove *a*, the outer or upper end of which is made narrower than the inner portion and terminating in the socket *az*, the rod *b* having the sash cord secured thereto and constructed to fit snugly the inner portion of groove *a* and adapted to be placed in the said groove with its portion *b* seated in socket *az*, and means for securing the said rod in the said groove.

**No. 16,104. Improvements on Time Locks.** (*Perfectionnements aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,306.)

**No. 16,105. Improvements on Time Locks.** (*Perfectionnements aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,306.)

**No. 16,106. Improvements on Attachments for Time Locks.** (*Perfectionnements aux dispositions aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,307.)

**No. 16,107. Improvements on Attachments for Time Locks.** (*Perfectionnements aux dispositions aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,307.)

**No. 16,108. Improvements on Time Locks and Attachments Therefor.** (*Perfectionnements aux serrures et aux dispositions aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,308.)

**No. 16,109. Improvements on Time Locks and Attachments Therefor.** (*Perfectionnements aux serrures et aux dispositions aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,308.)

**No. 16,110. Improvements on Modes of Mounting Time Locks.** (*Perfectionnements aux modes de monter les serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,309.)

**No. 16,111. Improvements on Modes of Mounting Time Locks.** (*Perfectionnements aux modes de monter les serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 11th January, 1883; (Extension of Patent No. 15,309.)

**No. 16,112. Machine for Thrashing and Cleaning Grain.** (*Machine à battre et nettoyer les grains.*)

James M. Walker, James Macome, George Keith, Edward Meaton and Manos Vanallan, (assignees of William Giberson,) Belleville, Ont., 12th January, 1883; (Extension of Patent No. 8301.)

**No. 16,113. Improvements on Fanning Mills.** (*Perfectionnements aux tarares-cribleurs.*)

Elizabeth Bennett, (executrix of John Bennett,) Belleville, Ont., 12th January, 1883; (Extension of Patent No. 8296.)

**No. 16,114. Improvements in Steam Generators.** (*Perfectionnements dans les générateurs de vapeur.*)

Charles Tyson, Philadelphia, Penn., U. S., 12th January, 1883; (Extension of Patent No. 8295.)

**No. 16,115. Improvements on Velocipedes.** (*Perfectionnements aux vélocipèdes.*)

John M. Lowry, LaGrange, Ga., U. S., 15th January, 1883; for 5 years.

*Claim.*—1st. The combination, with an axle D having fast wheel D, thimble G and loose wheel C, of the frame A having the bearing boxes E F, and the hand mechanism O M J. 2nd. The combination, with the middle pivot in cross bar S, of the levers P T on opposite sides of said cross bar, the rods V, the arms W, the standard X and the wheel L. 3rd. The driving axle positively secured in the hub of one of the driving wheels and working loosely in the other and being fitted in the frame box F by a thimble G.

**No. 16,116. Improvements in Dynamo-Electric Machines.** (*Perfectionnements aux machines électro-dynamiques.*)

Robert J. Gulcher, Bielitz Biala, Austria, 15th January, 1883; for 15 years.

*Claim.*—The combination of a rotating induction ring wedge-shaped or partially wedge-shaped in transverse section (the apex of the wedge being the inner periphery of the ring) with inducing magnets, the poles or polar extensions of which are of a channel or trough-form, or of a form in section similar to, approximating to that of the letter U, the depth of said poles or polar extensions being equal to, or greater than the depth of said ring, plus the depth of the coils of wire thereon.

**No. 16,117. Improvements on Switch Rods and Couplers.** (*Perfectionnements aux triangles et aux coussinets des aiguilles.*)

John Lovejoy, West Lebanon, N. H., U. S., 15th January, 1883; for 10 years.

*Claim.*—1st. The collar C having lip *e*, bridge E and slot D. 2nd. The combination of the switch rod B grooved to form the solid clutch *a*, and removed rear walls *c*, with the collar C having lip *e*, bridge E and slot D, said collar being fastened by a wedge key K passing through it and the groove of the rod.

**No. 16,118. Improvement on Injectors.** (*Perfectionnement des injecteurs.*)

Paul H. Michaux, Françoise A. Michaux and Amélie C. Raincard, Paris, France, 15th January, 1883; for 5 years.

*Claim.*—1st. The employment of indirect pressure in place of the shock for opening the retaining valve of injectors. 2nd. In an injector the pressure-reservoir or chamber *a* (with or without the air vessel *b*) placed between the end of the injecting nozzle *d* and the retaining valve *f*.

**No. 16,119. Improvements on Drag Saws.** (*Perfectionnements aux scies traînantes.*)

John Fisher, jr., Woodstock, N. B., 15th January, 1883; for 5 years.

*Claim.*—1st. The combination, with bar 10 and bed frame 1, of the rock shaft 15 cranked at both ends, lever 16 and pull and push rod 17 for raising bars 9 and 10 to raise the saw. 2nd. The combination, with the bed frame 1 having framing 24, of the adjustable post 20, chain 22 and elbow lever 23 for clamping the log. 3rd. The combination, with the bed frame having sills 2 and 3, of the spike 1 roller 25 provided with ratchet wheel 27, and lever 28 provided with pawl 29, for feeding the log to the saw. 4th. The guide post 13, in combination with bar 10 having guides 11 and 12, to maintain the direct action of the reciprocating saw bar 9.

**No. 16,120. Improvement on Cattle Ties.** (*Perfectionnement des attaches de bestiaux.*)

Amon Baker, Bingham, (assignee of Cyrus M. Baker, West Water-ville,) Lincoln Baker and Tilson H. Baker, Bingham, Me., U. S., 15th January, 1883; for 5 years.

*Claim.*—The improved cattle tie composed of the U-shaped bow A of spring metal having the closed eye *a* formed upon one of its free ends, and the catch *b* on the other end, in combination with the curved yoke B which is hinged or pivoted to the closed eye and adapted to be engaged with the catch.

**No. 16,121. Improvements on Glass Furnaces.** (*Perfectionnements aux fourneaux de verrerie.*)

Himan Frank, Detroit, Mich., U. S., 15th January, 1883; for 5 years.

*Claim.*—The revolving metal chamber consisting of a metallic shell lined with fire clay or other refractory material and provided with spiral ribs, and one or more working holes for the introduction of the glass blower tools. 2nd. The combination, with a furnace, a stack and a revolving melting chamber, of intermediate detachable collars D D' suspended between the ends of the chamber. 3rd. The collar D and means for elevating or depressing the same, whereby it is made to serve the purpose of a damper.

**No. 16,122. Improvements on Refrigerating and Freezing, and on Apparatus therefor.** (*Perfectionnements dans la méthode de réfrigération et congélation et aux appareils pour cet objet.*)

John Chambers, Te Mata, N. Z., (now in Manchester, Eng.) 15th January, 1883: for 5 years.

*Claim.*—1st. The novel system or method of removing from the air the moisture contained therein by first cooling the air down to a temperature more or less above the freezing point of water, so as to condense and extract the greater part of the said moisture from the air in the form of water and, afterwards, when required further reducing the temperature of the said air below the freezing point and effecting the deposit of the remaining comparatively small quantity of moisture in the form of snow or ice in the refrigerating apparatus. 2nd. The combination of a group or groups of refrigerating pipes or tubes with depositing chambers for the reception of the moisture condensed in or on such pipes or tubes, such depositing chambers being adapted with slides valves or their equivalents, whereby the current of air may be directed through one or more of the groups of refrigerating pipes or tubes and in either direction at pleasure. 3rd. The employment, in air refrigerating apparatus, of one or more groups of U-shaped refrigerating pipes or tubes enclosed in suitable casings, the two ends of each of the said pipes or tubes forming one group being secured in one tube plate in such a manner as to open into the moisture depositing chamber at opposite sides of the division plate in such chamber. 4th. The combination, with air refrigerating and freezing apparatus, of a blowing or exhaust fan or other air compressing or exhausting apparatus.

**No. 16,123. Improvements in Waggon Brake Blocks.** (*Perfectionnements aux sabots des freins de wagons*)

Benjamin F. Haldeman, Allegheny, W. R. Stoughton and James H. Mills, Pittsburg, Penn., U.S., 15th January, 1883: for 15 years.

*Claim.*—The combination of the cap A having the tongue b with the block B, notch c and bolt or set screw i.

**No. 16,124. Improvements on Wrecking and Construction Cars for Railways.** (*Perfectionnements aux chars de secours et de construction des chemins de fer*)

Luther K. Jewett, Fitchburg, Mass., U.S., 15th January, 1883: for 5 years.

*Claim.*—1st. The combination, with the car of a pivoted counterbalanced mast h h' provided with a pivotted boom h', the mast being adapted to be turned down nearly horizontally when the car is to be run on the track. 2nd. The car and the weighted or counterbalanced mast and its turn-table, combined with the pivotted ring a. 3rd. The car and the pivotted ring a to support the mast, combined with the ring timbers to lock the ring a, when the mast is to be retained in upright position. 4th. The car and counterbalanced mast, pivotted ring to support the mast and the step sill, combined with a locking device to engage the lower end of the mast with the step sill. 5th. The car and its attached rack a b and the pivotted ring a, combined with the ring timbers, their worm gears, and the cords or chains connected with the shaft of the worm gears to operate them, and the ring timbers. 6th. The combination, with the car, of the jack screws g pivotted to the corners of the car. 7th. The combination, with the car, of the jack screws g h pivotted thereto. 8th. The combination, with the car and its pivotted jack screws, of the levelling blocks g' adapted to be sustained by the ties. 9th. The car and turn-table and tipping mast, combined with the step sill stop thereon, and means to adjust the step on the step-sill. 10th. The car turn table and tipping mast, combined with the step, step sill and jack screws connected with the car and with the step sill. 11th. In the car, its tipping mast and boom, combined with the track timbers m<sub>1</sub>, post n<sub>2</sub> and jack screw n. 12th. In the car, its tipping mast boom and turn table, combined with the track timbers m<sub>2</sub>, braces l<sub>2</sub> and suitable screws to hold the said braces and car in proper position. 13th. The car body and turn table, and mast and boom, combined with the drum shaft, its gears 17, 18, shaft 7, its gears 6 and 16, the sprocket or chain wheels 10 and 8 and chains 9, and shafts h<sub>3</sub> h<sub>4</sub> provided with gears to operate the shafts 12 and 7. 14th. The two shafts h<sub>3</sub> h<sub>4</sub> and their double set of gears h<sub>1</sub> h<sub>2</sub> 13 of different sizes, combined with the shafts 12 and 7 and their connecting gearing 17, 18 6 and 16, and sprocket or chain wheels and chains, whereby either the gears h<sub>2</sub> or 14 15 may be made operative to turn the drum shaft 12 at a slower or faster speed. 15th. The car body, the armable mast and boom combined with the drum s, rope or chain s, and means to turn the said drum. 16th. The longitudinally movable shaft h<sub>3</sub> and its collar 22, and gears of different diameter combined with the two locking devices 23 24. 17th. The car body combined with the shaft u and drums 28. 18th. The longitudinally movable shaft u and the car body to which it is applied, combined with the drums 28 and cranks 29.

**No. 16,125. Improvements on Grain Binding Machines.** (*Perfectionnements aux moissonneuses-lièuses.*)

William P. Hall, Brockport, N. Y., U.S., 15th January, 1883: for 5 years.

*Claim.*—1st. A combined harvester and grain binder, the series of rakes connected to flexible carriers and means by which the rakes are moved forward of the cutter bar and then downward in a vertical position into the standing grain. 2nd. The combination, with the harvester platform of harvester rakes, of means by which they are moved in front of the cutter bar, then downward and rearward, and means for retaining the rakes in a vertical position during their descent. 3rd. The combination, with the harvester platform, of endless chains having rakes connected therewith, sprocket wheels arranged to conduct the rakes rearward in a line parallel to the harvester platform and forward in an upward inclined direction, then downward into the standing grain, and means for retaining the rakes in a vertical position during the descent. 4th. The combination, with a harvester platform, of a series of harvester rakes and means by which the rakes are moved forward of the cutter bar, and then downward in a vertical position, and means for tripping the rakes as they are moved rearward over the platform. 5th. The combination, with a harvester platform and binder platform, of a series of independent rakes journaled in bearing links attached to endless chains, and devices for automatically tripping the rakes and throwing them out of operative position, and for causing any particular rake of the series to carry the grain rearward to the binding platform. 6th. The combination, with endless chains and rakes journaled at opposite ends in bearing links attached to said chains, of a reel located over the rear end of the harvester platform, the ends of said reel being recessed for the reception of the bearing links in the endless chains. 7th. The combination, with endless chains and rakes journaled at opposite ends in bearing links attached to said chains, of a reel located over the rear end of the harvester platform, said reel having recesses in its ends for the admission of the bearing links of the endless chains, and having the bar adjacent to said recesses located nearer the centre of the reel than the remaining bars. 8th. The combination, with endless chains and rakes, journaled at their opposite ends in bearing links attached to said chains, said rakes being provided with crank arms, of a guideway extending in front of the cutter bar and adapted to retain the crank arms of the rakes therein during their descent, and retain the rakes in a vertical position. 9th. The combination, with endless chains and rakes journaled at their opposite ends in bearing links attached to said chains, of crank arms connected with the rakes, guideways and switch mechanism constructed and arranged to cause the rakes to assume a vertical position in their descent, and, for a short distance, rearward over the forward portion of the harvester platform, and then to turn on their journals and pass over the accumulated cut grain of the harvester platform. 10th. The combination, with the rakes for transferring the grain from the harvester platform to the binder platform, of a switch, a toothed wheel for regulating the position of the switch, and a toothed wheel arranged to be operated by the rakes and close the switch at certain intervals of time. 11th. The combination, with a series of harvester rakes connected to a flexible carrier, of a switch device for actuating the switch by the rakes, and mechanism for setting the parts so that the switch will shift any one of the rakes. 12th. The combination, with endless chains and harvester rakes, journaled in bearing links attached to the chains, of a switch lever, a toothed wheel with which the switch lever engages and serves as a pawl, to prevent its backward rotation, a toothed wheel constructed to be operated by the harvester rakes and a device for setting the parts to cause the switch to close at any point in the travel of the rakes. 13th. The combination, with the switch and spring for holding it open, of a shaft provided at one end with a toothed wheel to be actuated by the rakes and another wheel to be engaged by the switch, a spring actuated from connected with the opposite end of the shaft, a gear wheel mounted on a stationary bearing encircling the shaft, said gear wheel being provided with a stop with which it engages a stop on the drum, and a rack bar for adjusting the position of the gear wheel. 14th. The combination, with the switch, ratchet wheels and drum of the gear wheel, rack bar, hand wheel and spring lever or catch. 15th. The combination, with a switch and a spring bar holding it open, of a sliding bar and connection for operating the same by the foot of the driver, and relieve the switch from the action of the springs. 16th. The combination, with the rakes and endless chains, of link bearings having rounded bearings on their upper and lower sides and formed with tapered ends. 17th. In a combined harvester and grain binder, the combination, with the harvester rakes and stationary guide rail, of the adjustable guide rail action for regulating the travel of the rakes. 18th. The combination, with the harvester rakes and stationary guide rails, of the adjustable guide rail section, a rock shaft connected therewith, an operating lever and a holding plate. 19th. The combination, with the harvester platform and rakes, of a binder platform located in rear of the harvester platform, guide rails supported on the binder platform, endless chains encircling sprocket wheels mounted on said guide rails, rakes journaled in bearing links attached to said chains and arranged to travel transversely to the travel of the harvester rakes, and devices for retaining the binder rakes in a vertical position as they descend and engage the grain, and as they rise and are disengaged from the grain. 20th. The combination, with the driving shaft, of the binding mechanism and a clutch supported on said shaft, of a series of harvester rakes attached to endless carriers, and tripping devices whereby the binding mechanism is automatically put in operation at certain intervals of time by the harvester rakes. 21st. The combination, with the binding arm, of a jointed compressor arm pivotted to the frame, a link pivotted at one end to the compressor arm, and at its other end to the binding arm, and a yielding rod secured at one end to the compressor arm, and at its other end to the frame. 22nd. The combination, with the driving shaft and two-armed crank M provided with the anti-friction rollers n n', of a cam yoke M' provided with the irregular interior trackway, the slide M<sub>2</sub>, link M<sub>3</sub> and binder shaft. 23rd. The combination, with the binding arm and shaft, of a cam yoke, a two-armed crank engaging therewith, and a crank connected with the yoke and attached to the binding arm shaft. 24th. The combination, with the two armed crank cam yoke and slide, of the binding arm shaft provided with a groove and the crank connected therewith provided with a spline to allow of a longitudinal movement of the binding arm shaft. 25th. The combination, with a rotary knot tyer, of a friction holder consisting of two reciprocating jaws, one of said jaws being bent outward in the form of a loop. 26th. The combination, with a rotary knot tyer, of a friction holder, one portion of which is formed with a



cutting edge, and a reciprocating cutter arranged to engage therewith and sever the cord. 27th. The combination, with a main cam gear, a lever actuated thereby, and a bracket connected to a sliding rod pivoted to the cam actuated lever, of the knot tyer and cutting device mounted at one end on said bracket and reciprocated thereby. 28th. The combination, with the reciprocating bracket having an open slot formed in its upper end, and flanges at the side of said slot, of the reciprocating cutter constructed with a screw threaded shank supported in said slot, and adjusting nuts on said shank, and arranged on opposite sides of the bracket and prevented from turning by said flanges. 29th. The combination, with the rotary head V provided with the hook VI, of the reciprocating cylinder V2, sliding shaft V3, and hook X2, the latter being inserted in a groove in the cylinder V2 and attached to the shaft V3, and a spring encircling the shaft. 30th. In a rotary knot tyer, the combination, with the rotary shaft, a sliding cylinder mounted thereon, and a spring encircling the shaft and bearing against the rear end of the sliding cylinder, of a knotting hook provided with a hooked shank for securing the shaft and cylinder together. 31st. The combination, with the cylinder provided with a deep slot, of the tying hook having a spring attached thereto and provided with bearing flanges for supporting the shank of the hook, in the outer portion of the groove or slot. 32nd. The combination, with the cylinder provided with a recessed end, of the tying hook made semi-circular in form and adapted to fit in said recess. 33rd. A clutch consisting of a drum or barrel loosely mounted on the shaft, in combination with a sleeve secured to the shaft, a disk loosely mounted on said sleeve and a pawl pivoted to an arm on the sleeve, the free end of the pawl being provided with a pin or stud that engages the inclined sides of an opening in the disk. 34th. The combination, with a clutch drum or barrel loosely mounted on the shaft and provided with internal V shaped notches, of a sleeve secured to the shaft, said sleeve having an arm provided with a circular groove, a pawl constructed with a circular bearing that fits in said groove, a disk loosely mounted on the sleeve, a spring for imparting a part rotary movement to the disk, and a stud on the pawl that extends through an irregular shaped opening in the disk. 35th. The combination, with the drum or barrel sleeve, pawl, disk and spring, of the projection on the disk and the clutch lever. 36th. The combination, with the sleeve, pawl and disk, the latter provided with a series of holes, of a spiral spring encircling the sleeve and secured at one end in one of said holes, and at the other to the sleeve or pin connecting the sleeve and shaft. 37th. A clutch consisting essentially of a loosely revolving barrel or drum, a sleeve secured to the shaft, a disk loosely mounted on the sleeve, a pawl arranged to lock the sleeve to the drum, a spring for imparting a part rotary movement to the disk, and a clutch lever for engaging the disk and arresting its movements.

**No. 16,126. Improvements on Stone Dressing Hammers.** (*Perfectionnements aux marteaux pour rabattre les meules.*)

Alexander M. D. Reid, Belmont, Mass., U. S., 16th January, 1883; (Extension of Patent No. 8330.)

**No. 16,127. Improvements in Scythe Fasteners.** (*Perfectionnements aux manches des faux.*)

The Vermont Scythe Company, (assignee of Miles Smith,) Springfield, Vt., U. S., 16th January, 1883; (Extension of Patent No. 8355.)

**No. 16,128. Improvements on Bricks.** (*Perfectionnements aux briques.*)

Pierre Lefebvre and Honoré Binetto, Montréal, Que., 16th January, 1883; for 5 years.

*Résumé.*—Une brique composée des parties principales A B C, dont la partie centrale forme saillie sur les deux autres.

**No. 16,129. Improvement on Paper Boxes and Machines for the Manufacture of the same.** (*Perfectionnement aux boîtes en papier et aux machines pour les fabriquer.*)

William H. H. Rogers, Brooklyn, N. Y., (assignee of Herbert Ludlow, Brooklyn, N. Y., and Albert E. Elmer, Springfield, Mass.,) U. S., 16th January, 1883; for 5 years.

*Claim.*—1st. The combination, with the compressing-head D, of the cam wheels A having the gutters *a a* with successively increasing swells *f*, and the bars E E having end studs or rollers *d d* fitting said gutters, whereby the compression is made to give successively harder blows. 2nd. The combination, with the guttered cam-wheels A having successively increasing swells, and the bars E E having end studs, of an intermittent compressor D having elastic-facing strip G in a recess *e*, with a cross-piece F having rib *l*, whereby the material is scored by two successive blows upon the rib without cut or injury. 3rd. The combination, with the compressor and strip F having rib *l*, of the table H having the hinged leaf K supported on springs to give a yielding support to the material while it is being scored. 4th. A folding box blank formed with the flaps P and O, the flap P being cut to form the locking heads *p p*, and the flap O being formed with the slot *s*. 5th. A blank for a folding box meant to form the folds *m m n n t t* and *u u* and cut to form the flaps M N O and P, the flap P being centrally slotted and formed with the locking heads *p p*, and the flap O cut to form the slot *s*.

**No. 16,130. Improvements in Railway Station Indicators.** (*Perfectionnements aux indicateurs des stations de chemins de fer.*)

Oliver H. Green, Somerville, Mass., (assignee of Silas J. Morse, Shelburne, N. H.,) U. S., 16th January, 1882; for 5 years.

*Claim.*—In connection with band L, the pair of rollers G H which are provided with springs that force them apart, and gears that enable them to revolve in unison in either direction.

**No. 16,131. Improvements on Compounds for Preserving Eggs.** (*Perfectionnements aux composés pour conserver les œufs.*)

Grovenor A. Curtice, Hopkinton, N. H., U. S., 17th January, 1883; for 5 years.

*Claim.*—The described composition of matter to be used for preserving eggs composed of lime, chloride of sodium, nitrate of potash, carbonate of magnesia, glycerine and water.

**No. 16,132. Improvements in Tackle Blocks.** (*Perfectionnements aux moufles des poulans.*)

Joseph W. Norcross, Lockport, N. Y., U. S., 17th January, 1883; for 5 years.

*Claim.*—1st. The combination of the inner metallic straps, the outer metallic frames or straps, the tubular projections extending from the outer frames or straps through openings in the end of the inner straps, and the keys which extend through the tubular projections. 2nd. The combination of the inner metallic straps, the outer metallic frames or straps, the tubular projections extending from the outer metallic frames or straps through openings in the ends of the inner straps, the H-shaped distance piece and the keys which extend through the tubular projections and through the H-shaped distance piece. 3rd. The combination, with the inner and outer straps, of the lubricating cup cast or otherwise attached to the inner surface of the inner strap and covered at its open end by the fixed outer strap, the latter having a perforation communicating with the cup which is closed by a removable plug. 4th. The cup *f* connected with the inner surface of the inner strap E and projecting through the wooden check-piece F, in combination with the fixed outer strap D forming a cover to the cup and confining the wooden check-piece in place. 5th. The combination of the metallic rim A, the wooden disks fitting the interior of said rim, the pins *m m* projecting from the rim, the straps *k* extending diametrically across the disks and provided with holes to engage with the pins *m m*, the hub *a* extending from the first strap, through the wooden disks, and provided with a shoulder, which bears the second strap, the pins *o o* projecting from the hub, and the holes in the second strap to engage with said pins.

**No. 16,133. Improvement in Flour Bolts.** (*Perfectionnements aux bluteaux.*)

Charles Schacht, Moline, Ill., U. S., 17th January, 1883; for 5 years.

*Claim.*—The combination, with a reel bolt, of one or more rods suspended within the bolting chest, and a series of flexible loops suspended from said rod or rods, to adapt them on the rotation of the reel bolt, to drag upon or against the bolting cloth.

**No. 16,134. Improvements on Journal and other Bearings.** (*Perfectionnements aux coussinets des tourillons et autres.*)

Ferdinand E. Canda, New York, N. Y., U. S., 17th January, 1883; for 5 years.

*Claim.*—1st. A journal or other bearing composed of mercury and other suitable metals amalgamated therewith. 2nd. A journal or other bearing composed of mercury and other suitable metals amalgamated therewith, and a lubricating substance mechanically combined with the amalgam.

**No. 16,135. Improvements in Lubricators.** (*Perfectionnements aux boîtes à graisse.*)

Ross J. Hoffman, Binghamton, N. Y., U. S., 17th January, 1883; for 5 years.

*Claim.*—1st. In connection with the boiler and steam cylinder of the class described, an automatic lubricator pipe cup connected to a valve chamber above the valve thereof, a pipe connecting said valve chamber above the valve with the interior of the boiler, a valve having ports constantly open for the passage of a small escape of the steam, means for giving a constant pressure beneath the said valve, and a steam pipe connecting the valve chamber below the valve to the interior of the cylinder. 2nd. The combination of the lubricator cup E, valve mechanism D having valve end ports *h h* constantly open to some extent, variable mechanism for pressing said valve upward, pipe *c* leading to the interior of the dome of boiler, and pipe *a* leading to connection with the cylinder. 3rd. In connection with a boiler and cylinder of a locomotive, a steam supply pipe leading from the dome and connected with the cylinders, a suitable automatic lubricator, valve chamber and valve between the lubricator and cylinders, ports allowing a constant flow of steam in limited quantity from the valve to the cylinders, and means whereby the back pressure of the steam in the cylinders may lift the valve and increase the flow of steam. 4th. In combination with the boiler and cylinder of a locomotive, a lubricator cup E and a valve mechanism D consisting of a chamber having pipe connections 1 2 3, and valve *f* having telescoping stems *l* and *m*, collars 4 and 5, spring K and ports *h h*, the said valve mechanisms and lubricator being connected to each other to the steam cylinder and to the boiler by pipe connections, whereby the steam from the boiler is constantly supplied in limited quantity to the cylinder and the supply of steam varied.

**No. 16,136. Improvement on Nut Locks.** (*Perfectionnement des arrête-écrous.*)

Charles E. Bell, Greenfield, Ohio, U. S., 17th January, 1883; for 5 years.

*Claim.*—The combination of a bolt having a central bore entirely through it and reverse threads on the inside and outside of its lower end, the nut *d* having the reversed threads *e f*, and the locking screw *h* having a thread *p* corresponding to the internal thread of the screw bolt and the nut thread *l*, whereby the nut is prevented from turning in either direction until the locking bolt is withdrawn.

**No. 16,137. Improvements in Whip-Holders.***(Perfectionnements aux porte-fouets.)*

Rudolph Peters and Walter J. Switzenburg, Hamilton, Ont., 17th January, 1883; for 5 years.

*Claim.*—1st. A whip-holder composed of the two shear blades A A. 2nd. The blade A A pivoted by a screw B to a block ring or other equivalent device to hold it and provided with projections *a*, operating spring D, plus F F for the purpose of holding and hanging a whip in a vertical position.

**No. 16,138. Improvement on Bottle Stoppers.***(Perfectionnements aux bouchons des bouteilles.)*

Nathan Thompson, Brooklyn, N. Y., U. S., 17th January, 1883; for 5 years.

*Claim.*—1st. The combination, with a stopper, of a bale or handle *c* by which the stopper *c* is to be removed and held, and the pivot ends *ct*, which are used to lock the said stopper when the bale or handle is turned down, and to unlock the said stopper when the bale or handle is turned up. 2nd. The combination, with a stopper, of a bale or handle *c*, whose pivot ends *ct* are caused to lock the said stopper when the bale or handle is turned down, and to unlock the said stopper when the bale or handle is turned up, by being moved to and from each other within sockets formed in capsule *a* and under a flange or into a groove *bt* round the bottle neck. 3rd. The combination, with a stopper, of a bale or handle *c* whose pivot ends *ct* are caused automatically to lock the stopper in position on the bottle or other article by simply pressing the same into the bottle neck, the pivot ends being first forced outward by the conical end of the bottle neck and afterwards springing by the elasticity of the bale or handle into a groove or under a flange on the bottle neck. 4th. The use, in combination with stoppers, of projections *a* acting against the sides of the bale or handle *c*, when the latter is being raised, and thereby forcing the pivot ends *ct* thereof outwards, so as to disconnect the stopper from the bottle or other article.

**No. 16,139. Improvements on Halters.***(Perfectionnements aux licous.)*

Edward Barnard, Rome, N. Y., U. S., 17th January, 1883; for 5 years.

*Claim.*—1st. A corner piece provided with the vertical slots at each end, the horizontal slot and the inclined slot, both being located between the vertical slots. 2nd. A corner piece provided with vertical slots at each end, a horizontal and an inclined slot located between the vertical slots and having pins projecting from one side thereof. 3rd. The combination, with a single strap, of corner pieces located at the angle formed at the junction of the head and nose portions of the halter, said corner pieces being provided with vertical slots at each end, and horizontal and inclined slots located beneath the vertical slots.

**No. 16,140. Improvements in Shoemakers' Jacks.***(Perfectionnements aux chevilles des cordonniers.)*

Henry P. Roberts, Jamestown, N. Y., U. S., 18th January, 1883; for 5 years.

*Claim.*—1st. The combination of the swivel plate A, swivel B having perforated ears *a* and the loose bearing plate *h* for such swivel, with the arms C, set screws L M and last holding devices, the whole adapted to allow oscillatory adjustment in two directions. 2nd. The adjustable arm C and plate D having flange and ratchet *b*, the curved arm G carrying adjustable toe pad I, and central pivot *k*, combined with the arm F carrying the heel pin *d* and with the double pawl H. 3rd. The heel arm J pivoted to the arm F and having a perforated ear *e*, and heel pin *d* combined with the spring K, arm F, toe pad I and the swivel arm C.

**No. 16,141. Improvements in Water Meters.***(Perfectionnements aux hydromètres.)*

Parker Wells, Lynn, Mass., U. S., 18th January, 1883; for 5 years.

*Claim.*—1st. A water meter having cross cylinders and external chutes to lead the water under force to reciprocating cross pistons, and from said pistons to the service pipes after measurement, the pistons acting alternately and automatically without the aid of internal valves or other moving mechanism. 2nd. A water meter case having internally projecting rings covering the area of the stroke of the piston heads, said case being formed of cross cylinders adapted to receive alternately acting pistons and to be formed into a true cylinder by turning, boxing, or otherwise. 3rd. The main piston and auxiliary piston, both being buoyed up against friction by confined air and operating at approximately right angles with each other. 4th. A main piston and auxiliary piston operating approximately at right angles with each other, the one being locked while the other is moving. 5th. A lift-valve adapted to allow the water in the house pipes to gravitate into the sewer as the water pressure is cut off. 6th. The main piston G having lugs *g* upon the plate *g*, combined with the auxiliary piston H having the recesses *h* adapted to serve with the cross cylinders A B. 7th. The receiving chamber C having ports W W<sub>1</sub> W<sub>2</sub> W<sub>3</sub>, combined with the pistons G H having connecting and shifting recesses and with the cross cylinders A B. 8th. The removable cap D having exit D<sub>1</sub>, aperture *d* and inlet E, combined with the case A B having central aperture, and with pistons and ports. 9th. The cap D having pistons D<sub>1</sub> and E, combined with the valve and case A B C D. 10th. The cross cylinders A B having chamber C, ports W W<sub>1</sub> etc., and chutes *z*, etc., combined with the pistons and chamber cap D. 11th. The piston G having groove K, recess K<sub>1</sub> and connected barrels, and the auxiliary piston H, with the heads *h*<sub>2</sub> having annular recesses *h*<sub>3</sub> combined with the ports in the cross cylinders A B. 12th. The recesses J in the cylinder heads, and the cross bars J adapted to limit and control the stroke of the pistons G H.

**No. 16,142. Improvement on Rotary Engines.***(Perfectionnements aux machines rotatoires.)*

George W. Wade and Joshua M. Wardell, Cadillac, Mich., U. S., 18th January, 1883; for 5 years.

*Claim.*—1st. The combination of the cut off valves K or K<sub>1</sub> with the revolving cylinder B having a central steam chamber B<sub>1</sub>, radially sliding pistons J and ports or inlets *b*, for passage of the steam through the cylinder to act upon the sides or faces of the pistons and the ellipsoidal case A. 2nd. The combination, with the revolving cylinder B having a central steam chamber B<sub>1</sub> and ports or inlets *b*, of the cut-off valves K or K<sub>1</sub> and their attached shaft *e* having its axis coincident with that of the cylinder. 3rd. In a rotary engine having a hollow revolving cylinder fitted with radially sliding pistons for operation within a fixed case of varying diameters and having duplicate exhaust ports *m n* on opposite sides of it, the combination of the reversing valves *m m* with the revolving cylinder B having a central steam chamber B<sub>1</sub>, ports or inlets *b*, radial slots *b* for the pistons, recesses, or chambers *g g* for the valves M M on opposite sides of the slots, and outwardly diverging passages *h h* from said chambers. 4th. The combination, with the revolving ring *k*, clutch rod *m*, lever *l* and rods *i*, with the reversing valves M M, the revolving heads F G and their attached revolving cylinder B having radial piston slots *b*, inlets *bt*, reversing valve chamber *g g* on opposite sides of said slots, and outwardly diverging ports or passages from said chambers *g g*.

**No. 16,143. Improvements on Sash Fasteners.***(Perfectionnements aux arrête-croisées.)*

Richard N. Sibley, Stephen Sibley, Benjamin Sibley and Aaron Sibley, Stewiacke, N. S., 18th January, 1883; for 5 years.

*Claim.*—1st. The sash fastening C having a flat pear-shaped cam notched diagonally at the small end and provided with a hole eccentric to the curvature of the larger end, and on that side terminating in the point formed by the diagonal notch. 2nd. In combination with a window and sash, a cam fastener rounded at one end and notched at the other end, and provided with a screw-pivot D eccentric to the rounded end nearest to the longest side.

**No. 16,144. Improvements on Mechanical Musical Instruments.***(Perfectionnements aux instruments de musique mécaniques.)*

Alonzo Durkee, New York, N. Y., U. S., 18th January, 1883; for 5 years.

*Claim.*—1st. In a wind musical instrument, the combination with a perforated music sheet and jacks, levers, or key moving fingers arranged on one side of it, and push pins arranged on the other side thereof, of a perforated block embracing said sheet and movable laterally, whereby a lateral movement of said music sheet is imparted to the said push pins. 2nd. The combination, with a perforated music sheet or strip arranged between jacks, levers, or key moving rods on one side, and push pins on the other side, of a laterally movable box, or frame holding said levers, jacks or rods and embracing the edge of said sheet, or strip, whereby the relative lateral position of said jacks or rods and music sheet are preserved. 3rd. In a musical instrument adapted to be played by means of a moving perforated music sheet which controls the operation of valves to its reeds, pipes, or other sounding devices, the combination, with the jacks or levers E pivoted in pivoted frame E<sub>1</sub>, of the movable perforated block C, push pins B and connected levers and wind regulating valve F G H and I respectively. 4th. The combination, with air pressure tubes N, of the bellows tube J, air passages L and pipe connecting tubes K, of the escape valve or pallet L having a spring M and arranged within said pressure chamber against the mouth of the tubes N. 5th. In a wind musical instrument constructed and adapted to be operated mechanically or manually, the combination, with the air pressure chamber K and escape tube J, of the bellows valve or pallet L provided with communicating supply and exhaust passages L<sub>1</sub>.

**No. 16,145. Improvements on Pillow Sham Holders.***(Perfectionnements aux porte-taie oreillers.)*

John A. Wanless, Toledo, Ohio, U. S., 18th January, 1883; for 5 years.

*Claim.*—1st. A pillow sham holder consisting of a frame D, a rod C and means for locking the rod and frame in position, when partially rotated. 2nd. The combination of the brackets A B, the rod C and the frame D, said rod being provided with journals, and said brackets being constructed and parts arranged and operating as described. 3rd. The rod C with the frame D having a removable and a locking connection with the brackets A B.

**No. 16,146. Improvements on Fare Boxes.***(Perfectionnements aux trancs des wagons.)*

Walter S. Wales, Henry R. Phelps and Helen R. Rockwell, (assignees of George Beadle), Syracuse N. Y., U. S., 18th January, 1883; (Extension of Patent No. 8327.)

**No. 16,147. Improvement on Paint.***(Perfectionnement de la peinture.)*

Laurita H. Brocket, (assignee of Atwater E. Brocket), Branford, Conn., U. S., 19th January, 1883; for 15 years.

*Claim.*—The use for a paint made of pine tar or stockholm tar, caoutchouc gum, gutta percha, gum shellac, gum copal or copal (oil) varnish and linseed oil or their equivalents.

**No. 16,148. Sap Pan Elevator and Car.***(Élévateur-charriot pour les casseroles à sucre.)*

Lorenzo Magoon, (executor of Ede W. Lee), Stanstead, Que., 19th January, 1883; (Extension of Patent No. 2332.)

**No. 16,149. Improvements in Combined Sole Buffing and Cleaning and Edge Setting Machines.** (*Perfectionnements aux machines combinées pour polir et nettoyer les semelles, et finir les tranches des semelles des chaussures.*)

Enos Patten, (Co-inventor with Thomas Davey.) Lynn, Mass., U. S., 19th January, 1883; for 5 years.

*Claim.*—In combination, the suspended shaft A provided with pulleys *a* at, pivoted frames B and C, shaft D carrying pulleys *e* and *f*, frame E, arm E1, arm F axially pivoted thereto, and head G carrying shaft pulley and tools.

**No. 16,150. Improvements in Wind Instruments.** (*Perfectionnements dans les instruments à vent.*)

Moses Harris, (assignee of Elias P. Needham and Charles A. Needham.) New York, N. Y., U. S., 20th January, 1883; (Extension of Patent No. 8308.)

**No. 16,151. Improvements in Fanning Mills.** (*Perfectionnements dans les tarares-criblures.*)

Anthony Kline, Bond Head, Ont., 20th January, 1883; (Extension of Patent No. 8383.)

**No. 16,152. Improvements on Wheels.**

(*Perfectionnements aux roues.*)

Charles Dranly, Carrizo Springs, Texas, U. S., 20th January, 1883; for 5 years.

*Claim.*—1st. The combination, with the screw threaded tube A provided with an annular shoulder C, of the screw threaded sleeve D having its inner end flared coincident with the shoulder C and closed at its outer end, said inclosure being cast or formed integral with the sleeve. 2nd. The combination, with the tube A provided with an annular shoulder C, of the spokes I, the cushion layer E, the metal layer F on the same, and the nut D. 3rd. The combination, with the tube A provided with an annular shoulder C, of the spokes I, the cushion layer E, the metal layer F, the flat cushion rings G, the flat metal rings H and the nut D. 4th. The combination, with the tube A provided with an annular shoulder C, of the spokes I, the cushion layer E, the metal layer F, the flat cushion rings G and the flat metal rings H provided with an external annular ridge J. 5th. The combination, with the tube A provided with an annular shoulder C and having its outer end closed, of the spokes I and the nut D. 6th. A rim made of sheet metal folded to form a head of double thickness, and a web of double thickness. 7th. The combination, with the hub and spokes, of a rim made of sheet metal folded to form a head of double thickness, and a web of double thickness, and sockets in this web for the outer ends of the spokes.

**No. 16,153. Improvements on Water Jacket Smoke Boxes.** (*Perfectionnements aux boîtes à fumée avec chemise à eau.*)

Edward Huber, Marion, Ohio, U. S., 20th January, 1883; for 10 years.

*Claim.*—The combination of the boiler shells A, B, the flue sheet *c* and the cylindrical wall K, with the bulging jacket L rivetted to the outer shell B and to the said wall K, the latter being rivetted to the flue sheet, the whole forming a space *i* communicating directly with, and being a part of the space G.

**No. 16,154. Improvements on Knit Caps.**

(*Perfectionnements aux bonnets en tricot.*)

Curtis F. Hoag, Kinderhook, N. Y., U. S., 20th January, 1883; for 5 years.

*Claim.*—1st. A knitted cap section having selvages along its sides and tapering top. 2nd. A knitted cap having its top formed of selvaged tapering pieces. 3rd. A cap body formed of sections, each section having substantially parallel sides and a tapering end, with selvages formed on said sides and end.

**No. 16,155. Improvements on Car Couplings.**

(*Perfectionnement des accouplages des chars.*)

Nicholas L. Davis and John H. McIntyre, Rutland, Vt., U. S., 20th January, 1883; for 5 years.

*Claim.*—1st. The combination of the two bifurcated draw-heads A A having respectively the solid projections *a a* and the chambered projections *a2 a3*, with their corresponding bumper surfaces, the long pivoted and laterally vibrating spring coupling hooks B B located and acting within the recesses of the chambered projections *a2 a3* and the vertical rods D D having tumblers J J. 2nd. The combination of the vertically sliding and horizontally vibrating tumbler-rod D with the vibrating hook B, and the draw head A provided with the oblong slot *n*, space *o*, stop *m* and shoulders K K1. 3rd. The tumbler rods D D provided with tumblers J J and upper extensions *e e*, in combination with the vertically sliding and laterally vibrating spring hooks B B and with the draw-heads A A. 4th. In an automatic car-coupling device, the combination of the swinging-bar or lever E pivoted near its centre, with the lever bar H, rods I and tumbler-rod D. 5th. In an automatic car-coupling, the wheel rod F, wheel G, rods I, lever-bar H and tumbler-rod D.

**No. 16,156. Improvements on Waggon.**

(*Perfectionnements aux wagons.*)

Silas Van Patten, Danesburg, N. Y., U. S., 20th January, 1883; for 5 years.

*Claim.*—1st. The combination, with the link S hinged to axle of the extension tongue block R recessed on the upper side in the form of a double hook and having the upper side of its ends bevelled, whereby, the link will pass into said recess automatically from either direction. 2nd. The combination, with the link S hinged to axle and the bolt K connecting the tongue and hounds of a lever T having a front end slot for the reception of the link, and fulcrumed at its middle offset to said bolt. 3rd. The combination, with the hinged link S, of the slotted lever T, the connecting bars U W and the connecting lever V, whereby the said hinged link can be readily raised to unlock the extension tongue. 4th. The combination, with the tongue J and the extension tongue M of the plate L, the keeper P and the dovetailed plate Q, whereby the said extension tongue is kept in place while moving forward and backward. 5th. The combination, with the suspended brake bar Y, the extension tongue M and the wagon gearing, of the rod *a* and lever *b*, whereby the brake will be applied by the rearward movement of the said extension tongue. 6th. The combination, with the brake bar Y, the extension tongue M and the wagon gearing, of the derrick *e f g* and the hoisting rope *h*, whereby the forward and backward movements of the extension tongue will raise and lower the derrick load and apply the brake.

**No. 16,157. Improvements in Hay Rakes.**

(*Perfectionnements aux râteliers à foin.*)

The Massey Manufacturing Company, (assignee of Charles A. Massey, Matthew Garvin and William Johnston.) Newcastle, Ont., 20th January, 1883; (extension of Patent No. 8320.)

**No. 16,158. Improvements on Rock Drills.**

(*Perfectionnements aux forets de mine.*)

Henry C. Sergeant, New York N. Y., U. S., 20th January, 1883; (Extension of Patent No. 8357.)

**No. 16,159. Improvements on Rock Drills.**

(*Perfectionnements aux forets de mine.*)

Henry C. Sergeant, New York, N. Y., U. S., 22nd January, 1883; (Extension of Patent No. 8357.)

**No. 16,160. Improvements in Safety Reliefs.**

(*Perfectionnement aux bombes fusibles.*)

George A. Prowse, Montreal, Que., 22nd January, 1883; for 5 years.

*Claim.*—1st. The combination of the thimble A, plug D having openings E, and plate G. 2nd. The combination, with a vessel subjected to pressure, of a plate or surface of less strength than what is required to burst the said vessel, said plate being supported so that, when it has given way, it may be removed and replaced by a new one.

**No. 16,161. Improvements in Draft Equalizers.** (*Perfectionnements aux régulateurs du tirage des fardeaux.*)

Jacob Sebastian, New York, N. Y., U. S., 23rd January, 1882; for 5 years.

*Claim.*—1st. In a draft equalizer for vehicles, the combination, with the front axle having a spring support at its rear side, of a horizontally sliding draft bar connected at its forward portion with the front axle, and having its rear end extended directly through the said front axle and acting on the rear end portion of the spring, whereby the forward thrusts of the draft bar are relieved by the spring and sustained by the front axle. 2nd. The horizontally sliding draft bar having its rear end extended directly through the front axle of the vehicle, and provided at its forward end with lateral arms connected with the axle, in combination with a spring arranged directly in rear of front axle, and supported thereby and acting on the rearward extension of the draft bar. 3rd. The combination of the axle, the sliding draft bar having its forward end connected to the axle by means of chains, and having its rear end bifurcated and arranged to extend through the axle, the tubular India rubber spring fitted on a core projecting from the axle and the cross head, whereby the draft bar acts on the spring.

**No. 16,162. Improvements on Heel Nailing Machines.** (*Perfectionnements aux machines à cheviller les talons.*)

Henry A. Henderson, Lynn, Mass., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The reciprocating head having the awls, drivers and top lift spanker arranged in relation to each other to be brought successively into operative position. 2nd. The combination of the revolving head A, the notched disk *a* and the horizontal spring bolt *a3*. 3rd. The combination of the spanker block G and top lift holding devices, for holding the top lift thereon or thereto. 4th. The combination of the block G, the top lift grasping arms and means for holding the arms to the block and for moving them to and from each other. 5th. A top lift spanker, or heel compressor, having its operative surface made slightly concave, or shaped to depress the surface of the heel from or near the centre to the edge. 6th. The combination of the post or bracket *e* and the table *e2*. 7th. The combination of the post *e* having the spring holding recess *e3*, with the table *e2* and spring *e1*. 8th. The combination of the table *e2* having the recess *e3*, with the templet plate *e4* having the lug or stop *e5*, which enters said recess. 9th. A solid templet plate having a templet at one end and the lugs or stops *e8 e12*. 10th. The solid nail-holder plate having nail-holder C2 at one end. 11th. A solid nail-holder plate having a nail-holder C2 at one end and the slot C16. 12th. The nail-holder C2 or perforated block having the perforated plate *e4* adapted to be partially revolved in opening and closing the holes in the nail-holder. 13th. The combination of the templet plate C2, the nail-holder C2 adapted to slide upon the templet plate, and the interposed plate *e4* adapted to be moved automatically upon the outward movement of the nail-holder over

the templet, to open the holes in the nail-holder and to be moved in an opposite direction upon the reverse movement of the nail-holder to close the holes. 14th. The combination of the heel support of the boot or shoe, with the side guide plates *c*. 15th. Centering devices for controlling the position of the boot or shoe, consisting of the two yielding plates *c*, the guiding edges of which are adapted to enter the space between the out sole and upper leather of the boot or shoe. 16th. In an organized heel nailing machine, the combination of a jack for presenting the boot or shoe, a templet adapted to be moved horizontally into position and to be moved vertically upon the heel blank, and a gang or group of awls and a gang or group of drivers or either, and means for reciprocating them or it. 17th. The combination of a jack for presenting the boot or shoe, a templet and nail-holder having the movement indicated and adapted to be used in connection with a reciprocating gang of awls and drivers or either. 18th. The combination of a jack for holding and presenting the work, with devices for centering the boot or shoe thereon. 19th. The combination of a jack for presenting the work to the heel nailing mechanism with devices for locating or centering the heel blank upon the work. 20th. The combination of a reciprocating gang of drivers, a templet and nail-holder having the movement specified, a jack for presenting the work to the driving mechanism, and centering devices for locating the work and heel blank. 21st. The combination of the head supporting the awls, drivers and top lift-holder or either of them, and means for reciprocating it. 22nd. The combination of the head supporting the awls drivers and top lift holder, or either of them, and means for reciprocating the same, and automatic stop motion mechanism adapted to automatically stop the machine at the end of each revolution. 23rd. The shoe and blank centering devices or either of them, having the adjustments specified or either of them. 24th. The combination of the heel support, the vertically yielding work and heel blank guides or either of them, and the vertically movable compressing templet. 25th. The combination of the heel support, the templet and the interposed top lift holder.

### No. 16,163. Improvements in Cork Drawers. (*Perfectionnements aux tire-bouchons.*)

William Addison, Hamilton, Ont., 23rd January, 1883; for 5 years.

*Claim.*—1st. The cup A to rest on the neck of the bottle and in which the screw C works, the lever D working on the bearing E, by which the cork is drawn up out of the bottle on to the shank B, by the direct action of the screw C. 2nd. The rubber washer or cushion G around the bottom of the cup A.

### No. 16,164. Improvements in Car Heaters. (*Perfectionnements aux calorifères des chars.*)

William Martin, Tidionte, Penn., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. A tank or reservoir secured to, and partially surrounding the engine boiler for holding or collecting the steam supply by water pipes located in the top of the furnace. 2nd. The tank or reservoir A provided with extensions *a*, which partially surround the boiler of the locomotive, in combination with pipes BB located in the upper portion of the furnace connecting the said extensions *a* and forming a continuous conduit for the generation and passage of steam to the reservoir. 3rd. The combination of the tank or reservoir A mounted on, and made a part of the engine boiler, with the pipes B and D. 4th. The combination of the tank or reservoir A for collecting and holding the steam secured to, and made a part of the engine, with the pipes B D E and universal coupling F.

### No. 16,165. Improvements in Car-Couplings. (*Perfectionnements aux accouplages des chars.*)

Nathan M. Hale and Francis M. Samson, Grand View, Texas, U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The combination of the crank *m* and latch *p* with the vertically adjustable draw bar. 2nd. The combination, with the vertically adjustable draw bar *c*, of a pin-lifting lever *g* having a hook *q*, and an adjustable connecting chain. 3rd. The combination of the pin-lifting lever *g* and hook *q* with the coupling pin *e*. 4th. The hook *q* in combination with the pin-lifting lever *g* and coupling pin, and pivoted on a stud *t* arranged to form a stop to the lever. 5th. The combination, with the coupling pin *e*, of the arm *n*, the rod *o*, the clip *r*, the rod *l*, and the lever *a*. 6th. The coupling link made of two parts *h* pivoted together and sustained in position by a spring or springs *i*.

### No. 16,166. Improvements on Electric Arc Lamps. (*Perfectionnements aux lampes électriques en arc.*)

Norman McCarty, Brooklyn, N. Y., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. In protector for electric lamps composed of the lower, or globe section A and the upper close section B constructed to close the upper opening in and form a continuation of the lower section, combined with the upper and lower carbon holders, the said upper section inclosing the upper carbon holder. 2nd. In an electric lamp, the two carbon holders, one or both adjustable, and the mechanism for adjusting said holder or holders, all arranged in a portion of the lamp below the globe holder, said portion with the said carbon holders and mechanism made detachable from the globe holder, combined with mechanism, whereby the circuit is completely broken in the act of disengaging the said mechanism from the globe holder and the circuit closed in replacing the said mechanism. 3rd. The two carbon holders, one or both adjustable, and the mechanism in connection with the principal magnet or adjusting said holder or holders, all arranged in a portion of the lamp below the globe holder, said portion with said carbon holders and mechanism made detachable from the globe holder, combined with a shunt magnet, the armature of which is in magnetic connection with the armature of the principal magnet, so that the power of one tends to overcome the power of the other and

also arranged in the portion of the lamp below the globe holder. 4th. The combination of the bell crank lever L M, the one arm M hung to the armature and the two jaws *r* hung to the other arm of the lever, said jaws arranged to grasp the carbon upon opposite sides. 5th. The combination of the bell crank lever L M, the one arm M hung to the armature and the two jaws *r* hung to the other arm of the lever, said jaws arranged to grasp the carbon upon opposite sides, and said jaw *t* made adjustable relatively to the jaw *r*. 6th. The combination of the armature N arranged parallel with the axis of the magnet P hinged to one pole R at one end, and its meeting surface with the pole R at the other end on an angle to the axis of the magnet, and the bell crank lever L M carrying the clutch *a* with the rod I carrying the adjustable carbon of an electric lamp. 7th. The combination of the armature N arranged parallel with the axis of the magnet P hinged to one pole R at one end, its meeting surface with the pole R at the other end on an angle to the axis of the magnet, the bell crank lever L M carrying the clutch *a* with the rod I carrying the adjustable carbon of an electric lamp.

### No. 16,167. Improvements in Automatic Harmonica. (*Perfectionnements aux harmonicas mécaniques.*)

Robert W. Pain, New York, N. Y., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. An automatic harmonica consisting of air pump, or bellows secured over the air ducts of an ordinary harmonica, which is supported in a suitable frame carrying a perforated music sheet. 2nd. The combination, with a reed plate fixed in a suitable air chamber and carrying reeds rivetted thereto, said chamber and plates being permanently fixed in supporting standards, which latter also support drums carrying a perforated music sheet, of a removable bellows and pump set on or over said reed plate. 3rd. The combination, with the harmonica A, of the open frame F secured thereto by dowels *f* and having strips *g*, and the double bellows or pump H firmly secured to the top of said frame.

### No. 16,168. Improvement on Distilling and Condensing Apparatus. (*Perfectionnement des appareils de distillation et de condensation.*)

Michael D. Peterman and Mathew Taylor, Penn Tshp, Penn., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. An upright still suspended in an upright water chamber over a fire, in combination with a condenser and water pipe from the condenser to the water chamber. 2nd. The combination of upright still and water chamber, a condenser, a water pipe from the condenser to the water chamber, and an injector. 3rd. In combination with the condensing chamber of a still, a coiled worm pipe polygonal in cross section having one of its sides in contact with the wall of the condensing chamber.

### No. 16,169. Mechanism for Preventing the Lapping of Belts on Shafting. (*Mechanisme pour empêcher de chevaucher les courroies sur les arbres de couche.*)

William Hayes, Jr., Fall River, Mass., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The sleeve B composed of the two sections C D united by the screws *d* and provided with the chamber E for receiving the hub of the pulley K, in combination with the shaft A and a retaining collet. 2nd. The improved clutch collet described, the same consisting of the sections L M dovetailed together and adapted to be secured to a shaft by the screw N. 3rd. The collet J, a loose sleeve for receiving the unshipped belt, a shaft on which the sleeve and collet are mounted, and a pulley. 4th. The sleeve B consisting of the two sections C D united by the screws *d* and provided with the chamber E, the collet J consisting of the two sections L M dovetailed together and provided with the screw N, the shaft A and pulley K. 5th. The sleeve B provided with the chamber E whether cast whole or made in sections.

### No. 16,170. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

William S. Parker, Little Falls, N. Y., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The combination, with the carbon-holder, of one or more repelling magnets and suitable connecting mechanism, whereby the carbon will be moved and governed by the repellant action of the magnet or magnets. 2nd. The combination of the magnets B C formed of soft iron bobbins wound respectively with coarse and fine wire and included in the main and branch circuit, the soft iron cores *b*, *c*, vibrating lever *d*, a clutch device and the carbon holding rod D, whereby increase of magnetism of coil B causes the core *b* and its surrounding bobbin to become polarized in the same direction so that said core is repelled. 3rd. The combination, with the electro-magnet B and its core *b* adapted to move freely, of the adjustable stop piece, or block K inserted in the lower end of said magnet.

### No. 16,171. Improvements on Wire Barbs for Fences. (*Perfectionnements aux barbes des clôtures en fil de fer.*)

Curtis B. Brainard, Joliet, Ill., U. S., 23rd January, 1883; for 15 years.

*Claim.*—The barb for fence wires, made of a single piece of wire having the crimps *a* *z* and loop *a* *1*, in combination with the two strand wires *c* *c*, said barb placed upon one of said strand wires loosely and held thereon within a single coil of said strand wires by its fellow strand wire lying in the crimps *a* *z*.

**No. 16,172. Improvements in Hose Connections.** (*Perfectionnements aux joints des boyaux.*)

Edward F. Gilbert, Lyons, N.Y., U.S., 23rd January, 1883; for 5 years.

*Claim.*—1st. In a flexible hose, the main reel length *c* provided with two short pieces one for each end, one having female couplings at both ends and the other having male couplings at both ends, whereby connections may be made with either a male or a female coupling on another length of pipe, a hydrant or a fire engine *b*; screwing the outer section thereto, or by removing the outer section and screwing the inner section thereto.

**No. 16,173. Improvements on Axle Boxes.** (*Perfectionnements aux boîtes des roues.*)

Orril R. Chaplin, Boston, Mass., U.S., 23rd January, 1883; for 15 years.

*Claim.*—1st. An anti-friction bearing composed of the necked bearing rolls *C* and separator rolls *D*, the rings *F* and *G* for holding them together, the outer ring *G* having an outer diameter no greater than the outer diameter of the circle of bearing rolls, and the inner ring *F* having an inner diameter greater than the inner diameter of the circle of bearing rolls. 2nd. In an axle box with anti-friction rolls *C*, *D*, the ring *G* of a diameter that will allow it to be inserted through the end of the box, in combination with the groove *a* in the box to prevent contact of ring *G* with the box when in use. 3rd. The hardened seat *K* so grooved as to form a lip in front of the ball and retain it in position in the groove.

**No. 16,174. Improvement in Mop-Holders.** (*Perfectionnement des manches de torchons.*)

Jonas T. B. Lee, Toronto, Ont., 23rd January, 1883; for 5 years.

*Claim.*—1st. A mop-holder composed of two bars pivoted to each other and provided with a device for locking them together. 2nd. The combination, with the bars *A* and *D*, of the links *I* pivoted to both, and of a device for locking the bars together. 3rd. The combination, with the bars *A* and *D*, of the links *I* pivoted to both, the links *G* pivoted to the bar *D*, and the disk *E* pivoted eccentrically to the link *G* and provided with a handle *F*. 4th. The combination, with the bar *D* and the bar *A* provided with a recess *a*, of the links *I* pivoted to the bars *A* and *D*, the links *G* pivoted to the bar *D* and the disk *E* pivoted eccentrically to the links *G*.

**No. 16,175. Improvements in Roofing Cement.** (*Perfectionnements au ciment à toitures.*)

William L. Maltby, Montreal, Que., 23rd January, 1883; for 5 years.

*Claim.*—A roofing cement or paint composed of actinolite mica, and soap stone powdered and mixed with coal tar or other liquid bituminous substance.

**No. 16,176. Improvements on Open Links.** (*Perfectionnements aux maillons ouverts.*)

Soiomon Shetter and Hiram G. Filson, New Cumberland, W.V., U.S., 23rd January, 1883; for 5 years.

*Claim.*—In a connecting link, the combination, with the part *B* provided with the hook *b* and the upturned end *c*, of the part *A* provided with the hook *a* and the eye *e*, the said hooks being flattened diagonally.

**No. 16,177. Improvement on Water Indicators.** (*Perfectionnement des indicateurs d'eau.*)

Deanis McCarly and George R. Davis, St. John, N.B., 23rd January, 1882; for 5 years.

*Claim.*—The dial *a*, hand *a*, shaft *s* and cord *E* provided with the float *G* and counterbalance *H*.

**No. 16,178. Improvements on Connections for Electric Circuits.** (*Perfectionnements aux raccordements des circuits électriques.*)

Edward H. Johnson, New York, N.Y., U.S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The combination of crossing electrical circuits, a block of insulating material having grooves in opposite surfaces in which the wires of the circuits are laid, and multiple arc connections between such circuits within the block. 2nd. The combination, with the wires of a main circuit laid in grooves in a block of insulating material, and the wires of derived circuits therefrom laid in other grooves in said block, of means within said block for connecting said main circuits with said derived circuits, and a removable circuit breaker controlling both the main and derived circuits. 3rd. The combination, with a main circuit and one or more derived circuits therefrom, of a single safety catch included in all such derived circuits and adapted to connect the derived and main circuits. 4th. The combination, with the wires of a main circuit and those of derived circuits therefrom laid in grooves in a block of insulating material, of means within said block for connecting the main circuits and derived circuits a removable circuit breaker controlling all the circuits and a safety catch carried by the circuit breaker. 5th. The combination, with a block having a socket provided with circuit terminals, of the hollow plug *B* of insulating material having two exterior terminals connected by a safety catch, or fusible conductor with the interior of the plug. 6th. The combination, with the block of insulating material provided with interior terminals, of the plug having corresponding terminals and fitting the interior of the block, the terminals of the plug being connected by a safety catch.

**No. 16,179. Improvements on Fire-Extinguishers.** (*Perfectionnements aux extincteurs d'incendie.*)

William Morrison, Toronto, Ont., 23rd January, 1883; for 5 years.

*Claim.*—1st. In a chemical fire extinguisher, two or more rods extending from and rigidly secured to the main plug of the extinguisher and connected together at this lower end by one or more cross pieces provided with an angular, or pointed projection upon which the base of the acid bottle shall rest, in combination with an adjustable cap arranged to fit over the top of the acid bottle and vertically adjusted by a screw passing through the main plug. 2nd. In a chemical fire extinguisher in which the body of the acid bottle is incircled by a ring horizontally pivoted between the two rods extending from, and rigidly secured to the main plug of the extinguisher, which rods are connected together at the base by a cross piece having a pointed projection arranged to come in contact with the bottom of the acid bottle, in combination with a fracturing device, operated from the exterior of the extinguisher and arranged to compress the bottle against the pointed projection, for the purpose of breaking the lower portion of the bottle. 3rd. In a chemical fire extinguisher in which the acid bottle is supported between two rods extending from and rigidly secured to the main plug of the extinguisher, a cross head working upon guides, forming part of, or attached to the rods, the said cross head being vertically adjusted by a screw passing through the main plug in combination with a cap arranged to fit over the top of the bottle and upon a neck extending from the cross head, the said cap being arranged so that it may be adjusted to permit the insertion of the bottle or secured to the cross head so that its downward movement shall cause the cap to compress the bottle, thereby producing the desired fracture. 4th. In a chemical fire extinguisher in which the bottom of the acid bottle rests upon a pointed projection, the combination of a cap fitting over the neck of the bottle and provided with a washer of rubber, leather or other soft material, to prevent direct contact between the cap and the bottle, the said cap being provided with adjusting mechanism for the purpose of compressing the bottle between the cap and pointed projection and thus causing the bottle to fracture at its bottom. 5th. In a chemical fire extinguisher in which the acid rests upon a stationary pointed projection, an adjustable cross head with a downwardly projecting neck having a feather key formed upon one side of it, in combination with a cap arranged to fit over the top of the bottle and onto the projecting neck, a slotted passage way being made in the cap to admit the feather key, and a spring arranged to hold the cap in its proper relative position.

**No. 16,180. Improvements on Tonguing and Grooving Machines.** (*Perfectionnements aux machines à rainures et languettes.*)

Warren S. Mayo, Ottawa, Ont., 23rd January, 1883; (Extension of Patent No. 8362.)

**No. 16,181. Improvements on Lamp Heaters.** (*Perfectionnements aux chauffettes à lampe.*)

Angus McKenzie, Toronto, Ont., 23rd January, 1882; (Extension of Patent No. 8434.)

**No. 16,182. Improvements on Pumps.** (*Perfectionnements aux pompes.*)

Tromson Draper, Petrolia, Ont., 23rd January, 1883; (Extension of Patent No. 8627.)

**No. 16,183. Improvements in Plashed Hedges.** (*Perfectionnements aux haies vives.*)

Wesley Young, Dayton, Ohio, U.S., 23rd January, 1883; for 5 years.

*Claim.*—1st. A hedge fence composed of live plants bent down in the plane of the fence and held in place by suitable fastenings, and having a line of wire extending along the base of the plants near the ground, said wire being secured to the plants and operating to prevent the passage through the spaces between the plants of small stock before said spaces have become closed or protected by the growth of the shoots. 2nd. A hedge fence composed of live plants bent down in the plane of the fence and held in place by suitable fastenings, and having a horizontal line of wire extending along the upper portion of the plants and secured thereto to give increased lateral strength, and having also a horizontal line of wire extending along and secured to the bases of the plants, for preventing the passage through the spaces, between the plants, of small stock before said spaces have become closed or protected by the growth of the side shoots.

**No. 16,184. Improvements on Smut and Polishing Machines.** (*Perfectionnements aux cylindres émouleurs.*)

Hiram P. Edwards, Hamilton, Ohio, U.S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The sliding sleeve *f* arranged on the rotary shaft *D* and provided with the inclined spider arms, and the inclined wings *G* carrying brushes and movably connected with the spider arms, in combination with mechanism connected with the sliding sleeve, and under control of the attendant from the exterior of the machine, whereby the sleeve can be moved vertically on the rotating shaft to radially adjust the brushes at any time during the operation of the machine. 2nd. The sleeve *f* having the inclined spider arms *F* and the inclined arms *G* carrying brushes and movably connected with spider arms, in combination with the pivoted lighter bar *J*, connected with the sleeve *f*, and devices for adjusting said lighter bar, whereby the sleeve can be automatically moved vertically, to readily adjust the brushes at any time during the operation of the machine. 3rd. The sleeve *f* having the inclined spider arms *F* and the inclined

arms G carrying brushes and movably connected with the spider arms, in combination with the pivoted lighter bar J, provided with the sleeve C having vertical rods m rigidly connected with the sleeve of the spider arms, and the hand screw K for adjusting the lighter bar, whereby the spider arms can be moved vertically to radially adjust brushes at any times during the operation of the machine. 4th. The combination, with the sleeve f having the inclined spider arms F movably connected with the brush carrying wings G, of the shaft D slotted at S and tubular above the slot, the spring Q encircling the shaft, the transverse fil R and the rod R<sub>1</sub>, and screw T for adjusting the fid. 5th. The series of permanent spaced brushes H and a series of interchangeable flanged beater sections M and the brush sections H, adapting the machine to be converted from a polishing to a combined polishing and beating machine. 6th. In a wheat scourer and polisher, the revolving cylindrical series of brushes H<sub>1</sub> provided with air spaces n formed between the series of brushes, and the brush heads G<sub>1</sub> mounted upon the radially and vertically adjustable wings F G and revolving within the perforated screen O.

**No. 16,185. Improvements on Churning Apparatus.** (*Perfectionnements aux barattes.*)

Benjamin F. Moore and Benjamin Moore, Heathcote, Ont., 23rd January, 1883; for 5 years.

*Claim.*—The combination, with the base A having posts B C connected by horizontal parallel bars D D, of the elbow lever E provided with handle F and foot rest G, pitman L and slide J having arm K.

**No. 16,186. Improvement on Lifters.**

(*Perfectionnement des manches d'ustensiles.*)

Charles F. Fellows, Chelmsford, Mass., U.S., 23rd January, 1883; for 5 years.

*Claim.*—The combination of the arms B C and D.

**No. 16,187. Improvements on Pneumatic Diaphragm Levers.** (*Perfectionnement aux leviers pneumatiques de diaphragme.*)

Alonzo Durkee, New York, N. Y., U. S., 23rd January, 1883; for 5 years.

*Claim.*—1st. In a mechanical wind musical instrument, a pneumatic diaphragm lever D consisting of a recessed block D<sub>1</sub> provided with orifices b and l and having a raised rim r, flexible diaphragm g, hinged tapering lever h provided with valve closing screw h<sub>2</sub> and exhaust valve m. 2nd. A pneumatic diaphragm lever provided with an exhaust valve, a screw arranged upon said lever and adapted to be operated by the valvular action of the diaphragm, to close and hold the exhaust valve. 3rd. In a mechanical musical instrument, a pneumatic lever constructed with inlet orifice, raised rim, flexible diaphragm and hinged tapering lever.

**No. 16,188. Improvements on Road Scrapers.** (*Perfectionnements aux pelles à cheval.*)

Albert Gerow, Picton, Ont., 23rd January, 1883; for 5 years.

*Claim.*—1st. The combination, with a wagon frame having a platform or floor 7 supported on side bars 6 6 and provided with standards 9 9, of the shovel or scraper 12 hung at its rear to a tail board 12, the ends sliding in grooves in the standards and a windlass 15, and rope or chain 14 for fitting the scraper from the ground by the operation of a lever. 2nd. The combination, with a wagon having a platform or floor 7 carrying windlasses, of a scraper or shovel 12 provided with two balls 18 19, one attached to the front axle of the wagon and the other suspended by the pulley 20 hung on a rope or chain 21 winding on a windlass 22, whereby the scraper can be raised from the ground and dropped for gathering. 3rd. An earth shovel or road scraper 12 having a bottom to fall and discharge the contents. 4th. The combination of a platform wagon, a scraper 12 suspended therefrom, and windlasses for operating the scraper. 5th. In combination with a platform wagon and a shovel or scraper hung therefrom, and windlasses for operating the scraper, steering wheel 27 for moving the front axle pivotally on the king-bolt to guide the machine in travelling.

**No. 16,189. Improvements on Potato-Diggers.** (*Perfectionnements aux arrache-potates.*)

Henry D. Herrington, Amos Broughton, Hoosick, and Sidney E. Durt, White Creek, N. Y., U.S., 23rd January, 1883; for 5 years.

*Claim.*—1st. The combination, with a semi-circular digging blade A of a potato digger, of a series of cutting blades B attached to the circular blade A. 2nd. The combination with the plows of a potato digging machine, of the adjustable upright J secured to the plow beam V, arms x and fulcrum support et. 3rd. The combination, with digging blades and means for oscillating said blades, of plows arranged in advance of the digging blade and arranged to run on each side of the row of potatoes to be dug, cutting away the sides of the row and aiding in removing the vines. 4th. The combination of the digging blade A with the series of cutting blades B and separating fingers C having an oscillating motion, cleaning fingers D and mechanism for operating the fingers. 5th. The combination of the digging blade A separating fingers C, cleansing fingers D, endless sprocket chain, sprocket wheels et F, cranks Z and pivoted arms et.

**No. 16,190. Improvements on Machines for Bleaching Fruits and Vegetables.** (*Perfectionnements aux machines à blanchir les fruits et les légumes.*)

Daniel M. Donald, Norwich, Ont., 24th January, 1883; for 5 years.

*Claim.*—1st. The combination of case A having the hopper H, formed to keep back the sulphur and receive the fruit and vegetables, and belt B on rollers C D driven by pulley E, to move and discharge the fruit and vegetables. 2nd. The combination of the chaffing disk K with screen I and pipe L.

**No. 16,191. Improvements on Shears.**

(*Perfectionnements aux cisailles.*)

Azor J. Phipps, Boston, Mass., U. S., 24th January, 1882; for 5 years.

*Claim.*—1st. The blades A B provided with handles C D, in combination with the guard G provided with the holder K, stop J and spring H. 2nd. The depression L and guard M, in combination with the blade A. 3rd. The holder K for securing the guard G to the wick tube. 4th. The stop J for steadying the guard and keeping it in proper position in respect to the wick tube. 5th. The guard projecting beneath the handles C D as shown at Z, and provided with the spring H.

**No. 16,192. Improvements on Stop Motions for Spoolers.** (*Perfectionnements aux cause-mèche des bobineuses.*)

Alexander G. Brown, Williamstown, Mass., U. S., 24th January, 1883; for 5 years.

*Claim.*—The levers M pivoted to a platform between the bobbins and spindle C, and each provided with a loop L between its fulcrum and spindle C, and with a downward projection a on its inner end, in combination with the bobbin spindles, the bar R, rollers K O, loop Q and a spool spindle C.

**No. 16,193. Improvements in the Method of, and Apparatus for Ventilating Water Closets.** (*Perfectionnements dans le mode et les appareils d'aéragé des latrines.*)

Thomas Rowan, London, Eng., 24th January, 1883; for 5 years.

*Claim.*—1st. The respective combination of parts forming modifications of the improved apparatus for ventilating water closets, urinals, drains, sewers, and the like, for treating smoke, chemical fumes and the like, from chimneys, and flues, and stoves, wherein are employed jets of water. 2nd. The employment of a jet or jets of water in combination with forms of apparatus described and shown.

**No. 16,194. Improvements in Horse Shoes.**

(*Perfectionnements dans les fers à cheval.*)

George Bryden, Hartford, Conn., William E. Banks, Brooklyn, and John B. White, New York, N. Y., U. S., 24th January, 1883; (Extension of Patent No. 8346.)

**No. 16,195. Improvements in Horse Shoes.**

(*Perfectionnements dans les fers à cheval.*)

George Bryden, Hartford, Conn., William E. Banks, Brooklyn, and John B. White, New York, N. Y., U. S., 24th January, 1883; (Extension of Patent No. 8347.)

**No. 16,196. Improvements on Pole Rings.**

(*Perfectionnements aux anneaux des timons de voitures.*)

David S. Norris and James Godwin, (Assignees of James Fenning,) Danbury, Conn., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. The divided ring S S and a ring V at a right angle thereto, in combination with a neck yoke and stop A. 2nd. The divided ring S S, the metallic ring V and the elastic ring V<sub>2</sub>, in combination with the neck yoke and stop A. 3rd. The metallic pole ring comprising the divided ring S S, the metallic ring V at a right angle thereto, the latter provided with an inner elastic ring V and the whole adapted to be applied to a neck yoke.

**No. 16,197. Improvements on Tags.**

(*Perfectionnements aux étiquettes.*)

Edmond A. Warren and Thomas J. Moore, Brooklyn, N. Y., U. S., 25th January, 1883; for 5 years.

*Claim.*—The tag A composed of two plies or thicknesses and provided with the strengthening frame B composed of a string or wire extending around the tag, near the margin, and secured between the two plies or thicknesses by pasting or cementing them together both inside and outside the frame, whereby the tag is protected all around the margin against being torn, and is prevented from curling up or becoming rumpled.

**No. 16,198. Improvements on Apparatus for Heating Railway Cars.** (*Perfectionnements aux appareils de chauffage des voitures de chemin de fer.*)

Louis Fitzgerald, (Assignee of Maurice J. Walsh,) New York, N. Y., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. The combination, with a pipe or pipes for conveying steam along a train, of an injector or pump on the locomotive, and means whereby the same may be readily connected with said pipe or pipes and supplied with steam from a boiler, for the purpose of draining from the pipe or pipes any water that may remain therein, and whereby it may be readily disconnected from said pipe or pipes, when it is no longer desired to be used. 2nd. The combination, with two pipes extending around or through a car, one arranged within the

other and containing a heating agent, and the other conveying the waste or expended heating agent away, of a yielding or flexible pipe or pipes extending beyond the car, and a cock for controlling communication between the pipes within, and the pipe or pipes extending beyond the car. 3rd. The combination with two pipes extending around or through a car, of a receptacle for the outer pipe containing acetate of potash, or a mixture of about two parts by weight of caustic soda, and about eleven parts by weight of acetic acid, or the equivalent thereof, with or without the addition of water. 4th. The combination of pipes for conveying a heating agent around or through a car, or other pipes for conveying the waste or expended heating agent back again, and flexible pipes, one within the other, extending beyond the car. 5th. The combination, with pipes for conveying a heating agent around a car, pipes arranged within the first mentioned pipes for conducting the waste or expended heating agent from the car, two pipes outside the car, arranged one within the other, for respectively conveying the heating agent to and the waste heating agent from the car, and a cock adapted to establish communication between the outer of the pipes within the car, and the inner of the pipes outside the car, or also between the inner of the pipes within the car, and the outer of the pipes outside the car, or to connect the two pipes within the car. 6th. The combination of a pipe for containing a heating agent, a receptacle surrounding the said pipe and containing acetate of potash, or a mixture of caustic soda and acetic acid, or the equivalent thereof, with or without the addition of water, and an external wrapping of a material which is a non-conductor of heat. 7th. The combination, with the pipes A C or A' C', of the couplings Q, rigid hooks *a*, the hooks *f* formed upon the levers *g*, of the springs *h* and guards extending outside the levers and springs. 8th. The combination of the pipes A C and the cylinder B, the coupling piece *d* and the head *d*.

### No. 16,199. Improvement on Car Couplers.

(*Perfectionnement des accouplements des chars.*)

John H. Ward, Lowell, Mass., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. The link B provided with the serrated hooks L, the draw-bar heads A provided with the chambers C *d* and pins L, the levers provided with arms G and teeth *i*, and the shafts D provided with the levers J, springs K and wheels H. 2nd. The links B provided with the hooks L, in combination with means for causing the hooks to engage the draw-bar heads, keep the same from being accidentally disengaged, and disengage the same therefrom when required. 3rd. The pin L arranged to serve as a staple for the hook *i*, a stop for the lever J and a stud for the spring K. 4th. The draw-bar head A provided with the backwardly projecting part *i*, adapting to receive, or strengthen the pin L in the chamber C. 5th. The link B provided with the hooks L, in combination with the curved yielding arm G adapted to receive the end thrust of the link, turn its free end down into engagement with the pin L and hold it in contact therewith. 6th. The levers J provided with the chains M mounted on the shaft D provided with the spring K. 7th. A link having two downwardly projecting hooks for engaging the draw-bar heads, and provided with serrations or means whereby they may be lifted out of engagement therewith.

### No. 16,200. Improvements on Mechanical Musical Instruments. (*Perfectionnements aux instruments de musique mécaniques.*)

Robert W. Pain, New York, N. Y., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. A mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips, or sheets, and in which air under pressure is used to produce the necessary notes of sound, bellows which force the wind to the reeds or other sounding devices of the instrument arranged within a box cover over the tubes, said cover being hinged on the top of the action board. 2nd. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, the combination with the air bellows, or reservoir of an actuator key or push-pin, whereby the tones of the reeds or other sounding devices may be changed in expression and crescendo, diminuendo and tremolo effects produced. 3rd. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, the combination with the feeders or pumps G, of the rotating toggle shaft I provided with toggles I<sup>1</sup>, whereby said pumps are alternately moved to give a continuous supply of air to the bellows, or air reservoir. 4th. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, the combination, with a removable box cover placed on top of the tube or action board, of bellows or air reservoir contained therein for forcing the wind to the reeds or other sounding devices. 5th. A hinged cover inclosing the air reservoir or bellows which fits over the tubes D and is adapted to be removed, or opened for inserting the sheet of music. 6th. An air reservoir or cover, provided with interior flexible strips arranged to bear upon the perforated music sheet and prevent the escape of air from said reservoir or cover, excepting through the perforations of said sheet. 7th. An air reservoir or cover, provided with interior flexible strips arranged to prevent the escape of air from its sides, and adapted to permit the free passage of a music sheet beneath the said sides and over the action board of the instrument. 8th. An air reservoir or chest adapted to be set over the perforated music sheet upon the action board and provided with interior flexible air-tight strips and with a weighted, or spring actuated bellows like platform, to increase the pressure of air from said reservoir. 9th. The combination, with a movable air reservoir, a chest adapted to be set over the perforated music sheet upon the action board, of attached arms whereby said chest may be held to and lifted from its position. 10th. The combination, with a movable air reservoir or chest adapted to be set over the perforated music sheet, of latches or springs whereby said chest is held to the instrument.

### No. 16,201. Improvements on Magazine Drum Stoves. (*Perfectionnements aux poêles circulaires à charbon.*)

George M. Barboar and Merrill B. Mills, Detroit, Mich., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. A stove shell having an exterior surface shell of spun or rolled metal, which has its exterior surface plated with a different metal. 2nd. A stove body having a surrounding shell separated therefrom by an air space, and provided with an exterior surface shell of spun or rolled metal plated on the outside with a different metal. 3rd. A stove shell having an exterior surface shell composed of two or more bands of spun or rolled metal, the exterior faces of which are plated with a different metal. 4th. The combination, with a stove body, of the two removable projecting rings or flanges and a separate shell supported between said rings or flanges and provided with an exterior surface shell of spun or rolled metal plated on its outside with a different metal. 5th. The combination, with a stove body, of two projecting rings or flanges perforated for the passage of air, and a separate shell supported by said rings or flanges and separated from the stove body by an air space, which is in communication with the perforations of said rings or flanges, said separate shell being provided with an exterior surface shell of spun or rolled metal.

### No. 16,202. Improvements on Harrows.

(*Perfectionnements aux herses.*)

Edward W. Herendeen, Geneva, N. Y., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. A harrow tooth having a flat cutting edge and rounded rear edge, and wide bevelled lower portion. 2nd. A harrow tooth having a flat cutting edge and rounded rear edge, and wide bevelled lower portion, and provided with a flat head set at an angle to the line of cutting edge. 3rd. A harrow having teeth provided with a front cutting edge and set in the frame to incline downwardly and rearwardly in line with the draft, whereby the teeth will pass through the harrow frame in a straight and inclined direction. 4th. The harrow tooth C in combination with the frame provided with inclined apertures, for the reception of said tooth, and corresponding in cross section to the shape thereof.

### No. 16,203. Worm Powder. (*Poudre à vers.*)

Thomas McCarroll and William A. Ellis, Menford, Ont., 25th January, 1882; for 5 years.

*Claim.*—1st. A compound of matter composed of santonine, mercury and chalk, sage and white sugar. 2nd. A compound of matter composed of calomel, jalap, santonine, rhubarb and white sugar.

### No. 16,204. Improvement on Gaiter Boots and Shoes. (*Perfectionnement des chaussures à élastiques.*)

Edwin B. Stimpson, Brooklyn, N. Y., U. S., 25th January, 1883; for 5 years.

*Claim.*—A boot or shoe having the upper quarter on the inside of the ankle from the front to the back seam, and the outside quarter from the back seam to or near the front seam, both of elastic material, and having a button fly attached to the inside ankle quarter at the front seam and adapted to lap over the outside quarter.

### No. 16,205. Improvements on Water Motors. (*Perfectionnements aux moteurs hydrauliques.*)

Frederick W. Tuerk, Berlin, Ont., 25th January, 1883; (Extension of Patent No. 8363).

### No. 15,206. Improvements on Wagon Springs. (*Perfectionnements aux ressorts des wagons.*)

William Webber, jr., Rockton, Ill., U. S., 25th January, 1883; for 5 years.

*Claim.*—1st. In a vehicle spring, the rocking crank shafts DEH and single connecting rod I encircled by the spring K. 2nd. In a vehicle spring, the rocking crank shafts DEH, connecting rod I, spring K and collar P provided with the set screw R.

### No. 16,207. Improvements on Machinery for Weaving Sacks, Bags, Pillow Cases, &c. (*Perfectionnements aux machines pour tisser les sacs, toiles d'oreillers, etc.*)

Walter Briggs, Abraham Briggs, Asa Briggs, Arthur Briggs, Elijah Briggs and Joseph Briggs, Whitworth, Eng., 25th January, 1883; for 15 years.

*Claim.*—1st. The combination of an endless pattern surface and a tappet or tappets put by the action of the said pattern surface in and out of gear, with one or more of the jack rods to cause the top and bottom warps to be woven together at the proper places, to form the closure of the tubular article. 2nd. The combination of an endless pattern surface, a sliding rod acted on by said pattern surface, a tappet or tappets adapted to weave the closure of the tubular article, and a hooked connecting rod put in and out of engagement with said tappet or tappets by the action of said pattern surface at the proper time, to weave the closure of the tubular article. 3rd. The combination of the wheel C with snug D, snug E, tappets O S, treading levers L R, hooked connecting rod I and spring *d*. 4th. The combination, with the mechanism that operates the heads during the weaving of the closure of the tubular article, of means for increasing the friction on the warp beam. 5th. The combination of the rod I, spring *d* and strap *c*. 6th. The combination of the wheel C, snug D, snug E, rod F, lever G, bar H, guide J, connecting rod I, spring *d* and strap *c*.

**No. 16,208. Improvements on Reapers.***(Perfectionnements aux moissonneuses.)*

John Bell, Woodford, Ont., 25th January, 1883; for 5 years.

*Claim.*—1st. The combination of the standards F F', stationary cam C consisting of the parts *c c c c c* and *c t*, driving pinion W1, crown wheel W to which are pivoted the rake stems R1 R2 R3 R4 and carrying the rake sockets R, the spindle S carrying thumb pinion P, the spindle S1 carrying the cam C1, and the tripping pinion P1 regulated by the lever L, by means of the collar P2, tripping lever T, slide bar B B1, bell crank lever M, lever N, stop catch E and notch bar L. 2nd. The combination of the cam *c*, cam *c5*, cam *b*, lever N on spindle S, and crown wheel W carrying the rake sockets R1 R2 R3 R4. 3rd. The combination of the standard F, slide D, stud *d*, cam lever *d*, and guide *d s*. 4th. The combination of the standard F, notch bar L1, lever L, collar P2, pinion P and cam *c t* on spindle S1. 5th. The combination of the spindle S and S1, the former carrying the crown wheel W and the thumb pinion P, giving motion when desired to the tripping pinion P1 feathered upon the spindle S1 and thus moving the double beat cam C1 also feathered upon the said spindle to allow the single or double beat to be brought into action. 6th. The construction of the thumb pinion F imparting motion to the pinion P1, if desired, so as to cause the 2d, 3rd or 4th rake to be tripped. 7th. The combination of the cam *c t*, tripping lever T, slide B with arm B1, bell crank lever M with weight M1, counterbalanced lever N having arm *n* and stop catch E. 8th. The construction of the rake stems R1 having pin *r*, shoulder *r c* and notch *r s* to engage the shoulder *r s* of the socket R. 9th. The construction of the main cam C, having groove *c* with rim *c t*, opening or gate *c s*, in-line *c s*, guide piece *c t* and lever arm *n*.

**No. 16,209. Improvements on Bolt Cutters.***(Perfectionnements aux décapoirs des boulons.)*

Alexander R. Duff and Peter Lewis, Oneida, N.Y., U.S., 25th January, 1883; for 5 years.

*Claim.*—1st. The combination of an open frame A having its two sides rigidly connected together, a stationary cutter B secured therein, a movable cutter B1 extending across the frame and having its opposite edges fitting in guides in the sides of the frame, two levers E pivoted together and to the stock of the movable cutter, and links F connecting said levers with the two sides of the frame. 2nd. The combination of the frame A, the cutter B fitted to guides in the frame, the screws C D, the cutter B1, the levers E and the links F pivotally connected to the levers and frame.

**No. 16,210. Improvements on Billiard Tables.***(Perfectionnements aux tables de billard.)*

Charles W. Allen and Thomas G. Cowgill, Pine Ridge Agency, Dakota, U.S., 25th January, 1883; for 5 years.

*Claim.*—1st. The combination with the bed B and cloth *c*, of the cleats C provided with rabbets. 2nd. The combination, with the bed B, cloth *c* and cleats C, of the cloth covered bars D and screws *d*. 3rd. The combination, with the cleats C provided with the screw-threaded lugs *f*, and the base G provided with the groove *g*, of the rod H provided with a right hand and a left hand thread. 4th. The end cloth holding cleats adapted for lateral movement and provided with diagonally placed brace bars, adapted to act in grooves of the side cloth holding cleats, whereby both side and end cleats may be simultaneously spread to stretch the cloth over the bed. 5th. The end cleats C provided with screw-threaded lugs *f* and diagonally-placed brace bars E, and side cleats C having seals *e* to receive the bars E, and the right and left screw H combined for operation. 6th. The combination, with the frame A and bed B and the devices connected therewith, of the base G provided with the semi-circular bars J J1. 7th. The combination, with the semi-circular bars J J2, of the arc-shaped arms K K2. 8th. The combination, with the arms K K2 having grooves in their ends, of the spherical segment or bow-shaped skeleton frame L provided with the flange *l*. 9th. The combination, with the base G, bars J J1, arms K K2, skeleton frame or bow L, of the rod *m*, washer *n* and nut P.

**No. 16,211. Improvements in Harness Pads.***(Perfectionnements aux sellettes des harnais.)*

Henry J. Bieble and John E. Bridges, Dungannon, Ont., 25th January, 1883; for 5 years.

*Claim.*—1st. The metallic main plate A of a harness pad constructed with two ribs *a a* on its lower side, four slots *a s*, less or more, and an aperture *d s*. 2nd. The pads C C as constructed, in combination with the plate A.

**No. 16,212. Roofing Cement.***(Ciment à toitures.)*

William L. Maltby, Montreal, Que., 25th January, 1883; for 5 years.

*Claim.*—A roofing cement or paint composed of comminuted asbestos, mica and soap stone, mixed with coal tar or other bituminous liquid.

**No. 16,213. Improvements on Life Preservers.***(Perfectionnement aux appareils de sauvetage.)*

Eliza R. Cogswell, New York, N.Y., U.S., 27th January 1883; for 15 years.

*Claim.*—1st. A life preserver of any suitable construction, containing cork or other granulated woody matter, treated with a water repellent. 2nd. A filling for life preservers composed of cork coated with paraffine, to exclude moisture and air. 3rd. The combination of a filling composed of cork coated with paraffine and an enclosing integument, itself made air and water proof by coating or impregnating with paraffine. 4th. A series of connected pouches rendered water

and air proof by being coated or impregnated with paraffine and filled with cork, which is coated with paraffine, to exclude moisture and air. 5th. A life preserver comprising, as its essential element, one or more pouches B1 rendered water and air proof by being coated or impregnated with paraffine and enclosing a filling composed of cork in a granular or fragmentary condition, the fragments or granules of the cork being coated with paraffine. 6th. The combination, with a jacket B having pockets *b*, of pouches B1 made water and air proof by being coated or impregnated with paraffine, and filled with cork, itself coated with paraffine, to exclude moisture and air.

**No. 16,214. Improvement on Car-Couplers.***(Perfectionnement des accouplages des chars.)*

Robert Bigney, Caplestone, Ont., 29th January, 1883; for 5 years.

*Claim.*—1st. The combination of the adjusting screw A, provided with wheels A1 A; and collars C C1, arms B B1, levers D, collars E E1 stops R R1, arm B1, coupling pin F provided with shoulder G, nut F1, spring I, guide H, draw-bar K provided with slots K1, spring J1, and spring ball J provided with flange J1 and key J2. 2nd. The combination of the draw-bar K, keys N N, collars L L1 L2, coil spring O and braces M M.

**No. 16,215. Adjustable Chain Pump Buck-et.***(Godet mobile de clapnet.)*

Thomas Kenyon, Hamilton, Ohio, U.S., 31st January, 1883; (Extension of Patent No. 8403.)

**No. 16,216. Machine for Raising Saw Logs on to the Mill Floor.***(Machine pour monter les billots de sciage sur les pavés des scieries.)*

William Hamilton, Peterborough, (Assignee of John Ludgate, Ashburnham,) Ont., 31st January, 1883; (Extension of Patent No. 2043.)

**No. 16,217. Tubular Kerosene Lantern.***(Lanterne tubulaire à kérosène.)*

John H. Stone, Hamilton, Ont., 31st January, 1883; (Extension of Patent No. 8350.)

**No. 16,218. Improvement in Steam Boiler Cleaners.***(Perfectionnement dans les nettoyeurs des chaudières à vapeur.)*

Allen S. Fisher, Clinton, and William Stitt, Goderich, Ont., (Assignees of John A. Fordon and James F. Thomas, Bay City, Mich., U.S.) 31st January, 1883; (Extension of Patent No. 8381.)

**No. 16,219. Process for Manufacturing Dry Hop Yeast.***(Procédé de fabrication de la levure au houblon sec.)*

Andrew B. Burns, Amherstburg, Ont., 31st January, 1883; (Extension of Patent No. 8402.)

**No. 16,220. Improvements on Hoisting Machines.***(Perfectionnements aux ascenseurs.)*

John Fensom, Toronto, Ont., 31st January, 1883; (Extension of Patent No. 8390.)

**No. 16,221. Improvements on Spring Shade Rollers.***(Perfectionnements aux bâtons à ressort des rideaux.)*

Daniel E. Kempster, Boston, Mass., U.S., 31st January, 1883; for 5 years.

*Claim.*—1st. The slotted roller end *e* with metallic cap *e*, in combination with a sliding plate G having a slot with a single notch *g* in one end only of said slot, and the flat sided portion *b t* of the spindle B. 2nd. The plate G having a slot with a single notch *g* in one end only of said slot. 3rd. The spindle B formed with the flat side *b t* for preventing the slow rotation of the roller in one direction, in combination with the single notched slotted sliding plate G *a*. 4th. The combination of the spindle B having the flat side *b t*, the roller C having end cap E with slotted end *e*, metallic cap *e* and the slotted plate G having a notch *g* in one end only of said slot, the several parts being constructed and arranged for conjoint operation. 5th. The combination of the roller having the line of attachment of the shade marked thereon with reference to the notched end of the locking plate with said plate so that when the shade is wholly unwound and permitted to lock, the roller may be revolved sufficiently by pulling the shade to release the locking plate and permit the spring to reverse the motion of the roller and wind up the shade. 6th. In a curtain fixture or shade roller, the spindle B with its flat portion *b t* arranged parallel with the bracket notches *b s b s*, in combination with the lip *b* or means for holding said spindle right side up, when the roller is in its bracket.

**No. 16,222. Improvements in Car Couplings.***(Perfectionnements aux joints des tuyaux.)*

William Martin, Tidionte, Penn., U.S., 31st January, 1883; for 5 years.

*Claim.*—1st. The pipe A provided with a ball B, and a pipe D provided with a hemispherical shell C combined with an encasing shell and a nut H. 2nd. The screw-threaded pipe A having a ball B, and a pipe D having a hemispherical shell C combined with a divided encasing shell F and nut H. 3rd. A pipe coupling, composed of the



pipe A provided with ball B, the pipe D provided with hemispherical shell C and the divided encasing shell F G, the ball B being bevelled in the rear portion, whereby an oil chamber is provided,

### No. 16,223. Improvements on Car Brakes.

(*Perfectionnements aux freins des chars.*)

Charles Higham, Watertown, N. Y., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The brake shoes and their operating levers and a link pivoted at one end to one of the said levers, combined with a movable bearing block for the other lever mounted in the other end of the said link, and means to adjust its position in the said block. 2nd. The lever and link forked to embrace it and slotted at its end, combined with the bearing block guided in the said slot, and its adjusting set screw and threaded socket therefor held in the end of the said slots.

### No. 16,224. Improvements on Treadles for Sewing and other Machines.

(*Perfectionnements aux marches des machines à coudre et autres.*)

George B. Ward, New York, N. Y., U. S., 31st January, 1883; for 5 years.

*Claim.*—The rotary shaft G having cranks *f g*, and swivelled foot supports H H, combined with the belt or chain F, shaft E having fly wheel belt or chain D and shaft C to be driven, and with frame A.

### No. 16,225. Improvement on Calendars.

(*Perfectionnement des calendriers.*)

Elroy N. Heath, Boston, Mass., U. S., 31st January, 1883; for 5 years.

*Claim.*—The main card A having the slits *a a* made therein, and the names of the days of the week above the space between the slits and those of the months, between the lower ends of the slits, in combination with the sliding card B having the numbers of the days of the months and provided with a notch C at its bottom edge, whereby the latter card is held to the former simply by resting in the slits and the proper month is exposed at the notch.

### No. 16,226. Improvements on Railroad Velocipedes.

(*Perfectionnements aux velocipedes de voie de fer.*)

Jeremiah Murphy, Brooklyn, N. Y., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The combination of a large flanged driving wheel provided with cranks for the feet, a saddle arranged over said driving wheel, a smaller flanged following wheel behind the driving wheel, a frame connecting said wheels, a steadying wheel arranged opposite the space between the driving wheel and the following wheel, and longitudinally adjusted braces forming a part of said frame and extending at reverse angles from near the ends of the frame proper to said steadying wheel. 2nd. The combination, with a large driving wheel, a following wheel arranged behind the same, and a steadying wheel arranged opposite the space between the driving wheel and following wheel, of means whereby the velocipede may be canted more or less, to properly balance it. 3rd. The combination, with a large driving wheel, a following wheel arranged behind the same, and a steadying wheel arranged opposite the space between the two said wheels, of an extensible strap extending from the bearings of, and passing over the steadying wheel and affording provision for canting the velocipede to distribute the weight. 4th. The combination of a large driving wheel, a smaller following wheel, and a steadying wheel arranged opposite the space between the said wheels and the frame D D'. 5th. The wheel consisting of the shaft *a*, provided with flanges *b*, the disk-shape collar *c*, the tread *d*, nuts *e* and spokes *a*.

### No. 16,227. Improvements on Petroleum Burners.

(*Perfectionnements aux foyers à pétrole.*)

Richard A. Bury and Robert M. Bidelman, Adrian, Mich., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The process of burning vaporizing oils in a furnace of ordinary construction, by the use of an asbestos vaporizer. 2nd. As a means of vaporizing crude petroleum or other vaporizing oils, an asbestos vaporizer in a fire-box of ordinary construction.

### No. 16,228. Improvements on Wheel Runners.

(*Perfectionnements aux patins des voitures.*)

Harold Holland, Lynn, Mass., U. S., 31st January, 1883; for 5 years.

*Claim.*—The body C having the goose necks *d d*, provided with the U-shaped clumps J J for attaching the same to the wheel; the shoe G provided with the nuts and bolts *f* for attaching the same to the body; the flanges *e* for preventing the wheel from slipping laterally from the runner; and the two vertical braces *m m* arranged equidistant from the flanges *e* to strengthen and prevent the runner from bending.

### No. 16,229. Improvement on Electric Devices for operating Throttle Valves.

(*Perfectionnement aux appareils électriques pour faire fonctionner les soupapes d'admission.*)

Josiah Nesbitt, Toronto, Ont., 31st January, 1883; for 5 years.

*Claim.*—1st. In an engine or machine, the movement of which is

arrested by the cutting off of the steam or other primary motor, the combination of an electro-magnet arranged to sustain the mechanism by which the throttle valve, or other cut-off is operated and provided with a key, or keys by which the current is broken in order to release the operating mechanism sustained by the electro-magnet. 2nd. In an engine or machine, the movement of which is arrested by the cutting off of the steam or other primary motor, a rope or chain connected at one end to the throttle valve or other cut-off, and after passing around a spool held from revolving by a suitable catch, has a weight attached to its other end, in combination with an electro-magnet arranged to sustain a weighted lever or its equivalent, which lever, when released from the magnet, is arranged to fall upon and release the catch holding the spool, by which action the effect of the weight is directed to operate the cut-off mechanism. 3rd. A rope H connected at one end to the throttle valve or its equivalent and having a weight attached to its other end, a pivoted spool G, around which the rope is carried, and a pawl engaging with a ratchet G on the spool in order to sustain the effect of the weight, in combination with a pivoted lever weighted so as to fall, when not supported, and provided with a tail-piece designed to come in contact with, and disengage the pawl when the lever falls, a lever, one end of which fits over a catch on the lever, and the other extends below the pivoted weighted lever having a tail piece and supported by the electro magnet.

### No. 16,230. Improvements on Knitting Machines.

(*Perfectionnements aux machines à tricoter.*)

Joseph Adams, Philadelphia, Penn., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The following instrumentalities in combination: first, a needle cylinder provided with a series of vertically placed bearded needles and mechanism for revolving said cylinder, second, a tuck presser situated in such relation to said cylinder as to be always in mesh with the beards on the needles, third, a plain presser placed concentrically with the tuck presser, but adapted to be moved towards and from the needles in a direction radial to their cylinder, fourth, a lever connected with the plain presser, and fifth, a cam way upon the needle cylinder adapted to encounter the lever and occasion the throw, both of said lever and with it, of the plain presser. 2nd. In combination with a presser bar provided with a fixed stem, a tuck presser revolving fixedly upon said fixed stem a collar having an elliptic slot and placed upon said stem, a plain presser revolving around the collar, a lever engaged as to its upper extremity with the collar, and a line as to its lowest extremity, with a cam-way, a cam-way upon a needle cylinder, and a needle cylinder. 3rd. In combination with the needle cylinder, a cam-way and means for locking the cam-way to said needle cylinder.

### No. 16,231. Improvements on Two-Wheeled Vehicles.

(*Perfectionnements aux voitures à deux roues.*)

Edward Storm, Poughkeepsie, N. Y., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The combination of shafts, or a pole secured to the axle side bars mounted on the axle, and a spring, or springs connecting the side bars to the body. 2nd. The combination of shafts or a pole secured to the axle side bars, rigid connections between the axle and side bars, and springs connecting the side bars to the body. 3rd. The combination, in a two-wheeled vehicle, of shafts, or a pole, secured to the axle side bars mounted on the axle and torsion springs connecting the side bars to the body. 4th. The combination of shafts, or a pole secured to the axle side bars mounted on the axle and connecting the side bars to the body. 5th. The combination of shafts, or a pole secured to the axle side bars mounted on the axle, a body unconnected with the shafts and springs connecting the side bars and body. 6th. The combination, in a two-wheeled vehicle, of shafts, or a pole secured to the axle, rigid brackets or supports secured to the axle independently of the shafts or pole, and springs between the brackets or supports and the body.

### No. 16,232. Improvements on Safety Valves.

(*Perfectionnements aux soupapes de sûreté.*)

George C. Collier, Bay, Mich., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. A safety valve wherein the pressure acting upon the top of a wing valve depresses the same and affords a direct passage of steam from the boiler to the exhaust passage. 2nd. A safety valve provided with steam spaces D H, steam passages F I, valves G E L, spring M, lever B and weight C.

### No. 16,233. Improvements on Detachable Handles for Utensils.

(*Perfectionnements aux queues mobiles des ustensiles.*)

Fred A. Neider and George Grossmann, Augusta, Ky., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. A detachable handle, constructed in two parts pivoted together and provided with jaws arranged to move in closing in planes parallel to their faces. 2nd. The combination, to form a detachable handle for utensils, of the two parts pivoted together and provided with jaws to grasp the utensils arranged to move in closing in planes parallel to their faces, and one part arranged to close within a pocket in the other, when the two are brought together. 3rd. The combination, to form a detachable handle for utensils, of the two parts A and B pivoted together and provided with jaws *a b* which are bent at an angle to said parts and arranged to take over the margin of the utensil C, and one part provided with an inclined or bevelled projection *i* arranged to take against a face *f* on the other part, so as to give the parts a slight longitudinal movement on each other when brought together.

**No. 16,234. Improvement on Steam Generators and Furnaces.** (*Perfectionnement des générateurs de vapeur et des foyers.*)

Claudius A. Candler and James Whitehead, Detroit, Mich., U.S., 31st January, 1883; for 5 years.

*Claim.*—1st. In a steam generator furnace and in combination with such generator furnace and with the boiler, the heater D provided with flues through the same and connected with said boiler by the pipes Q P and Q1, the former communicating with the boiler in rear of the bridge wall, while the latter communicates with the boiler above the flues and passes through the smoke jacket. 2nd. The dampers H I, hollow open on one side only and with a front perforated wall and adapted to close the openings between the boiler and the bridge wall. 3rd. In a steam generator furnace and in combination with a locking device P, two crank levers O adapted to operate the dampers H I reversibly or independently of each other. 4th. The combination with the heater D thereof, of the vertically sliding dampers H I, the shaft N, lever M and rod L connected to the damper I, the hollow shaft X, lever M, the rod L connected to the damper H and the operating handles O O. 5th. The combination, with the alternately opening and closing dampers H I, of the crank lever O for operating said dampers, said levers being arranged in front of the furnace doors, whereby it will block one of the doors and prevent the same from being opened, when either of the dampers is entirely opened or closed. 6th. The combination, with the alternately and vertically reciprocating dampers, of the means for operating the same from outside, the furnace walls.

**No. 16,235. Improvement in Knitting Machines.** (*Perfectionnements des machines à tricoter.*)

George A. Nye, Bristol, Penn., U. S., 31st January, 1883; for 5 years.

*Claim.*—1st. The combination of the stationary cam plate D and the two movable cams E F and their operative mechanism, consisting of the slides G H, links J J, levers I K, post L, cam M, shaft T, worm gear K, worm L, shaft W and clutch N. 2nd. The combination, with the head U, latch V and adjustable cam, of the lever I provided with stud S, and mechanism for operating said lever.

**No. 16,236. Improvement on Washing Machines.** (*Perfectionnement des machines à laver.*)

Joseph H. Manton, Hull, Que., 31st January, 1883; for 5 years.

*Claim.*—1st. The combination of the suds box A, corrugated curved spring bottom, or yielding washboard B and rotary brush E mounted within the concavity of the washboard and journaled in bearings on box A, whereby the clothes will be wound upon the brush and by rotary motion be washed. 2nd. The yielding curved corrugated washboard B within the suds box A, in combination with a rotary brush E journaled to turn in the concavity of the washboard. The combination, with the suds box A, of the spring yielding washboard B and rotary brush E, whereby the brush winds the clothes thereon and are interposed between two yielding washing surfaces.

**No. 16,237. Improvement on Axes.** (*Perfectionnement des essieux.*)

Zotique Tremblay, Haverhill, Mass., U. S., 31st January, 1882; for 5 years.

*Claim.*—1st. The axle A, provided with the screw D and key C. 2nd. An axle provided with a key for securing the helve, and a set screw by which the key is forced into contact with the helve within the eye of the axle. 3rd. The axle A having the lower portion Z of its eye V-shaped and inclined downwardly from its inner to its outer end, and its upper portion G flat, the helve B having its upper portion from a

to a flat, and its lower portion from b to v inclined to form an angle or shoulder at t, the pole E provided with the diagonally arranged screw D and the key C provided with the notch f. 4th. The screw D and key C for securing the helve B in the axle A. 5th. In a device for securing the helve of an axle in its eye, the key C having one of its sides provided with a notch f, or means for engaging the screw used for forcing it into position. 6th. In a device for securing the helve of an axle in its eye, the screw D.

**No. 16,238. Improvements on Games.** (*Perfectionnements aux jeux.*)

Joseph Froin, Paris, France, 31st January, 1883; for 5 years.

*Claim.*—A game founded upon geographical or historical subjects, composed of a map of the continent or country, the geographical or historical study of which is to form the subject of the game, and a pack of cards corresponding in number to the number of geographical or political subdivisions of the continent or country, each card being marked with a picture or vignette, of the subdivision represented by it, and with the chief geographical or historical data connected with such subdivision.

**No. 16,239. Improvements on Carriage Top Setters.** (*Perfectionnements aux châssis de carrosserie.*)

Richard H. Lewis, Oshawa, Ont., 31st January, 1882; for 5 years.

*Claim.*—A frame for setting carriage tops having the base A A, posts B B B, jointed centrally of their length and provided with jamb nuts G, and notched horizontal bars C C connected by jointed rod D, the whole attachable to a carriage seat.

**No. 16,240. Improvements in Lifting Jacks.** (*Perfectionnements aux crics.*)

Selah M. Baird and John M. Baird, Holly, Mich., U.S., 31st January, 1883; for 5 years.

*Claim.*—1st. The bent and curved arm F and the horizontal arm G, both sliding on the vertical shaft C. 2nd. The chain c attached to the horizontal arm G, and passing through the eye d attached to the upper end of the shaft C, in combination with the bent and curved arm F and the horizontal arm G.

**No. 16,241. Improvement in Millstone Alarms.** (*Perfectionnement des signaux de meunerie.*)

William Lunhoff, Detroit, Mich., U. S., 31st January, 1882; for 5 years.

*Claim.*—1st. The combination, with a hopper and a valve or flexible wing located thereon, of a signal mechanism provided with a bell and a bell hammer having a spring arm provided with a projecting tripping tail or end, a pivoted lever carrying said signal mechanism, a rotary wheel arranged below said arm or adjacent thereto, and having a projection arranged to strike the projecting end of the bell hammer, an adjustable counterpoise arranged upon said lever, and a flexible connection between the free end of said lever and the valve or wing, in the hopper. 2nd. The combination, with the lever E, chain b and the signal mechanism carried by said lever, of the valve or wing B, chain H having ring k, pin h1, and weight H2. 3rd. The combination, with the hopper and the valve or wing thereon, of the chain b, the pulleys E1 E1 over which said chain passes, the pivoted lever E having its free end attached to the lower end of said chain b, the signal mechanism mounted on said lever and having a bell, and a spring bell hammer provided with the projecting end d2, the rotary wheel provided with the pin C3, the chain H connected to the free end of the lever, the pulley H1, the ring k inserted in said chain H, the weight H2 and the stationary pin h1.



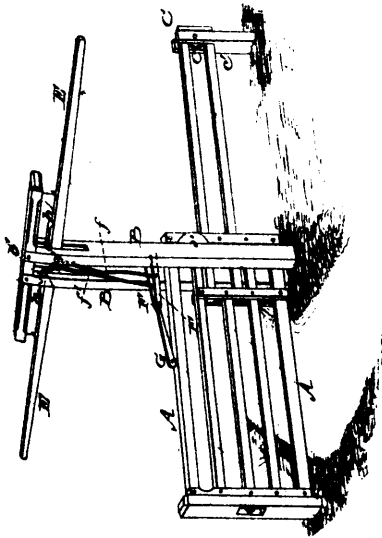
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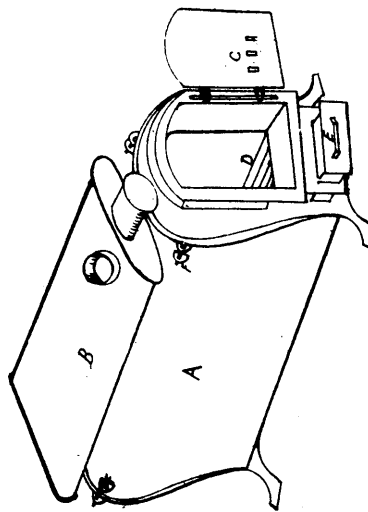
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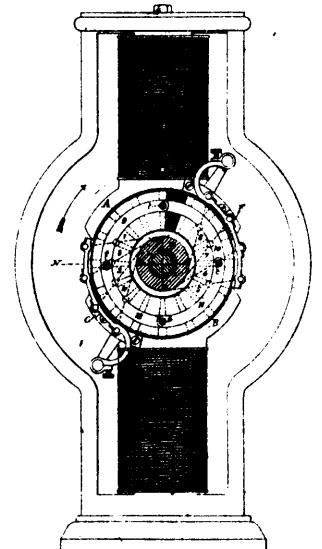
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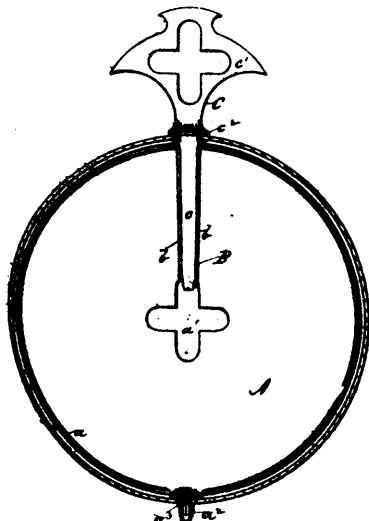
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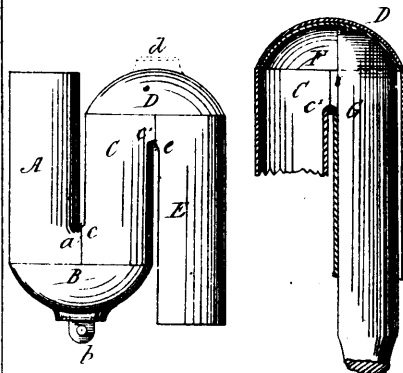
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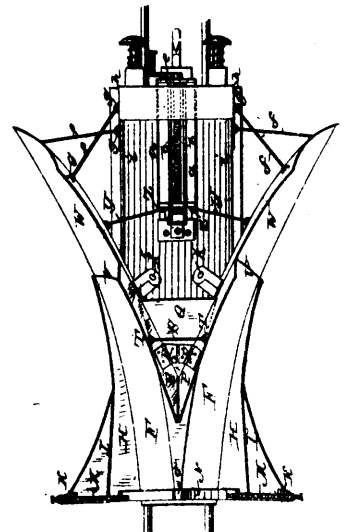
16056 Hochhansen's Improvements on Dynamo or Magneto Electric Machines.



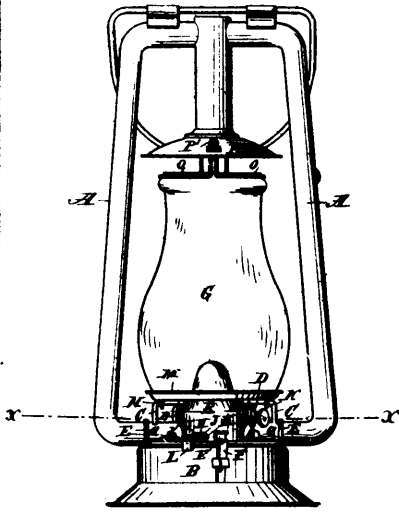
16057 Berger's Improvements on Stove Pipe Dampers.



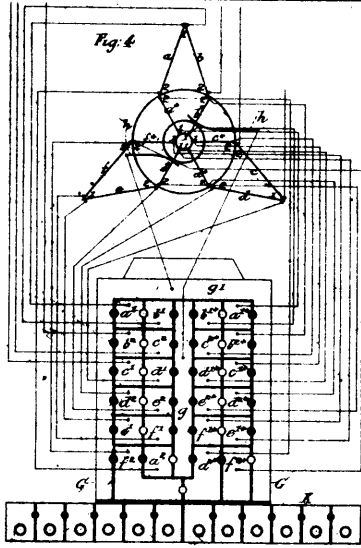
16058 Chapman's Improvements on Lead Traps or Cesspools.



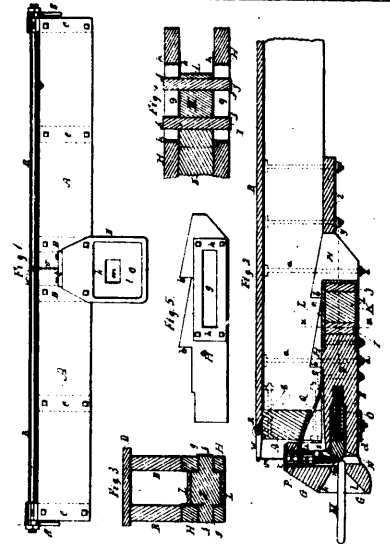
16059 Hesselbom's Improvements on Snow Ploughs.



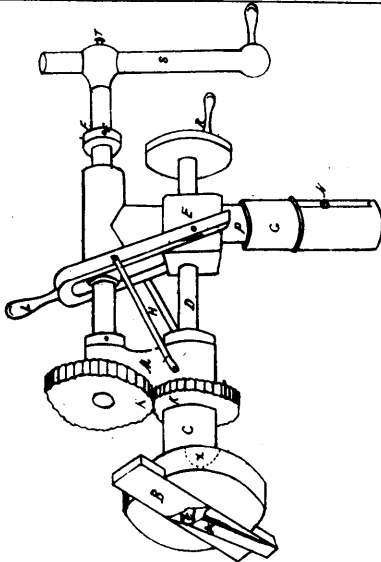
16061 **Fifield's Improvements on Lanterns.**



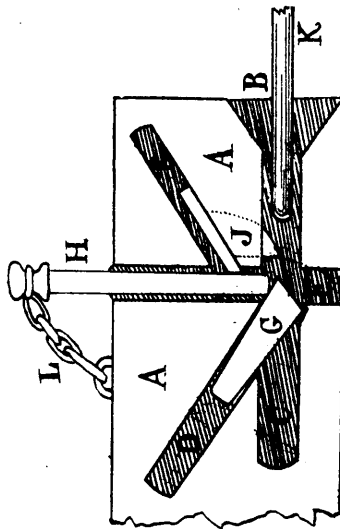
16062 **Elphinstone & Vincent's Improvements in Dynamo Electric Machines.**



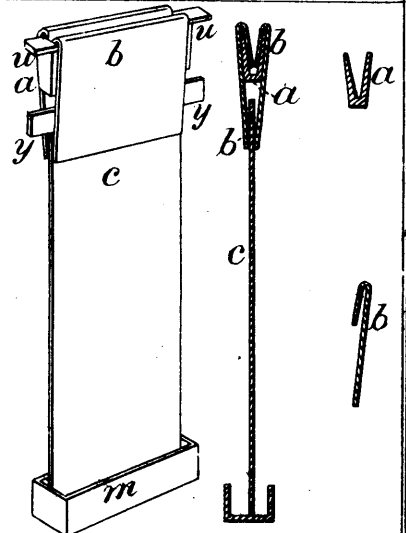
16063 **Cram's Improvements on Car-Couplings and Draw-Bars.**



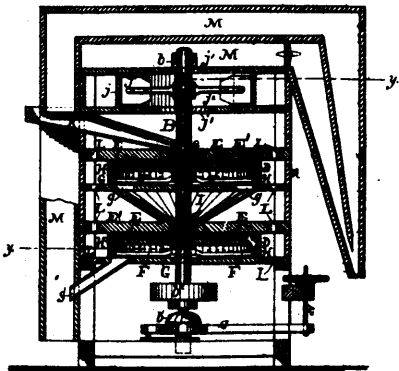
16084 **Paré's Improvements on Hollow Augers.**



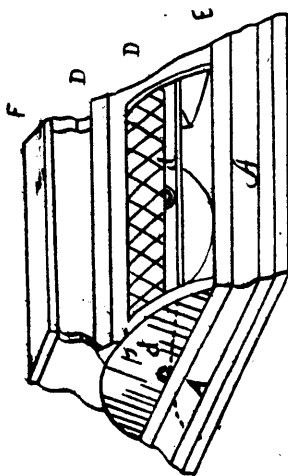
16065 **Marcheter's Improvements in Car-Couplings.**



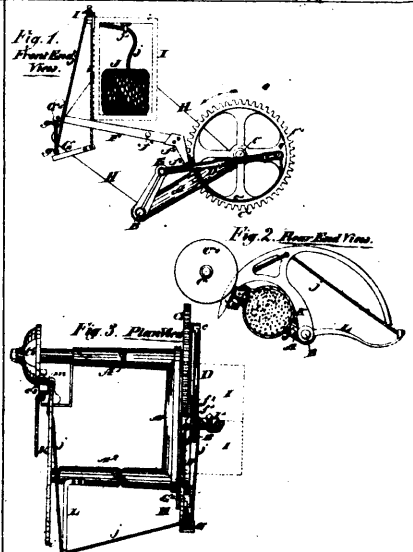
16066 **Nichol's Improvements in Apparatus for Evaporating or Concentrating Liquids, and Saturating Liquids with Gases.**



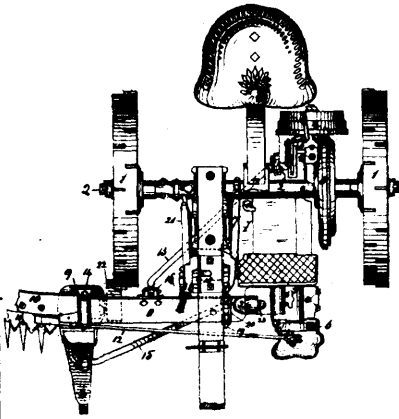
16087 **Mann's Improvements on Grain Scourers.**



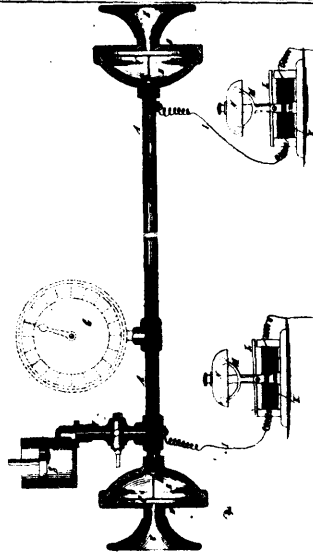
16088 **Gordon's Improvements in Lunch Boxes.**



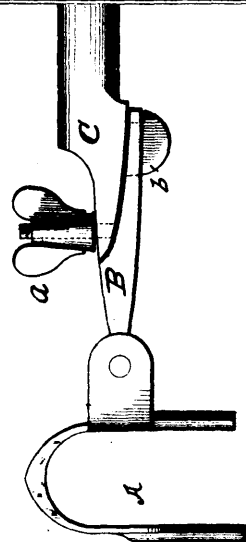
16069 **Appleby's Improvements in Grain Binders.**



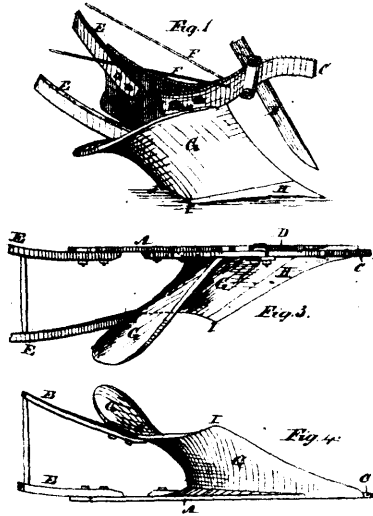
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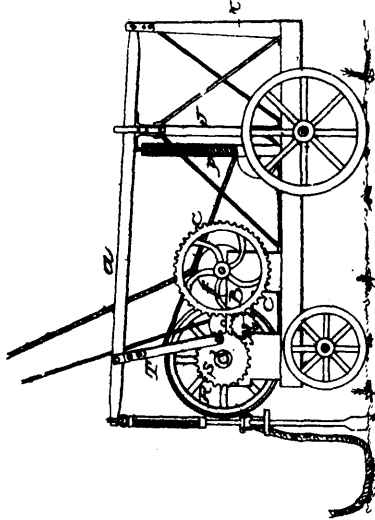
16072 Hussey's Improvements in Telephones.



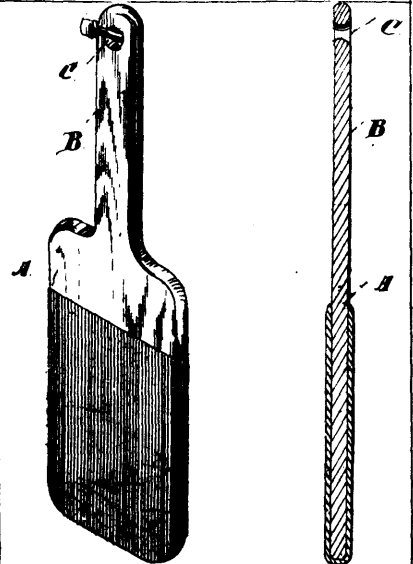
16075 Randall & Clark's Improvements on Thill and Pole Couplings for Vehicles.



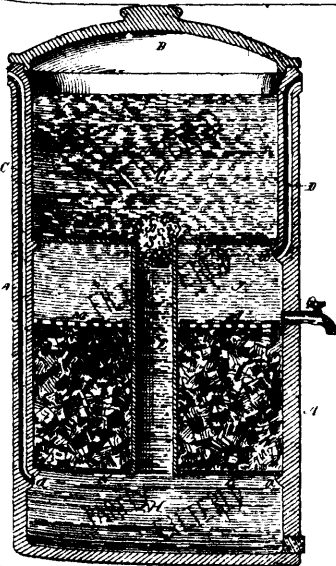
16078 Dean's Improvements on Ploughs.



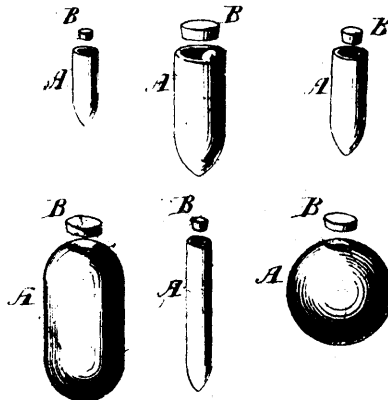
16077 Downie's Improvements on Portable Drilling Machines for Oil and Water Wells.



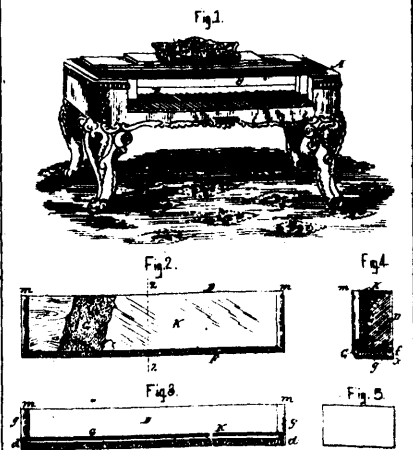
16078 Spencer's Improvements on Bluing Paddles.



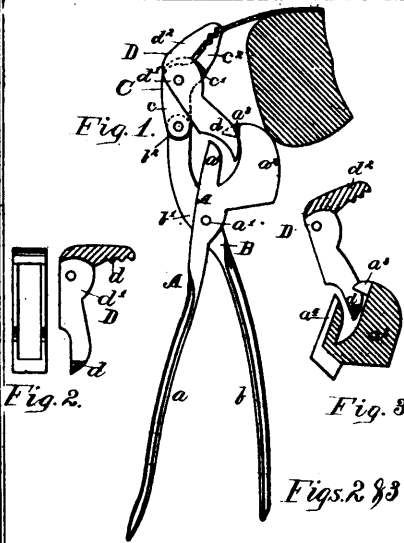
16080 Bailey's Improvement on Water Filters.



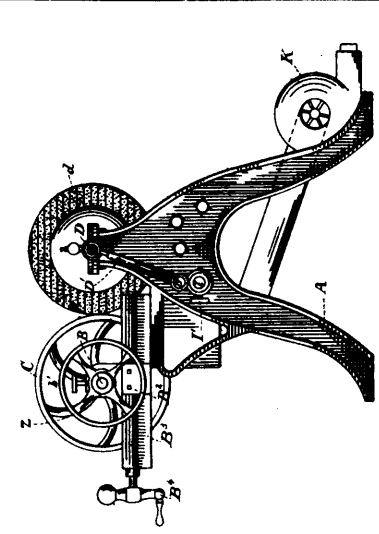
16081 Gibbs' Improvements on Suppostories.



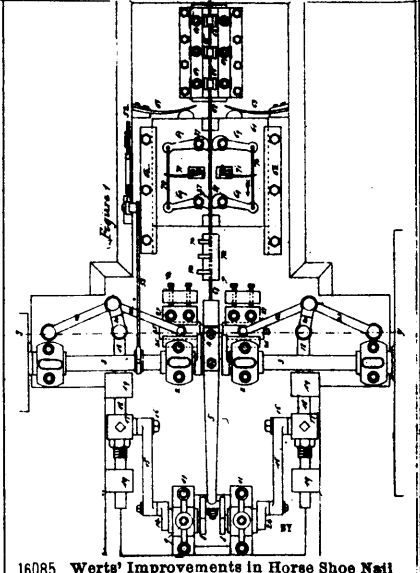
16082 McCarthy & Davis' Improvements on Pianos.



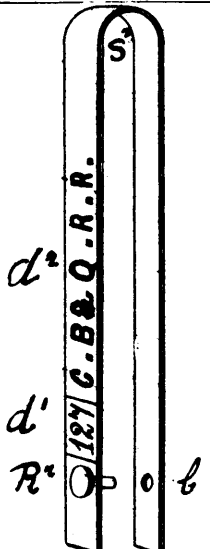
16083 Henderson's Improvements in Lasting Tools.



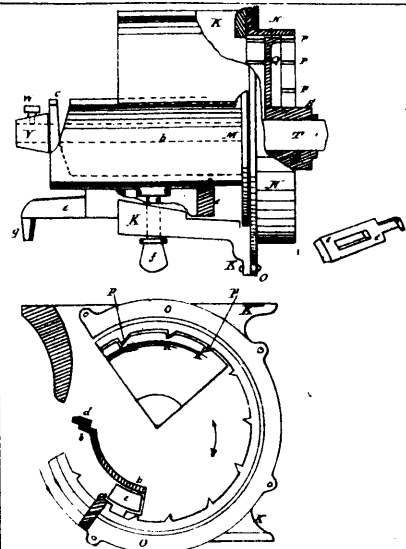
16084 Simmons' Improvements on Grinding Machines.



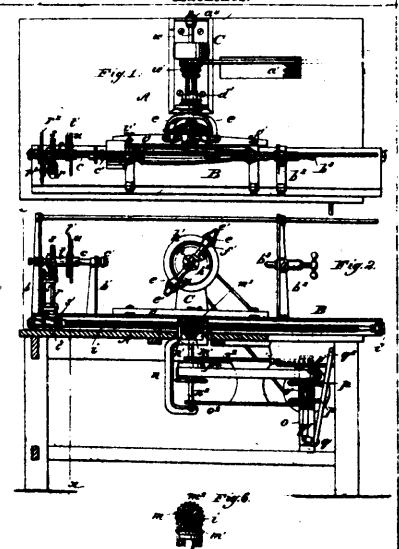
16085 Werts' Improvements in Horse Shoe Nail Machines.



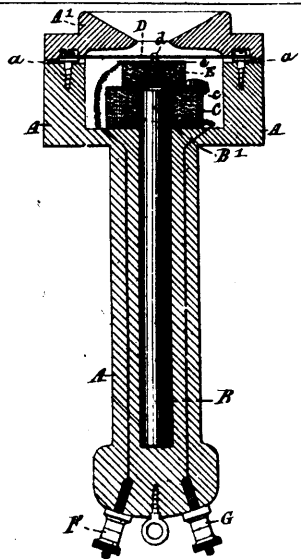
16086 Brooks' Improvements on Seals for Securing Car Doors and other Purposes.



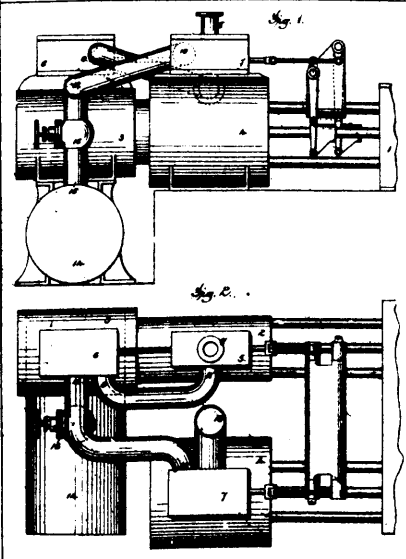
16087 Bartlett's Improvements on Seed Drill Distributors.



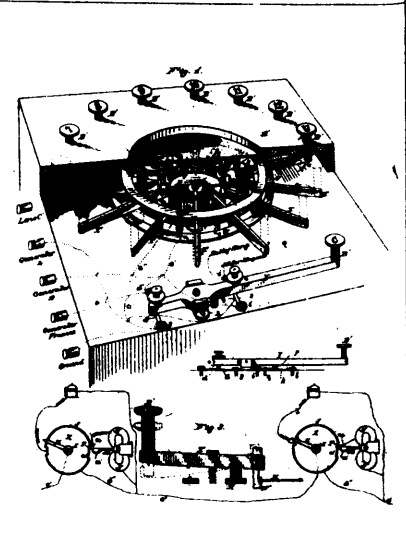
16088 Anderson's Improvements on Moulding Machines.



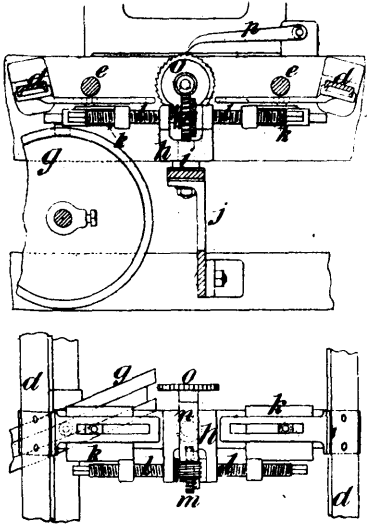
16089 Strangways' Improvements in Telephones.



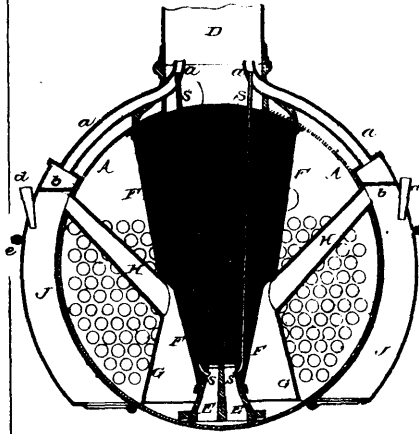
16090 Ferry's Improvements on Pumping Engines.



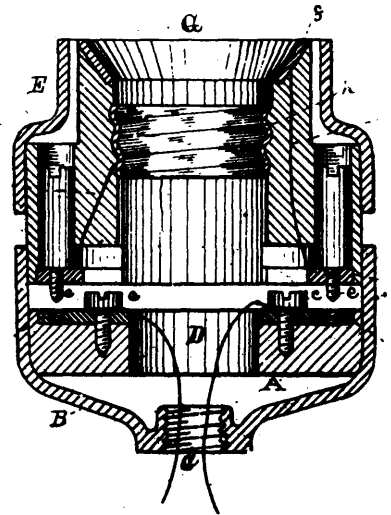
16091 Stabber's Improvements on Call Apparatus for Telephone Lines.



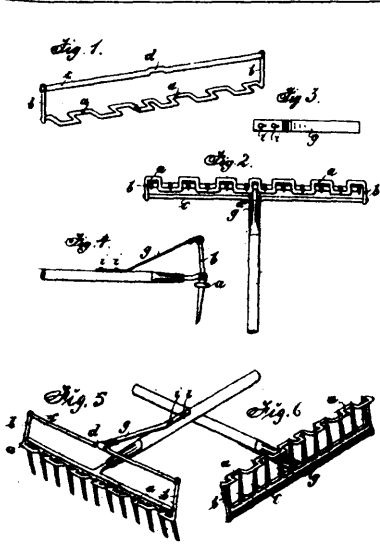
16093 Ashworth's Improvements on Yarn Winding Machines.



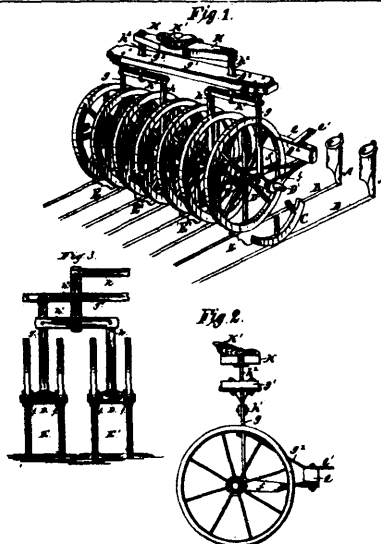
16094 Mitchell's Improvements on Spark Arresters.



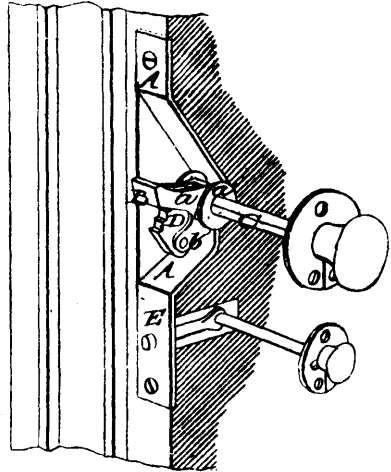
16095 Johnson's Improvements on Sockets for Electric Lamps.



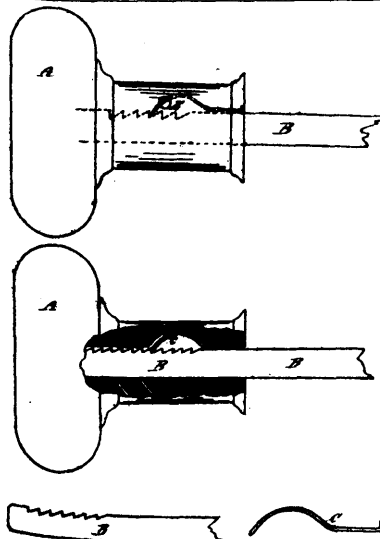
16097 Miller & Eason's Improvement in Hand Rakes.



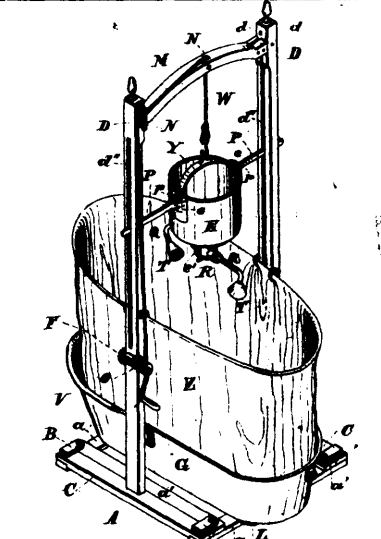
16098 Smith's Improvements on Grain Drills.



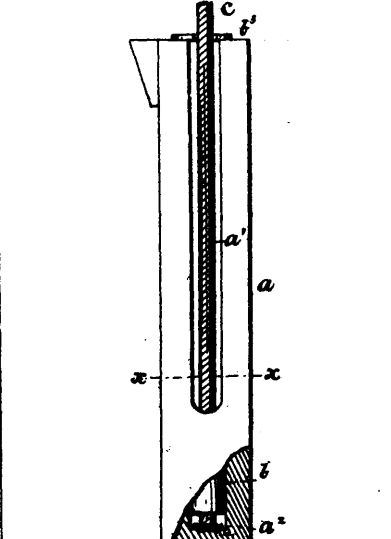
16099 Montague, Booker & Dinning's Improvements on Sash Fasteners and Holders.



16100 Mills's Improvements on Door Knobs and Spindles.

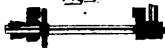
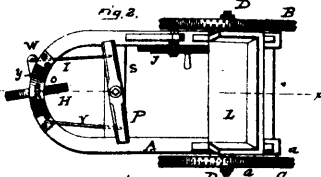
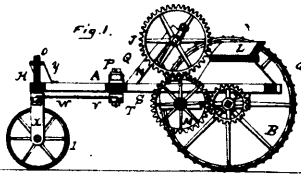


16101 Kendall's Improvements on Portable Bathing Apparatus.

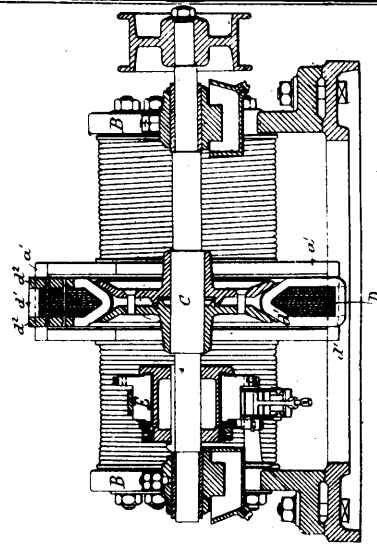


16103 Goforth's Improvements on Sash Cord Fasteners.

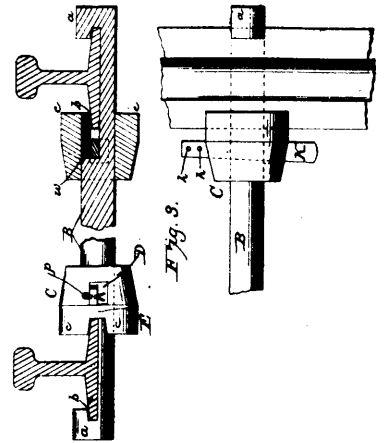




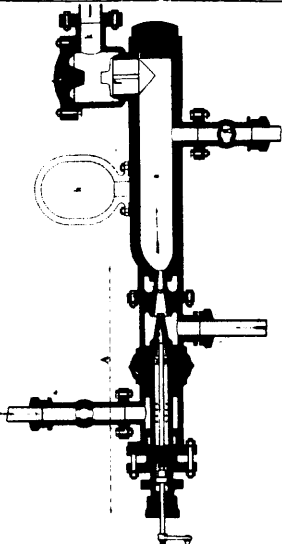
16115 Lowry's Improvements on Velocipedes.



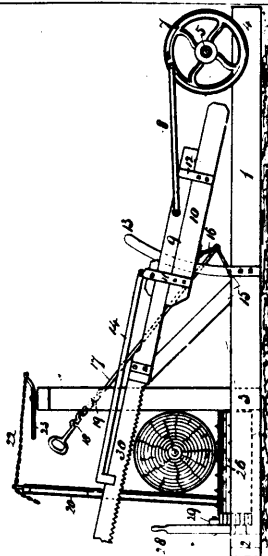
16116 Gulcher's Improvements in Dynamo-Electric Machines.



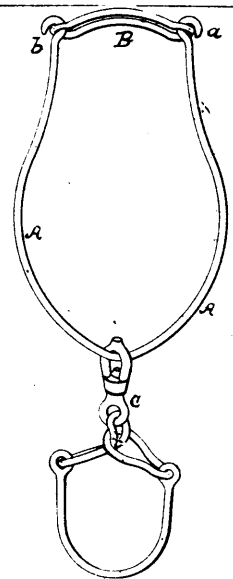
16117 Lovejoy's Improvements on Switch Rods and Couplers.



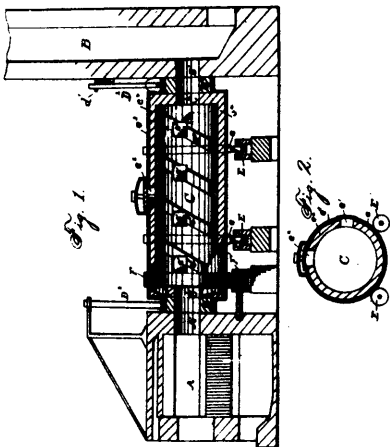
16118 Michaux & Baingard's Improvement on Injectors.



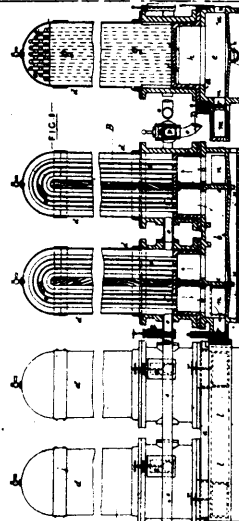
16119 Fisher's Improvements on Drag Saws.



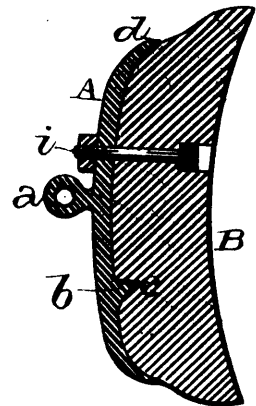
16120 Baker's Improvement on Cattle Ties.



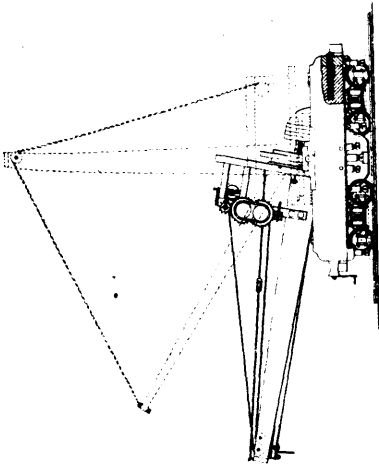
16121 Frank's Improvements on Glass Furnaces.



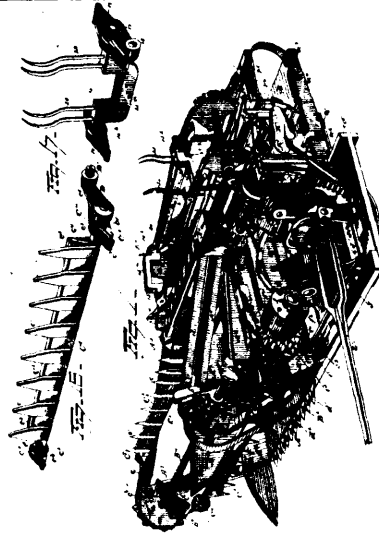
16122 Chambers' Improvements in Refrigerating and Freezing, and on Apparatus therefor.



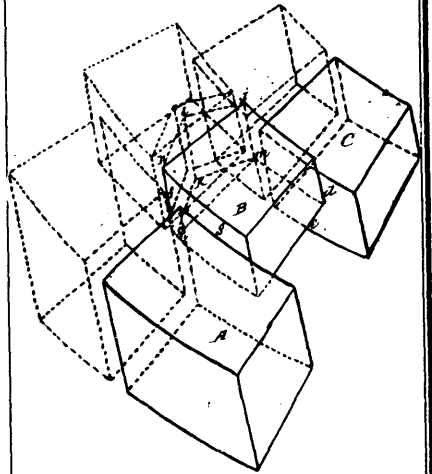
16123 Haldeman's Improvements on Waggon Brake Blocks.



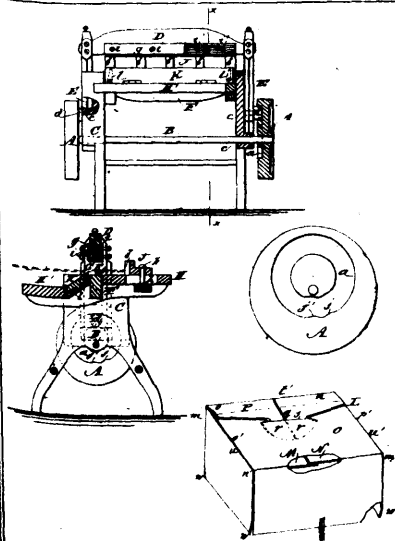
16124 Jewett's Improvements on Wrecking and Construction Cars for Railways.



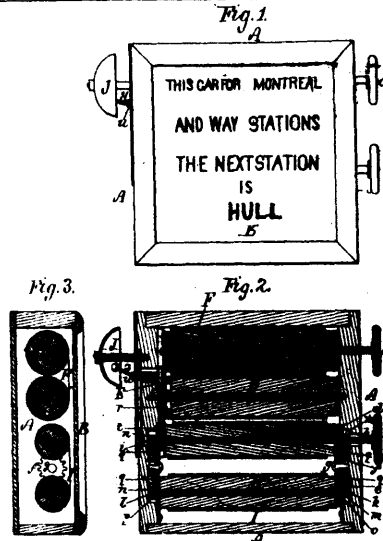
16125 Hale's Improvements on Grain Binding Machines.



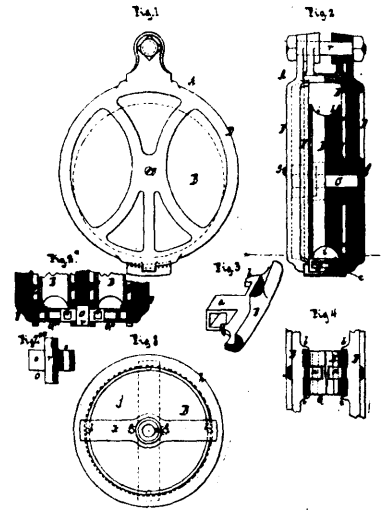
16128 Lefebvre & Binette's Improvements on Bricks.



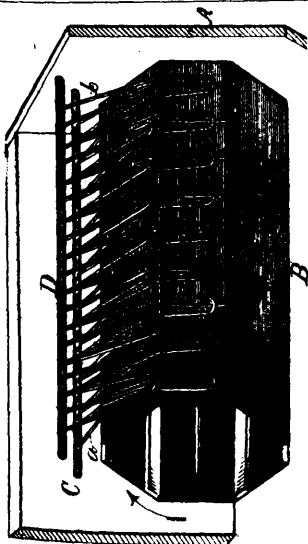
16129 Ludlow & Elmer's Improvement on Paper Boxes and Machines for the Manufacture of the same.



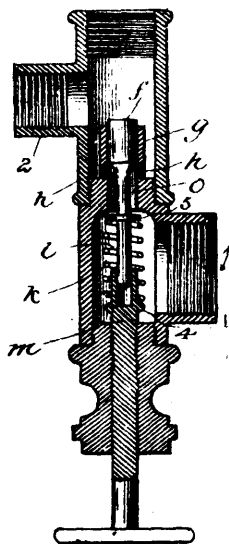
16130 Morse's Improvements in Railway Station Indicators.



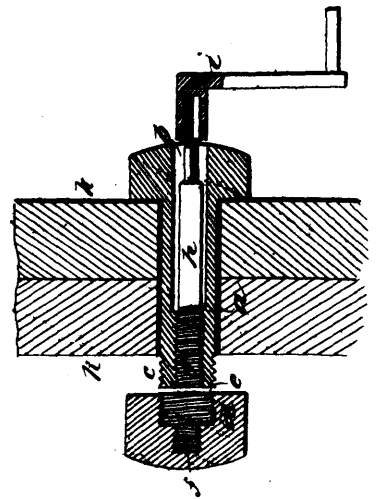
16132 Norcross' Improvements in Tackle Blocks.



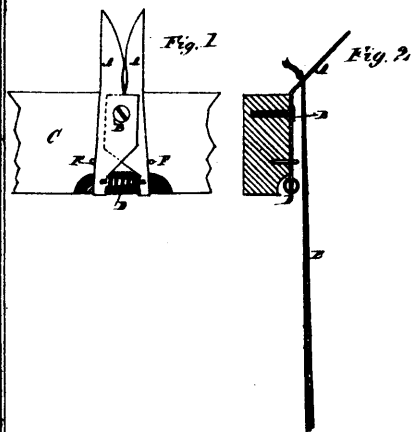
16133 Schacht's Improvements in Flour Bolts.



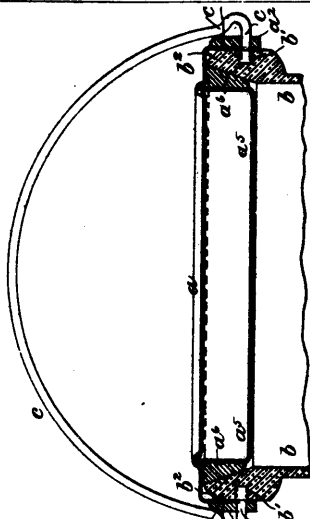
16135 Hoffman's Improvements in Lubricators.



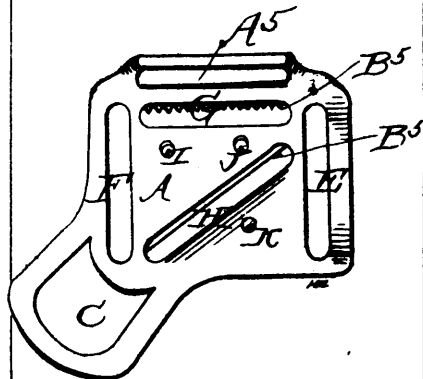
16136 Bell's Improvement on Nut Locks.



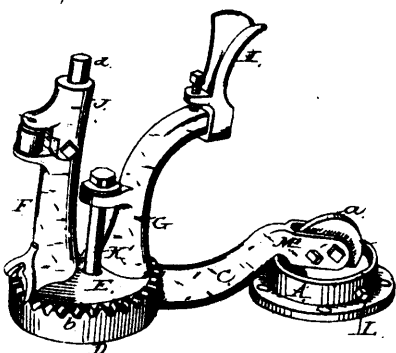
16137 Peters & Swartzburg's Improvements in Whip-Holders.



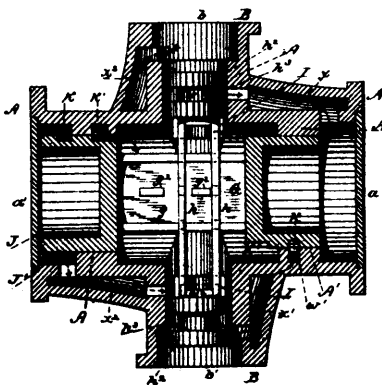
16138 Thompson's Improvements on Bottle Stoppers.



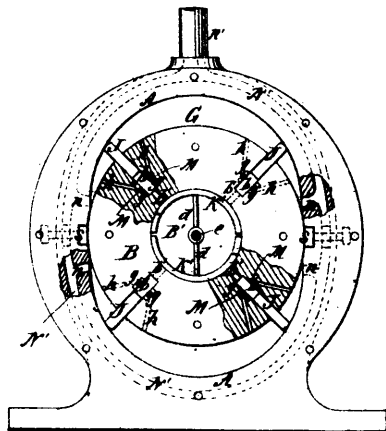
16139 Barnard's Improvements on Halters.



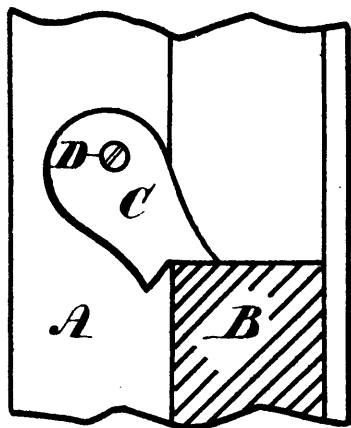
16140 Robert's Improvements in Shoemakers' Jacks.



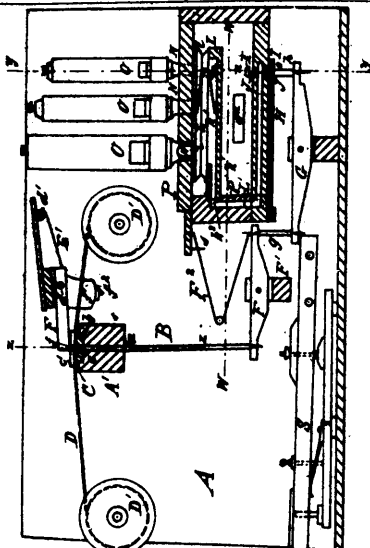
16141 Wells' Improvements in Water Meters.



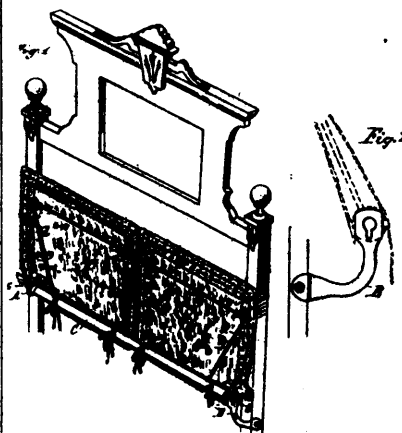
16142 Wade & Wardell's Improvement on Rotary Engines.



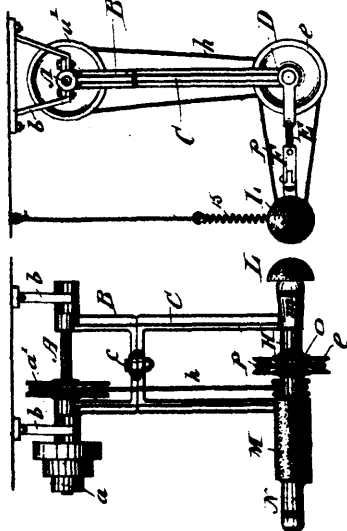
16143 Sibley's Improvements on Sash Fasteners.



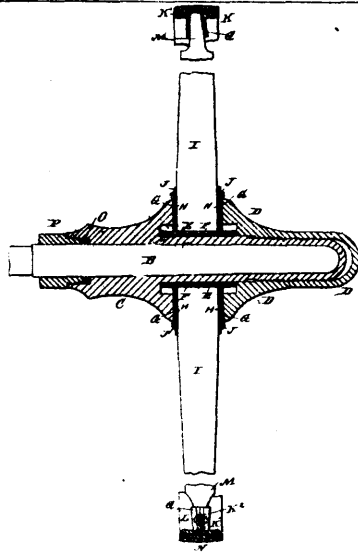
16144 Durkee's Improvements on Mechanical Musical Instruments.



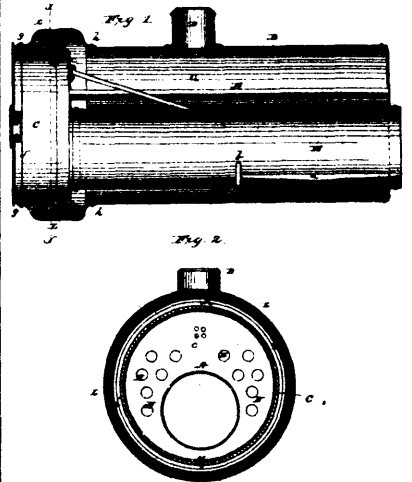
16145 Wanless' Improvements on Pillow Sham Holders.



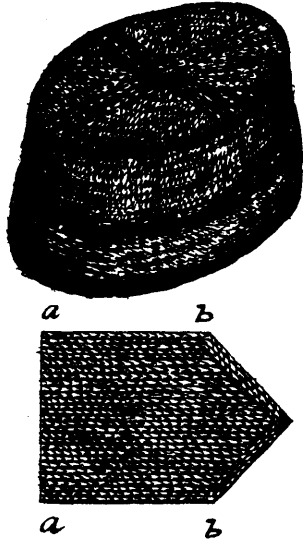
16149 Patten & Davey's Improvements in Combined Sole Buffing, Cleaning and Edge Setting Machines.



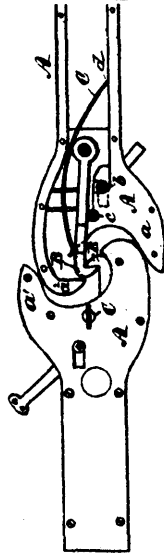
16152 Dranly's Improvements on Wheels.



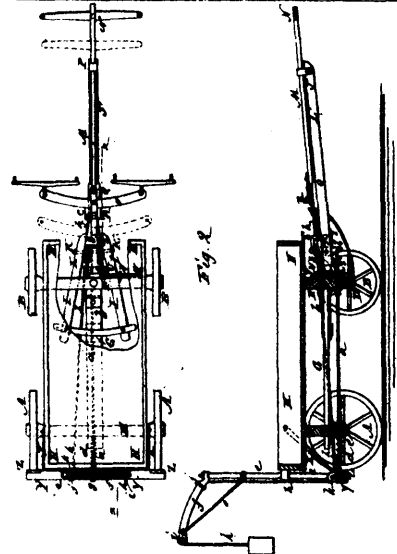
16153 Huber's Improvements on Water Jacket Smoke Boxes.



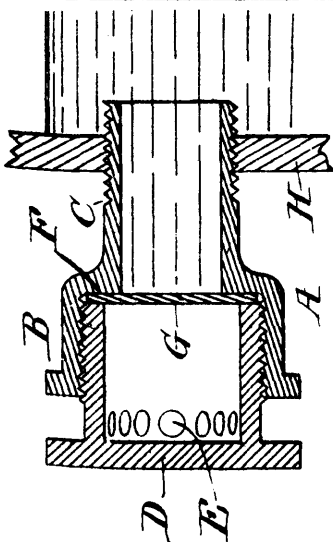
16154 Hoag's Improvements on Knit Caps.



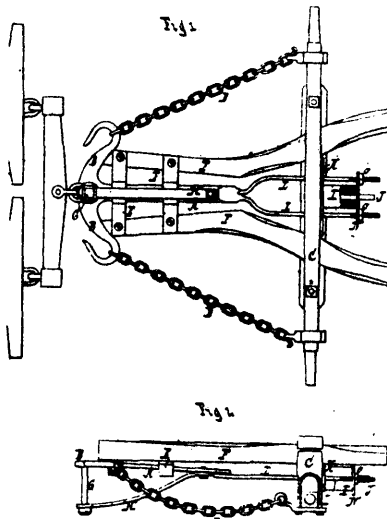
16155 Davis & McIntyre's Improvement on Car-Couplings.



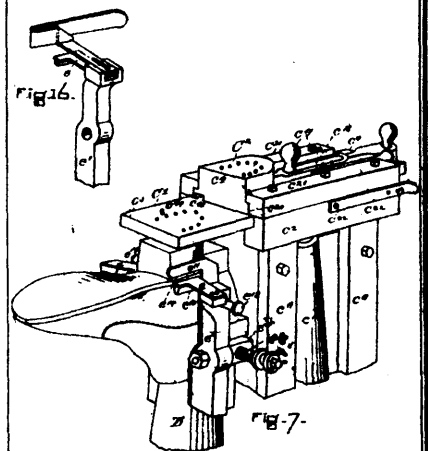
16156 Van Patten's Improvements on Waggon's.



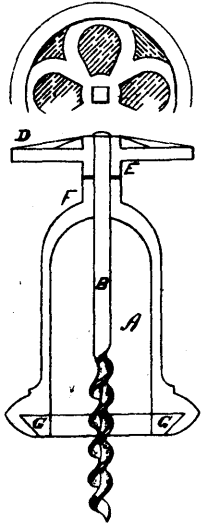
16160 Prowse's Improvements in Safety Reliefs.



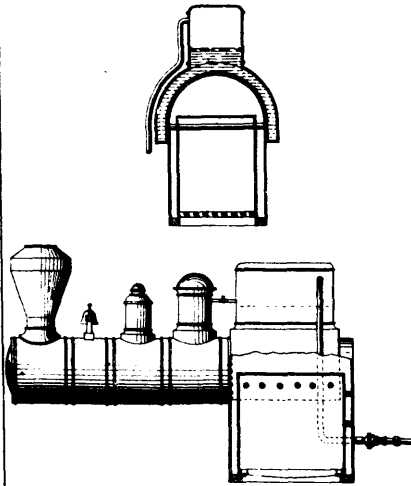
16161 Sebastian's Improvements in Draft Equalizers.



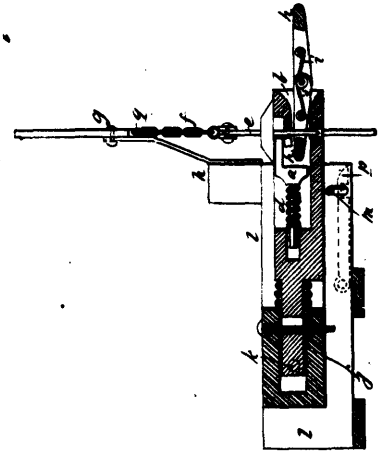
16162 Henderson's Improvements on Heel Nailing Machines.



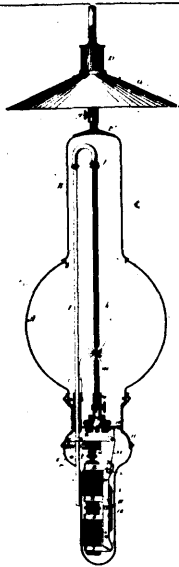
16163 Addison's Improvements in Cork Drawers.



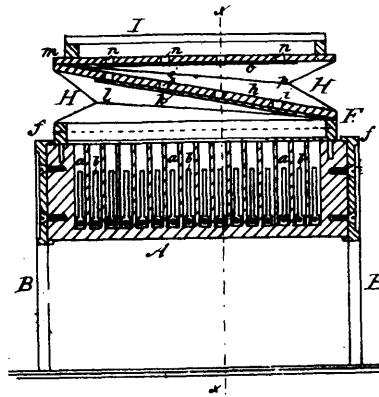
16164 Martin's Improvements in Car Heaters.



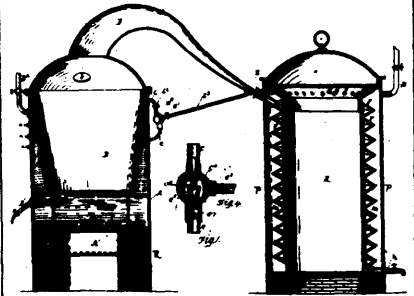
16165 Hale's Improvements in Car-Couplings.



16166 McCarthy's Improvements on Electric Arc Lamps.



16167 Pain's Improvements in Automatic Harmonica.



16168 Peterman's Improvements on Distilling and Condensing Apparatus.

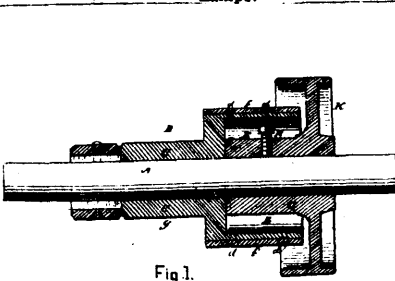
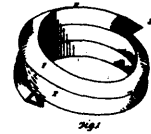


Fig. 1.

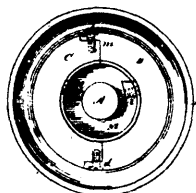
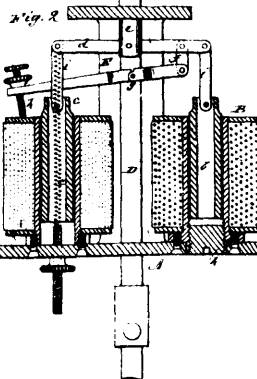
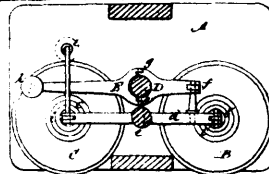


Fig. 2.



Fig. 3.

16169 Hayes' Mechanism for Preventing the Lapping of Belts on Shafting.



16170 Parker's Improvements on Electric Lamps.

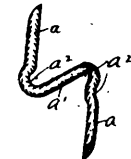


Fig. 1.



Fig. 2.



Fig. 3.

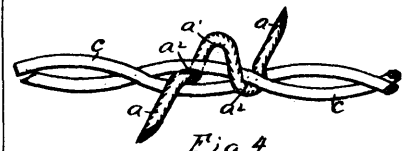
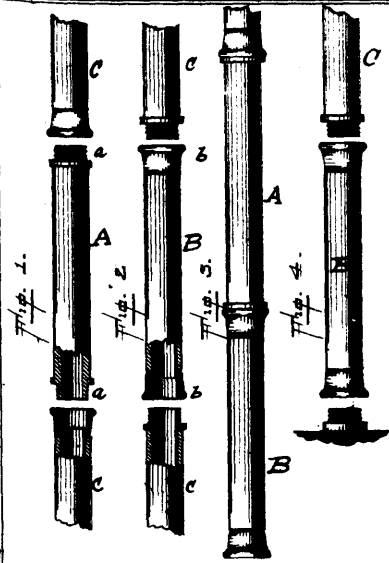
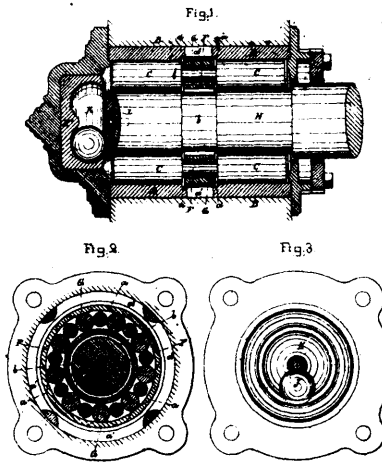


Fig. 4.

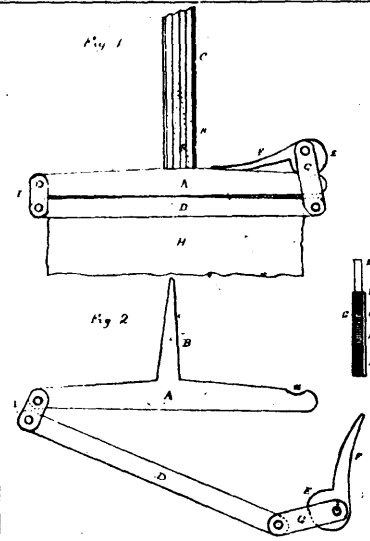
16171 Bralnard's Improvements on Wire Barbs for Fences.



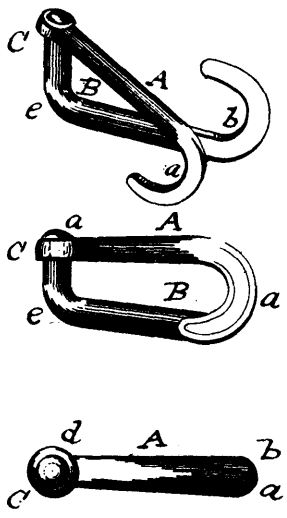
16172 Gilbert's Improvements in Hose Connections.



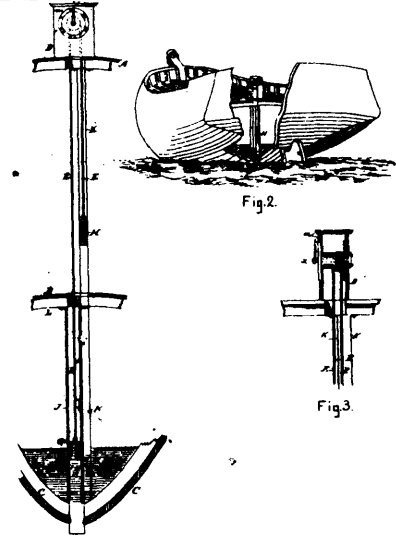
16173 Chaplin's Improvements on Axle Boxes.



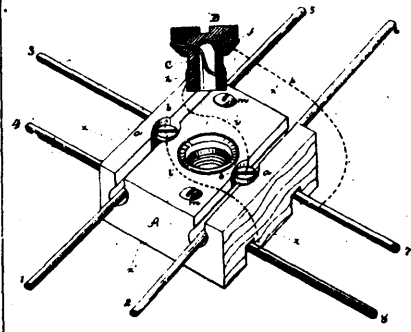
16174 Lee's Improvement in Mop Holders.



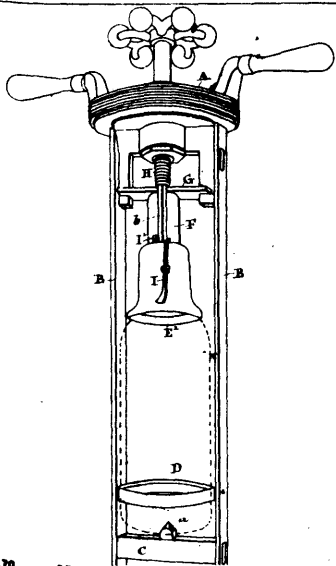
16176 Shetter's Improvements on Open Links.



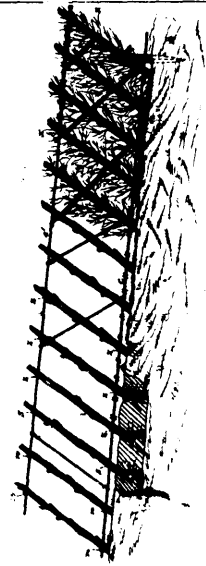
16177 McCarthy & Davis' Improvement on Water Indicators.



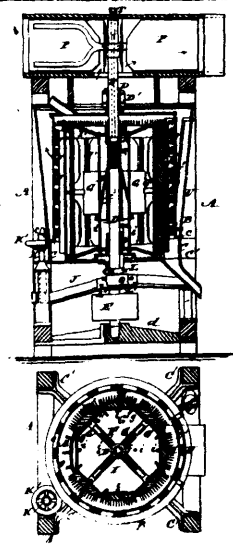
16178 Johnson's Improvements on Connections for Electric Circuits.



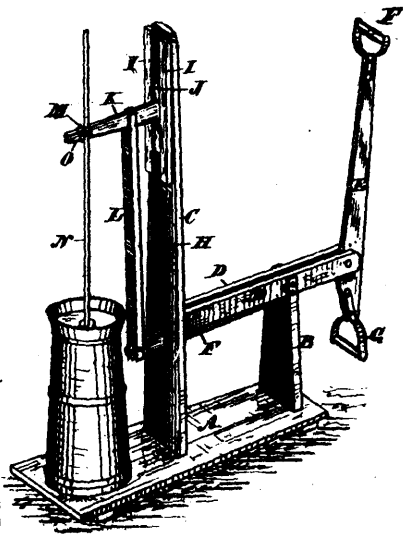
16179 Morrison's Improvements on Fire-Extinguishers.



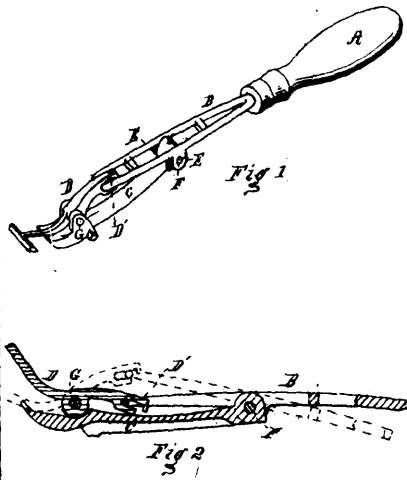
16183 Young's Improvements in Plashed Hedges.



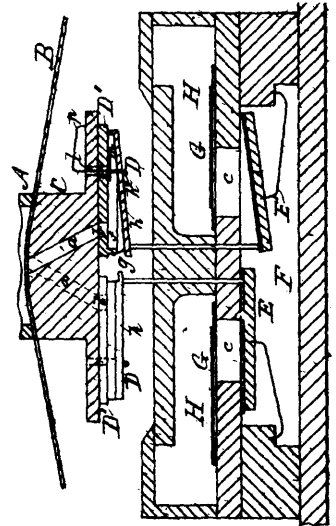
16184 Edwards' Improvements on Smut and Polishing Machines.



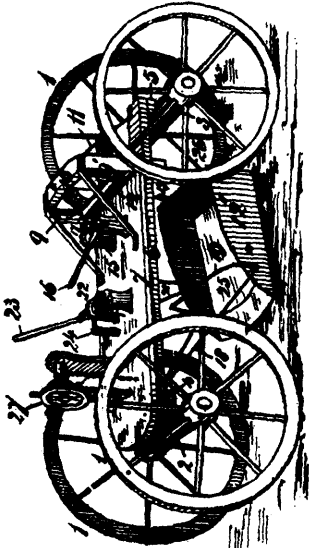
16186 Moore's Improvements on Churning Apparatus.



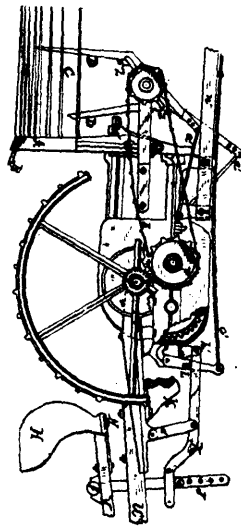
16186 Fellows' Improvement on Lifters.



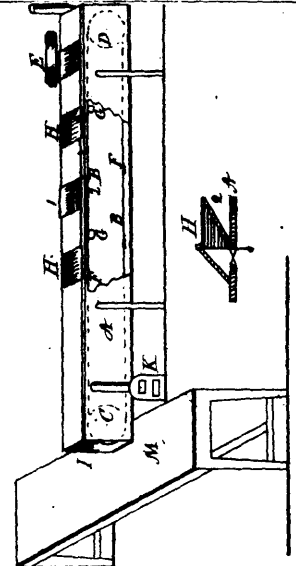
16187 Durkee's Improvements on Pneumatic Diaphragm Levers.



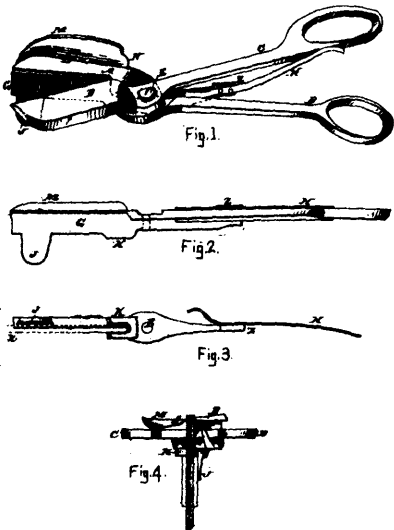
16188 Gerow's Improvements on Road Scrapers.



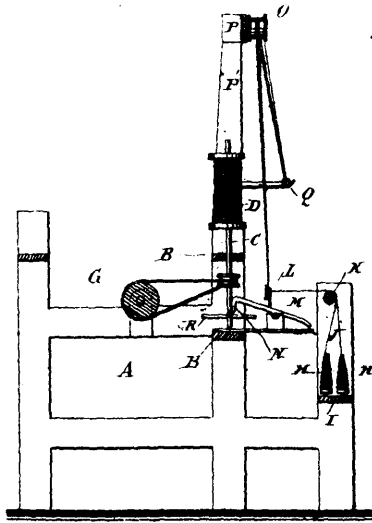
16189 Herrington's Improvements on Potato-Diggers.



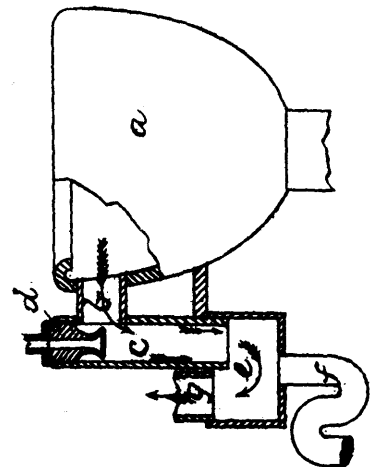
16190 Donald's Improvements on Machines for Bleaching Fruits and Vegetables.



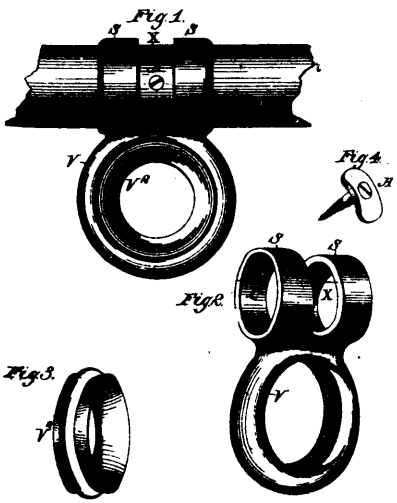
16191 Phipps' Improvements on Shears.



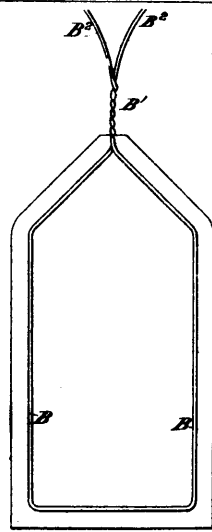
16192 Brown's Improvements on Stop Motion for Spoolers.



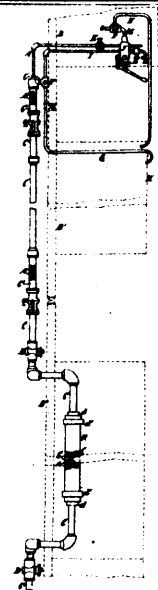
16193 Bowan's Improvements in the Method of, and Apparatus for Ventilating Water Closets.



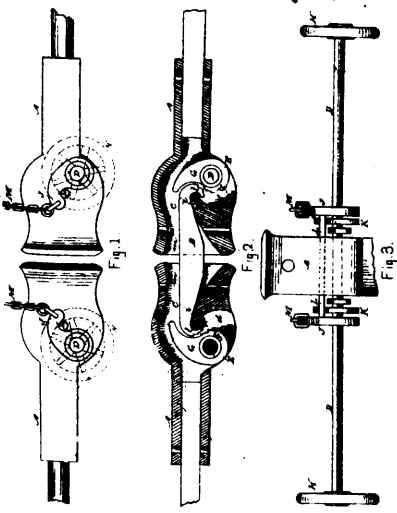
16196 Fenning's Improvements on Po.e Rings.



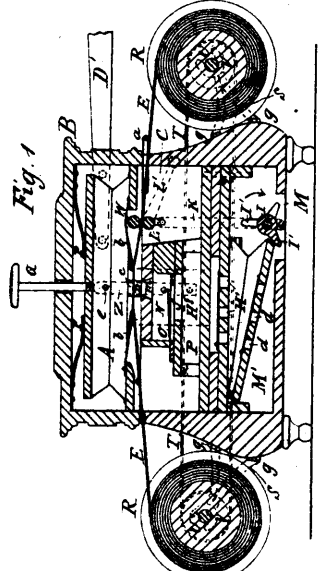
16197 Warren's Improvements on Tags.



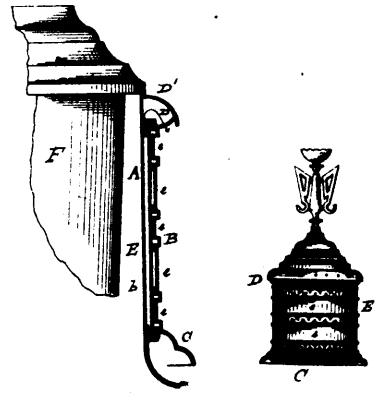
16198 Walsh's Improvements on Apparatus for Heating Railway Cars.



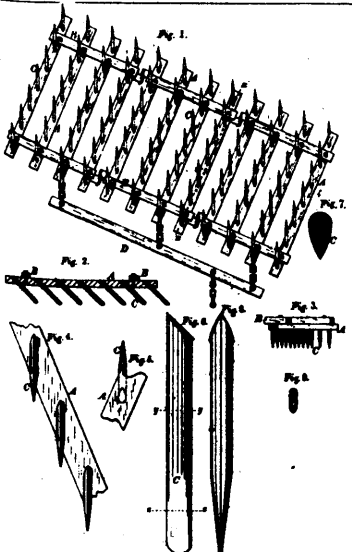
16199 Ward's Improvements on Car-Couplers.



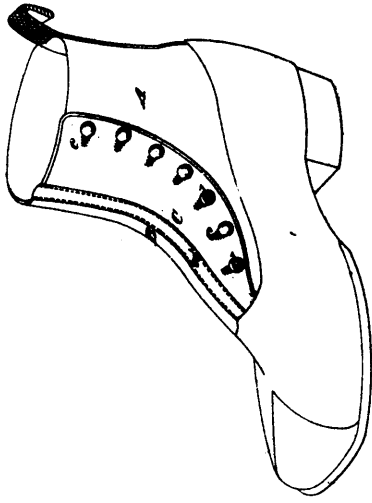
16200 Pain's Improvements on Mechanical Musical Instruments.



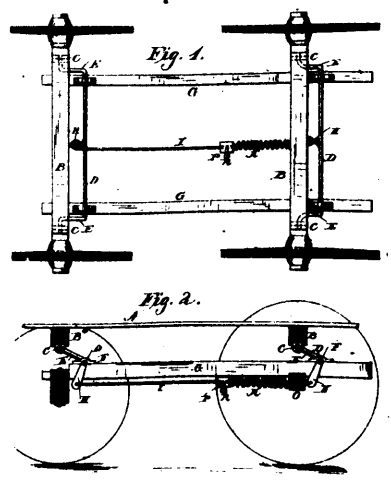
16201 Barbour & Mills' Improvements on Magazine Drum Stoves.



16202 Herendeen's Improvements on Harrows.

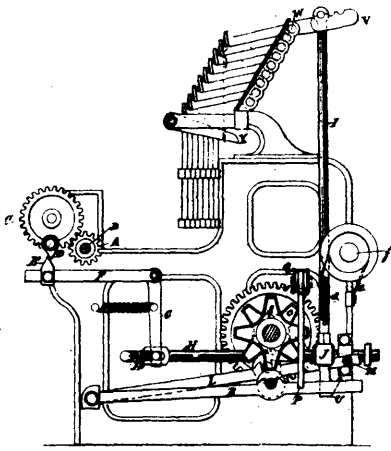


16204 Stimpson's Improvement on Gaiter Boots and Shoes.

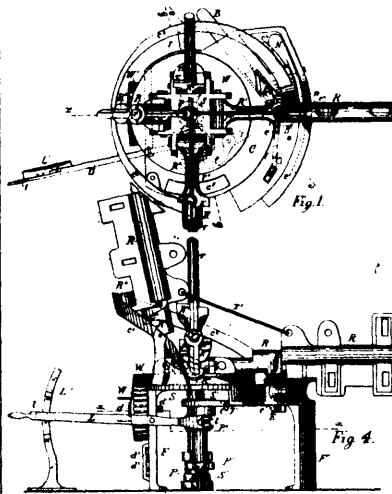


16206 Webber's Improvements on Waggon Springs.

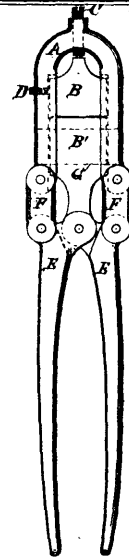




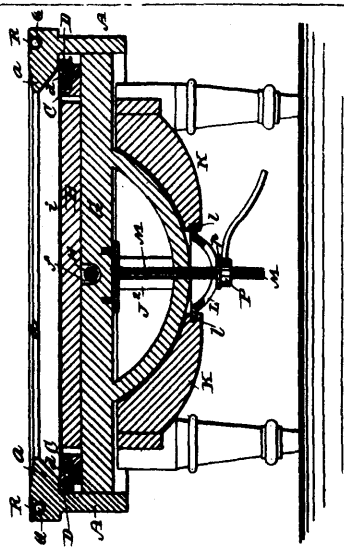
16207 Briggs' Improvements on Machinery for Weaving Sacks, Bags, Pillow Cases, &c.



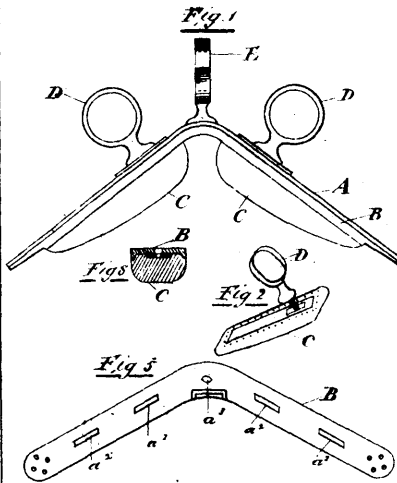
16208 Bell's Improvements on Reapers.



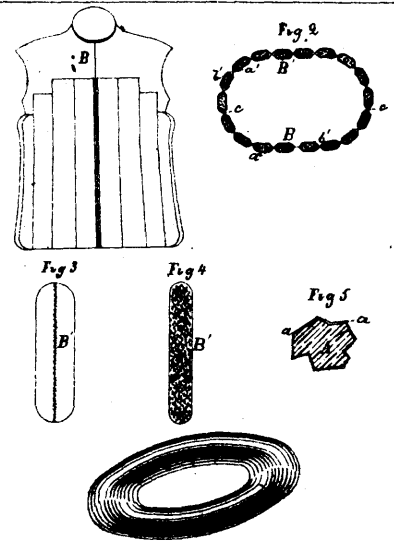
16209 Duff's Improvements on Bolt Cutters.



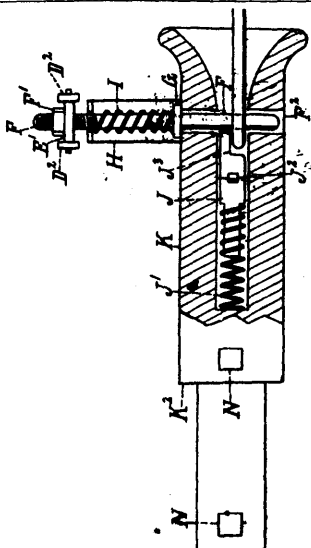
16210 Allen's Improvements on Billiard Tables.



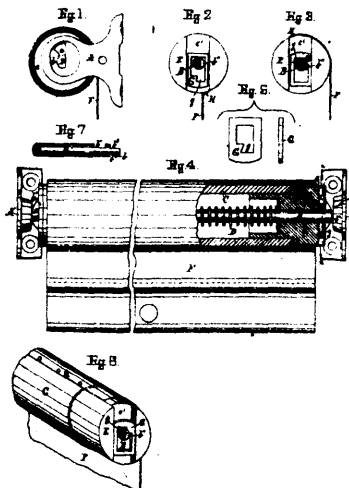
16211 Bickle & Bridges' Improvements on Harness Pads.



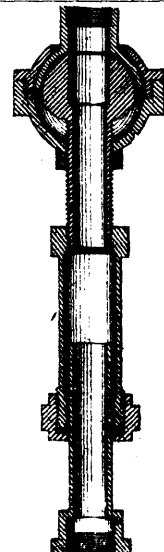
16213 Cogswell's Improvements on Life Preservers.



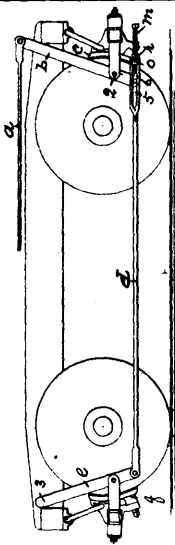
16214 Bigney's Improvement on Car-Couplers.



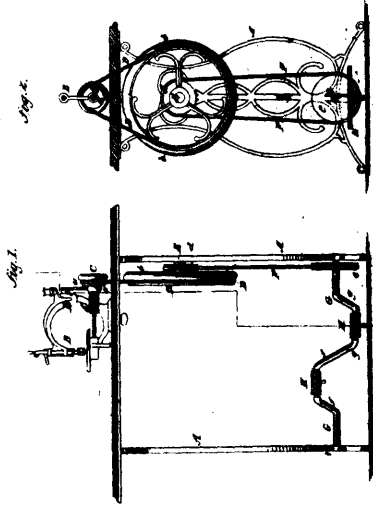
16221 Kempster's Improvements on Spring Shade Rollers.



16222 Martin's Improvements on Pipe Couplings.



16223 Higham's Improvements on Car Brakes.



16224 Ward's Improvements on Treadles for Sewing and other Machines.

				1	2	3	4	5	6	7				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100					

Fig. 1.

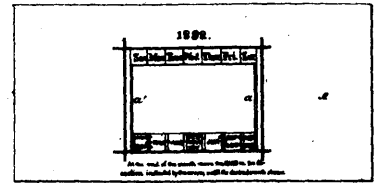
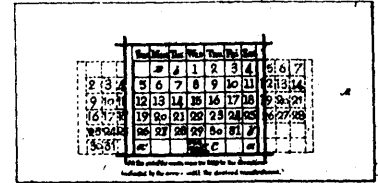
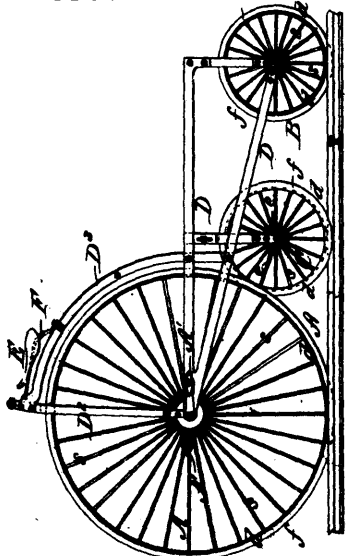


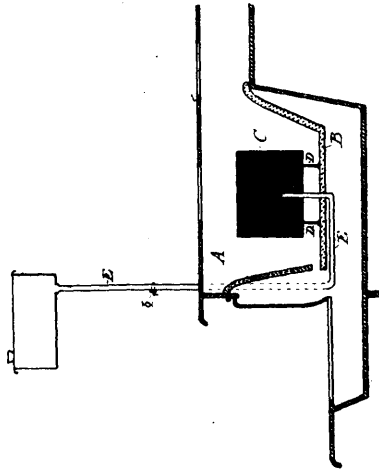
Fig. 2.



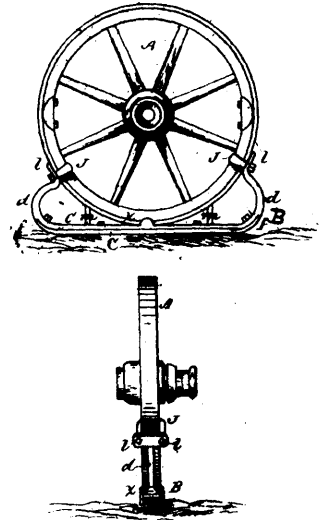
16225 Heath's Improvement on Calendars.



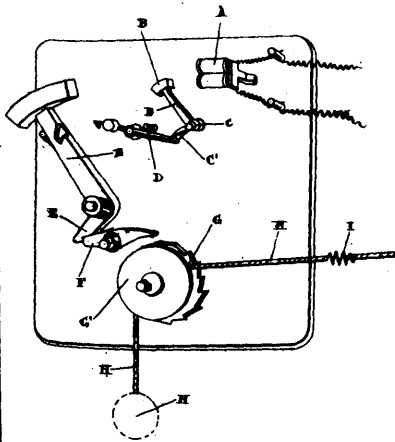
16226 Murphy's Improvements on Railroad Velocipedes.



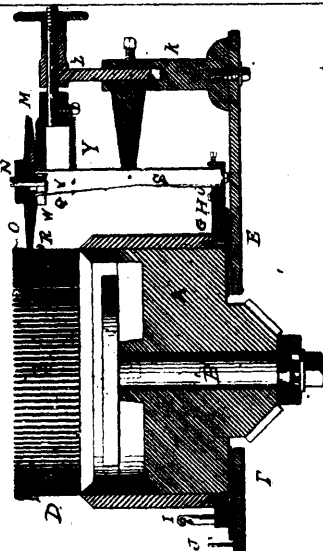
16227 Bury & Bidelman's Improvements on Petroleum Burners.



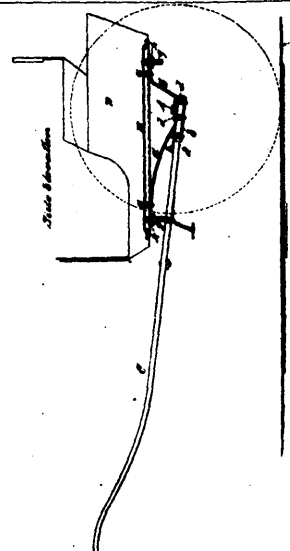
16228 Holland's Improvements on Wheel Runners.



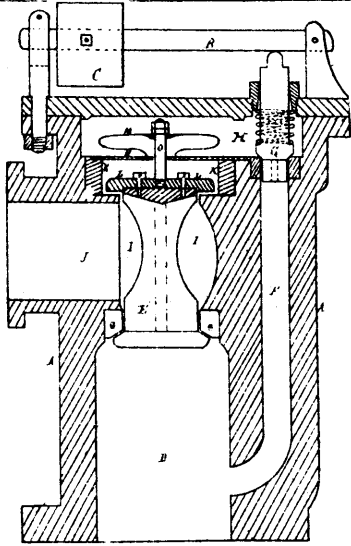
16229 Nesbitt's Improvement on Electric Devices for Operating Throttle Valves.



16230 Adams' Improvements on Knitting Machines.



16231 Storm's Improvements on Two Wheeled Vehicles.



16232 Collier's Improvements on Safety Valves

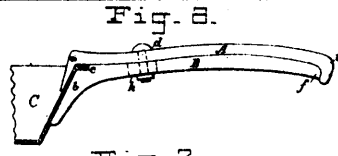


Fig. 2.

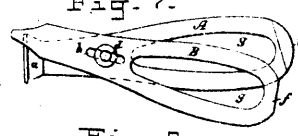


Fig. 3.

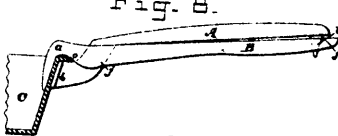


Fig. 4.

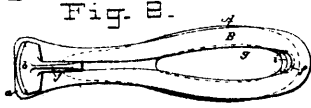
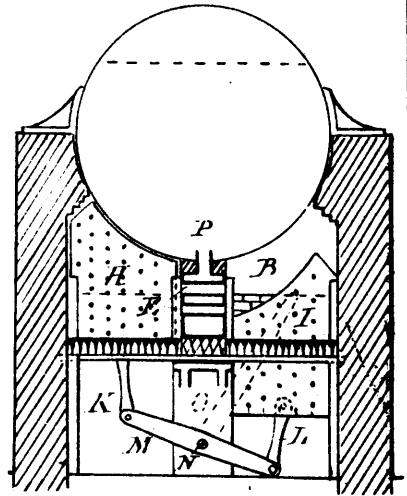
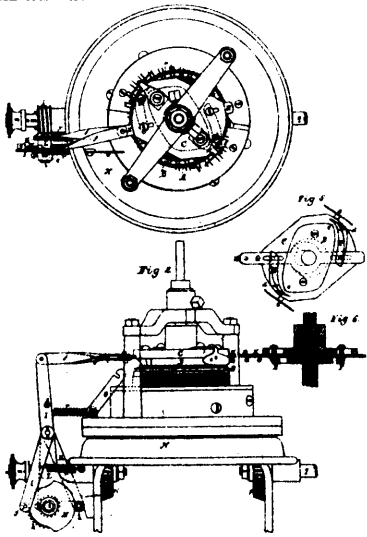


Fig. 5.

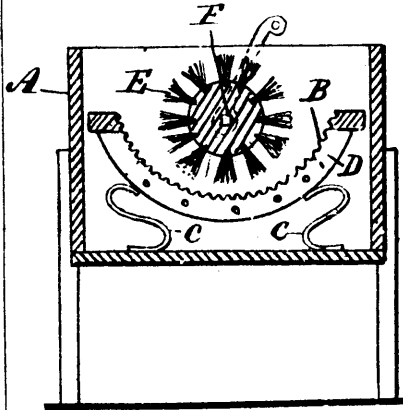
16233 Nelder & Grossmann's Improvements on Detachable Handles for Utensils.



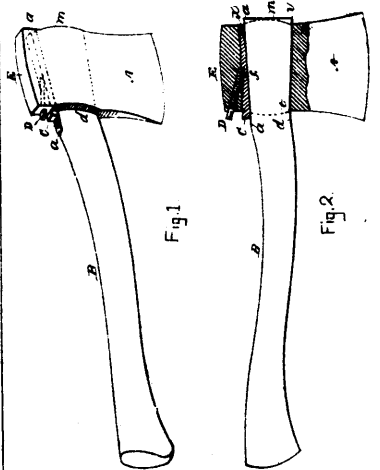
16234 Chandler & Whitehead's Improvement on Steam Generators and Furnaces.



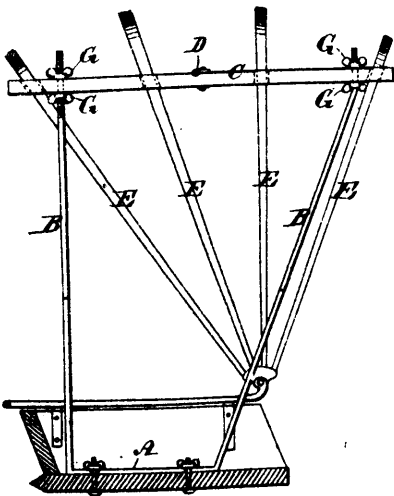
16235 Nye's Improvement in Knitting Machines.



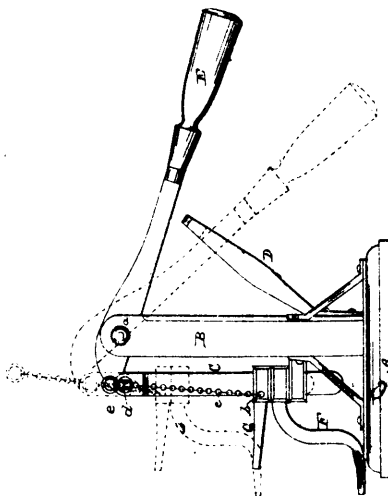
16236 Manton's Improvement on Washing Machines.



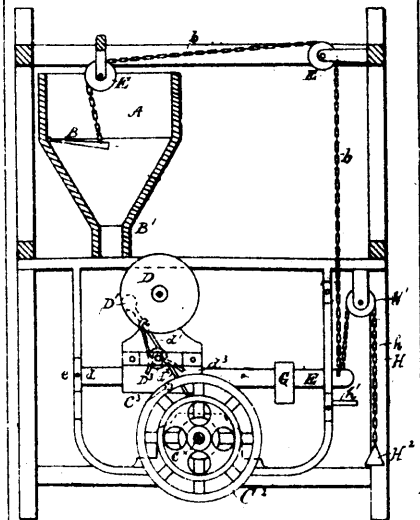
16237 Tremblay's Improvement on Axes.



16238 Lewis' Improvements on Carriage Top Setters.



16240 Baird's Improvements in Lifting Jacks.



16241 Lanhoff's Improvement in Millstone Alarms.