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# The Canadian Patent Office

## RECORD




Vol. XI.—No. 10.

OCTOBER, 1883.

Price in Canada \$2.00 per An.  
United States — \$2.50 “

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### INVENTIONS PATENTED.

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

#### No. 17,555. Emery or Corundum Wheel.

(*Tambour à émeri.*)

James T. Barnard, Hamilton, Ont., (Assignee of Gilbert Hart, Detroit, Mich., U. S.) 1st September, 1883; 5 years.

*Claim.*—1st. An emery, corundum or other composition wheel having embedded therein and extending from the center toward the circumference thereof a brace or braces formed of a substance as easily or more easily worn away by friction than the body of the wheel whereby the composition of which such wheel is formed is braced against the centrifugal strain resulting from a rapid rotation and an even wear of the periphery of said wheel secured, substantially as set forth. 2nd. An emery, corundum or other composition grinding or polishing wheel having embedded therein a concentric reticulated or foraminous metal disk or disks equally subject to wear by friction as the body of the wheel whereby said wheel is re-enforced in all directions, substantially as set forth.

#### No. 17,556. Couplings for Shafting.

(*Embrayage des arbres de couche.*)

John Killip, Allegheny, Penn., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A shaft-coupling composed of longitudinal separable sections having a central bore, one of said sections having rectangular flat-faced keys, which project into the cavity of the coupling, said keys surrounded by relief-channels, substantially as and for the purposes specified. 2nd. A shaft-coupling composed of longitudinally separable sections having a central bore, each section having longitudinal grooves on its edges parallel to the axis of the bore, substantially as and for the purposes specified. 3rd. The combination with the shafts having flat recesses *h h*, of a coupling composed of longitudinally separable sections, one of said sections having rectangular flat-faced projections *f f* which project into the recesses *h h* of the shafts, substantially as and for the purposes specified.

#### No. 17,557. Telephone.

(*Téléphone.*)

Allen W. Rose, London, Eng., 1st September, 1883; 5 years.

*Claim.*—1st. Connecting the receiver and transmitter of a telephone, both to one rod or carrier so as to form a portable telephone which can be grasped and carried in the hand and simultaneously placed in position opposite or against the ear and the mouth respectively of the user, substantially as described with reference to figure 1 of the drawings. 2nd. Constructing telephonic transmitters of two diaphragms, discs or plates separated from each other by insulating material, so as to form a recess or cavity between them to contain divided or powdered carbon or its equivalent, a space being left between the outward surfaces of the diaphragms and the holder in which they are secured to admit of free vibration, substantially as described with reference to figure 2 of the drawings. 3rd. The telephonic receiver, as described, with reference to figures 3 and 4 of the drawings, the said receiver being provided with a circular or coiled magnet, one pole of which is carried inwards to the center to receive the bobbin so that the body part of the magnet and the coil are situated in or about the same plane.

#### No. 17,558. Pipe Grapple. (*Tenaille à tuyau.*)

Elisha K. Green, Los Angeles, Cal., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A pipe-grapple, consisting of the two jaws A B hinged together and provided with the connecting-link C, substantially as described. 2nd. In a pipe-grapple, the hinged jaws A B formed with concaves *h*, substantially as and for the purpose specified.

#### No. 17,559. Wire Woven Mattress and other Spring Beds. (*Matelas de fil de fer tissé et autres lits à ressorts.*)

William C. Norman, Montreal, Que., 1st September, 1883; 5 years.

*Claim.*—In combination, with the head and foot, of an iron bedstead, a woven wire mattress frame composed of head bars B and side rails C secured together by castings A holding the ends of both, and provided with pins D setting into shoulders E on the posts, all as set forth and for the purposes described.

#### No. 17,560. Elevator. (*Élévateur.*)

Levi Daso, Pioneer, Ohio, U. S., 1st September, 1883; 5 years.

*Claim.*—1st. In an elevator, the combination of the platforms D D<sub>1</sub> provided with suitable guide rollers with the grooved standards A, substantially as shown and described. 2nd. In an elevator, the combination of the platforms D D<sub>1</sub> provided with suitable guide rollers with the grooved standards A, cables secured to said platforms and extending over suitable pulleys at the top and bottom of the standards, substantially as described. 3rd. In an elevator, the combination of the platforms D D<sub>1</sub> with the standards A, cables G secured to each of said platforms, said cables passing around a drum H, in opposite directions, the construction being such that both elevators may be operated simultaneously by turning the drum alternately in opposite directions, one platform being raised while the other is lowered, substantially as and in the manner described. 4th. In an elevator, two platforms in combination with suitable standards, cables for operating said platforms, said cables passing around a drum in opposite directions, and in connection therewith mechanism whereby said drum may be turned alternately in opposite directions, the construction being such that one of the platforms may be hoisted as the other is lowered, substantially as described. 5th. In an elevator, the combination of a platform provided with guide rollers with grooved standards A<sub>1</sub> and in connection therewith a cable secured to said platform and over a hoisting drum with suitably intervening pulleys, the construction being such that by rotating the drum in opposite directions the platform may be hoisted and lowered, substantially as described. 6th. In an elevator, the combination with suitably grooved standards, of the platforms D D<sub>1</sub>, cables secured to said platforms and to the hoisting drum, the shaft of said drum provided with a suitable pinion, the bevelled gear wheels N<sub>1</sub> located upon a suitable shaft and adapted to mesh with said pinion, and means for bringing said wheels alternately into mesh with said pinion, the construction being that the drum may be operated alternately in opposite directions thereby causing one platform to ascend as the other descends, substantially as described. 7th. In an elevator, the combination with a winding drum provided with a ratchet-wheel, of a forked pawl, substantially as and for the purpose described. 8th. In an elevator, the combination with the standards A, of the platforms D D<sub>1</sub> and hoisting drum connected to said platforms by suitable cables, the shaft of said drum provided with a suitable pinion, bevelled wheels N<sub>1</sub> mounted upon a driving shaft fitted for endwise movement, and in connection therewith means for bringing either of said bevelled gear wheels into mesh with said pinion, substantially as described. 9th. In an elevator, the combination with the platforms, of the safety stop, consisting of the spring pawls F, connecting rods *f*, draw-bar E provided with a spring *c*, substantially as described. 10th. In an elevator, the combination with the platform, of the draw-bar E provided with a spring *e*, said draw-bar constructed with an interior groove *e'* in which the cable may be located, the clamp secured to said draw-bar, and in connection therewith a ratchet and pawl drum adapted to tighten the cable, substantially as described. 11th. In an elevator, the guide roller M mounted upon a suitable frame, and frame *m* provided with a suitable pulley *m'* adapted to hold the cable upon said roller, the construction being such that the roller may shift from side to side upon its shaft, substantially as and for the purpose described. 12th. In an elevator,

provided with a perpendicular rack-bar, the combination, with a suitable platform, of a sliding draw-bar E provided with the spring c, of the connecting rods and spring pawls F, the construction being such that said draw-bar will drop in relation to the cross-bar of the platform when the rope breaks and the pulleys be engaged in said rack-bar, substantially as described. 13th. In an elevator, the combination with two platforms, of a continuous hoisting cable and a winding drum having a spirally grooved surface, said cable being adapted to travel on said drum from end to end, one branch thereof passed to the right to one platform and the other branch passed to the left to the other platform, substantially as and for the purpose set forth.

### No. 17,561. Journal Box and Bearing.

(*Boite de tourillon et coussinet.*)

Robert W. Traylor, Richmond, Va., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. The method described of making journal boxes or bearings which consists in moulding, casting or pressing a composition of powdered mica or mica scales and a suitable cement into the proper form and then baking or drying the same, substantially as described. 2nd. A journal box or bearing composed of a composition of mica and a suitable cement, substantially as described. 3rd. A journal box or bearing composed of a composition of mica, starch or flour and a suitable cement, substantially as described. 4th. A moulded cast, or pressed journal box or bearing composed of mica and a suitable cement, substantially as described. 5th. A moulded cast, or pressed journal box or bearing composed of mica, starch or flour and a suitable cement, substantially as described. 6th. A journal bearing consisting of a composition of mica and suitable cement moulded or cast upon or around a metallic supporting frame, substantially as described.

### No. 17,562. Snow Plough. (*Charrue à neige.*)

Lewis Larchar, Marble Rock, Iowa, U. S., 1st September, 1883; 5 years.

*Claim.*—1st. The combination, in a snow-plough, of the scrapers A, top wings C and top chutes E, substantially as specified. 2nd. The combination, in a snow-plough, of the scrapers A, the top wings C, the side wings D and the chutes E, substantially as and for the purpose set forth. 3rd. The combination, in a snow-plough, of the scrapers A, top chutes E and rear wings F, substantially as described. 4th. The combination, in a snow-plough, of the front scrapers A, top wings C, top chutes E and rear wings F, substantially as described. 5th. The combination, in a snow-plough, of the front scrapers A, top wings C, side wings D, top chutes E and rear wings F, substantially as described. 6th. In a snow-plough, the combination of the guards I, the bottom J, the opening H and the rear wings F extending to point G under the bottom whereby a draft through the openings H is produced, substantially as shown and described. 7th. The combination of rear wings F, vertical wall H and top chutes E, in a snow-plough, substantially as specified. 8th. The combination of vertical wall H with top chutes E, the former being located at the rear end of said top chutes, substantially as described.

### No. 17,563. Dust Collector. (*Recueille poussière.*)

Noah W. Holt, Buffalo, N. Y., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. In a dust-collector, the combination of the following elements, namely: an enclosing casing, a rotating filtering reel arranged therein to move around a horizontal axis and a stationary cut-off arranged within the reel and supported independently of the reel upon a stationary support, substantially as set forth. 2nd. In a dust-collector, the combination of the following elements, namely: an enclosing casing, a filtering reel having a zigzag surface enclosed within the casing and a cut-off arranged within the reel and below the centre of the reel, a suction fan and air trunk connecting the fan with openings in the reel heads, substantially as set forth. 3rd. In a dust-collector, the combination with the following elements namely: an enclosing casing, a filtering reel mechanism acting upon the reel heads within the casing to rotate the reel, a cut-off for isolating portions of the filtering surfaces alternately and a jarring mechanism for dislodging the dust from the isolated portions of the filtering reel, substantially as set forth. 4th. In a dust-collector, the combination of the following elements namely: an enclosing casing, a rotating filtering reel having zigzag surfaces, mechanism acting upon the reel heads within the casing to rotate the reel, a cut-off arranged inside of said reel for isolating portions of the filtering surfaces alternately and a jarring mechanism for removing the dust from the isolated portion of the filtering reel, substantially as set forth. 5th. In a dust-collector, the combination of the following elements namely: an enclosing casing, a rotating reel inside of the casing, the tubular bearings for the ends of the reel whereby it may be mounted without a through central shaft and a cut-off inside and supported independently of the reel, substantially as set forth. 6th. In a dust-collector, the combination of the following elements namely: an enclosed casing, a rotating filtering reel in said casing, hollow trunnions for mounting said reel communicating with the interior of the reel and a suction fan adapted to draw air from the casing into the interior of the reel through the filtering material and out of said reel, substantially as set forth. 7th. In a dust collector, the combination of an enclosing casing, a zigzag shaftless rotating reel, a fan moving air into the reel through the cloth and outward axially, a fixed cut-off placed on the inside of the reel so as to intercept the inflow of air through a part of the zigzag sections and a trough placed under the isolated sections to receive the dust dislodged from such sections, substantially as set forth.

### No. 17,564. Roofing Felt. (*Feutre à toiture.*)

Welcome White, Everett, Mass., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A roofing felt composed of a sheet of soft porous paper saturated and coated upon one side with a composition of asbestos, soapstone, and coal-tar, substantially as described. 2nd. A roofing felt composed of a sheet of soft porous paper saturated and coated upon one side with a composition of asbestos, soapstone, and coal-tar

applied while hot and compacted and bevelled by pressure, substantially as described. 3rd. A roofing felt made by saturating a sheet of a soft porous paper and covering it upon one side with a composition of asbestos, soapstone and coal-tar applied while hot, covering said composition with a coating of powdered asbestos and soapstone thoroughly mixed and in a dry state and then subjecting the whole to the action of pressure rolls, substantially as and for the purposes described.

### No. 17,565. Roofing Composition.

(*Composition pour toiture.*)

Welcome White, Everett, Mass., U. S., 1st September, 1883; 5 years.

*Claim.*—A roofing cement or composition composed of asbestos, soapstone and coal-tar or other liquid bituminous substance united in about the proportions set forth and described, for the purposes specified.

### No. 17,566. Fire Place. (*Foyer.*)

Henry Rembert, Willis, Texas, U. S., 1st September, 1883; 5 years.

*Claim.*—1st. In a fire place, the sheet-metal plate A bent to form sides B and provided with lugs l, in combination with the plate D bent to form the sides E and again to form the flanges b whereby the plates are connected together to enclose an air space between them in connection with the hearth C and the top-plate F, substantially as and for the purpose set forth. 2nd. A fire place formed of sheet-metal, consisting of the hearth C having perforations i, the plate G having L-shaped flanges f for connecting it to the hearth, the perforated top-plate F bent downward at its front edge to form flange d, the plate A bent to form sides B and having lugs l and the plate D bent to form sides E and flanges b, said plates being connected together and to the hearth, substantially as and for the purpose specified.

### No. 17,567. Compound Railroad Rail.

(*Lisse composée pour chemin de fer.*)

George H. Everson, Scottsdale, Pa., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A T-head for compound rails having broad or rounded grooves or recesses in the under surface of the head at each side of the central stem for receiving the blunt upper or bearing head of the side or web pieces of the rail, substantially as and for the purpose described. 2nd. The combination, of the blunt headed side or web pieces with a T-head having rounded or shallow seats, recesses or grooves in the under surface of the head at each side of the central stem for receiving the said heads, substantially as and for the purposes described. 3rd. In a compound railroad rail, the combination of a head piece having a stem and grooves on the under surface of the head at each side of the stem with angle-pieces or webs having obtuse heads which enter the grooves or recesses in the under surface of the head and shallow grooves along the line of the bolt-holes, substantially as and for the purpose specified. 4th. In a compound railroad rail, the head a having the recesses or grooves f upon its under surface and the stem b, wedge-shaped at its extremity and grooved along the line of bolt-holes in combination with the angle-pieces having the obtuse heads which enter the recesses ff of head a and having shallow grooves jj along the line of bolt-holes, substantially as and for the purpose specified.

### No. 17,568. Process and Apparatus for Evaporating Liquids from any Organic or Inorganic Matter.

(*Procédé et appareil à évaporer les liquides de matières organiques ou inorganiques.*)

William F. Browne, New York, N. Y., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. An evaporating-pan constructed with a double convoluted spiral channel. 2nd. An evaporating-pan constructed with convoluted spiral channel cast in one piece. 3rd. A double spiro-convoluted evaporating-pan having double spiral convolutions, one of which is for the circulation of the substance to be evaporated and recovered while the other convoluted channel forms a passage or conduit for the circulation of a heated substance therein. 4th. A spiro-convoluted vacuum-pan having external and internal spiral channels and a bottom fitted to the bottom of the external spiral channel thereby forming a closed channel through which heating substances circulate. 5th. The combination of a spiro-convoluted evaporating-pan with a steam-generator attached to the bottom thereof arranged over a furnace which supplies the heat for evaporating the substance which circulates through the spiro-channel or channels. 6th. In an evaporating apparatus, the combination of the heating devices consisting of conduits or coils through which the liquid to be evaporated is forced, a closed evaporating chamber connected directly to the lower ends of the coils and to the steam-dome above and a closed chamber below said evaporating chamber provided with a steam coil for desiccating the matter to be recovered. 7th. In an evaporating apparatus, the combination of the heating device consisting of conduits through which the liquids to be evaporated are forced, a separator connected thereto into which the heated liquid is discharged and two or more alternating evaporating-pans connected directly by pipes having controlling-valves to the separator whereby either pan can be used for evaporating while the other is being emptied and cleansed. 8th. The combination, of a heating device consisting of conduits through which liquids to be evaporated are forced and a separator into which the heated liquids are discharged and the volatile parts eliminated therefrom, with an open evaporating chamber provided with heating adjuncts into which the residual matter in the separator is discharged and wherein the matter to be recovered becomes desiccated. 9th. The process of heating and evaporating liquids which consists in forcing the liquids through an internal heated conduit and thus highly heating the same, then discharging it into a separator and then conducting the resulting steam through the external conduit. 10th. In an apparatus for evaporating liquids, a heating device consisting of a conduit or series of conduits, one or

more of which are provided with an internal imperforate conduit through which liquid is forced while steam simultaneously therewith is forced through the external conduit for the purpose of heating said liquid, in combination with the connecting stand-pipes which are connected respectively to the ends of the internal and external conduits for receiving the liquids and steam separately and from whence the conduits are supplied, and into which the contents of the conduits are discharged separately, as described. 11th. The process of heating and evaporating liquids which consists in forcing the liquids through an internal heating-conduit and thus highly heating the same, then discharging it into a separator, then conducting the resulting steam through the external conduit exposed to the heat of the furnace and finally utilizing the steam thus superheated by conducting it through the heating conduits of an evaporating-pan for continuing the evaporation of the liquid discharged from the internal coils into the separator as described. 12th. In a device for heating liquids prior to the discharge and subsequent elimination of vapor therefrom, two connecting stand-pipes, one of which connects with all of the corresponding ends of one series of conduits which are placed one above another, while the other stand-pipe connects with a required number of the other ends of said conduits, whereby liquids are forced simultaneously and separately through two or more conduits and discharged therefrom from two or more of the lower ends of said series of conduits. 13th. In an apparatus for heating and evaporating liquids, a conduit or supply-pipe, a stand-pipe, a series of internal coils connected therewith at their induction ends and a separator connected with their eduction ends, in combination with connected external coils. 14th. In an apparatus for heating and evaporating liquids, a conduit or supply-pipe, a stand-pipe, a series of internal coils connected therewith at their induction ends and a separator connected with their eduction ends, in combination with connected external coils and an evaporating-pan and connecting devices for conducting steam from the external coils to the pan. 15th. The process of heating and evaporating liquids which consists in forcing the liquid between an external and internal coil of pipe in a furnace to near the middle portion of the coil, thence discharging the resulting steam or vapor through suitable opening into the internal pipe and conducting it therefrom to places of use and at the same time conducting the concentrated liquid to a suitable receptacle. 16th. In combination, with a conduit or conduits provided with an internal spray-conduit extending the entire length thereof and through which liquids are forced, the device for forcing liquids into said internal conduit from whence it is forced out in spray into the external conduit and the separator by which the vapor and liquid are divided in the manner set forth.

### No. 17,569. Signal Lamp. (*Lampe à signaux.*)

Edward S. Piper, Toronto, Ont., 1st September, 1883; 5 years.

*Claim.*—1st. In a railroad car or coach, a lamp placed within a lamp-box having a signal lens or lenses and arranged in combination, with an opening in the side of the car for the purpose of admitting the light of the lamp into the car while utilizing the same light for signal purposes, substantially as and for the purpose specified. 2nd. A lamp box containing a lamp and attached to the outside of a car or coach having a hole through its side to communicate with the interior of the box, the said box being provided with a signal lens protected by a reflector formed in the shape of a frustum of a cone, in combination with the signal glass G detachably connected to the reflectory E, substantially as and for the purpose specified. 3rd. In a lamp-box containing a lamp and provided with a signal lens protector by a reflector formed in the shape of a frustum of a cone, a signal glass G contained within a frame provided with a hoop wire G, the combination with a hole or holes made in the reflector F for the purpose of forming a detachable connection between the signal glass and reflector, substantially as and for the purpose specified. 4th. In a lamp box containing a lamp and having a circular hole or holes pierced through it, a flanged ring G formed around each hole and having a thread cut on its inner surface to receive the screwed ring b, in combination with the flanged lens E and flanged reflector F for the purpose of protecting the hole in the lamp-box, as specified. 5th. In a lamp box containing a lamp provided with a chimney and a door to gain access to the interior of the box, the combination of a semi-circular hood H formed on the interior roof of the lamp-box around the mouth of the upper ventilator, substantially as and for the purpose specified. 6th. In a lamp containing coal oil or other burning fluid, a tube formed within the fluid reservoir and perforated so as to admit the fluid into the interior of the tube, in combination with a float fitting the tube and provided with a spindle extending through the top of the fluid reservoir, a flange formed around the aperture through which the spindle passes, substantially as and for the purpose specified.

### No. 17,570. Apparatus for Generating Vapour and Gas from Liquid Hydro-Carbon. (*Appareil à produire la vapeur et le gaz de l'hydrocarbure liquide.*)

Henry F. Hayden, Washington, D. C., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A generator for hydrocarbon vapours having a vertical tapering body and a vertical central flue extending up through the same, substantially as and for the purpose specified. 2nd. A generator having a vertical tapering body, and a centrally arranged vertical tapering flue, the taper in the body of the generator and that in the flue being in reverse directions, substantially as and for the purpose specified. 3rd. A hydrocarbon generator having an external shell, and a central flue having a series of swells or enlargements at intervals so as to increase the fire surface of the generator, substantially as specified. 4th. In a hydrocarbon generator, the combination with the generator shell having a central flue, of a series of hollow conical frustra arranged within the shell and around the central flue, substantially as and for the purposes specified. 5th. In a hydrocarbon generator, the combination with the generator shell having a central flue, of two sets of hollow conical frustra arranged within the retort around the central flue and with the basis of the alternate cone in reverse direction, substantially as and for the pur-

poses specified. 6th. In a hydrocarbon generator, the combination with the body or shell of the generator, of a central flue having a series of swells or enlargements at intervals in its length, and a series of hollow conical frustra arranged around the central flue within the generator and between the swells or enlargements of the central flue, substantially as and for the purpose specified. 7th. In combination with a vertical generator or retort, two or more vertical pipes arranged to take the contents out through the bottom of said retort, substantially as and for the purpose specified. 8th. The combination, with the generator body and central flue, a stuffing box, arranged to operate, substantially as and for the purpose specified. 9th. The combination of the furnace having the ascending and descending flues, the superheater arranged in the partition walls between the flue, and the generator, all arranged to operate substantially as and for the purposes set forth. 10th. In combination, with a generator provided with a central heat flue and set vertically in the surrounding heat flue, of an annular receiving flue provided with posts leading into the generator flue, whereby the heat is made to impinge upon the exterior of the generator on all sides and pass down outside and up through the same, substantially as and for the purposes specified. 11th. In a generator for hydrocarbon vapours, the combination of the body or case, the central heat flue provided with swells or enlargements and the deflecting plates, said central heat flue being arranged to conduct the products of combustion from the furnace-flue up through the case or body of the generator its entire length, substantially as and for the purpose set forth. 12th. The combination in a generator, of the outer shell or body, the central heat flue provided with swells or enlargements, deflector plates arranged in the swells or enlargements of the central flue, and hollow conical frustra arranged within the generator around the central flues, substantially as and for the purposes specified.

### No. 17,571. Threshing Machine.

(*Machine à battre.*)

Aaron Love, Whitechurch, Ont., 1st September, 1883; 5 years.

*Claim.*—1st. The combination, with a thrashing-machine, of an exhaust fan communicating with the interior of the machine between the thrashing cylinder and revolving beater and provided with a suitable discharge spout for conveying the dust produced by thrashing to a point remote from the machine. 2nd. The combination with a thrashing-machine, of an exhaust fan set within a casing placed above the thrashing machine and communicating with its interior between the thrashing-cylinder and revolving beater, substantially as and for the purpose specified. 3rd. In a thrashing machine provided with an exhaust fan for the withdrawal of the dust produced within the thrashing-machine, an outer casing arranged to contain the fan provided with a perforated or slotted bottom to prevent the grain or straw being drawn into the fan. 4th. In a thrashing-machine provided with an exhaust fan for the withdrawal of the dust produced within the thrashing machine, an outer casing arranged to contain the fan and communicating with the interior of the machine, the combination with a valve or valves placed in the outer casing for regulating the power of the suction, substantially as and for the purpose specified.

### No. 17,572. Felly. (*Jante.*)

Ebenezer Danford, Geneva, Ill., U. S., 1st September, 1883; 5 years.

*Claim.*—1st. A felly composed of a metal tube continuous in periphery, and a filling of wood or equivalent material, substantially as and for the purposes described. 2nd. A felly composed of a metal tube and a filling of wood or equivalent material, and provided with a spoke-socket of a diameter, in its outer part, sufficient to receive the whole thickness of the spoke and abruptly diminishing to a diameter in its inner part sufficient only to receive the tenon, substantially as and for the purposes described. 3rd. A felly composed of the metal tube A provided with apertures D in its inner wall and opposite smaller apertures in its outer wall, and of the wood or equivalent filling B provided with corresponding apertures E passing quite through it, substantially as and for the purpose described. 4th. The described method of constructing a felly, consisting in forcing a filling of wood or equivalent material into a metal tube, and then bending and at the same time compressing the tube thus filled between the rollers for the purpose of making the tube and filling fit each other tightly.

### No. 17,573. Cylinder for Grain Scourers.

(*Cylindre à nettoyer le grain.*)

Lyman Morgan, Port Washington, Wis., U. S., 1st September, 1883; 5 years.

*Claim.*—A cylinder for grain scourers, composed of staves cast with wedge-shaped ridges extending spirally around the interior, and rounded ridges falling short in height of the wedge-shaped ridges and running lengthwise of the cylinder, as set forth. 2nd. A cylinder for grain scourers, having ridges a and c that run in opposite directions to each other and encompass slots between them, as set forth. 3rd. A cylinder for grain scourers, cast with a series of ridges a, notched at a', raised portions c and slots d, as set forth. 4th. A cylinder for grain scourers, having ridges that extend spirally around its interior and form a spiral trough between them, and having slots extending through the troughs, as set forth.

### No. 17,574. Manufacture of Material in Imitation of Leather &c. (*Fabrication de matériaux en imitation de cuir &c.*)

Henry Loewenberg, Wiesbaden, Germany, 1st September, 1883; 5 years.

*Claim.*—1st. The method or process of manufacturing material in imitation of leather, wool, fabrics or embossed or figured surfaces by first preparing a negative made by applying to the surface to be imitated a layer of molten composition and then applying to the negative

another layer of molten composition with a backing of fabric, the layer of composition and the backing being in each case applied in the manner substantially as described, and the composition used being substantially of the kinds set forth in the following claims. 2nd. As a composition for the negative, I claim a mixture of 1 to 2 parts of strong solution of salt of copper, 1 to 2 parts of a chromate or bichromate in weak solution and 1 to 1½ part of glycerine with 5 to 7 parts of liquid glue. 3rd. As a composition for the imitation material, I claim either a mixture of 2 to 4 parts of drying oil thickened to gelatinous consistence of chlorine, 1 to 3 parts of caoutchouc solution and 2 to 3 parts of colouring matter, or the same mixture with 5 to 8 parts of glue or gelatine and 1 to 2 parts of glycerine. 4th. As another composition for the imitation material, I claim a mixture of 10 to 12 parts of glue or gelatine, 2 to 4 parts of vaseline, not more than two parts of glycerine, 1 to 2 parts of a salt of copper, less than 1 part of a chromate or salt of iron along with colouring matters, and with or without a very small addition of alkali.

**No. 17,576. Compound Metal or Alloy for Deoxidizing and Coating Metals.** (*Alloi composé pour désoxyder et enduire les métaux.*)

John B. Jones, Brooklyn, N. Y., U.S., 1st September 1883; 5 years.

*Claim.*—An alloy for coating iron, consisting of lead, tin and zinc with metallic sodium added, substantially in the manner and proportions specified, whereby the alloy is rendered electro-positive to iron, its melting point reduced and oxidation destroyed, arrested or prevented, as set forth.

**No. 17,576. Compound to be Employed as Substitute for Barm.** (*Composé destiné à remplacer le levain.*)

Alexander Esilman, Manchester, Eng., and Henry Esilman, Glasgow, Scotland, 1st. September, 1883; 5 years.

*Claim.*—1st. The use of phosphate of ammonia in company with alkaline or earthy carbonates of the nature herein indicated in the making of unfermented bread, biscuits, pastry and similar food. 2nd. The use of phosphates of ammonia and carbonates of soda or potash, or other carbonates in the preparation of baking powders or liquid preparations for use in lieu of barm or ordinary baking powders. 3rd. A mixture of phosphate of ammonia and bi-carbonate of soda or potash, with or without other substances, for the purposes set forth and indicated. 4th. The employment of phosphate of ammonia with suitable carbonates of the indicated nature in the preparations of "self-raising flour."

**No. 17,577. Seed Drill and Fertilizer.** (*Semoir-traceur et fertilisateur.*)

Horace M. Keith, Commerce, and Joel P. Harger, Pontiac, Mich., U. S., 1st. September, 1883; 5 years.

*Claim.*—1st. The combination, substantially set forth, in a seed drill, of a hopper having interior vertical seed conducting tubes or chutes provided with top inclined trays, with feed-wheels having internal buckets adapted to operate in relation to said trays, for the purpose specified. 2nd. The combination, substantially set forth, in a seed drill, of a hopper having interior vertical seed conducting tubes or chutes provided with top inclined trays, with feed-wheels having internal buckets and means for laterally adjusting said feed-wheels in relation to the trays, for the purpose specified. 3rd. In combination, the hopper, the fixed vertical tubes or chutes therein, the open feed-wheels having internal buckets, the shaft upon which they are fixed and means for effecting the endwise adjustments of said shaft, and the feed-wheels therein consisting of the screw-stems *i*, the coupling plates *ii*, the screw-nuts *j*, and the spring *ji*, arranged at the end of the hopper whereby to set the feed-wheels towards and from the fixed hopper tubes, for the purpose specified. 4th. The feed-wheel band *d* mounted at one edge upon spokes *dt* and having buckets *e*, arranged upon the interior wall of said band, in combination with a fixed tube or chute having a tray extending within and beneath the said band toward its spoked side and below the path of the buckets, and the hopper through the bottom of which the said chute passes, substantially as described for the purpose specified. 5th. The combination, in a seed-drill, of the hopper for the fertilizer having longitudinal side slots *k* on a plane with its bottom, with feed-arms *r* passing into and through said slots and having a reciprocating movement across and upon the bottoms of the hopper, and means for producing said movement whereby to effect the feed of the fertilizer from both sides of the hopper, substantially as described. 6th. The hopper for the fertilizer adapted to have an endwise movement, and provided with longitudinal side slots *k* on a plane with its bottom, and means for operating both the hopper and the said feed-arms, substantially as described for the purpose specified. 7th. In combination, the hopper for the fertilizer adapted to have an endwise movement, and having longitudinal side slots *k* on a plane with its bottom, feed-arms *r* adapted to operate within said slots upon and across the hopper bottom, bell-crank levers pivoted to the frame and serpentine cams *p* for operating said levers, the said feed-arms being carried by a bar pivoted to said levers and operated, in the manner and for the purpose specified, by suitable drill driving-gear connections. 8th. The hopper for the fertilizer adapted to have endwise movement, having longitudinal side slots *k* and side strips *s* adapted for vertical adjustment in relation to said slots, the scraper *G* upon the rear side of the hopper, and the feed-arms *r* adapted to operate within said slots upon and across the hopper-bottom and, beneath the said regulating strips *s* and the scraper, all constructed and combined with the seed drill tubes and with the chutes *b*, substantially as described for the purpose specified. 9th. The combination, with the drill tubes, of a seed-planter, of the hopper for the fertilizer, the guide *l* for said hopper, the serpentine cam *m* for operating said hopper, the feed-arms *r* operating through slots in the sides of the hopper, the bell-crank levers pivoted to the carrying bar of said feed-arms, the serpentine cams *p* and the shaft *n* operated by the drive gear of the drill, the said serpentine cams being arranged in

relation to each other to operate simultaneously the hopper and the feed-arms to deliver the fertilizer from both sides of the hopper. 10th. The combination, substantially set forth, in a seed-drill, of the drill-tubes thereof with a supplemental drill-point or cutting edge adapted for attachment to said drill-tube and operating in front thereof, for the purpose specified. 11th. The supplemental drill device consisting of an arm *n* having a yoke and a dip *ni* whereby it is secured to a drill-tube, and a narrow point or cutting edge *n* carried by said arm in front of and below said drill tube, substantially as described for the purpose specified. 12th. The combination, substantially set forth, of the seed conducting tube with a thin narrow cutting blade or point *n* and a covering device, substantially as described, and adapted to travel in the slit made by said narrow cutting blade, for the purpose specified. 13th. The combination, substantially set forth, of a seed conducting tube and an attachable thin or narrow cutting blade or point *n* with an attachable covering blade *nc*, constructed substantially as described, and adapted to travel in the slit or narrow opening made by said cutting blade, for the purpose specified. 14th. The combination of the seed-conductor with the arm *v* extending in front thereof, the clip *vi*, the narrow drill forming point *n*, a clamp *vi* therefor and a covering disk-shaped wheel *vc*, substantially as described for the purpose specified. 15th. The combination, in a seed-drill, of a seed-conductor, a thin or narrow cutting blade or point *n* and a covering blade *nc*, as described, with the seed-hopper *C*, a feed-device for feeding the seed continuously and a chute *c*, substantially as and for the purpose specified. 16th. In combination, in a seed-drill and fertilizer, the hopper *C*, its feed device, the hopper *B*, its feed device, means, substantially as described, for connecting and operating the feeding devices of said hopper, means for rendering the feed devices of the hopper *A* non-operative, a drill-forming point or cutting-blade adapted for attachment to the drill-tube, and a covering device adapted to travel in the out made by the drill-forming point, substantially as described.

**No. 17,578. Seed Cleaner.** (*Nettoyeur de grain.*)

Alpheus R. Appleman, Newark, Ohio, Assignee of Jefferson Grube, Auburn, Ind., U. S., 1st. September, 1883; 5 years.

*Claim.*—1st. A seed cleaning machine consisting of the frame *A* having hopper *B*, agitating shaft *Bt*, fan-shaft *C*, having eccentric connection *d*, the shoe *D* and the spring arms *E*, as and for the purpose set forth. 2nd. The described seed-cleaner, in combination with an *a* attached to the thrashing machine or clover huller, substantially as shown and described.

**No. 17,579. Saw Mill Log Holder.** (*Soutien de billot pour scierie.*)

Ezra B. Eddy, (Assignee of George H. Millen), Hull, Que., 1st. September, 1883; 5 years.

*Claim.*—The combination with the saw-gang, saw carriage, of posts *E* *E*, on opposite sides of the carriage in advance of the saws and provided with racks *F*, shaft *H* carrying pinions *G*, pressure roller *I* bearing on the log and drum wheel *K* provided with winding rope *L*, having a weight *W*, whereby the log is prevented from rising during the upward movement of the saws by the resistance of weight *W*, applied.

**No. 17,580. Store Service System.** (*Système de distribution automatique.*)

Gilbert R. Elliott and Milton Clark, Boston, Mass., U. S., 1st. September, 1883; 5 years.

*Claim.*—The improved store service system, hereinbefore described, consisting of one or more wires extending from a cashier's desk to one or more salesmen's counters, having one of their ends fixed and their other ends adapted to be raised and lowered, in combination with a car adapted to travel by gravity and arresting stops, one near each end of each wire, substantially as set forth.

**No. 17,581. System for Conveying Cash and Parcels in Stores.** (*Système de transport de monnaie et paquets dans les magasins.*)

Gilbert R. Elliott and Milton Clark, Boston, Mass., U. S., 1st. September, 1883; 5 years.

*Claim.*—1st. The store service system, described, consisting of a wire stretched taut between fixed supports and having two arresting stops secured to it, in combination with a carrier adapted to be propelled from one stop to the other in either direction by a push of the hand, substantially as set forth. 2nd. The holder, described, consisting of a spring controlled roller mounted in a frame, in combination with a web or sheet adapted to be wound up by the roller, substantially as and for the purpose set forth.

**No. 17,582. Process of and Apparatus for Extracting Gold and Silver from their Ores.** (*Procédé et appareil à extraire l'or et l'argent de leurs minerais.*)

Richard Barker, London, Eng., 1st. September, 1883; 15 years.

*Claim.*—In apparatus for extracting gold and silver from their ores by the combined action of electricity, mercury and water, the branch cathodes and anodes arranged to extend across the rille vat or trough and to lie in the water, and above the mercury, substantially as described and shown, and for the purpose set forth.

**No. 17,583. Bottle and Fruit Jar Stopper.** (*Bouchon de bouteille et de jarre à fruit.*)

Gregory Duoro, Buffalo, N. Y., U.S., 1st. September, 1883; 5 years.

*Claim.*—The combination with a bottle or jar having its neck provided on its outer side with shoulders *a* inclined on their lower sides, of a cover or cap *B* inclosing the neck or upper portion of the bottle or jar, and provided with lugs *b*, a threaded hole *c*, screw *D* and washers *e*, *f*, substantially as set forth.

**No. 17,584. Refractory Lining for Furnaces, stoves, etc.** (*Doubleure réfractaire pour fournaïses, poêles, etc*)

George Duryee, New York, N. Y., U. S., 4th September, 1883; 5 years.

*Claim.*—1st. The refractory composition described, consisting of molasses as a binding material and source of carbon, plumbago, fire clay and burnt clay, substantially in about the proportion specified. 2nd. The method of putting in a continuous lining and applying a protective glaze to a refractory carbon lining before the operation of firing the same, as for the purpose set forth.

**No. 17,585. Fire, Water and Weather Resisting Paint Compounds.** (*Peinture à l'épreuve du feu, de l'eau et du temps.*)

Lorenzo D. Mott, Lake City, Minn., U. S., 1st September, 1883; 5 years.

*Claim.*—A fire, water and weather resisting paint for coating wood and metal, consisting of coal tar resin, brown mineral earth, yellow ochre, sulphur and salt compounded as described, in about the proportions stated.

**No. 17,586. Sewing Machine.** (*Moulin à coudre.*)

James Authors, Toronto, Ont., 5th September, 1883; 5 years.

*Claim.*—1st. In a sewing machine the combination of a disk *F*, a shaft secured to said disk revolving in a different line from the main shaft, the needle-bar *E* having a slot to allow the passage of the disk the crank *H* secured to said disk shaft on the opposite side of the needle bar, the crank pin *C* and the links *D* *H*, substantially as and for the purpose specified. 2nd. On the face of a sewing machine, a horizontal spring riveted thereto and arranged in combination with a slotted guideway cut in the face plate and passing across the spring for the purpose of taking up the slack thread produced by the movement of the take-up, substantially as specified. 3rd. In a sewing machine having a circular bobbin fitting in a recess in a revolving hook, the combination of a cap or cover having its shank loosely fitted and pivoted in its hanger, whereby it is free to oscillate on its pivot to permit the thread to pass freely between it and the bobbin, substantially as set forth. 4th. In combination with the needle of a sewing machine, a rotating hook provided with a projection situated opposite to its sewing point so that it approaches the needle simultaneously with the hook pressing it towards the sewing-point of the hook, substantially as and for the purpose specified.

**No. 17,587. Vacuum Exhaust Pipe.**

(*Tuyau d'évacuation au vide.*)

Dennis Harrigan, Somerville, Mass., U.S., 5th September, 1883; 5 years.

*Claim.*—1st. A vacuum exhaust for creating a vacuum in the pipe not then exhausting consisting of two exhaust pipes provided with steam spaces and annular chambers surrounding the exhaust pipes and with suitable ports connecting the exhaust pipes with the steam spaces and with passages connecting the chambers and the spaces, substantially as above described. 2nd. In combination, the plate *k*, the exhaust pipes, the annular chambers and steam spaces provided with suitable ports and connecting passages and the tips, substantially as above described.

**No. 17,588. Fire Box.** (*Foyer.*)

James Whelan, Montreal, Que., 5th September, 1883; 5 years.

*Claim.*—1st. In combination with a cooking stove, and in place of the grate and brick lining, a detached fire-box of which the depth is greater than the sectional area, as and for the purposes set forth. 2nd. In a cooking stove, a fire box made separate from same composed of front *A*, back *B*, sides *C* *D* and dumping gate *E* with air passage round the back and sides of same, all as set forth. 3rd. In a cooking stove, a fire box or chamber with grate made to dump and also toward to-and-fro to clear itself, substantially as described. 4th. In a stove, the combination with the fire box or chamber and grate made to dump, of a rest or support *F* introduced through one side of fire box carried in the other and supporting the live and unconsumed coal during the discharge of ashes, etc., all substantially as set forth.

**No. 17,589. Glass Roof.** (*Toiture en ver.*)

William Ward, Cleveland, Ohio, U. S., 5th September, 1883; 5 years.

*Claim.*—A glass roof consisting of glass panes secured at their edges to the sash in combination with metallic strips formed with flat narrow ledges or flanges that rest against the ends of two adjacent panes, substantially as set forth.

**No. 17,590. Process of Making Whisky.**

(*Procédé de fabrication d'eau-de-vie.*)

Marshall J. Allen, New York, N. Y., U. S., and William E. Bradley, Frankfort, Ky., U. S., 5th September, 1883; 15 years.

*Claim.*—1st. In the manufacture of whisky the process described, consisting in rapidly cooling spent beer and then mixing the slop with fresh material for subsequent fermentation, substantially as set forth. 2nd. In the manufacture of whisky the process of saving the sugar starch and yeast contained in spent beer which consists in facing such spent beer before permitting it to cool by mechanical means such as sieving of the bran chaff and other coarse waste particles, rapidly cooling the thin slop and then adding the same to and mixing

it with fresh material for subsequent fermentation, substantially as set forth. 3rd. In the manufacture of whisky the process of saving the sugar starch and yeast contained in spent beer and utilizing the same which consists in freeing the spent beer of the bran chaff and other coarse particles, rapidly cooling the slop and then mixing the thin slop thus obtained with fresh mash, substantially as described. 4th. In the manufacture of whisky the mode of saving the sugar and yeast contained in a spent beer and in using the same which consists in freeing the spent beer of coarse particles by mechanical means such as a sieve, of rapidly cooling this thin slop by causing such an agitation of the slop as will hold the particles of sugar, starch and yeast in suspension and then mixing the thin slop so treated with fresh grain, substantially as set forth.

**No. 17,591. Waggon.** (*Chariot.*)

Joseph Moses, Lapeer, Mich., U.S., 5th September, 1883; 5 years.

*Claim.*—1st. The axle *A* attached to the diagonally braced side-bearing frames *F* which are connected together by the arched bearing-plate *G* in combination with the arched bearing plate *H* fastened to the bottom *B* of the waggon, a king-bolt *a* arranged, substantially as and for the purpose specified. 2nd. The rear axle *B*, in combination with a bolt rigidly fastened to the rear of the waggon-bottom *E* on the one side and from the other side of the axle towards the centre of the waggon-bottom to which it is rigidly bolted, forming a substantial brace and support to the said bottom, substantially as and for the purpose specified. 3rd. A waggon-bottom *E* provided with rear axle *B* braced and supported by the bearing-bars *D*, as specified, in combination with the front axle *A*, side-bearing frames *F*, arched bearing-plates *G* and *H*, waggon-bottom *E* and king-bolt *a*.

**No. 17,592. Mill Stone Dressing Machine.**

(*Machine à piquer les meules de moulins.*)

Cornelius S. Hoover, Lancaster, Pa., U. S., 5th September, 1883; 5 years.

*Claim.*—1st. In a millstone-dressing machine, a slide and its automatic feeding devices, in combination with a tool-holder carried by said slide and a bar or bars adapted to be inclined and to operate on said holder to govern the longitudinal and lateral inclination of the furrows, substantially as set forth. 2nd. In a millstone-dressing machine a slide and its automatic feeding devices, in combination with a diamond-holder carried by said slide, a lever arranged to force said diamond-holder towards the stone and an inclined bar arranged to be in contact with said lever while said slide moves back and forward, substantially as and for the purpose set forth. 3rd. In a millstone-dressing machine, a tool-holder, a spring which constantly forces it from the stone, a slide which carries said holder, a lever which operates to force said holder towards the stone, and an inclined bar which acts on said lever to cause it to gradually increase its pressure on the tool-holder during the motion of the slide in one direction, substantially as set forth. 5th. In a millstone-dressing machine, a tool holder, a lever arranged to force said tool-holder towards the stone, a slide which carries said holder and lever, a spring which opposes the action of said lever and a pattern-bar which by its contact with an attachment of said lever as the slide is fed from side to side governs the dress of the stone face or furrows, substantially as set forth. 5th. In a millstone-dressing machine, a tool-holder movable towards and from the stone, in combination with a slide which carries said holder, a lever and bar which act on said holder to prevent the diamond from leaving the stone and a screw between said lever and bar whereby the position of the holder with respect to the stone may be adjusted, substantially as set forth. 6th. In a millstone-dressing machine, a tool-holder movable toward and from the stone, a spring which tends to raise it therefrom, a lever and inclined bar which holds the tool against the stone, a slide carrying said holder and moving in a line parallel to said bar and a device for adjusting the inclination of said bar, substantially as set forth. 7th. In a millstone-dressing machine, a tool-holder constantly against the stone, a transversely moving slide carrying said holder, a longitudinally moving carriage for the slide, an inclined bar parallel to the line of motion of said carriage and vertically adjustable independently thereof, the necessary intervening devices whereby said bar causes the tool to cut more deeply as the carriage moves toward the upper end thereof, and an adjusting screw for regulating the inclination of said bar, substantially as set forth. 9th. In combination with the tool-holder slide, opposing spring and lever, and carriage moving at right angles to the line of motion of the slide, two inclining planes, one parallel to the line of motion of the slide and the other to that of the carriage and both combining to control the dress of the millstones as said slide and carriage are slowly fed, substantially as set forth. 10th. In combination with a bed plate or frame, a carriage and a transversely moving slide, all immovable in a vertical direction, a diamond holder and its operating lever both carried by said slide, a transverse bar of variable inclination, a longitudinal bar on which one of said transverse bar rests and a device for adjusting the inclination of said longitudinal bar, substantially as and for the purpose set forth.

**No. 17,593. Mode and Apparatus for Desulphurizing Ores.** (*Mode et appareil à désoufrer les minerais.*)

William F. Browne, New York, N. Y., U. S., 5th September, 1883; 5 years.

*Claim.*—1st. In a desulphurizing apparatus, the process of desulphurizing ores and volatilizing base metals contained therein, consisting in impelling and drawing pulverized ore through a heated conduit wherein the ore is desulphurized and other base properties volatilized and discharging the product into a suitable place or places. 2nd.

In a desulphurizing apparatus for desulphurizing ores, the process of drawing pulverized matter by a steam ejector through a heated coil and discharging the same into a suitable place or places. 3rd. In an apparatus for desulphurizing ores, the combination of the steam and desulphurizing apparatus in one case or shell wherein both are heated from one fire, for the purpose specified.

### No. 17,594. Interlocking Bolts.

(*Boulons de sûreté.*)

Thomas J. Bush, Lexington, Ky., U.S., 5th September, 1883; 5 years.

*Claim.*—1st. The combination of bent bolts A and A' formed with the locking notches *a* and *a'* a suitable distance from their lower ends, the bolts being polygonal or round in cross section, substantially as described. 2nd. The combination, with a railroad tie provided with crossing holes and apertured fish-plates F, of the cross-locked bolts A A' bent, threaded and nutted on their ends whereby the rail flanges are rigidly secured to the ties, as described. 3rd. The bent bolt A formed with the notch *a* and faced off at the back as shown at *e*, in combination with the bolt A' faced off at the back as shown at *b* and formed with the notch *a'* and the curved face *c*, substantially as described. 4th. The combination with the notched and bent bolts A A' of the wedge B, substantially as described. 5th. The combination with the bent and notched bolts A A' of the plates F F', substantially as shown and described. 6th. The combination with the bent and notched bolts A A', of the plates G formed with the extensions *h h'*, as and for the purposes set forth.

### No. 17,595. Coat Rack. (*Porte-habit.*)

Beverly R. Nelles, Grimsby, Ont., 6th September, 1883; 5 years.

*Claim.*—1st. In a coat rack, a series of pivoted arms C and shoulder supports E pivoted thereto at their outer end, the arms separated by tubes, spools D or their equivalent device on rod B supported by brackets A, substantially as and for the purpose specified. 2nd. In a coat rack, the combination of the pivoted arms C carrying pivoted shoulder supports E, blocks D, brackets A A', bolt B, all arranged and constructed substantially as and for the purpose specified.

### No. 17,596. Switch Stand. (*Support d'aiguille.*)

Aroher Baker, Montreal, Que., 6th September, 1883; 5 years.

*Claim.*—1st. In a switch-stand the casting of forging of the locking block J and the switch stand A B provided with a bottom projection K, all in one piece as described and for the purposes set forth. 2nd. The combined radius and lifting bar E suitable to any throw switch which locks handle D and secures locking bar F at one operation and the automatic arrangement thereby effected. 3rd. In combination with a switch stand the steps L L L, as described for the purpose set forth.

### No. 17,597. Sand-band for Vehicle Axles.

(*Collier des essieux de voitures.*)

Frank S. Rolfe, Waterbury, Vt., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. A metallic sand guard or protector consisting essentially of a perforated plate having an internal collar or annular projection adapted to receive the inner of the axle box, substantially as shown and described. 2nd. The combination with an axle, of a metallic sand guard or protector composed of a perforated plate K having an internal collar *c* with an annular recess inside to receive the round part of the axle-arm and square outside to receive the square part of the axle, substantially as shown and described. 3rd. The combination with the axle A and its arm B, of the hub E, band I and perforated plate K having an internal collar *c*, substantially as shown and described.

### No. 17,598. Process and Apparatus for the Manufacture of Syrup and Sugar. (*Procédé et appareil pour la fabrication du sirop et du sucre.*)

William F. Browne, New York, N. Y., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure in an occluded condition to prevent carbonization through a conduit subjected to the heat of a furnace and into a separator or expansion chamber outside of the furnace for separating the steam and vapor from the saccharine matter. 2nd. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure from the upper or cooler portion of a conduit through and out of the hottest portion thereof into a separator or expansion chamber where the aqueous vapor is separated from the saccharine liquid or syrup for the purpose specified. 3rd. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure in a continuous stream or streams through a heated conduit or conduits from a cooler to the hottest portion thereof and discharging it into an expansion chamber for the separation of the steam from the liquid or syrup. 4th. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid and utilizing the steam eliminated therefrom which consists in forcing such liquid under pressure through a heated conduit in an occluded condition and discharging it into a closed separator or expansion chamber and conducting the steam therefrom to an engine or other places of use. 5th. In the manufacture of syrups and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure through a heated conduit in an occluded condition and discharging it into a separator and forcing the resulting partially concentrated syrup therefrom into an evaporating device or devices where the concentration is completed. 6th. The process of evaporating a saccharine liquid which consists in passing it through a channel in a pan over a steam coil in which superheated steam moves in an opposite direction to the flowing liquid whereby the liquid is sub-

jected to a rising or increasing temperature and the heat of the steam more fully utilized. 7th. In the evaporation of a saccharine liquid, the process of automatically removing the scum therefrom which consists in causing the liquid to flow through a heated channel against and through perforated skimming devices in a continuous current whereby the scum is automatically forced from the pan. 8th. In the defecation of saccharine juice, the process of automatically removing the coagulated and other impurities therefrom which consists in causing the juice to circulate by heat from a central cylinder through a perforated section at the top thereof into the outer cylinder and back again repeatedly and thus force the impurities in the form of scum over the top of the inner cylinder into an annular gutter and thus conducting them away from the defecator. 9th. The process of manufacturing sugar which consists in subjecting the freshly expressed juice to the defecating process, filtration, evaporation and concentration in closed vessels without exposure to the air whereby oxidation and carbonization are prevented and a better product produced. 10th. In combination with the heating coils or conduits, a forcing device and an evaporating pan for receiving the heated liquid for the purpose described. 11th. The combination with the heating coils or conduits having an induction pipe entering their upper or cooler portion and an eduction pipe leading from their lower or hottest portion, of a forcing device and an evaporating pan. 12th. The heating coils or conduits, an evaporating pan and an interposed trap in combination with a suitable forcing device for forcing the liquid to be evaporated into the coils or conduits located in a furnace and on into the pan. 13th. A vacuum pan having an inclined bottom, a spiral division plate secured thereto forming a spiral channel and a steam heating coil in the channel, in combination with an induction pipe for liquid entering the upper portion of the channel. 14th. An evaporating pan having a suitable channel and heating devices in connection therewith, in combination with an inclined skimmer or skimmers and separator located in one or more of the channels for automatically skimming the liquid, substantially as described. 15th. A closed evaporating pan having a steam escape pipe in combination with a steam heating coil therein having a jet nozzle terminating in said steam escape pipe, operating as and for the purpose described. 16th. Two or more closed, evaporating pans in combination with one or more trapping devices interposed between the pans for conducting the liquid from pan to pan. 17th. In combination with evaporating apparatus, a defecating device consisting of an outer tank, an inner chamber communicating therewith at the bottom and having at the top a perforated section connecting with a room or gutter for conducting away the scum. 18th. A defecating device consisting of an outer tank and an inner open bottomed steam heated cylinder having at its top an inclined perforated rim. 19th. A defecating device consisting of an outer tank and an inner open bottomed cylinder in combination with the steam heating coils for causing circulation of the juice. 20th. The described defecating device in combination with a central tube, a screw threaded nut, a screw threaded shaft and a crow bar for raising and lowering the tank. 21st. In combination with the evaporating apparatus and the defecating devices, the interchangeable filters interposed between them. 22nd. In combination with the evaporators and heating coils, the defecating tanks, the interposed filters and a pump for drawing the juice through the filters and forcing it into the heating coil. 23rd. The portable sugar works consisting of a combination of the pressure rolls, the defecating tanks and the evaporating apparatus mounted in a suitable frame on wheels, for the purpose described. 24th. In a portable sugar works, the evaporating apparatus in combination with the pressure rolls and the necessary adjuncts thereto made of steel whereby the maximum capacity is retained, with a minimum amount of metal and lightness and durability secured and the whole mounted on wheels for the purpose specified.

### No. 17,599. Revolving Screen.

(*Ecran tournant.*)

Philip Cadell, Victoria, B.C., 10th September, 1883; 5 years.

*Claim.*—The combination in a continuative revolving screen of corrugated wire cloth (or perforated metal H) forming the screening surface of the screen, substantially as and for the purpose set forth.

### No. 17,600. Horse Tail Holder. (*Croupière.*)

Allen C. Smith, Canaan, and Van Rensselaer Powell, Troy, N. Y., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. A horse tail holder having on its inner surface a series of tapering grooves or recesses, substantially as set forth. 2nd. A horse-tail holder having a portion of its inner surface formed with a series of tapering grooves or recesses and composed of a somewhat soft and elastic material, substantially as set forth. 3rd. A horse-tail holder composed of a curved strip *g*, of metal having a grooved or recessed lining *h* of somewhat soft and elastic material and at its ends straps furnished with a fastening device, substantially as described.

### No. 17,601. Book Protector.

(*Appareil pour protéger les livres.*)

Peter N. Breton, Montreal, Que., 10th September, 1883; 5 years.

*Claim.*—A book protector composed of the covering boards A and B provided with perforations for the straps C C, box D, water proof cover E, cover straps *a a*, buttons *b b* and handle F, substantially as shown and specified.

### No. 17,602. Buzz or Trueing-up Planer.

(*Raboteur.*)

William W. Laidlaw, Galt, Ont., 10th September, 1883; 5 years.

*Claim.*—1st. In a buzz or trueing-up planer, a table divided at a point immediately over and parallel with the cylinder and having one or both of its parts pivoted or hinged on the frame of the machine so that it can be tilted for the purpose of exposing the cylinder. 2nd. In a buzz or trueing-up planer, a divided table hinge *l* as specified, in combination with a locking device for holding the table in a horizontal position, substantially as specified.

**No. 17,603. Composition for Cooling Journals.** (*Composition pour refroidir les tourillons.*)

Madison I. Woodbury and Nathan N. Post, St. Albans, Vt., U. S., 10th September, 1883; 5 years.

*Claim.*—The described compound packing for cooling hot journals, consisting of talc tallow, sulphur and lard in the proportions specified.

**No. 17,604. Mortising Machine.**

(*Machine à mortaiser.*)

John Cant, Hugh Cant, William H. Laidlaw and Andrew Cant, (assignees of Andrew McWilliam.) Galt, Ont., 10th September, 1883; 5 years.

*Claim.*—1st. In a mortising machine, a fence having adjustable dogs arranged on it to indicate the location of the mortises in combination with dogs pivoted on the table and arranged to engage with adjustable stops fitted into the carriage for the purpose of engaging the position and length of each mortise, substantially as specified. 2nd. The dog B pivoted on a side C held on the fence A and operated, substantially as and for the purpose specified. 3rd. The dogs F pivoted to the table C and formed as specified, in combination with adjustable stops E fitted to and arranged on the carriage D, substantially as and for the purpose specified.

**No. 17,605. Moulding Machine.**

(*Machine à moulure.*)

John Cant, Hugh Cant, William W. Laidlaw and Andrew Cant, (assignees of Andrew McWilliam.) Galt, Ont., 10th September, 1883; 5 years.

*Claim.*—1st. In a moulder, or that class of planing machine in which the cylinder is driven by a belt passing over a pulley on one end of the cylinder, the combination of a device arranged to adjust the end of the cylinder remote from the driving-pulley. 2nd. The bearing box C, having the bottom of its supporting pedestal D, set at an angle to the centre-line of the cylinder and supported on a correspondingly shaped bearing E, on the frame in combination with a bolt or other fastening device arranged to hold the frame, as specified. 3rd. In the side head of a moulding machine, in which the pivot upon which it angles is situated between the head and its driving-pulley, the combination of a device located below the driving-pulley and arranged to adjustably secure the spindle of the side head. 4th. In a moulding machine in which the upper feed-roller is held to the frame by a pivoted link and is arranged to drive the lower feed roller by a vertical shaft, a pivoted arm arranged to support the vertical shaft below the point where it gears with the lower feed-roller and so pivoted that the vertical shaft may be angled without straining the gearing. 5th. In a moulding machine, the combination of a pressure-bar pivoted to the frame of the machine and arranged to be secured thereon by a tapered pin or analogous device. 6th. As an improved pressure-bar, a horizontal spindle held in a bearing-box vertically adjustable, in combination with heads detachably held on the spindle so that they may be changed to suit the different classes of work. 7th. In a moulding machine, a horizontal-bar supported by the table in proximity to the guard spindles, in combination with a pin or analogous device arranged to engage with the bar so that when longitudinally adjusted the guard spindles are turned so as to adjust the guards, as specified.

**No. 17,606. Process of Insulating Wires for Electric Uses.** (*Procédé à isoler les fils électriques.*)

Richard S. Waring, Pittsburg, Pa., and J. B. Hyde, New York, N.Y., U. S., 10th September 1883; 5 years.

*Claim.*—1st. In the insulation of cotton or fibre covered wires for electric uses, the process of immersing such prepared wires in coils or otherwise into baths or heated insulating material at high temperature to expel all moisture therefrom and saturate the fabric with mixture, substantially as and for the purpose set forth. 2nd. In the preparation of cotton or other fabric covered wires for electric uses, the process of immersing such compound and drawing it from such bath immersed reels by a second and storing reel through an intermediate and gauging mold or molds, substantially in the manner and for the purpose set forth. 3rd. The method described of insulating wire consisting of first heating the compound to the required temperature then immersing fibre covered wire in said compound, releasing the cotton or other fibre of all moisture and thoroughly saturating it, then drawing the insulating wire through gauging devices and finally reeling it on a receiving and storing reel, substantially as set forth.

**No. 17,607. Insulating Material for Electric Wires.** (*Matériel à isoler pour les fils électriques.*)

Richard S. Waring, Pittsburg, Pa., and J. B. Hyde, New York, N.Y., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. An insulating compound for telegraph wires and electric uses composed of two or more of the heavier products arising from the re-distillation of the residuum of petroleum, substantially as set forth. 2nd. An insulating material for electric uses, consisting of one or more of the heavier products derived from petroleum residuum by re-distillation freed from paraffine and solid when cold, substantially as described.

**No. 17,608. Silk and Thread Polishing Machinery.** (*Machine à polir la soie et le fil.*)

William R. Landfear, Brooklyn, N. Y., U. S., 10th September 1883; 5 years.

*Claim.*—1st. The combination, with a spindle carriage mechanism for imparting a rising and falling motion thereto, spindles in said carriage and means for rotating them, of bars or rails arranged transversely to the length of said carriage and series of loosely pivoted cones carried by said bars or rails and around which the thread or silk is to be wound in its passage to said spindles, substantially as and for the purpose described. 2nd. The combination, with a spindle carriage mechanism for imparting a rising and falling motion thereto, spindles in said carriage and means for rotating them, of bars or rails arranged transversely to the length of said carriage and two rows of loosely pivoted cones carried by said bar or rail, the cones in the two rows being arranged with their axes at angles to each other, substantially as and for the purpose described. 3rd. The combination of the carriage D, the shaft E, and devices actuated thereby for giving said carriage its rising and falling movement, the spindles provided with wheels *e*, the vertical shaft C, the drum C<sub>2</sub>, and band or belt C<sub>1</sub>, mechanism for rotating the shafts C and E, the tension devices G, the rails H, and loosely pivoted cones I, substantially as and for the purpose described.

**No. 17,609. Step Ladder.** (*Echelle brisée.*)

Ezra R. Flint, Morenci, Mich., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. The combination, with side pieces supporting suitably arranged steps, of the legs or supports secured to the same near their top and continued forward for some distance in front of the top step so as to receive a cross strip forming an independent step, substantially as set forth. 2nd. The combination with the side pieces supporting suitably arranged steps and provided near their top with a cross brace of legs or supports pivoted to the side pieces with their top ends extending some distance in front of the same and adapted to rest in the cross brace, and provided with a cross strip forming an independent step in front of the side pieces, substantially as and for the purpose set forth. 3rd. The combination, with side pieces supporting suitably arranged steps and curved rearwardly near their top, at which curved portion they are provided with a suitable cross brace, or legs or supports pivoted to the side pieces at said curved portion with their top ends extending some distance in front of the same and adapted to rest on the cross brace and provided with cross strip forming an independent step in front of the side pieces, substantially as and for the purpose set forth.

**No. 17,610. Automatic Weighing Machine.**

(*Balance à bascule.*)

John Stevens, Neenah, Wis., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. The combination in an automatic weighing machine, of the weighing receptacle adjustable as to its size, and a feed-hopper and cut-off mechanism adjustable in position to follow the change in the size of the receptacle. 2nd. The combination, with the cylindrical weighing receptacle, of sheet metal, of removable lengthening-rims adapted to fit upon the top of the receptacle and one upon another to change the size of said receptacle and a feed-hopper adjustable vertically to adapt its position to the varying height of said receptacle. 3rd. In an automatic weighing machine, the combination with the weighing receptacle and with the discharge gate, of a shield placed within said receptacle and immediately above said discharge-gate to support the major portion of the superincumbent mass of the charge. 4th. The combination, with the feed-hopper and its spout, of a slow-down gate and a slow-down float connected with said gate to operate it and depending within the grain receptacle with its face set slantingly in the general trend of the talus of the charge. 5th. The combination with the hopper and with the slow-down gate supported thereon, of an adjustable stop to determine the distance to which said gate may open away from the floor of the delivery-spout. 6th. The combination, with the slow-down gate in the delivery-spout, of adjustable stops to determine the distance to which said gate may open away from the floor of the spout and the distance to which it may close in thereto-ward. 7th. The combination, with the delivery-spout, of the cut-off gate pivoted in brackets from the weighing receptacle. 8th. A slow-down gate consisting of a plate moving edgewise and transversely of the delivery-spout combined with a float suspended within the weighing receptacle and acted upon by the accumulating charge to close said gate gradually. 9th. In combination with the trip-latch and the spring attached thereto, and carried thereby, a stop against which said spring is brought in the return movement of the latch after the scale has been actuated, whereby said latch is caused to snap over the catch-arm or hang from the main gate, as the latter closes. 10th. In combination with the trip-latch, and the spring carried thereby, a stop upon the fixed part of the frame-work against which said spring is brought in the return movement of the latch after the discharge-gate has been opened, and means for adjusting said stop to increase or decrease the resilient action of said spring toward the catch-arm from the main gate to cause the latch to snap over said arm as the main gate closes with certainty. 11th. The bracket for supporting the trip-bolt fixed to the casing of the secondary discharge-spout or of the weighing receptacle, as and for the purpose set forth. 12th. The combination, with the trip-stop and trip-latch of the trip-bolt, and its spring, and the adjustable plate or gauge to determine the stress of said spring. 13th. The bracket for the trip-bolt slotted longitudinally, in combination with said bolt, and with stops or gages, and the thumb-screws passing through said slot. 14th. The stops or gages for the trip-bolt struck up from sheet-metal, substantially as described, with a body to rest against the under surface of the bracket, two arms to saddle the bolt and a third arm bent up from between the other two to enter the slot in the bracket, and steady said stop. 15th. The combination of the trip-bolt, its bracket, the gage for adjusting the stress of the spring in said bolt, the adjustable stop for the spring on the trip-latch, and the single screw holding said gage and stop, and screwing as their means of adjustment. 16th. In combination, with the trip-bolt, of an adjustable face-plate upon its stop. 17th. In combination with the trip-bolt, a hardened face-plate upon the trip-stop and means whereby it may be set in varying vertical adjustments, substantially as described. 18th. In combination with the trip-bolt, a hardened face-plate upon the trip-stop and means whereby it may be set in varying angular adjustments, as and for the purpose set



forth. 19th. In combination with the trip-bolt, a hardened face-plate upon the trip-stop, and means whereby it may be set in varying adjustments both vertically and angularly, substantially as described. 20th. The combination of the trip-stop, split or slotted from one end, the hardened face-plate mounted in a seat formed in the opposing arms at said end, and screws passing through both of said arms whereby they may be caused to clamp the face-plate in any desired adjustment. 21st. The combination, with the scale-rod and the trip-bolt, of the trip-stop transversely slotted at its butt end to take over said scale-rod, and provided with a set-screw to clamp it thereto in proper relation to the trip-bolt. 22nd. The combination in an automatic weighing machine, of a platform scale, a weighing receptacle seated upon a platform, thereof tripping instrumentalities for the discharge gate of said receptacle, blocked by a stop upon the scale-rod and released by the descent of the latter when the scale beam rises, and means for bracing and steadying the scale-rod against the transverse thrust of the tripping agent in contact with its stop. 23rd. A scale-rod, enlarged at the hooked end to fill the slot in the covering-plate of the base whereby said rod will be steadied against lateral play. 24th. The scale rod having a notch in the curve of its hook, combined with the bar over which said hook takes, adapted to fit into said notch, and steady the rod against the transverse thrust of the trip-bolt. 25th. The combination of the register, the link depending from the actuating arm, the cranked lateral arm from the main gate and the spring connection between said link and lateral arm. 26th. The combination of the slow-down gate, the curved screw-rod, from the covering plate of the delivery-spout, passing through a lug on the supporting frame, of said gate, the thumb-nut on said rod, and the set-screw threaded into said lug and adjustable toward and from said covering-plate. 27th. The combination of the feed hopper mounted upon a rod or support from the scale standard and the cut-off gate moving in the delivery-spout of said hopper, and pivoted in brackets from the weighing receptacle, substantially as described.

### No. 17,611. Automatic Weighing Apparatus. (Balance à bascule.)

John Stevens, Neenah, Wis., U. S., 15th September, 1883; 5 years.

*Claim.*—1st. In a machine for automatically weighing grain and other material, a buoyant presser-plate applied in the chute or spout through which the material is delivered to the weighing receptacle, and operated by suitable mechanism to diminish the flow of material as the equilibrium point is neared. 2nd. In a machine for automatically weighing grain and other material, a float or governor operated by the gradual accumulation of the contents of the weighing receptacle and actuating by its movement a cut-off or presser, in the delivery chute to diminish the stream passing therethrough as the charge nears its maximum. 3rd. The combination, with a float or governor suspended within the weighing receptacle and controlling a cut-off or presser, as described, of adjusting mechanism, whereby it may be moved vertically to compensate for changes in the predetermined amount to be weighed. 4th. The combination, with a float or governor suspended within the weighing receptacle and controlling a cut-off or presser for diminishing the flow of the incoming stream, of adjusting mechanism whereby it may be set in or out toward or from the point where the stream reaches the accumulating mass. 5th. The combination, with a buoyant presser-plate for diminishing the flow of grain and other material in a delivery spout, of an independent cut-off whereby said flow is completely stopped at the moment the discharge from the receptacle beneath takes place. 6th. The combination, with a grain-weighing receptacle and with the spout delivery thereto, of a buoyant presser-plate for diminishing the flow of material through said spout as the equilibrium point is neared and an independent cut-off whereby said flow is completely stopped at the moment the scale is actuated. 7th. The combination, with the discharge gate having a crank arm on its pivot, of a supplementary gate or valve having a cam arm or catch upon its pivot and operated by the weight of the stream as it descends from the first-named gate so as to throw its catch over a pin or anti-friction roll upon said crank arm and lock the discharge gate open. 8th. The combination, in an automatic weighing machine, of a platform scale, a weighing receptacle seated upon the platform thereof and tripping instrumentalities for the discharge gate of said receptacle stopped or dogged by the scale rod when in its position of rest and released by the descent of said rod as equilibrium is passed. 9th. The combination, with a discharge gate, of a positive-locking device to hold it close stopped or dogged by the scale-rod while the scale-beam is down and tripped or released by the descent of said rod when the beam rises. 10th. The combination, with a discharge-gate, of a positive locking mechanism which is tripped by the descent of the scale rod at the moment the scale is actuated and reset in position to again lock said gate by the action of the gate itself as it is urged open by the pressure of the charge. 11th. The combination, with the discharge gate, of locking and releasing mechanism and an adjustable stop on the scale-rod adapted to block or dog said mechanism to retain the gate closed until the descent of the rod as the scale is actuated. 12th. The combination, with the weighing apparatus, of the electric register in the mill-office, the button or contact point upon the scale-standard, the connecting wire and a lug upon the trip bolt whereby the circuit is completed to actuate the register by the movement of said bolt. 13th. The combination substantially as described, of the discharge gate, the pivoted trip-latch with its curvy track and the trip-bolt. 14th. The combination substantially as described, of the discharge gate, the trip-latch, the trip-bolt and the stop on the scale-rod. 15th. The combination substantially as described, of the discharge gate, the trip-latch, the trip-bolt and its lug, the electrical button upon the scale-standard and the electrical register in the mill-office. 16th. The combination, with the trip-bolt, of the adjustable gate, as and for the purpose set forth. 17th. The combination, substantially as described, of the weighing receptacle mounted upon a platform-scale, the discharge gate, the trip-latch, the trip-bolt, the stop on the scale-rod and a suitable delivery spout. 18th. The combination, substantially as described, of the weighing receptacle mounted upon a platform-scale, the discharge gate, the trip-latch, the trip-bolt, the stop on the scale-rod, a hopper supported upon the scale-standard and the cut-off in said hopper-spout connected with the discharge gate. 19th. The combination, substantially as described, of the discharge gate,

its rock-shaft, the trip-latch, the arm  $\epsilon_3$ , the cut-off in the delivery-spout and the link  $m_3$  connecting said cut-off and arm. 20th. The combination, substantially as described, of the discharge gate, its rock-shaft, the crank-arm and pin on said rock-shaft, the secondary gate carrying a catch, the arm  $\epsilon_3$  also on said rock-shaft, the cut-off in the delivery-spout and the link connecting said arm  $\epsilon_3$  to an arm on the cut-off pivot. 21st. The combination, substantially as described, of the discharge gate, its rock-shaft, the trip-latch, the crank-arm and pin, on said rock-shaft, the secondary gate and its catch, the arm  $\epsilon_3$  also on said rock-shaft, the cut-off in the delivery-spout, and the link connecting said arm  $\epsilon_3$  with an arm on the cut-off pivot. 22nd. The combination, with the delivery-spout, of the buoyant presser-plate turned up at its end, as and for the purpose set forth. 23rd. The combination, with the cut-off at the end of the delivery-spout, of the buoyant presser-plate forming the cover to said spout. 24th. The combination, substantially as described, of the float, its supporting link or links hung loosely to the rock-shaft which supports the secondary cut-off, the segmentally-slotted ear fast to said shaft and the set screw passing through the slot and taking into the link. 25th. The pivoted trip-latch having a yoke to receive the head of the trip-bolt, a shoulder to lock the gate-arm and a curved trackway for the anti-friction roll on the end of said arm. 26th. The catch on the end of the supplementary gate-pivot having a re-entrant curve or pocket and a curved extension, as and for the purpose set forth. 27th. The adjustable stop upon the scale-rod, as and for the purpose set forth.

### No. 17,612. Apparatus for Bathing, Vaporizing, etc. (Bain à l'eau, à la vapeur, etc.)

William W. Rosenfield, New York, N. Y., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. The combination with an ordinary bath tub of a horizontal shower or spray pipe, extending nearly or quite the whole length of the tub, substantially as described. 2nd. The combination with an ordinary bath tub, of a detachable shower or spray pipe of nearly or quite the length of the tub, and means for supporting said pipe longitudinally of the tub in such a position that the shower or spray will fall upon a person recumbent in the tub, substantially as described. 3rd. The combination with a bath tub and its hot and cold water cocks 2, 3, of the detachable longitudinal shower pipe 10, flexible connecting pipe 12, siamese attachment and means for supporting said pipe 10 in an elevated position longitudinally of the tub, substantially as described. 4th. The combination with the closed liquid receptacle 27, of the air chamber 26, of a size substantially equal to or greater than that of the liquid receptacle, the two being connected by a passage as described, and a pipe as 34 affording free communication between the latter and the air above the liquid in the former, substantially as described. 5th. The combination, with the closed liquid receptacle 27, of the air chamber 26 of a size, substantially equal to or greater than that of the liquid receptacle, the pipe as 34 connecting the latter with the former at a point above the surface of the liquid and means for regulating the flow of the liquid, substantially as described. 6th. The combination with the induction pipe 6 and perforated discharge pipe 3, of the medicating or tinturing apparatus, substantially as described. 7th. The combination, with the induction pipe, and the perforated discharge pipe of the medicated or tinturing apparatus consisting of the receptacle 23, the air chamber 26 and the liquid receptacle 27 and their connections, substantially as described. 8th. The combination, with the induction pipe and the perforated discharge pipe, of the medicating apparatus, substantially as described, and the receptacle for receiving the drippings from said perforated discharge pipe provided with a cover as 44, having an opening as 45, substantially as described. 9th. The combination, with an ordinary bath tub, of a flexible cover as 17, provided with an opening as 18, a perforated pipe as 3 and means for connecting the same with the hot water cock, substantially as described. 10th. The combination, with an ordinary bath tub, of the longitudinally perforated pipe as 3, provided with a cock as 21 for shutting the water off from a part of the length, substantially as described. 11th. The combination, with an ordinary bath tub, of the flexible cover as 17, provided with the opening as 18, the perforated pipe as 3, and means for detachably connecting the same to the hot water cock, substantially as described. 12th. The combination, with the ordinary cock, of a bath tub, of the flexible connecting pipe and means whereby said pipe is detachably secured to said cock, substantially as described. 13th. The combination, with an ordinary bath tub and its hot water cock, of the perforated pipe 3, flexible connecting pipe 6 and means whereby said flexible pipe is coupled to said cock, substantially as described. 14th. The combination, with an ordinary bath tub and its hot water cock, of the perforated pipe 3, flexible connecting pipe 6, nipple 10, plain annulus 12 and annulus 15, substantially as described. 15th. The combination, with an ordinary bath tub and its hot water cock, of the perforated pipe 3 having cock 21, and the movable seat and foot rest 19, 20, substantially as described. 16th. The plain annulus 12, substantially as described, in combination with a plain surfaced pipe or crib of a cock.

### No. 17,613. Educational Instrument.

(Instrument d'éducation.)

William Forrest, Bradford, Ont., 10th September, 1883; 5 years.

*Claim.*—1st. As an educational instrument, a series of discs pivoted on a common centre and having printed or otherwise marked on their surfaces, the letters of the alphabet, numerals, or other signs, the said discs being arranged so that they can each be turned on their common pivot independent of each other in order that the letters, or other signs, may be arranged into various combinations, substantially as and for the purpose specified. 2nd. A series of discs pivoted independently, but on a common centre, and having printed, or otherwise marked on them, the letters of the alphabet numerals, or other signs, in combination with an opening arranged to expose but one letter on each disc so that the letters, or other marks, when brought before the opening shall be read together, substantially as and for the purpose specified. 3rd. A series of discs each having a hole in its centre to fit loosely on to a hollow cylinder carried in a suitable frame and centrally divided by a collar fixed to a spindle fitted with-

in the hollow cylinder, in combination with dogs, adjustably fitted to the spindle and actuated by mechanism so that they can be thrown out beyond the periphery of the collar for the purpose of gripping the particular disc which may at the time be over the said collar in order that the said disc will revolve when the spindle is turned on its axis. 4th. A series of discs, fitted loosely on a fixed cylinder and separated from each other by fixed washers so that each disc may be independently revolved without imparting motion to the others. 5th. A series of discs journaled on a cylinder and contained within a casing so fixed to the cylinder that it will not revolve thereon and having a longitudinally opening made in it so as to expose one letter on each disc, the said discs being arranged so that they can be revolved within the casing independent of each other in order that the letters on the discs may be brought separately before the opening for the purpose of building up a word, substantially as and for the purpose specified. 6th. A series of discs independently journaled in a cylinder within a casing having a longitudinal opening made in it as specified, the said cylinder having mechanism arranged within it as described, so that by longitudinally adjusting the casing or cylinder the said mechanism can be caused to grip any disc desired, in combination with a fixed pointer situated to indicate the location of the gripping mechanism, substantially as and for the purpose specified. 7th. A series of discs pivoted on a common centre and having letters or other signs marked on their periphery, each disc being provided with a handle so that they can be turned on their common pivot independent of each other, in combination with a casing designed to enclose, or partially enclose the discs, but having circular grooves formed in it to permit the handles of the discs to pass around or partially around it. 8th. A series of discs pivoted on a common centre and having letters or other signs marked on their periphery, in combination with handles fixed one to each disc so that they can be moved independently. 9th. A series of discs pivoted on a common centre and having letters or other signs marked on their periphery and means for independently revolving each in combination with two bars extending across the disc parallel with their centre and at a distance apart about equal to the size of the letter on the disc, so as to separate the letters arranged into a word between the bars from the other letters on the disc. 10th. A series of discs pivoted on a common centre and having letters or other signs marked on their periphery and means for independently revolving each disc so as to bring a single letter on one disc in conjunction with single letters on the other discs, the said letters so arranged being between two parallel lines extending across the disc, in combination with a slate, or other marking surface, located above the letter so arranged for the purpose of taking diacritical marks. 11th. A series of discs pivoted on a common centre and having letters or other signs marked on their periphery and means for independently revolving each disc so as to bring a single letter on one disc in conjunction with single letters on the other discs, the said letter so arranged being between two parallel lines extending across the disc, in combination with a slide or blind so arranged that the letters between the lines may be independently or collectively covered, substantially as and for the purpose specified. 12th. A series of discs pivoted on a common centre and having letters printed on their peripheries for the purpose of building up words as specified, in combination with a blank space left on each disc between two of the letters, for the purpose specified.

### No. 17,614. Electric Bell Pull.

(Cordon de sonnette électrique.)

Frank J. Wall, Lawrence, Mass., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. The improved electric bell-pull described, the same consisting in the plates A K, stud L, knob M, spring N, springs G P, spindle E, knob B, insulator Q, stop R and wires g h constructed, combined and arranged to operate, substantially as set forth. 2nd. In an electric bell-pull, the spring N provided with the bend X, in combination with the spindle E, stop R, insulator Q and conducting wires, substantially as set forth. 3rd. In an electric signal-bell, the sliding plate K provided with the arm t, in combination with the plate A, the spring P, fastening device J, the spring N, the auxiliary spring b, the stop R, the spindle E, spring g and h, and wires g and h, substantially as described. 4th. In an electric bell-pull, the plate A, provided with the slot m, in combination with the sliding plate R provided with the knob M, spring P and means for permanently closing the circuit to produce a continuous ringing of the bell, substantially as described. 5th. In an electric bell-pull, the elongated spindle E its inner end shaped to adapt it to ride over the bend X, in combination with the knob B, electric wire and spring G, substantially as set forth.

### No. 17,615. Air Circulator for Cars, Cabins and Vehicles. (Circulateur à air pour chars, cabines et voitures.)

Charles McIntosh, New York, N. Y., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. In an air circulator for cars, cabins and vehicles, the adjustable blades H and shaft F, in combination with the bracket G and cowl or ventilator E, substantially as and for the purpose set forth. 2nd. In an air circulator for cars, cabins and other vehicles, the adjustable blades H and shaft F, in combination with the bracket G, rods I and J, friction wheel k and car wheel L, substantially as and for the purpose set forth. 3rd. The ice receiver P, consisting of the outer holder p, inner holder p' with spring clamping arms Q, faucet R, in combination with the bracket G, substantially as and for the purpose set forth. 4th. In an air circulating device for cars, cabins and vehicles, the adjustable blades H, shaft F, bracket G, cowl E and ice receiver P, all combined and arranged, substantially as and for the purpose set forth. 5th. In an air circulator for cars, cabins and vehicles, the adjustable blades H, shaft F, bracket G, ice receiver P, rods I and J, and friction wheel k, substantially as and for the purpose set forth. 6th. In an air circulator for cars, cabins and vehicles, the shaft N<sub>4</sub> with blades H attached to the cowl T or to the car roof, in combination with rod n<sub>2</sub> with wheel w, the register s which can be open or closed by arm s' and the bracket s<sub>3</sub>, substantially as and for the purpose set forth.

### No. 17,616. Casting Hollow Wares.

(Coulage des objets creux.)

John B. Harker, Columbus, Ohio, U. S., 10th September, 1883; 5 years.

*Claim.*—The method of casting tea-kettles and other cast-iron hollow ware consisting in molding them with their bottoms uppermost and gating the molds between their top and bottom portions, substantially as set forth.

### No. 17,617. Lumber Trimming Machine.

(Machine à dégrossir le bois.)

Willard B. Swartwout, Three Rivers, Mich., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. In a machine for sawing lumber into different lengths, the means for automatically depressing preceding saws below the bed or table of the machine, consisting of the cord M attached to a swinging saw frame at or near its heavier end and passing through suitable guide ways, in combination with a block sliding on a rail adjacent to the next succeeding saw frame whereby the preceding saws will be depressed, as set forth. 2nd. The combination with a swinging saw frame, a sliding block and a cord or chain connecting the said frame and block, of a trap adapted to support the said block and permit the latter to be forced beneath the upper surface of the rail when desired, substantially as shown and described. 3rd. In lumber trimming machines, the combination with the slide blocks O, that are connected to the swinging saw frames of the trap P and latch R arranged for allowing the blocks to be forced below the bed of the machine when the latch is moved from beneath the trap, substantially as shown and described. 4th. The combination with the swinging saw frame I, sliding block O and cord or chain M connecting said frame and block of the hinged trap O, pivoted latch R, springs Q S, the former spring Q bearing against the trap P, and the latter spring S connecting the lower end of the latch with the main frame and the cord or chain T, substantially as shown and described. 5th. The combination with the swing saw frames I and the rails B of the horizontal bar U supported at its ends, the squared irons W passing through holes in the said bar U and provided with nuts on their upper ends, and the shoes V secured to the lower ends of the said irons W and the spiral springs X forcing the irons and the shoes down on the lumber, substantially as shown and described.

### No. 17,618. Tilling Machine. (Machine à labourer.)

Charles E. Sackett, Morristown, N. J., U. S., 10th September, 1883; 5 years.

*Claim.*—1st. The combination, substantially as set forth, of the plow-beam carrying the plows, the straight axle of the implement and the mechanism for preventing lateral movement of the beam and mechanism for vertically adjusting either of its ends. 2nd. The combination, substantially as set forth, of the axle, a segment casting carried at the land end thereof, an angled lever articulating and registering with said segment, a spindle carried by said angle-lever, and the land-wheel revolving upon said spindle. 3rd. The combination, substantially as set forth, of a main plow provided with a plow-share determining the width of furrow and a front plow provided with a plow-share narrower than the furrow for the purpose of leaving an uncut or hinge edge on the furrow side. 4th. The combination, substantially as set forth, of a main plow-share determining the width of furrow, a forward plow-share narrower than the furrow for the purpose of leaving an uncut edge and a mould-board shaped to revolve the cut upon said uncut edge. 5th. The combination, substantially as set forth, of the forward plow turning its furrow slice into the previously made furrow and a skeleton pulverizing wheel having a grooved or recessed tread in order that it may pass over the deposits of said forward plow without being materially elevated. 6th. In a skeleton pulverizing wheel, the combination, substantially as set forth, of the long hub, the end boxes thereof, a series of spokes radiating from each box, the circular rims and curved transverse braces. 7th. The combination, substantially as set forth, of a main plow and pulverizing wheel with a screen or extension of the mould-board of said main plow for the purpose of confining the earth within said wheel during the process of pulverization.

### No. 17,619. Apparatus for Drying and Seasoning Timber. (Appareil à sécher le bois.)

Alexander McNeile, London, Eng., 10th September, 1883; 5 years.

*Claim.*—1st. The construction, arrangement and combination of parts shown and described, constituting an apparatus for drying and seasoning timber and consisting of a close chamber constructed of timber provided with an inner lining of same material easily renewable round the walls and roof for the preservation of the structure, the chamber being also provided with fire place and open flue and fitted with open shallow vessels containing water, all arranged to operate as set forth. 2nd. The combination of the three drying and seasoning chambers A A\* A\*, arranged side by side, the outer ones being extended forward beyond the front of the central one with their fire-places D\* D\* facing each other at the sides and in front of the fire-place D of the central one, substantially as described.

### No. 17,620. Dynamo Electric Machines.

(Machines dynamo-électriques.)

James E. H. Gordon, Kensington, Eng., 10th September, 1883; 15 years.

*Claim.*—1st. My improved dynamo-electric machine for electric lighting, composed of stationary armature, bobbins and electro magnet bobbins mounted upon an iron or steel wheel, the axes of the said bobbins being straight and parallel to the axis of the wheel and so arranged that as the wheel revolves the electro-magnets are carried past the induction bobbins end to end, substantially as described. 2nd. In dynamo machines in which the cores of the electro-magnets and of the armature bobbins are straight and parallel with the re-

volving axis of the machine, I claim to make the number of armature bobbins in each ring double the number of the electro-magnets in the magnet ring whether the armature bobbins are fixed and the magnets carried by the revolving axis or vice versa. 3rd. I claim the improvement in dynamo machines applicable to all machines where one end of each armature core is acted on by the magnets and the other ends of the cores are connected by an iron plate consisting in lengthening the cores beyond the length required for the wire and thus setting back the iron plate into a field of greatly diminished inductive action. 4th. The construction of the flanges of the fixed coils which are next to the magnets of German silver, for the purpose described. 5th. The construction of the flanges of the fixed coils with a slit through their outer end and with lugs projecting from the edges of the slit to enter an opening in the core, substantially as described. 6th. In the construction of the revolving wheel of dynamo machines, the combination of the two discs A, distance piece D, ring E, electro magnets G, coned bosses F and coned plates B, substantially as described. 7th. The combination of the ring E, the iron cores G projecting from either side of it, the bobbins G' slipped on to each iron core and the pole pieces G3, substantially as described. 8th. The construction of the sole or bed plate of dynamo machines with a gap through which a portion of the wheel descends into a pit below. 9th. The combination with the boss of the revolving wheel of loose iron collars pressed outwards from the boss by screw studs to cause them to bear lightly against the sides of the bearings in which the axle of the wheel is carried, substantially as described. 10th. The combination of the bed plate I with the slot or gap I', therein, the fixed rings M bolted to the inside of the gap I', the tie rods M3, the law standards carrying the axis of the revolving wheel and the struts from the top of the standards, substantially as described. 11th. The construction of the fixed rings M which carry the induction bobbins each in three segments, one much smaller than either of the other two, substantially as and for the purpose described. 12th. The construction of the cores of the fixed coils, of T pieces with wedge shaped heads welded into V shaped pieces formed of iron plate bent to an acute angle, substantially as described. 13th. The alternative construction of the same cores with stud bolts instead of fixed stems for convenience of removing the fixed coils, substantially as described. 14th. The construction of the stationary iron rings of this or any other dynamo machine where one end of the iron core of each of the armature bobbins is attached to such a ring with a channelled section and a water service for the removal and recovery of the waste heat. 15th. The method of regulating separately excited dynamo machines by driving the exciter by a separator engine and bringing the stop valves of the small or of both engines into the photometer room, substantially as described.

#### No. 17,621. Shoes. (*Souliers.*)

Isaiah A. Reals, Brocton, Mass., U. S., 11th September, 1883; 5 years.

*Claim.*—The shoe provided in its leg portion with an elastic gore on both sides of and around the front of such leg portion and projecting above the inelastic instep portion, in combination with a stay *h* fastened to the instep portion and to the fore pulling-loop but unattached to the gore, all substantially as set forth.

#### No. 17,622. Thill Coupling.

(*Armons des limonnières.*)

John E. Power, Dartmouth, N.S., 11th September, 1883; 5 years.

*Claim.*—The thill coupling, consisting of the clip band B provided with clips or hooks C C, the T headed thill-iron D with bushed journals *e*, the packing-block E and taper compensating screw F with self locking device for said compensating screw, all combined as set forth.

#### No. 17,623. Signal Lamp. (*Lampes à signaux.*)

E. S. Piper, Toronto, Ont., 11th September, 1883; 5 years.

*Claim.*—1st. In connection with a railway car or any chamber lighted by artificial means, a box or case fitted into or applied to an aperture made in the said chamber in such a manner that the interior of the said box shall be illuminated by the light within the said chamber, in combination with a reflector placed within the box or case for the purpose of refracting the light thus obtained on to a lens or signal glass inserted into the box, substantially as and for the purpose specified. 2nd. A box or case having two lenses or signal glasses inserted in it opposite to each other and an open side for the admission of light, in combination with a double reflector placed within the box or case in such a manner as to form a partition between the lenses and refract separate rays of light into each lens, substantially as and for the purpose specified. 3rd. In a box or case having two lenses or signal glasses inserted in it opposite to each other and a reflector extending obliquely from the side of each glass towards the centre and open side of the box for the purpose of forming a partition between and a separate reflector for each glass, the combination of coloured glass so placed over the open side of the box that the rays of light admitted there through shall be differently coloured for each compartment formed within the box by the partition, as specified, so that the light from each lens shall be of a different colour.

#### No. 17,624. Oil Can. (*Bidon à huile.*)

John W. Jackson, Sharpville, Pa., U.S., 11th September, 1883; 5 years.

*Claim.*—In a self-closing oiler, the spout F, slipped through the screw-cap H, provided with the guide I, and valve-seat *f*, and having its inner end perforated and closed by a perforated cap; the valve rod G, provided with spring pressing against the guide I, and keeping the valve *f* upon the seat-pin *f*, in combination with the rod C, provided with a slot *d*, and held outward by a suitable spring in the cylinder B, the latter having wing-piece D, to which is pivoted the dog E, having cupped end *e*, substantially as shown and described, and for the purpose set forth.

#### No. 17,625. Rubber Cloth. (*Drap de Caoutchouc.*)

F. E. Aldrich, Boston, Mass., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both its surfaces printed or stamped with useful or ornamental designs or figures in an ink or printing compound of a different color or shade from the body of the cloth or fabric, substantially as set forth. 2nd. As an improved article of manufacture, a rubber cloth or fabric, composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures, in an ink or printing compound of a different color or shade from the body of the cloth or fabric, said ink or compound being composed in part of rubber, caoutchouc, gutta-percha, or some analogous substance, and a coloring material or materials, substantially as specified. 3rd. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both of its surfaces painted or stamped with useful or ornamental designs or figures, in an ink or printing compound of a different color or shade from the body of the cloth or fabric, said ink or compound being composed in part of rubber, caoutchouc, gutta-percha, or some analogous substance, and containing sulphur or some ingredient for rendering the ink vulcanizable, substantially as set forth. 4th. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures, in an ink or printing compound of a different color or shade from the body of the cloth or fabric, and varnished, substantially as specified. 5th. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures, in an ink or printing compound analogous to the coating of the cloth or body of the fabric, and of a different color or shade therefrom, substantially as set forth. 6th. As an improved article of manufacture, a rubber cloth or fabric, composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures, in an ink or printing compound of a different color or shade from the body of the cloth or fabric, said ink or compound containing rubber and sulphur, or an ingredient for vulcanizing the rubber when subjected to heat or the sun's rays, substantially as specified. 7th. As an improved article of manufacture, a rubber cloth or fabric composed wholly or in part of rubber, having one or both of its surfaces printed or stamped with useful or ornamental designs or figures, in an ink or printing compound of a different color or shade from the body of the cloth or fabric, said ink or compound containing rubber, lead, and sulphur, or means for vulcanizing the rubber when subjected to heat or the sun's rays, substantially as set forth.

#### No. 17,626. Chronometer Escapement.

(*Echappements au Chronomètre.*)

A. W. Kentoff, Dalas, Oregon, U.S., 11th September, 1883; 5 years.

*Claim.*—1st. The combination, with the escapement wheel *h*, of the balance-staff *i*, carrying the balance wheel *k*, and roller *m*, spring *q*, oscillating lever *o*, and locking lever *t*, substantially as described, and for the purpose set forth. 2nd. The combination, with the escapement-wheel *h*, balance-staff *i*, roller *m*, spring *q*, and oscillating lever *o*, of the frame *r*, cross-bar *s*, locking lever *t*, springs *u*, *w*, substantially as described, and for the purpose set forth.

#### No. 17,627. Waterproof Coats.

(*Habits hydrofuge.*)

William and John Maguire, Toronto, Ont., 11th September, 1883; 5 years.

*Claim.*—1st. A waterproof coat, having the bottom edge of its skirt turned up, forming a trough or channel to receive water flowing on the surface of the coat, and convey it away from the legs of the wearer of the garment. 2nd. A waterproof coat, having the bottom edge of its skirt turned up to form a trough, in combination with a tube or pipe leading from the trough, substantially as and for the purpose specified. 3rd. In a waterproof coat having the bottom edge of its skirt turned up to form a trough, the combination of the piece C arranged to form the bottom of the trough, as specified. 4th. In a waterproof coat having the bottom edge of its skirt turned up to form a trough, a piece C arranged to form the bottom of the trough, in combination with the tie-pieces D, as specified.

#### 17,628. Games. (*Jeux.*)

P. H. Johnston, Boston, Mass., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. A game consisting of a series of differently colored blocks, adapted to be combined to form designs or figures, and a top or teetotum, having its sides respectively colored or marked to correspond with the colors of the blocks, the game being played substantially as set forth. 2nd. In a game, substantially as described, the colored blocks A, each of said blocks having a diameter at its centre corresponding with the length of each of its sides, in combination with a top or teetotum, having as many straight or angular sides as there are colors represented by the blocks, substantially as specified. 3rd. In a game, substantially as described, a top, having the flat hexagonal body C, provided with the spindle D, each angle of the body being colored or marked to correspond with a color on one of the blocks A, substantially as set forth. 4th. The blocks A, colored and otherwise constructed as described, and put up in sets for use, substantially as set forth.

#### No. 17,629. Apparatus for Screwing the ends of Sheet Metal Pipes. (*Appareil à visser les bouts des tuyaux en fer métallique.*)

A. Cameron, Montreal, Que, 11th September, 1883; 5 years.

*Claim.*—1st. In a screw-threading machine, a lower die let into frame, and an upper die, operated by a lever, the meeting surface of teese having a corresponding section of a spiral cut on each, and made to press in turn on successive portions of the circumference of the pipe to form a continuous spiral, all substantially as set forth. 2nd. The combination with the moulding dies or blocks of a tapering block mounted on a screwed shaft, which is moved forward till it enters into and holds the pipe, all substantially as set forth. 3rd. The combination, with the screwed shaft, carrying pipe of mechanism, consisting of arm, slotted arc, and pawl and ratchet, whereby the backward movement of the lever is caused to impart rotary motion to the shaft *H*, this transmitting such motion through gears to screwed shaft, and rotating pipe through a desired arc.

**No. 17,630. Vacuum Pans for Evaporating Liquors.** (*Appareil à évaporer les liqueurs au vide.*)

U. A. Hoeverler, Pittsburg, Pa., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. The combination of the pan *A*, exhaust *C*, and inlet pipe *F* or *F*<sup>1</sup>, having the rose or shower head *G* or *G*<sup>1</sup>, substantially as described. 2nd. In combination with the vacuum pan *A*, the inlet pipe *F* or *F*<sup>1</sup>, rose or shower-head *G* or *G*<sup>1</sup>, and the imperforate tray *H*, located beneath said shower-head, substantially as described. 3rd. In combination with the vacuum-pan *A*, the inlet pipe *F*, rose or shower-head *G*, and the tray *H*, perforated and rimmed at its periphery, substantially as described.

**No. 17,631. Heel-paring Machine for Boots and Shoes.** (*Machine à parer les talons des Chaussures.*)

F. Cutlan, Leicester, Eng., 11th September, 1883; 5 years.

*Claim.*—1st. The employment of the clip or hooked bar *A*, substantially as and for the purposes described. 2nd. The fixing of the knife to a loose piece hinged or jointed to the knife-stock, substantially as described and shown. 3rd. The combination of the sliding bar *U*, friction roller *V*<sub>1</sub>, cam *V*, and revolving shaft *w*, substantially as and for the purpose set forth.

**No. 17,632. Cooking Ranges.** (*Poêle à charbon pour cuisine.*)

U. H. Scott, Tredonia, N.Y., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. A cooking-range having a flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, provided with the vertical dividing-plates *D* *D*<sub>1</sub>, in combination with the dividing damper *J*, arranged below the oven, and its operating mechanism, substantially as specified. 2nd. In a cooking-range the combination of the oven *B* and the flues *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub>, with the dampers *E*, *H*, *J*, and their operating mechanism, substantially as specified. 3rd. The damper *E*, and its arms *a* *f*, connecting-rod *f*, rack *f*<sub>2</sub>, connecting-rod *g*, arm *g*<sup>1</sup>, and damper *H*, in combination with the pinion *H*<sub>1</sub>, its supporting vertical shaft and arm *i*, connecting-rod *i*, arm *j* and dividing-damper *j*, whereby all the dampers may be moved or operated simultaneously by the handle *e*, for the purposes described. 4th. A cooking range, in which the flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub> surrounds and separates the oven entirely from the fire-box, and is provided with the plates *D* *D*<sub>1</sub>, in combination with a series of simultaneously-acting dampers *E*, *H*, *J*, and their operating mechanism, substantially as described. 5th. A cooking-range, in which the flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub> surrounds and separates the oven from the fire-box, in combination with the dividing-plates *D* *D*<sub>1</sub>, and a suitable means for changing the direction of the products of combustion for the purposes described. 6th. A cooking-range, having a flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub>, in combination with the dampers *E* and *J*, and their operating mechanism, substantially as specified. 7th. The flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub>, in combination with the damper *J*, and a suitable means, substantially as specified, for changing the direction of the heat around the oven. 8th. In a cooking-range, the flue *C* *C*<sub>1</sub>, *C*<sub>2</sub>, *C*<sub>3</sub>, which surrounds and separates the oven from the fire-box, in combination with a series of connected dampers, whereby the products of combustion may be directed around the oven in different ways, for the purposes substantially as shown and described.

**No. 17,633. Railway Ditching Machine.**

(*Machine à faire des fossés aux chemins de fer.*)

D. E. Grove, Dallas, Texas, U.S., 11th September, 1883; 5 years.

*Claim.*—1st. In a railway ditching machine, the plow *F*, made angular and with inclined cutting edges, whereby a ditch will be cut or a bank sloped, as described. 2nd. In a railway ditching machine, the combination with the car *A*, and the angular carrier-frame *C*, the derricks *X*, *V*, and their tackles *S*, *V*, *T*, and *a*, *c*, *b*, whereby the carrier and its plow can be adjusted laterally and vertically, as set forth. 3rd. In a Railway Ditching Machine, the combination with the car *A*, the derricks *X*, *V*, and the tackle of the windlass and the steam-engine, whereby the plow and carrier can be quickly raised and lowered as described. 4th. In a Railway Ditching Machine, the combination with the car *A*, the plows and the carrier-frames of the push-bars *B*, whereby the plows are pushed forward against the resistance of the earth, as described. 5th. In a Railway Ditching machine, the combination with the car *A*, and the side-carriers of the transverse carriers and their supporting tackle and derricks, whereby the inclination and position of the said transverse carriers can be regulated, as described. 6th. In a Railway Ditching Machine, the combination with the angular plow, having inclined cutting edges of the angular frame provided with the endless belts *H*, *J*, *K*, and spring side-boards, substantially as shown and described. 7th. In a Railway Ditching Machine, the combination with the car, of the angular frame, the angular plow, the carrier-belts *H*, *J*, and their rollers, and the angle-belt *K*, and its guide-rollers, whereby the dirt will be raised and carried back, as set forth. 8th. In a Railway Ditching Machine, the combination with the angular carrier-frame, and the inclined endless belts *H*, *J*, of the narrow belt *K*, made thick and with bevelled edges, and the guide-pulleys *L*, whereby dirt is kept from entering the space between the adjacent edges of the said

inclined belts, as set forth. 9th. In a Railway Ditching Machine, the angular frame carrying the plow, and provided with the bails, in combination with the bar *c*, hinged at its outer end to the frame, and connected at its inner end to the car *a*, and the derrick mounted on the car, and provided with the tackle, substantially as described. 10th. In a Railway Ditching Machine, the combination with the car *A*, and the carrier-frame of the hinged bar *e*, and the swivelled hand-screw *f*, whereby the lateral inclination of the plow and carrier can be regulated, as set forth. 11th. In a Railway Ditching Machine, the combination with the car *A*, the bar *e*, and the carrier-frame, of the vertically sliding block *g*, and the swivelled screws *j*, whereby the lateral inclination of the carrier and plow can be adjusted from the car, as set forth. 12th. In a Railway Ditching Machine the combination with the car, the bar *e* hinged at its forward end to the frame *C*, and the carrier-frame of the rack-bar *o*, and the gear-wheel *p*, having shaft and hand-wheel, whereby the carrier-frame can be adjusted to bring the plow nearer to the car or send it therefrom, as set forth. 13th. In a Railway Ditching Machine, the combination with the car carrying the side-carriers and their plows, and the transverse carriers of a train of cars *X*, provided with an endless conveyer, whereby the conveyer lying over, each car can be loaded from the said side, and transverse carriers, as set forth. 14th. In a Railway Ditching Machine, the combination, with the angular carrier-frame, the endless belts *H*, *J*, *K*, and their rollers, of the bevelled gear-wheels *M*, *N*, the connecting-rod *O*, and the steam-engine *Q*, whereby the carrier-belts are made to move together substantially as set forth. 15th. In a Railway Ditching Machine, the conveyer, consisting of the slats *y*, having their side edges correspondingly bevelled and overlapped, the coupling links *z* and *1*, 2, and the wheels *5*, *7*, as set forth. 16th. In a Railway Ditching ditching Machine, the combination with the cars *x*, having posts *11*, cross-bars *10* and track timbers *9*-*8*-*9* of the endless conveyer *y* *z* *1*-*2*, having hangers *4*-*6*-*4* and wheels *5*-*7*-*5*, whereby the dirt received at the forward end of the conveyer will be carried to the rear of the trains, as set forth. 17th. In a railway ditching machine, the combination with the hangers that carry the guide wheels of the conveyer, of the rag-wheels *16*, the crank-shaft *15* and the steam engine, whereby the conveyer can be operated independently of the other parts of the mechanism, as set forth.

**No. 17,634. Electro-Coating Process.**

(*Manière d'enduire par les procédés électriques.*)

U. H. Waleun, Islington, Eng., 11th September, 1883; 5 years.

*Claim.*—1st. The electro-coppering solution set forth in the first part of this invention, containing cyanide of potassium and neutral tartrate of ammonium in about the proportions named charged by electrolysis and completed by the addition of cupric ammonide, as set forth and for the purpose named. 2nd. Using the solutions mentioned in the first part of this invention, at a boiling heat or near thereto, as set forth and for the purposes named. 3rd. Thin sheet iron plates coated with copper by the solution described and as set forth in the first part of this invention. 4th. The apparatus, described in the second part of this invention, for preventing the too great evaporation of the solution, including the arrangement for conducting the electric current into the tank and insulating the tank also including the counterbalanced cover worm tube and upper vessel, for the purposes named. 5th. Working the solutions mentioned in the third part of this invention, in a closed vessel under a known pressure, as set forth. 6th. The use of the closed vessel for the purposes (other than increase of pressure), set forth in the third part of this invention. 7th. The addition of cupric ammonide to the solutions named in the fourth part of this invention, in the manner stated and for the purpose named.

**No. 17,635. Automatic Safety Car Signals.**

(*Signaux automatiques à la sûreté des chemins de fer.*)

U. H. Rushforth, Camden, N. Y., U. S., 11th September, 1883; 5 years.

*Claim.*—1st. The method of automatically displaying a danger signal from the end of a train which consists in connecting a danger signal with a system of pneumatic brakes adapted to be operated from the engine or by the breaking of a hose-brake-coupling, whereby upon the application of the brakes from the engine, or the stoppage of the train by reason of the breaking of a hose coupling, the danger signal is automatically exposed. 2nd. In a railroad train in combination, a system of air or vacuum brake tubes, a fixed danger signal applied to the end of a car, a device which when the train is in motion obscures the light of said signal and means for connecting the obscuring device with the system of air or vacuum brake tubes whereby upon the application of the brakes from the engine or upon the breaking of a coupling, the air is enabled to operate the signal. 3rd. In a railroad train, the combination of a system of air or vacuum brake tubes, a fixed signal lantern applied to the end of a car, an obscuring plate or kindred obscuring device connected with a piston playing in a pump cylinder and adapted when the train is in motion to obscure the light, a pump cylinder also applied to the car and connecting tubes for conveying the pressure from the air or vacuum brake tubes into the cylinder for operation of the piston and signal. 4th. The combination of a suitable operating mechanism connected with a system of pneumatic brakes, a slide connected thereto and adapted to be raised and lowered thereby, signal arms pivoted to said slide and adapted to be operated thereby so as to be either extended or closed, substantially as set forth. 5th. The combination of a suitable operating mechanism, a slide connected thereto, adapted to be raised and lowered thereby, and provided with suitable flanges or stops, pivoted signal arms and guides for closing said arms when the slide is lowered, substantially as set forth.

**No. 17,636. Ice Creepers.** (*Crampons à glace.*)

F. M. West, Mohawk, N.Y., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. The spiked plate *B* having a screw threaded stem *b* and spikes *b*<sub>1</sub>, in combination with the socket *A* sunk in the heel and

secured to the face thereof by means of the face plate  $\alpha$ , said socket provided with an internal screw thread terminating in a shoulder  $\alpha$  to retain a shouldered plug D filling the bore of the socket and pressed against said shoulder by a spring E abutting against the back plate  $\alpha_2$ , substantially as described and for the purpose set forth. 2nd. The combination of the circular socket A having face plate  $\alpha$  and provided with internal screw thread terminating in a shoulder to retain the shouldered plug D inserted from the rear and pressed forward by a spring E, substantially as described and for the purpose set forth.

**No. 17,637. Treating Alcoholic Liquors with Electricity.** (*Manière de clarifier les liqueurs alcooliques par les procédés électriques.*)

A. C. Tichener, Alameda, Cal., U.S., 11th September, 1883; 5 years.

*Claim.*—The method of removing fusel oils or other impurities from alcoholic liquors which consists first in passing through them an electric current by means of wires and electrodes one of which is provided with a removable envelope or casing; and secondly in removing said envelope from the liquor and renewing it by putting on another or cleansing and restoring the old envelope at intervals when it has received a deposit of impurities, substantially as set forth.

**No. 17,638. Apparatus for Manufacturing Gas.** (*Appareil pour la fabrication du gaz.*)

Arthur O. Grainger and Josh. H. Collins, Philadelphia, Pa., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. A gas generator having its internal walls made conical, the internal diameter being largest at the grate and smallest at the top in combination with a grate extending its full width to the casing in front, two doors arranged at an angle to each other and hinged at their outer sides, seats for said doors and means to secure said doors tight upon their seats, substantially as and for the purpose specified. 2nd. A gas generator, superheater, etc., provided on the bottom with an extension of their sheet iron casing, the bottom of said extension resting upon the foundation and the top of said extension being on a level with the floor or bottom of lining of said generator, etc., substantially as set forth and for the purpose of dispensing with stone or brick piers. 3rd. The combination of a generator supplied with air and steam pipes and superheater, of a gas apparatus with an oil nozzle, means to spray the oil into the vaporizing chamber under great pressure and mix it therein with previously produced water-gas, substantially as and for the purpose specified. 4th. In combination, of a generator supplied with steam and air pipes and a superheater of a gas apparatus with an oil nozzle, means to force the oil and means to spray the oil into the exit for the water-gas between its place of generation and washer, substantially as and for the purpose specified. 5th. The combination of a generator and a superheater, the top of the former being on a level with the bottom of the latter, with a flue connecting said generator with the superheater, a chamber arranged in the bottom of the superheater, a spraying oil-nozzle opening into said chamber and facing the flue from generator and mechanical means to force oil under pressure into said chamber in the form of finely-divided spray, substantially as and for the purpose specified. 6th. In a generator for making gas, the grate extending its full width to the casing, in combination with two doors arranged at an angle to each other and hinged at their outer sides seats for said doors and means to secure said doors tight upon their seats, substantially as and for the purpose specified. 7th. The combination of a generator and a superheater with an exit or smoke flue, provided with a valve, a flue leading from the superheater to the gas-holder, an adjustable water-seal arranged in said flue and connecting mechanism between the valve of the smoke-flue and the adjustable water-seal whereby the water-seal is operated to close the gas outlet when the smoke valve is open, substantially as and for the purpose specified. 8th. The combination in generator A, of the grate B, frame C, doors C<sup>1</sup>, vertical-bar C<sup>2</sup>, hinged arms C<sup>3</sup>, links C<sup>4</sup> and screws C<sup>5</sup>, substantially as and for the purpose specified. 9th. The described process for carbureting previously produced water-gas which consists in passing said water-gas into a highly-heated chamber and therein spraying oil under great pressure and intimately mixing said water-gas and oil, next vaporizing the oil through the agency of the highly-heated water-gas and finally passing said mixture through a super-heating or fixing chamber, substantially as set forth.

**No. 17,639. Machinery for the Manufacture of Paper.** (*Machines pour la fabrication du papier.*)

J. H. Armandale, Midlothian, Scotland, 11th September, 1883; 5 years.

*Claim.*—1st. The improved method of manufacturing paper described consisting in distributing the pulp by an endless wire cloth having a combined lateral and lengthwise agitation, then transferring the film of pulp into an endless open felt cloth  $\alpha$  passing between pressure rollers, then passing the film between endless felt cloth under pressure of rollers, then inserting the film between endless felt cloths passing between heated rollers, then if desired, sizing the paper between endless felt cloths dipping into a bath of animal size and removing the surplus size by passing the paper and cloths between squeezing rollers and finally drying the paper in a warm chamber by hanging the paper in festoons, the whole performed in a direct outward manner and by continuous motion. 2nd. The arrangement and combination of parts described and substantially as shown in the drawings, consisting of an endless wire cloth  $\alpha$  passing over a roller  $c$  at the delivery end, endless felt cloth  $d$  passing between rollers  $e$   $e$ , endless felt cloth  $g$   $g$   $g$  passing between pressure rollers  $h$   $h$   $h$ , endless felt cloths  $i$   $i$   $i$  passing between drying rollers  $k$   $k$   $k$ , sizing bath  $n$ , endless felt cloths  $l$   $l$ , squeezing rollers A B, elevating chain D, beil crank F, endless side belts F, side bars H and eccentric I.

**No. 17,640. Chain Cables.** (*Câble-chaînes.*)

James M. Dodge, Chicago, Ill., U.S., 11th September, 1883, 5 years.

*Claim.*—1st. In a chain cable, the combination with the links, of blocks interposed between the adjacent end portions of the links, the said blocks being adapted to afford bearing or working surfaces for the actions of the engaging devices of a chain-wheel, substantially as set forth. 2nd. In combination with the links, of a chain-cable, blocks interposed between the adjacent ends of the links and provided with grooves which afford pintle-like bearings for the said link ends, substantially as set forth. 3rd. In combination with two enchain links, a block having grooves arranged transversely to each other and operating to prevent any twisting movement of said links relatively, substantially as set forth.

**No. 17,641. Hot Water Heating Apparatus.** (*Appareil de chauffage à l'eau chaude.*)

O. Charland, Gentilly, Que., 11th September, 1883; 5 years.

*Claim.*—In a boiler, the combination of the mains A B and C, feed pipe  $a$ , branch pipes  $b$  and  $c$ , distributing pipes  $d$   $d$  and the return pipes  $e$   $e$ , arranged, substantially as shown and for the purpose set forth.

**No. 17,642. Detachable Book Cover.** (*Couverture mobile de livre.*)

James Gordon, Stratford, Ont., 11th September, 1883; 5 years.

*Claim.*—1st. A book holding device consisting of the back piece  $a$  having the upturned portions  $g$ , the case lining  $b$  having the holding tips  $h$   $h$ , the stop  $i$  and the raised ridge  $j$  and the tightener  $c$  having the wings  $d$  and  $e$  and the journals  $f$   $f$ , substantially as described. 2nd. The combination of a clasp having the back piece  $a$ , case lining  $b$  and the tightener  $c$  with the cover or back B, all substantially as shown and described.

**No. 17,643. Treating Volatile Fluids or Oils for Storage or Transportation.** (*Fabrication des huiles pour l'emmagasinage ou le transport.*)

S. M. Eiseman, New York, N. Y., U.S., 11th September, 1883; 10 years.

*Claim.*—1st. As a new article of manufacture, volatile or inflammable fluids and oils converted to a granulated fire and weather resisting state, substantially as described. 2nd. As a new article of manufacture, volatile or inflammable fluids and oils mixed with castor oil together with stearine or other equivalent fatty substances and coagulated or granulated at a low degree of heat by mixture with a liquid lye or an equivalent substance, substantially as shown and described. 3rd. As a new article of manufacture, volatile or inflammable fluid, and oils converted into granules which are provided with heat or weather-resisting coatings, substantially as described. 4th. As a new article of manufacture, volatile or inflammable fluids and oils converted into granules and provided with protective envelopes or coverings of silic combinations, substantially as described. 5th. The described process of granulating or coagulating volatile or inflammable fluids and oils which consists in dissolving in or mixing with the fluid or oil to be granulated, a fatty substance together with acid or combinations thereof, preferably at a low degree of heat and mixing the so treated volatile or inflammable fluid or oil with liquid lye for producing the granulation of the fluid or oil so treated, substantially as set forth. 6th. The described process of coagulating volatile or inflammable fluids and oils consisting in dissolving in or mixing with them stearine, or other suitable fatty substance, together with castor oil and with a liquid lye, substantially as set forth. 7th. The described process of producing fire and weather-resisting granulated volatile or inflammable fluids and oils consisting in granulating the said fluid or oil and then providing the granulus so produced with a coating of substances adapted to resist the effects of heat or the influences of the atmospheres, substantially as set forth. 8th. The described process of producing fire and weather-resisting, granulated or coagulated volatile or inflammable fluids and oils consisting in granulating the fluid or oil and then covering the granules with a coating of silic combinations, substantially as set forth.

**No. 17,644. Combined Match Lighter and Cigar Cutter.** (*Abumeur d'allumettes et rogneur de cigares combinés.*)

G. Iseuhart, Casy, Iowa, U.S., 11th September, 1883; 5 years.

*Claim.*—1st. The cover  $m$  having perforations Nos. 1 and 2, the pivoted knife  $r$  and the grooved cam-plate  $r'$   $r'$ , in combination with the reciprocating match-carrying mechanism  $c$   $d$   $f$ , substantially as and for the purposes shown and specified. 2nd. The spring latch and locking device  $s$   $s'$ , in combination with the cover N having perforation Nos. 1 and 2 and the pivoted knife R having a notch to engage the latch, substantially as shown and described for the purposes specified. 3rd. The improved instrument consisting of a case A having fixed bearings B, an inclined match safe bottom  $g$ , a reciprocating match-carrier and holder  $c$   $h$   $i$ , the handle  $d$ , the spring  $f$ , the friction plate  $m$   $n$ , the cigar-cutting mechanism  $a$   $r$   $r'$   $r''$  and the locking device  $s$   $s'$ , substantially as shown and described.

**No. 17,645. Blistering Liniment for Horses and Cattle.** (*Liniment à vésicules pour bestiaux.*)

P. Corcoran and T. O'Brien, York, Neb., U.S., 11th September, 1883; 5 years.

*Claim.*—The described composition of matter or blister liniment consisting of alcohol, cantharides, mercurial ointment, corrosive sublimate, muriate of ammonia, sulphuric acid, tincture of iodine, oil of spike, oil of origanum, oil of olive, oil of amber, British oil, oil of cedar, oil of henlock in the proportions specified.

**No. 17,646. Steam Boiler.** (*Chaudière à vapeur.*)

Joseph Burnett, Phelps, N. Y., U.S., 11th September, 1883; 5 years.

*Claim.*—In combination with a boiler, the smooth inclined partition plate or sheet E extending nearly the entire length of the boiler placed at an angle, in one direction fastened to the head H and to the sides of the boiler as far as it extends in a water-tight joint, substantially as and for the purpose set forth and described.

**No. 17,647. Mechanical Movement.**(*Mouvement mécanique.*)

L. S. Fithian, New York, N. Y., U. S., 11th September, 1883; 5 years.

*Claim.*—1st. In a mechanical movement, the combination with a shaft having cogged wheels connected by intermediate gears journaled in independent bearings, of a lever fixed to said shaft and forming a bearing for one of said intermediate gears, whereby the gear journaled in the said lever is adapted to have a revolution around or about the main shaft in one direction and a revolution upon its own axis in a contrary direction, substantially as set forth. 2nd. In a mechanical movement the combination with a shaft having a large double gear mounted loosely thereon and a lever fixed to said shaft, of a movable gear journaled in bearings in said lever at an inclination to the face of the large gear with which it meshes, and means such substantially as described for imparting motion to the large gear in a direction opposite to the revolution of the shaft whereby the movable gear journaled in the said lever is caused to revolve upon its axis in a direction contrary to its revolution about the main shaft, substantially as set forth. 3rd. In a mechanical movement, the combination of a shaft mounted in suitable bearings, a chambered cog-wheel fixed to said shaft, a chambered cog-wheel having an elongated hub and pinion integral therewith, and a sleeve mounted loosely on said shaft and provided with a pinion, and intermediate gear journaled in an independent bearing and connecting one chambered cog with the pinion on the other chambered cog-wheel, a lever fixed to the shaft and adapted to revolve therewith and a movable gear journaled in bearings, formed in said lever and adapted to connect the large loosely-mounted cog-wheel with a pinion on the loose sleeve whereby said sleeve is adapted to revolve with increased speed in the same direction as the main shaft, substantially as set forth. 4th. In a mechanical movement the combination of the main shaft A journaled in suitable bearings, the cog-wheel C and lever H fixed to said shaft, the cog-wheel G and sleeve K mounted loosely thereon and provided respectively with suitable pinions, the bevel gear D journaled in independent bearings formed in a stationary bar E arranged at an angle to the main shaft, and the movable gear T journaled in bearings formed in the lever fixed to the shaft, said gear D and I inclined to the faces of the large gears and connecting respectively with the same and with a pinion on the loose sleeve whereby the latter is caused to revolve in the same direction as the main shaft and with an increased speed, substantially as set forth.

**No. 17,648. Composition to be used as Paint or Dye.** (*Composé servant réciproquement de peinture ou de teinture.*)

The Leeds Manufacturing Co'y, (assignees of N. McCallum,) Brooklyn, N. Y., U. S., 11th September, 1883; 5 years.

*Claim.*—The dye stuff described as ecurine and produced by a mixture of flarine and picric acid evaporated to dryness with nitric acid, in the manner set forth.

**No. 17,649. Treatment of Certain Solid or Granulous Forms of Volatile Matters for their Reconversion into Liquid Form.** (*Fabrication de certains solides de manière à les convertir de nouveau sous forme liquide.*)

S. M. Eiseman, New York, N. Y., U. S., 11th September, 1883; 5 years.

*Claim.*—1st. The recovery of liquid volatile and inflammable fluid or oil together with the substances combined therewith from uncoated, solid or granulous form of the volatile and inflammable fluid or oil, by decomposing the solid or separate granules, substantially as described. 2nd. The recovery of liquid volatile and inflammable fluid or oil together with the substances combined therewith from granules, of the volatile and inflammable fluid or oil provided with a fire and weather-resisting coating as mentioned by decomposing the said granules, substantially as described.

**No. 17,650. Process for Solidifying Liquid Fatty Acids.** (*Procédé à solidifier certaines acides.*)

W. F. M. McCarty, Aix-la-Chapelle, German Empire, 11th September, 1883; 5 years.

*Claim.*—1st. The transformation of oleine into a solid fatty acid with high melting point so that the same can be employed to like purposes as stearic acid of first quality, substantially as described. 2nd. The transformation of mineral, vegetable and animal oils into a solid fatty acid by first saponifying or otherwise treating the same until they obtain a gelatinous-like consistency and then treating them according to my said process so that the same are converted into solid fatty acids, substantially as described. 3rd. My improved process for solidifying and transforming liquid or semi-liquid fatty acids into solid fatty acids consisting of (a) heating the fatty acids in a suitable vessel by means of free steam under continuous agitation of the mass by means of air introduced through a system of injector nozzles, or in other appropriate manner (b) successively adding about 8 to 10 per cent. common or 5 per cent. concentrated nitric acid during the agitation of the mass (c) maintaining a temperature of about 100° for the space of about one hour, under a continuous agitation of the material (d) successively adding about 1 per cent. of starch or other similar product, and continuing the aforementioned

agitation (e) continuing the agitation for about 2 hours, raising the temperature to about 120° centigrade, and then reducing the same to about 70° centigrade (f) washing the product so obtained until all trace of acid is eliminated, (g) grating the material in a suitable apparatus with a like quantity in weight of water, strongly saturated with lime, caustic potash ammoniac or other equivalent material, (h.) heating the product to 300° centigrade, and maintaining this heat for about 4 hours, or employing my patented automatic circulating apparatus, and working with a continuous vacuum, so that the heat employed does not exceed 160° centigrade, (k) washing the product so obtained when placing the same in a suitable apparatus and allowing the water and chemical products to settle or subside out of the same, (l) treating this product with about 1 per cent. of sulphuric acid, and energetically agitating the same (m) undistilling the product as a, d, l, in my patented distilling apparatus, by employing a vacuum, thus attaining a pure white mass with very high melting point, substantially as described in the foregoing specification. 4th. The application and employment of the transformed and solidified oleine and the solidified and transformed mineral vegetable or animal oils for themselves alone or suitable admixtures of the same for the manufacture of candles and other industrial purposes, substantially as described.

**No. 17,651. Railroad Rail and Tie Elevator and Lifting Jacks.** (*Élévateur et cric pour rails et traverses de chemin de fer.*)

T. C. Naramore, Williston, Vt., U.S., 11th September, 1883; 5 years.

*Claim.*—1st. In a lifting jack, the combination of the standards B B, the rack bar F, the gear wheel D, and pinion M, the dog E, braces g g and h h, and an operating lever socket pinion pivoted between the ends of the braces g g, substantially as shown and described. 2nd. The combination of the standards B B, the frame A attached thereto, the gear wheel D, pinion M, bolt d, spring dog braces g g, slotted braces h h, dog E, rack bar F, and operating lever and pinion, substantially as specified. 3rd. The combination of the operating lever and pinion, the slotted braces h h, and braces g g, pawl E, wheel E, and rack bar F, substantially as set forth. 4th. The combination of the rack bar, pinion which meshes therewith, the gear wheel lever socket, pinion and dog, and braces g g, and h h, the parts being arranged to operate, substantially as shown and described.

**No. 17,652. Hydrogen Lamps.** (*Lampe à hydrogène.*)

M. J. Hinden, Detroit, Mich., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. In a hydrogen lamp, the combination of the cup F, cock G, and bell crank lever H, one end of which is adapted to cover the cup when the cock is closed, substantially as described. 2nd. In a hydrogen lamp, the combination of the cup F, cover B, cock G, bell crank lever H, one of which latter is adapted to cover the cup when the cock is closed, and pipe E, substantially as described. 3rd. A hydrogen lamp, consisting of the jar A, cover B, chamber C, zinc D, pipe E, cup F, cock G, bell crank lever H, one end of which latter is adapted to cover the cup when the cock is closed, and spring I, all constructed, arranged, and operated, substantially as described.

**No. 17,653. Tubular Lanterns.** (*Lanternes tubulaires.*)

John H. Stone, Hamilton, Ont., 11th September, 1883; 5 years.

*Claim.*—1st. The combination, with a tubular lantern, of an air chamber B, perforated at top and bottom, a spiral spring enclosed in said air chamber, a globe holder D, wires c or equivalent attached to globe holder, and made to pass through the perforated top and bottom of the said air chamber, for the purpose of allowing the globe to be pushed up with the thumb of the left hand, to light the lantern and put out the same, without removing the globe. 2nd. In a tubular lantern, the wires c or stripes composing the globe holder passing through the bottom of the air chamber and the annular ring D, open at one part of its circumference as at e, to allow for expansion of the globe, substantially as and for the purpose specified.

**No. 17,654. Spring Gears for Buggies.**(*Trains de voitures.*)

John R. Hawkey, Parkhill, Ont., 12th September, 1883; 5 years.

*Claim.*—1st. A hanger, secured to and set below the side-bars or their equivalent of a vehicle, in combination with an elliptic spring supported by the hanger and arranged to carry the body of a vehicle, substantially as and for the purpose specified. 2nd. A hanger B, having a centre plate a, and bifurcated arms extending obliquely from either side of the plate, in combination with the elliptic spring C set on the plate a, and extending between the bifurcated arms, substantially as and for the purpose specified. 3rd. The plate a having bifurcated arms b extending obliquely from either side of it, in combination with the braces d, substantially as and for the purpose specified.

**No. 17,655. Derrick for Horse or Steam Power.** (*Grue à vapeur ou à cheval.*)

P. Cramer, Montreal, Que., 12th September, 1883; 5 years.

*Claim.*—1st. In combination with the timbermast of a common horse or steam-power derrick, a top and bottom gudgeon so attached as to bring the gudgeon centres near the edge of the timber, for the purpose set forth. 2nd. In combination with the timbermast of a common horse or steam-power derrick, a top band bearing a set-screw for the purpose of securing the top gudgeon when the latter is laid into the side of the timber. 3rd. In combination with the timbermast of a common horse or steam-power derrick, the strap e, plates e e, bolts d, k, and f f, and plate g, for the purpose of suspending the two top sheaves outside of the timber.

**No. 17,656. Car Coupler.** (*Attelage de wagon.*)

O. D. D. Martin, Augusta, Ga., U. S., 12th September, 1882; 5 years.

*Claim.*—1st. The combination with a drawhead having longitudinal openings or perforations formed at each side of draw bars extending entirely through the same from the front, and projecting at the rear, substantially as set forth. 2nd. A car coupling formed with a recess or chamber in its top, having a cover, and adapted to receive the links when not in use, substantially as set forth. 3rd. The combination of the draw head, the longitudinal recess, and the auxiliary vertical recess at the front end, the longitudinal slide, the spring, actuating the same, the coupling pin arranged in the vertical chamber, the coiled spring on the pin, and the operating chains or straps connected with the pin, and extending up and from the draw head, substantially as and for the purpose set forth. 4th. The combination with the draw head having a vertical chamber over its mouth, and a perforation in the bottom of said chamber, of the transverse rollers, the coupling pin having an enlarged head or flange, the coiled spring acting on the pin, and operating straps or chains, substantially as and for the purpose set forth. 5th. The combination with the draw head having a vertical chamber over the mouth formed with a perforation in its bottom, of the funnel shaped box, the plate carrying the transverse rollers, the coupling pin, the coiled spring, the straps, operating rods, and brackets or guides, and the cap piece having open ends, substantially as and for the purpose set forth. 6th. The combination with the draw head having the transverse ridge, a forwardly moving slide having a transversely grooved or corrugated face and the vertical chamber of the coupling pin, spring straps, operating rods, plate provided with the transverse rollers and a cap piece having open ends, substantially as and for the purpose set forth.

**No. 17,657. Refrigerators.** (*Glacières.*)

John Henderson, Toronto, Ont., 12th September, 1883; 5 years.

*Claim.*—1st. In a refrigerator, having a rectangular hole through the bottom of the ice chamber leading into the provision chamber, two grooves or channels made in the bottom, one on each side of the rectangular hole, and connected to an escape pipe, two triangular supports, one at each end of the hole grooves, being made in the supports, leading from their apex to the side grooves, in combination with a detachable cover arranged to fit and rest on the triangular supports, and protect the provision chamber from moisture while permitting the free downward current of the cold air. 2nd. In a refrigerator, having a hole made in the bottom of the ice chamber leading into the provision chamber, for the passage of the cold air and separate flues for the escape of the warm air accumulating at the ceiling of the provision chamber, the combination of two straps placed one on each side of the hole, and extending below the bottom into the provision chamber, thereby forming cushions to separate the warm air at the ceiling of the provision chamber from the cold air descending into it, from the ice chamber. 3rd. In a centrally open bottom refrigerator, having cold air passages separate from the warm air flues, and in which the ceiling of the provision chamber slants from the mouth of the warm air flue towards the centre opening, a cold air passage leading from the bottom of the ice chamber into the provision chamber at right angles to the warm air flues in combination with a strip extending along the side of the said cold air passage below the ceiling of the provision chamber, from the air descending the said passage. 4th. In an open bottom refrigerator, having a rack to carry the ice above the said bottom and thereby forming an air chamber between the two, the combination of racks arranged around the sides of the ice chamber, for the purpose of leaving free passages between the ice and sides leading into the said air chamber, substantially as and for the purpose specified. 5th. In a refrigerator, in which cold air descends through the open passage from the ice chamber into the provision chamber, the combination of a warm air flue leading from the ceiling of the provision chamber at a point above the mouth of the cold air passage, to a point at or about the top of the ice chamber, from which it is separated, in combination with a hole through the outer skin of the refrigerator, into the warm air flue, substantially as and for the purpose specified. 6th. In a refrigerator, having a warm air flue leading from the ceiling of the provision chamber to a hole through the outer skin of the refrigerator at a point near the top of the ice chamber, the combination of an adjustable damper placed in the partition between the ice chamber and flue, for the purpose of negotiating the admission of the warm air from the flue into the ice chamber, substantially as and for the purpose specified. 7th. In a refrigerator having a warm air flue leading from the ceiling of the provision chamber to a hole through the outer skin of the refrigerator, the combination of a hole made in the top of the ice chamber, substantially as and for the purpose specified.

**No. 17,658. Car Coupler.** (*Attelage de wagon.*)

Thomas H. Ambrose, Toronto, Ont., 12th September, 1883; 5 years.

*Claim.*—1st. In combination with coupling hooks C, arranged reversely, and having inclined portions a and flanges b, the draw-heads A having pins D, recesses to receive said flanges b, and inclined lugs B, as and for the purposes set forth. 2nd. In combination with the draw heads A, and coupling hooks C, as described, the links e, adapted to engage the catches d of the hooks and hold them elevated whereby an ordinary coupling link G, may be used, as set forth. 3rd. In a car coupling, and in combination with a draw-head having a pin D, and portion E, cast with a recess as shown, a coupling-hook C having a socket to receive said pin D, a flange b, fitting in the recess in the part E, whereby the link is held in operative position by said flange, and may be released by rotating the hook in the pin, until the flange is disengaged, as specified.

**No. 17,659. Railroad Tie and Rail Elevators.** (*Elevateurs de rails et traverses de chemin de fer.*)

Truman C. Naramore, Williston, Vt., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. The combination of the lever F, the pinion socket E,

the slotted supports e, braces c, pawl b, wheel C, and chain, substantially as shown. 2nd. The combination of the uprights B, the castings A applied thereto, the gear wheel C, bolt d, spring-dog braces c, slotted supports e, and operating lever and pinion, substantially as set forth. 3rd. The grappling iron A, composed of the double straps i e, the hinged arms j, and double braces k, substantially as described for the purpose set forth. 4th. In a weight elevator, the lifting step M, having the sides of the horizontal projection O extended, as and for the purpose set forth, substantially as described.

**No. 17,660. Machine for Cutting Heel Blanks.** (*Appareil à couper les cuirs à talons.*)

Elbridge S. Mansell, Lynn, Mass., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. In a machine for cutting lifts and forming heel blanks, a cutting-die and block, whereby the lifts are cut and pressed into the die, and mechanically operating pasting devices adapted to supply paste or adhesive material to each of the said lifts as cut, the parts specified being connected with operating mechanism in the machine, substantially as described. 2nd. In a machine for cutting lifts and forming heel blanks, a vertically-reciprocating block a paste tube arranged in the frame by the side of the same; a cutting-die, adapted to reciprocate across the line of movement of the block, and into line with the paste tube, the whole being combined with the actuating mechanism, substantially as described. 3rd. The combination of the block N, carried upon the vertically-reciprocated frame; a treadle and intermediate connections for depressing and raising the same; a plate P, carrying the cutting die, movable upon the guide-way; and arms t, upon the rock-shaft connected to the treadle, whereby the plate is made to reciprocate from front to rear as the block rises and falls, substantially as described. 4th. The combination in the described machine of the vertically reciprocating blocks, the horizontally reciprocating plate, carrying the cutting-die; a paste-holding vessel, and a tube separate from the block, and provided with a stop-cock worked by a trip-arm, as the frame carrying the block reciprocates vertically, all substantially as described. 5th. The combination of the block and movable frame e, with the worm-gear and pinion, and the pawl and ratchet adapted to turn said worm-gear, as the frame rises and falls, substantially as described. 6th. The combination in the described machine of a vertically-reciprocating frame carrying the block, the block adapted to move back and forth across the line of its vertical movement on the said frame, and a gearing, substantially as described, connecting said movable block to the driving mechanism, whereby the block is shifted in position in relation to the cutting die, substantially as described. 7th. The inner and outer cutting dies, in combination with mechanism, substantially as described, for lowering or raising the movable die to bring its cutting edge below or above the edge of the fixed die, and for holding it in raised or operative position, the parts operating in the machine, substantially as described. 8th. The horizontally movable plate, and the vertically adjustable cutting dies, combined with means, substantially as described, for such adjustment, whereby one die may have its cutting edge elevated above the cutting edge of the other die, substantially as and for the purpose set forth. 9th. The inner cutting die, and the outer cutting die, combined with a wedge to adjust one die with relation to the other, substantially as described. 10th. In a machine for cutting lifts and forming heel blanks, and in combination, a die-block and frame having inclined ways, and supporting a vertically-moving plate, which carries the outer-cutting die, and a secured frame carrying the inner cutting, and supported upon a third reversely inclined frame attached to that first specified, whereby the cutting dies are moved in reverse directions by the forward or backward movement of said frames. 11th. In combination with the described inclined frames and ways and their cutting dies, the hand-lever 10, adapted to move in a horizontal slot, and connected to the frame, substantially as described. 12th. The combination, with the frames and cutting dies, of the finger-lever t, pivoted as shown, and provided with a rod and plunger at its rear end, and the lever 10 connected to the frame d, and adapted to work in the horizontal and vertical guide-slots, substantially as described. 13th. The supplemental lever m, having a vertical plunger and plate, and pins set in said plate, and passing through the plunger, in combination with the lever 11, and with the dies and operating mechanisms whereby the blank is raised from the plunger, substantially as described. 14th. The plate P, supported upon levers set in the hollow guide standards upon springs, whereby the said plate yields when the cutting-block is pressed down. 15th. In a machine for cutting lifts, two independent cutting dies, in combination with adjusting mechanism, substantially as described, for vertically adjusting each of such dies with relation to the other, so that one of them is raised and the other one is lowered, and for holding one of them in raised or operative position. 16th. The two independent cutting dies, in combination with adjusting mechanism, substantially as described, for imparting a vertical adjustment to each of said dies, so that one of them is raised and the other lowered, and for holding them in raised or operative position, and with an ejector to act upon the lifts within the inner die. 17th. The cutting die and the ejector combined with the auxiliary ejector to detach the lower lift from the plunger-plate of the main ejector, substantially as described.

**No. 17,661. Commutators for Dynamo Electric Machine.** (*Commutateurs aux machines dynamo-electriques.*)

Elihu Thomson, New Britain, Conn., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. In a commutator constructed, substantially as described, with a series of supporting and conducting rods R for the commutator segments, the combination with a plate G through which said rods pass, of a layer of insulating material applied to the face of said plate between the rods, as and for the purpose described. 2nd. The combination with the rods or bars R forming supports for the commutator segments and conveying current thereto, of the flanges or plates G faced or covered with a layer of insulating material, as and for the purpose described. 3rd. The combination with a commutator

plate or segment for a dynamo-electric machine or electric motor, of an adjustable wearing edge adjacent to the insulating space between said segment and the adjoining segment, as and for the purpose described. 4th. The combination with a commutator plate or segment for a dynamo-electric machine or motor of a removable wearing-edge applied thereto at a point adjoining the insulating-spaces of the commutator. 5th. The combination with a commutator plate or segment, of the removable and adjustable piece, constructed in the manner and for the purposes set forth. 6th. The combination with the commutator plates or segments of armature terminals passing through the shaft beneath said segments and uniting clamps extending from said terminals to rods or projections extending from the segment, substantially parallel with the shaft and electrically connected with the segments. 7th. The combination with the commutator segments of the supporting rods R electrically connected thereto, the armature coil terminals parallel to said rods and uniting clamps, as and for the purpose described. 8th. The combination of the flanges or plates, the uniting-rods carried thereby, commutator plates or segments resting upon the rods and devices for removably clamping or securing the segments in place upon the rods. 9th. The combination of the supporting rods or bars R uniting the flanges or plates G and commutator plates or segments provided with laterally-projecting ears, as and for the purpose described. 10th. The combination of the supporting rods R, commutator segments resting upon the same and clamping devices engaging with the rods and the segments for holding the latter in place upon the rods. 11th. The combination of the rods R, the commutator-segments, segments seated upon the rods provided with laterally projecting ears and clamping devices engaging with the rods and with the ears whereby said segments may be separately removed at pleasure. 12th. The combination with the supporting-rods R of the commutator segment resting upon the same, the piece C2 and screws or bolts S2. 13th. A commutator for a dynamo-electric machine consisting of metal supporting-flanges faced with insulating material, rods or supports parallel to the shaft and entering said flanges and commutator-segments borne upon said rods and provided with means for detachably securing them in place so that any segment may be removed without disturbing any other portion of the commutator.

### No. 17,662. Dynamo Electric Generators. (*Générateurs dynamo-électriques.*)

Elihu Thomson, New Britain, Conn., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. In an armature of cylindrical annular or spherical form made without conducting projections or without projections that approach near to the outer layers of armature-wire, a system of two or more coils wound as described so as to bring the highest electric potential upon the outer layers of said windings, only as and for the purpose set forth. 2nd. In an armature of cylindrical annular or spherical form made without conducting projections or without projections that approach near to the outer layers of armature-wire, a system of two or more coils, the terminals from the inner layers of which are joined while the terminals from the outer layers are carried to the commutator, as described. 3rd. In a dynamo-electric or magneto-electric machine, an armature-coil, the inner layers of which are coarser wire or conductor than the outer layers, for the purpose set forth. 4th. The combination with the outer layers of wire in the armature of one or more tapes or cords interwoven with said layers, substantially as set forth. 5th. As a means for preventing displacement of the coils of wire upon an armature, an interwoven tape or tapes uniting and solidifying contiguous convolutions of wire, substantially as set forth.

### No. 17,663. Car Couplers. (*Attelages de wagons.*)

Charles F. Clapp, Eugene R. Clapp, Edward B. Pendleton and Albion P. Bickmas, Hyde Park, Mass., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. The draw-bar heads CD respectively provided with vertically sliding clutches E and springs a, constructed and arranged to operate, substantially as specified. 2nd. The cord G, pulley L and clutch E, in combination with the draw-bar head C and spring a, constructed and arranged to operate, substantially as set forth. 3rd. The rocking shaft H, pulley L, cord G, clutch E, draw-bar head C and spring a, constructed and arranged to operate, substantially as specified.

### No. 17,664. Roller Mill. (*Laminoir.*)

John Goldie and Hugh McCulloch, Galt, Ont., 12th September, 1883; 5 years.

*Claim.*—1st. In a gradual-reduction roller mill in which the feed hopper is situated above the rolls, a feed-distributing board pivoted within the hopper below the feed spout, in combination with an arm connected to the distributing board and extending beyond the pivot point of the said distributing board with an adjustable weight arranged to support the board and the weight of feed desired. 2nd. In a gradual-reduction roller-mill in which the feed hopper is situated above the rolls and is provided with a feed roller arranged to revolve within the bottom opening of the hopper, a cut-off gate situated at the bottom of the hopper and adjustably arranged in connection with the feed roller, in combination with mechanism so arranged that the weight of the feed discharged into the hopper will proportionately open the gate. 3rd. In a gradual reduction roller mill in which the feed hopper is situated above the roller, a feed distributing board pivoted within the hopper below the feed spout, in combination with a cut-off gate situated at the bottom of the hopper and adjustably arranged in connection with the feed roller, the distributing board being so connected to the gate that any movement of it on its pivot conveys a corresponding motion to the gate so that the said gate shall be opened in proportion to the quantity of feed discharged into the hopper. 4th. In a gradual reduction roller mill in which the feed hopper is provided with a feed gate pivoted at the bottom of the hopper and arranged in connection with the feed roller, the combination of an arm connected to the pivot of the gate for the purpose of closing its cut-off as described. 5th. A distributing board C pivoted within the hopper A and so shaped that its distributing edge shall be a

about an equal distance from the edges of the feed spout B, substantially as and for the purpose specified. 6th. In a gradual reduction roller mill in which the cut-off gate is operated by the feed falling on the distributing board, an arm journaled on the spindle of the gate and connected to a crank on the spindle of the distributing board, in combination with a spring lever fixed to the gate spindle and arranged to connect the same to the arm, as specified. 7th. In a gradual reduction roller mill in which the rolls are adjusted by spindles extending at right angles to the axes of the rolls, a pair of pivoted levers, one connected to each spindle and meeting at a centrally located stud, in combination with mechanism arranged to fill the said levers on their pivots for the purpose of withdrawing the rolls from contact with each other.

### No. 17,665. Automatic Car Coupler.

(*Attelage automatique de wagon.*)

George Mitchell, New Castle, and William D. Martin, Moncton, N.B., 12th September, 1883; 5 years.

*Claim.*—1st. In a car coupler, the combination of the draw-bar head A and the latch E with the ribbon spring K, substantially as set forth. 2nd. The combination of the draw head A, standard C, lifting lever D, latch E, rod I and spring K with the rock shaft G having the arm H and the hand levers J J and attached to the frame work of a railway car, substantially as shown and for the purpose set forth.

### No. 17,666. Direct Acting Pumping Engine. (*Machine d'épuisement à force directe.*)

Edward G. Shortt, Carthage, N. Y., U. S., 12th September, 1883; 5 years.

*Claim.*—1st. A steam pump consisting of a cylinder H open at both ends and having its end surrounded by independent chambers, a plunger playing in said cylinder, a valve opening outward from one of said end chambers and a valve opening outward from one end chamber and onward to the other end chamber whereby the pump is made on one stroke to expel the water from one end chamber and fill the other from the main supply, and on the other stroke is made to transfer the water from one end chamber to the other, as described. 2nd. The combination of the base A having chambers A1, A2, A8, and passage ways A3, A4, A5, and A7, the valves A6 and A12, the cylinder H open at both ends and arranged as described, the piston I and the chamber W C, substantially as shown and described. 3rd. The combination with the base A and valve A12, of the filling block B2, cap D and bail E, as and for the purpose described. 4th. In a direct acting steam pump, the combination with a steam piston and water plunger connected together, of a single enclosing case surrounding the whole and having a hand hole and detachable head plate covering the same located between the steam and water chamber, as described. 5th. The water chamber W C having a hole in its side provided with ribs or flanges t and u in combination with the turn bar T having screw stem U, the head plate H P and nut V, substantially as shown and described. 6th. The cylinder C having a partition head F fixed therein, a stuffing box c at its lower end and a hand hole opening laterally into the cylinder below this point, as described. 7th. The combination with the cylinder C, of the partition head F having upwardly projecting boss of less diameter than the cylinder and the piston made of an inverted cup shape and having its shell adapted to fit between said boss and the cylinder, as described. 8th. The combination, with the valve of a direct acting pump, of the cylinder having ports therein opening through its inner periphery and a working piston having passage ways or ports opening upon its periphery and adapted to register with the ports of the cylinder, as described. 9th. The combination with the steam chamber of a direct acting pump, of an independent induction and exhaust port for each end of the steam chamber formed in the wall of the chamber to cushion the piston, substantially as shown and described. 10th. In a direct acting pump, the combination of the steam piston and the main steam valve, the piston having the primary function of transmitting working power and the secondary function of a slide valve to operate the main steam valve and the main steam valve having the primary function of regulating steam to the main steam piston and the secondary function of a piston operated in turn by the working piston, the two being disconnected, as described. 11th. The combination with the valve M having piston M1, of the casing K having ports h leading from the steam supply plate R having passage way h2, cylinder C having two ports h h1 side by side and the piston having recess f for admitting steam to the lower end of the valve, as set forth. 12th. The combination, with the valve M having piston M1, of the casing and cylinder having ports j and l and the piston J having passage way k for exhausting the steam from beneath the valve, as described. 13th. The combination of the piston with hole r, port q and elongated recess g, the cylinder having port h1 and the plate R having passage way h2 whereby the pressure of steam below the valve piston M1 is maintained by open communication with the steam chamber S C after steam from port k has been cut off, as set forth. 14th. The piston J made longer than the stroke and having the construction of a slide valve in combination with the cylinder having ports therein, as described. 15th. The inverted cup shaped piston constructed as a slide valve with recesses combined with the boss F of less diameter and having a feather and groove connection therewith to prevent turning axially, as described. 16th. The valve M in combination with its case having exhaust passages k and j, near the end of its stroke and live steam passages k4 and j2 adapted to throw live steam to the end of the valve to cushion it, just as the valve cuts off its exhaust passages, as described. 17th. The valve J having its side M2 which is opposite the orifices E S made separate and pressed to close contact with the metal forming said orifices by the live steam, as described. 18th. The base A having inlet A2 in combination with the hollow cap D having a passage a3 connected with the said inlet or suction side of the pump.

### No. 17,667. Thill Coupling. (*Limonière.*)

John Clouston, Galt, Ont., 12th September, 1883; 5 years.

*Claim.*—1st. An improved thill coupling, a thill iron rigidly fastened to the thill with a curved end to fit over the bolt or pin



passing through the clip, in combination with a plate hinged to the thill iron and having its other end curved to correspond with the end of the thill iron thereby forming the other half of the bolt eye mechanism for binding together the parts forming the eye being provided, as specified. 2nd. The thill iron B rigidly fastened to the thill A and shaped to form one section of the bolt eye, the plate C hinged to the thill iron and shaped to form the other half of the eye, in combination with a thumb screw E and bolt arranged to clasp the plate to the thill iron.

### No. 17,668. Pump Valve. (*Souape de pompe.*)

Joseph Barrett, Petrolia, Ont., 12th September, 1883; 5 years.

*Claim.*—The combination of the brass body A, ring of leather C or other flexible material, spindle D, substantially as and for the purposes set forth.

### No. 17,669. Fire Alarm Telegraph.

(*Télégraphe d'alarme à feu.*)

Thomas Ahearn, Ottawa, Ont., 14th September, 1883; 5 years.

*Claim.*—1st. A fire alarm signal-box provided with a dynamo or magneto electric generator, a weight or equivalent means for operating said generator and means, substantially as shown and described, for locking said operating means out of action when the signal box is closed. 2nd. A fire alarm signal-box provided with a signal wheel or its equivalent, a magneto electric generator and means for operating said signal wheel and generator adapted to be wound or set for action without operating said parts to be held out of action until a detent is withdrawn and then to automatically operate the generator and signal wheel, all substantially as explained. 3rd. In a signal apparatus the combination of signal wheel E, finger J connected with the line or conductor generator D, drum h connected with the signal-wheel and generator, substantially as shown and described, and weight C for imparting motion to the drum, whereby the falling of the weight is caused to actuate the generator and the signal wheel. 4th. The described signal apparatus consisting of box A, door B having ledge or shelf a, generator D, signal wheel E, drum h connecting by gearing with the generator and a signal wheel and the weight C suspended by a cord or band from drum h, all substantially as shown and described. 5th. In combination with signal-wheel E and generator D, drum h provided with ratchets q r and gear wheel b and pinion l provided with pawls o and p, said gear and pinion being arranged as described to impart motion to the generator and signal-wheel respectively, whereby the drum may be rotated in one direction independently of the other parts of the apparatus, for the purpose explained. 6th. The combination, substantially as shown and described, of box A provided with door B and strip t, weight C, generator D, signal-wheel E and intermediate gearing finger j and binding posts connected with opposite branches of the line, all substantially as and for the purpose described.

### No. 17,670. Reaping and Mowing Machine.

(*Faucheuse-moissonneuse.*)

Alfred James Semon and E. W. P. Jones, Brantford, Ont., 14th September, 1883; 5 years.

*Claim.*—In a reaping or mowing machine, the combination of the cutters H and I working together and driven by cranks M and P, substantially as and for the purposes set forth.

### No. 17,671. Electric Arc Lamp.

(*Lampe électrique.*)

James K. D. McKenzie, Halifax, Eng., 14th September, 1883; 5 years.

*Claim.*—1st. The general arrangement or combination of parts constituting the regulating mechanism of the electric lamp, substantially as described. 2nd. The split armature and counter-acting springs for alternately grasping and loosing the carbon holder and automatically making the lift of the upper carbon, substantially as and for the purpose described and illustrated in the drawings. 3rd. The use of regulating cells, substantially in the manner described, on a circuit either of arc lamps alone or incandescent lamps alone or both together by which means the electric current is transmitted to the lamps on the same circuit during the momentary stoppage of any one lamp, either through the self adjustment of the carbons in an arc lamp or the failure of an incandescent lamp or any temporary stoppage while making any change in the lamps of the circuit.

### No. 17,672. Composition for Size.

(*Composition à colle.*)

Henry Goldberg, (assignee of Richard Parke,) New York, U. S., 14th September, 1883; 5 years.

*Claim.*—1st. A composition for size consisting of gum, thus, hard gum and caustic soda dissolved in water, substantially in the proportions as specified. 2nd. A composition for size consisting of gum, thus, hard gum, caustic soda dissolved in water, and of oil, substantially in the proportions as specified.

### No. 17,673. Fire Escape. (*Sauveteur d'incendie.*)

John S. M. Willcox, Whitby, Ont., 15th September, 1883; 5 years.

*Claim.*—The combination of the body A provided with two eyes a at, sling or strap S secured to the lower thicker end of the body A, brake B secured to the lower end of the body and provided with an eye b and the rope R provided with a grab hook H suspending the rope from a suitable object and said rope passing through the eye a, coiling upon the body A and passing through the eye a' between the brake B and through the eye b of the same, substantially as described and for the purpose set forth.

### No. 17,674. Gas Generating and Heating Apparatus. (*Appareil à produire la chaleur et le gaz.*)

William F. Browne, New York, N. Y., U. S., 15th September, 1883; 5 years.

*Claim.*—1st. The process of generating gaseous vapor and supplying heat to the steam-boiler of the locomotive which consists in injecting oil by a jet of steam under high pressure into and through a heated coil arranged around the sides of the fire-box and discharging the gaseous products of their decomposition directly into the fire-box and there causing their combustion by a suitable supply of air. 2nd. In a device for heating steam-boilers, a steam-supply pipe, an injector and an oil-supply pipe connecting therewith, in combination with a coil generator located in the fire-box of the boiler and a suitable perforated grate for burning the gaseous vapor generated in the coil generator. 3rd. In a device for heating steam-boilers, a steam supply pipe connecting with the exhaust pipe of a locomotive engine and with the injector, in combination with an oil-supply pipe, the injector and the coil-generator within the fire-box. 4th. In a device for heating locomotive steam-boilers, the oil tank adapted to be carried by the tender and the oil-supply pipe therefrom, having a spring-coil for permitting lateral movement and the water and steam pipes, in combination with the gas generating and heating device in the fire-box of the boiler. 5th. A water-heating and circulating device consisting of a series of coils located in the fire-box of the boiler and connected above and below the crown-sheet therewith, in combination with the coil, gaseous vapor generator also located in the fire-box and suitable connections, substantially as described. 6th. A water-heating and circulating device consisting of a series of coils located in the fire-box of a steam-boiler and having external circulating connections and their supporting standards, the said coils being adapted to sustain the gas-generating coils and connecting with the boiler below and above the water-line, substantially as described. 7th. A water-heating and circulating device consisting of a series of coils located in the fire-box of the steam-boiler and having external circulating connections and their supporting standards and cross-supporting circulating pipes which are adapted to sustain the gas-generating coils and connecting with the boiler below the water line, in combination with an injector connecting therewith for supplying water to the boiler. 8th. In a device for heating steam-boilers, a burner grate composed of tubular headers and connecting tubular perforated grate-bars provided with open channels in their upper surfaces, in combination with an oil-supply pipe opening into the channel. 9th. In a device for heating steam-boilers, a burner grate composed of tubular headers and connecting tubular perforated grate-bars provided with the channels in their upper surfaces, in combination with a gas-supply pipe connected to the tubular headers and bars and an oil-pipe opening into the channels. 10th. In a device for heating steam-boilers, and heating and circulating liquids, the supporting standards z m extending vertically between the outer and inner shell of the boiler of the fire-box and provided with suitable openings and packing-boxes for making a tight joint around the pipes which extend through the shell and standards, substantially as shown. 11th. In a device for heating steam-boilers, the generating coils extending around the four sides of the fire-box from near the bottom thereof up to the lower tubes of the boiler and then extending backward and forward around three sides of the box to the desired height whereby the passage between the box and tubes is left unobstructed for the passage of flame and hot products of combustion into the tubes of the boiler. 12th. In an apparatus for generating gas or gaseous vapor fuel, the process of forcing combined combustible liquid and water together into a heated coil or coils arranged in the fire-box and discharging the gaseous products of their decomposition directly into the fire-box, whereby a complete combustion is effected, in the manner set forth.

### No. 17,675. Apparatus for Generating Gas for Motive Power, Heating and Illuminating Purposes. (*Appareil à produire le gaz pour force motrice, lumière et chaleur.*)

William F. Browne, New York, N. Y., U. S., 15th September, 1883; 5 years.

*Claim.*—1st. A generating coil or conduit having the projecting ends thereof extending through the wall of the furnace tangentially to the inner and outer turns of the coil and the inner end of the coil and its projection bent down and extending below the bends of the coil and furnishing a support therefor. 2nd. A series of flat continuous coils or conduits having suitable end connections uniting all the coils with each other, in combination with the shell of the furnace for the circulation throughout the series. 3rd. A series of spiral coils having the outer bends thereof connected by external return-bends and couplings and also the inner bends thereof connected by return-bends and couplings to form a continuously connected conduit whereby a continuous circulation of liquid is secured throughout the series. 4th. A series of coils having their ends projecting through the wall of the furnace, substantially parallel to each other and having all their return fittings and couplings outside of the wall of the furnace. 5th. In combination with the coils, the hollow supporting pipes or bars passing through the furnace and having suitable end connections as and for the purpose described. 6th. In combination with the supporting hollow bars, the means for causing a circulation of liquid therein which consists in the stand-pipe H containing water under pressure, pipe m having valve 17, pipe a having valve 18, pipe p having valve 20, and steam-dome M operating as described. 7th. The furnace containing the generating coils constructed with a double shell extending from the base to the bonnet, the outer shell having apertures at the top and the inner shell having apertures at the bottom opening into the ash-pit, in combination with the circular damper S for the purpose of utilizing the heat and heating the air supplied to the fuel. 8th. The shell of the furnace having in combination therewith a door or doors extending from the base to the bonnet and nearly one-half of the circumference of the shell for the purpose of removing and inserting the generating coils and other internal parts, as described. 9th. The double shell of the furnace in combination with

the double shell of the door in which the inner furnace shell overlaps the hinge-joint for preventing leakage, as described. 10th. In combination with the engine operated by gas or vapors of liquid combustibles, the exhaust pipe *g* having valve 10 and the superheating-coil O, as and for the purpose described. 11th. In combination with the superheating-coils, the stand-pipe H, pipe *y* having valve 16, pipe S5, pipe *q* having plug-cock 14, pipe *m*1 and the dome M, as and for the purpose described. 12th. The means for returning the liquids which are trapped off from the generator to the pump and thence forcing them again into said generator which consists of a pipe *a* connected with the generator, the trap I, chamber C1, pump E1, return pipe *o* and the necessary connections and valves, as described. 13th. The water-supply pipe *ci*, the oil-supply pipe K and the pump E1, in combination with a conducting pipe *o* and a gas-generating apparatus. 14th. The process of generating gas which consists in forcing products of combustion from the furnace and carbonaceous material by a combined jet of steam and carbonaceous vapor under pressure through a heated coil or conduit. 15th. The process of generating gas which consists in forcing products of combustion and pulverized solid carbonaceous matter by a jet of steam through a heated conduit. 16th. The process of generating gas by first converting liquid hydrocarbon and water into vapor or gas and by a jet of the combined vapor forcing the products of combustion into a heated conduit and converting the mixture into a fixed gas. 17th. The pipe Q connected with the stack, the receptacle T, connecting pipe V, pipe *g*3 and the injecting device, in combination with a coil or conduit located in the furnace. 18th. The counterbalanced valve *z*3 provided with a guide-stem *m*3 in combination with its seat K3 within the stack, as and for the purpose described. 19th. The stack having a counterbalanced valve and seat therefor, as described, in combination with the outlet pipe Q. 20th. The pipe Q connecting with the stack, the pipe *g*3 for steam and oil vapor and the injecting device, in combination with the heating-coils located in the shell. 21st. The pipe *g*3 for steam and oil vapor, the injecting device, the receptacle T for pulverized carbonaceous matter and a connecting pipe, in combination with a coil of conduit located in the furnace. 22nd. The engine and a pipe connected with its exhaust ports, in combination with the hollow perforated grate *d*4 located in the base of the generator. 23rd. In a high-pressure gas-generating apparatus, the hollow perforated grate, in combination with the gas-generating conduits within said high-pressure gas-generating apparatus, for the purpose specified. 24th. The process of manufacturing gas or vapor which consists in forcing a mixture of liquid hydrocarbon and water through a heated coil or conduit and discharging the gas or vapor produced into a suitable receiver. 25th. The process of manufacturing gas or vapor which consists in forcing a mixture of liquid hydrocarbon and water under high pressure through a heated coil or conduit and discharging the resulting gas or vapor into a receiver. 26th. The process of manufacturing a fixed gas for illuminating or heating purposes which consists in forcing a mixture of carbonaceous matter and water under pressure through a heated conduit and discharging the resulting gas or vapor in a superheater and forming a fixed gas. 27th. The combination of generating coils, the receiver, the decomposing and fixing coils and a forcing device for oil and water for the production of a fixed gas.

### No. 17,676. Machine for Measuring Feet and Fitting Lasts. (*Machine à prendre la mesure du pied et les formes à chaussure.*)

Joseph H. Schaefer, Toledo, Ohio, U.S., 15th September, 1883; 5 years.

*Claim*.—1st. An apparatus for measuring feet, combining in its structure a supporting-table, a heel-supporting block, provided with an instep-measuring tape, and an adjustable centre-block, provided with laterally-movable upright stops or fingers for measuring the width of the foot, and a tape and devices connected therewith for crossing and drawing the same around the foot adjacent to the centre block, substantially as described. 2nd. The combination with a bed or table A, heel, toe and centre block supported thereon, and devices substantially as described, for measuring the feet and holding and fitting up a last and adjustable legs supporting the bed or table whereby the latter can be lowered to measure the foot and raised to fit up a last, as set forth. 3rd. The combination in a foot measure, of the bed or table, the heel-block provided with an attached instep-measuring tape, a centre-block, a tape for measuring around the foot, and movable arms connected with the latter tape, and adapted to mechanically straighten the same, and draw it around the foot, substantially as described. 4th. The heel-block, provided with a spring *d*3, a brace-strap *d*4, and an instep-measuring tape D1, substantially as described. 5th. The heel-block, provided with a rest for the heel, and with an instep measuring tape, connected with a spring arranged within a recess in the heel-block, substantially as described. 6th. The combination with the table and slidable centre block F, of the vibratory arms L, carrying a tape-measure for measuring round the foot, substantially as described. 7th. The combination, with the table and the slidable centre-block F, of the vertically-movable bar H, having the serrated holder at its lower end and devices for holding said bar, and holding in an elevated position when desired, substantially as described. 8th. The combination, with the swinging arms L, carrying the measuring-tape, of the arms M, carrying adjustable weights and pivoted to the tape-carrying arms, the pawls upon the weighted arms, and the segment racks upon the tape-carrying arms, by means of which the pivoted arms can be held rigidly together in pairs, in the manner described. 9th. The combination with the measuring-tape-carrying, arms of the pawls pivoted thereto, and the stationary segment racks arranged in position to be engaged by said pawls, when the arms are vibrated in a direction to spread out the tape-measure, substantially as described. 10th. The combination, with the movable centre-block F, of the vertically slotted standard I3 supported on said block, and the vibratory tape-carrying arms, the pivoted weighted arms and the four segment racks, all supported by a spindle connected with the slotted bar and held in adjustment thereon by a cam-lever, substantially as described. 11th. The combination of the weighted bar F, having the serrated holder *h*, with the described cam-lever-cam face, nut eye bolt *h*1, and horizontal bar *g*, all constructed and all arranged to hold said bar H, in the manner and for the purpose specified. 12th. The combination,

with the movable centre-block F, having the channel *r*, of the vibrating tape-carrying arms L, and the tape-guide arms *r*2 arranged to slide through the oscillatory hubs, substantially as described. 13th. The combination with the tape-carrying arms L, provided with segmental racks *m*, of the pivoted arms M, provided with a graduated scale, and carrying the adjustable weights and the pawls *r* adapted to engage the racks of the tape-carrying arms, substantially as described. 14th. The combination with the instep-measuring tape, of the swinging arm carrying the hub U, having a mortise, through which the bar for guiding and directing the tape is arranged to slide, substantially as described.

### No. 17,677. Self-adjusting Paddles for Boat. (*Palettes automotrices de la roue d'un bateau à vapeur.*)

Leonard C. Fogg, Kennebunkport, Maine, U.S., 15th September, 1883; 5 years.

*Claim*.—1st. The combination, with the arms of a paddle-wheel, of fixed cross-pieces, which form a part of the paddle or bucket, and revolving cross pieces pivoted between the arms of the wheel, substantially as described, and for the purpose set forth. 2nd. The combination, with the arms of a paddle wheel, of concave pieces rigidly secured between said arms, and concave plates pivoted between said arms, so as to swing against or away from the fixed concave pieces, substantially as shown.

### No. 17,678. Seal Joint Basin for Water Closets, etc. (*Basin hermétique de latrines, etc.*)

Abraham Edwards, Asbury Park, N. J., U. S., 15th September, 1883; 5 years.

*Claim*.—1st. A trap composed of a main body and induction pipe, a sealing tube aligned with said induction pipe vertically within said body, a mercury seal arranged in the bottom of said body so as to close said sealing tube at its lower end and eduction pipe, substantially as and for the purpose specified. 2nd. A trap composed of an elongated main body, induction and eduction pipes, a sealing tube and a removable cup or chamber having a mercury seal disposed therein so as to seal the lower end of said sealing tube, substantially as and for the purpose set forth. 3rd. A trap composed of a body designed and adapted to contain a mercury seal chamber and provided with induction and eduction pipes, a cleaning-out opening provided with suitable stopper and a sealing tube aligned with said induction pipe and arranged so that its lower end shall dip into and be sealed by said mercury seal, substantially as and for the purpose specified. 4th. A trap composed of a body designed and arranged to contain a mercury seal and provided with an eduction pipe, a screwed cap or cover, an induction pipe and a sealing tube depending from said cap or cover centrally within said body and arranged to dip into said mercury so as to be sealed thereby, substantially as and for the purpose specified. 5th. A mercury seal trap composed of a main body, induction sealing and eduction pipes, said parts being made of cast iron having unglazed inner surfaces and a mercury seal, substantially as and for the purposes described. 6th. A mercury seal trap composed of an elongated body having an induction pipe, sealing tube, an eduction outlet and an open bottom to which is screwed a removable chamber or cup, said parts being made of cast iron having unglazed inner surfaces, substantially as shown and for the purposes described. 7th. A mercury seal trap made of cast iron, having unglazed inner surfaces and a removable chamber in which is placed the mercury, substantially as shown and described. 8th. A mercury seal trap composed of a body having open bottom induction, sealing and eduction pipes, a removable mercury chamber having a lateral opening with stopple therefor, substantially as shown and described. 9th. A mercury seal trap composed of a body having an open bottom, induction, sealing and eduction pipes, a removable mercury chamber having a nut or projection *e*, substantially as shown and described. 10th. A mercury seal trap composed of a cast iron body having unglazed inner sides, substantially as shown and for the purpose set forth. 11th. In seal traps for wash basins and other fixtures, the method of preventing the growth or movement of vegetable organism within said traps which consists in providing unglazed cast iron surfaces within the trap, then inserting mercury therein and permitting the same to oxidize in such manner that the oxide of mercury will be deposited on said surfaces in the form of a film or coating, substantially as described. 12th. In a mercury seal trap, a sealing tube coated with porcelain or other non-amalgamable substance, as and for the purpose set forth.

### No. 17,679. Machines for Making Bricks. (*Machine à fabriquer des briques.*)

Cyrus Chambers, jr., Philadelphia, Penn., 15th September, 1883; 15 years.

*Claim*.—1st. The former-die M having its top and bottom convex and its sides straight or concave. 2nd. In combination with the former-die M, the casing M1 having the steam-chamber entirely within the same so as to avoid breaking the steam-joint when the die is removed. 3rd. The combination, with the casing M1 and the former-die M, of the bolt-hooks M2. 4th. The combination of the sand-box L with the case M1 when said box is hinged to said case. 5th. The combination with the sand-box L, of the scrapers *e*1 secured to the swinging frame L2 hinged to the sand-box. 6th. The combination, with the sand-box provided with the opening L5, of the slide valve L4 and actuating lever L6. 7th. In combination with the sand-box, the longitudinally-grooved roller A. 8th. The combination with the sand-box having the described slotted opening, of the bowed journal frame *h*1 and adjusting screw *h*3. 9th. In combination with the sand-box, the plate L7 adjustably secured thereto. 10th. The chain-protecting dust-apron *a*, located at the end of the chain-frame. 11th. The combination with the chain N of the inclined protecting apron N, 12th. The vibrating brush *b*, in combination with the chain N. 13th. In combination with chains N, the carrier pulleys C C and C C1 adjustably secured to the chain-frame C2 by means of the screws and

slots as shown, whereby the described vertical and horizontal adjustments may be independently effected. 14th. In combination with the off-bearing belt O B, the side guide-pulleys  $d$   $d_1$  pivoted on the adjustable plate  $d$   $d_1$ . 15th. In combination with the cut-off blade, the links  $n$ , of chains N having their faces raised towards slits  $p$ . 16th. In combination with the cut-off blade, the links  $n$  when provided with the projections  $n$ . 17th. In combination with the cut-off blade, the links  $n$  when provided with the corner grooves  $q$ . 18th. In combination with chain N and pulleys C C and C C<sub>1</sub>, the return supporting pulleys B<sub>10</sub> provided with the interval  $x$  in the faces of the same. 19th. In combination with the chain N and pulleys C C and C C<sub>1</sub>, the pulleys B<sub>10</sub> provided with the off-set  $z$ . 20th. The spiral cut-off blade made up of segments whose contiguous edges are respectively provided with V-shaped tongues and grooves. 21st. In combination with the spiral cut-off blade Q composed of segments joined together by a V-shaped fitting the clamps R. 22nd. In combination with the blade-clamps R and drums R<sub>1</sub> R<sub>2</sub> upon shaft X, the threaded through bolts U provided with nuts  $q$ . 23rd. The clamps S provided with the projections  $r$ , in combination with the bolts U and nuts  $q$ . 24th. In combination with the friction clutch fly-wheel H and shaft X carrying the cut-off blade, the gear system K<sub>4</sub> K<sub>5</sub> and M<sub>6</sub>. 25th. In combination with the gears K<sub>4</sub> and M<sub>3</sub>, the idler K<sub>5</sub> with its shaft inclined to and between the axes of the shafts of K<sub>4</sub> and M<sub>3</sub> and having a conical face provided with oblique teeth. 26th. The combination with key  $f$  on shaft W and the clutch mechanism of the adjusting screw  $y$ . 27th. In combination with the cut-off blade, its shaft X and the clutch and connecting gears, the adjustably weighted regulated hand lever J. 28th. The combination of the tightener-pulley  $h$   $h_3$ , journalled in the rigid bowed frame P, the said pulley rotating in a plane at right angles to that of said frame together with the separate transverse bar T<sub>1</sub> and the tightener bolt  $i$ . 29th. The combination with the pulley-frame, of a scraper O secured thereto, whereby when the pulley frame is adjusted the relative position of the scraper to the pulley will remain unchanged. 30th. The elevator belt arranged as shown with relation to the off-bearing belt, whereby the material carried over the end of the off-bearing belt will be delivered on to the elevator and returned by the latter to or near the inlet-pipe of the brick machine. 31st. The combination of the mixing pit provided with an opening leading into the case C and the curved arms C<sub>1</sub> lying in said pit and secured to a vertical shaft rotated by suitable mechanism in the relative direction indicated by the arrow in figure 27 whereby the material will be carried in towards the inlet-pipe. 32nd. In combination with the mixing pit and the curved arms C<sub>1</sub> secured to the vertical shaft A<sub>10</sub>, the sprinkling pipe A<sub>12</sub> extending from said shaft over and above the pit and connected with a water supply pipe A<sub>13</sub>. 33rd. The screen S<sub>6</sub> located within an enlarged chamber C<sub>6</sub> between the die and the clay-expressing mechanism, whereby the stones or other obstructions are worked outwardly to the sides of said chamber beyond the path of the moving body of clay. 34th. The chains N, plat  $ed_4$  and the off-bearing belt O B and its pulley  $d_3$  when combined and successively arranged in relation with each other in the manner specified, whereby the front and rear lower corners of the bricks are protected from injury.

### No. 17,680. Flash Preventer for Electric Conductors. (*Faux de rechange à feu pour conducteurs électriques.*)

Elihu Thomson, New Britain, Conn., U. S., 15th September, 1883; 5 years.

*Claim*.—1st. The described method of improving and maintaining the insulation of two electric conducting plates or surfaces consisting in forcing between them or across the intervening space by which they are separated, a jet or stream of an insulating fluid of sufficient strength to act mechanically, in the manner set forth, to prevent the formation of any conducting line of particles or to displace or dissipate any electric current or stream that may have established a path for itself. 2nd. The combination with two conducting bodies or surfaces in different states of electric excitement, of suitable means for forcing into, across or through the space by which they are separated, a jet or stream of an insulating fluid having a sufficient force or strength to act mechanically in the manner described in aiding or maintaining the insulation of such surfaces. 3rd. The combination, substantially as described, with a moving commutator or circuit-changing device, the parts of which are separated by free air spaces, of a jet or stream of insulating fluid sent through the insulating or separating spaces with a sufficient force to act mechanically in the manner described, to maintain or restore the insulation of the parts. 4th. The combination with a cylindrical commutator, the plates of which are separated by free air-spaces, of air ducts or pipes applied in the manner described so as to direct a jet or current of an insulating fluid radially between the plates, said jet or current being of a sufficient force of strength to act mechanically in the manner described so as to enforce the natural insulation quality of the fluid. 4th. The combination, with the commutator of a dynamo-electric machine constructed in the manner described, of a series of plates or segments separated from one another by free spaces, means substantially as described for directing a current of insulating fluid into, through, or across, the free spaces at the point in the revolution of the commutator immediately after a segment or plate leaves a commutator-brush. 6th. The combination with a commutator having a collecting-brush applied thereto, of an attachment P and jet J, directed upon the commutator at points immediately succeeding that at which the collecting-brush and a commutator segment or plate are disconnected from one another. 7th. The combination, with a revolving commutator, of jets J, applied to the interior thereof and directed into the spaces between the successive commutator plates or segments.

### No. 17,681. Boat. (*Embarcation.*)

John S. Stephenson, Ashburnham, Ont., 15th September, 1883; 5 years.

*Claim*.—A keelless canoe built of longitudinally matched tongue and grooved strips A, the upper strip cut to the angle of and secured to the gunwales, and the ends cut and fastened to cut water, posts at stem and stern and re-inforced on the inside by transverse ribs B extending from gunwale to gunwale, substantially as set forth.

### No. 17,682. Tubular Lantern. (*Lanterne tubulaire.*)

Geo. A. Kennedy, Coaticook, Que. 15th September, 1883; 5 years.

*Claim*.—1st. The square box tubes F, having a raised circular seat around a perforation covered by the ends of the tubes D, played outwardly to fit over the seat, to make a tight joint, for the purpose set forth. 2nd. The side tubes D, bent semi-circular at the top, and perforated on the underside through cap L, to admit of the uninterrupted insertion and passage of a textile material or fabric, or a flexible brush for cleaning out the tubes when foul, as described. 3rd. The side-tubes D, connected by a semi-hexagonal bent wire G, hinged directly to the top of reservoir A, for the purpose set forth. 4. The side tubes D, connected by a semi-circular bent wire J, to support the globe at the bottom when tilted. 5th. The parallel wires K, K, connected to the tubes D, and bent semi-circularly, to pass half-way around the globe above and below the bead thereon, to retain the globe fixedly by pressure of a spring, as set forth. 6th. The spring N G, secured to cap L, and for the purpose described. 7th. In a tubular lantern, the perforated concavo-convex circular disk N, secured to the cap of the burner, and having a plain annular flange to receive the bottom of the globe, and the outer or raw edge turned downward to stiffen the disk, to allow the unobstructed placing and removing of the globe, without tilting the disk, as set forth. 8th. The hinge and fastening G, H, passing directly through the tubes D, and secured thereto, to prevent the wires being wrenched off in use, as set forth.

### No. 17,683. Sash Holders. (*Arrêtes-croisées.*)

Osborne R. Cooke, Salem, Ohio, U. S., 15th September, 1883; 5 years.

*Claim*.—1st. In a sash-holder, the combination with a pair of dogs, substantially such as described, of the bracket or shields B, constructed with raised centre  $b$ , side flanges  $a$ ,  $a$ , and projecting flange B<sub>2</sub>, pivot-pin  $b$ , substantially as and for the purpose set forth. 2nd. In combination with a sash-holding device, substantially such as described, the vertical rod E, and bracket G G, having projecting flanges  $g$ ,  $g$ , to carry the ends of such rod, substantially as and for the purpose described.

### No. 17,684. Thresher and Grain Cleaner. (*Batteuse-vanneuse.*)

Jacob Miller, Canton, Ohio, U. S., 15 September, 1883; 5 years.

*Claim*.—1st. The combination of the thrashing cylinder and concave, with the inclined extension C, and braters D, and E, E, as set forth. 2nd. The combination of the thrashing-cylinder, concave and perforated extension C, with the braters D, and E, E, and brater or deflecting board F, as described, whereby the straw is elevated, after leaving the thrashing cylinder, and conducted rearward above the shaker-board, and finally deflected down on to the rear end of the carrier, as set forth.

### No. 17,685. Check Valve. (*Soupepe de détente.*)

James H. Blessing, Albany, N. Y., U. S., 15th September; 5 years.

*Claim*.—1st. In a straight-way valve, the combination with a valve-casing A, having a transverse partition or diaphragm B, arranged in an inclined position, as shown and described, and removable seat C, fixed on said partition of the removable sleeve D, having its lower end made to conform to the angle of the partition B, the said sleeve being adapted to secure the seat C in its place, as specified. 2nd. In a straight way valve, the combination with a valve-casing A, provided with a transverse partition or diaphragm B, fixed in an angular position therein, as described, of the removable sleeve D, provided with recesses  $d_2$ , and the check-valve E, provided with trunnions  $e$  adapted to engage in the recesses  $d_2$ , as and for the purpose specified. 3rd. In a straightway valve, the combination with a removable sleeve provided with recesses or pockets which are adapted to form one part of the hinge-joint on which the valve vibrates, of a check-valve provided with trunnions adapted to engage in the recesses or pockets in the removable seat, in the manner and for the purpose specified.

### No. 17,686. Straightway Check Valve. (*Soupepe de détente à chemin horizontal.*)

James H. Blessing, Albany, N. Y., U. S., 15th September, 1883; 5 years.

*Claim*.—1st. The valve casing A, provided with a partition B, arranged in an inclined position to the centre line of said casing and having an annular tongue  $b$ , formed thereon, as set forth, the said casing having a cylindrical chamber arranged perpendicularly to the face of the partition B, concentrically to the annular tongue  $b$ , and containing the transverse recess  $a$ , as described, in combination with a removable seat C, adapted to fit upon the annular tongue  $b$ , a removable sleeve D, provided with the opening  $e$ , and a check-valve D, provided with trunnions  $d$ , that are adapted to engage in the recess  $a$ , as and for the purpose specified. 2nd. The combination, with a valve casing A provided with the chamber A, containing a transverse recess  $a$ , as described, of the check-valve D, provided with trunnions  $d$ , and the removable sleeve E, provided with the opening  $c$ , and adapted to retain the trunnions  $d$  in the recess  $a$ , in the manner and for the purpose specified.

### No. 17,687. Harness Buckles and Loops. (*Boucles et anneaux de harnais.*)

LaFayette Hartson, Wyoming, Iowa, U. S., 15th September, 1883; 5 years.

*Claim*.—The buckle, having the tang-plate  $b$ , provided with orifices  $f$   $f$ , in combination with the metallic loop B, with its plates  $h$   $h$ , provided with orifices  $k$   $k$ , and the straps C D, with their meeting or lapping portions inserted or interposed between and rivetted to the plate  $b$ , of the buckle, and plates  $h$   $h$  of the loop, substantially as and for the purpose set forth.

**No. 17,688. Car Coupling.** (*Attelage de wagon.*)

Charles J. Edwards, Fairville, Miss., U. S., 15th September 1883; 5 years.

*Claim.*—1st. The combination, with the draw head provided with the vertical loops *d d* of the T-shaped coupling-pin pivoted therein, so that the pin is adapted to have both vertical and pivotal movement, as set forth. 2nd. The draw-head formed with the slots *b*, and *b'*, in combination with the T-shaped pin *B*, pivoted in the vertical loops *d d*, substantially as and for the purpose set forth. 3rd. The draw-head, chambered so as to form the ledge *f*, in combination with the T-shaped pin *B*, pivoted upon the draw-head in the vertical loops *d d*, substantially as described.

**No. 17,689. Differential Pulley Block.**

(*Moufle différentielle.*)

Peter Murray Jr. and Thomas J. Dennis, Newark, N. J., U. S., 15th September, 1883; 5 years.

*Claim.*—In a differential pulley block, the frame *A*, in which is mounted the axle *C*, one end of which is smaller and formed eccentrically to the other, as shown, in combination with the wheels *D*, *E*, having toothed rims upon their inner faces by which they are connected together and have a simultaneous differential movement, the wheel *E*, being mounted upon the larger end of the axle, and the wheel *D* upon the smaller, whereby the two wheels are retained in gear at a single point and revolved together in one direction upon fixed centres, substantially as set forth.

**No. 17,690. Vapor Torches.** (*Torches.*)

David A. Dangler, Cleveland, Ohio, U. S., 15th September, 1883; 5 years.

*Claim.*—1st. In vapor torches, in combination with a vapor generator and oil induction pipe, provided with a supply regulating valve, the combination chamber attached to and arranged below the generator and having an annular series of perforations in the side thereof, and a central opening in the bottom in alignment with the needle valve, substantially as described and for the purpose specified. 2nd. In combination with the combustion chamber and generator, the needle valve mechanism consisting of the gas supply pipe, valve tube *H*, needle valve and cup, substantially as described, and for the purpose set forth. 3rd. In vapor torches, a torch consisting of the generator oil supply pipe, provided with an oil regulating valve, combustion chamber attached to and arranged below the generator, and provided with an annular series of perforations, ejection vapor tube and needle valve mechanism, and needle valve, constructed and arranged, substantially in the manner as described, and for the purpose specified.

**No. 17,691 Cross Cut Saw.** (*Scie de travers.*)

George F. Simonds, Fitchburg, Mass., U. S., 19th September, 1883; 5 years.

*Claim.*—1st. The method of grinding cross-cut saws by moving the saw plate endwise in a curvilinear path such as, at each separate passage, to bring every part of the curved cutting edge successively to substantially the same point in the grinding line, and at the same time keeping the plane of the saw-plate in the direction of its width inclined to the grinding line with the back of the saw towards the apex of the angle of inclination, whereby the thickness of the curved cutting edge is made uniform throughout its length while the requisite taper in thickness is given to the plate transversely. 2nd. As a new article of manufacture, a cross-cut saw of substantially uniform thickness throughout the length of its curved cutting edge and of gradually diminishing thickness in the direction of its width from cutting edge to back.

**No. 17,692. Fire Escape.** (*Sauveteur d'incendie.*)

John H. Long, Walkerton, Ont., 19th September, 1883; 5 years.

*Claim.*—1st. A spindle carried in bearings provided with adjustable blocks arranged to be pressed against the said spindle for the purpose of retarding its movement, the combination of a rubber surface formed on the bearing, substantially as and for the purpose specified. 2nd. A spindle carried in bearings provided with adjustable friction blocks, in combination with mechanism arranged to press the friction blocks against the spindle for the purpose of retarding its movements, substantially as and for the purpose specified. 3rd. A spindle *A*, carried in bearings *B*, formed on the end of the hollow arms *C*, and having a wire rope, or chain *G*, wound around it as specified, in combination with the friction blocks *D*, butting against the spindle *A*, and actuated by the plungers *E*, which are provided with the handles *F*, substantially as specified. 4th. A wire rope or chain *G*, attached to a spindle *A*, carried in bearings *B*, formed on the end of the hollow arms *C*, which arms are provided with screwed plungers *E*, in combination with the cross bar *I*, having attached to it the supporting wire *J*, and connected with the arms *C*, for the purpose of bracing the arms, substantially as shown and specified.

**No. 17,693. Gas Burner.** (*Bec à gaz.*)

William Bell, New York, N. Y., (assignee of Andrew B. Lipsey, West Hoboken, N. J.) U. S., 19th September, 1883; 5 years.

*Claim.*—1st. The combination with an annular burner tip, or a circular series of burner tips, of a pipe or passage extending within the same from above and serving to supply gas thereto, substantially as specified. 2nd. The combination with an annular burner tip, or a circular series of burner tips, of a gas passage extending up within the same to a point considerably beyond the same and returning thereto so as to be headed by the products of combustion passing through a chimney, substantially as specified. 3rd. The combination, with an annular burner tip, or a circular series of burner tips, of a gas passage consisting of a pipe extending up from the centre of a body piece from which the burner tip or tips extend and adapted to

communicate with the nipple of a gas fixture, a pipe or pipes extending laterally from the said pipe at a point considerably above the burner tip or tips and pipes which are in communication with the said laterally extending pipe or pipes and communicate with the burner tip or tips, substantially as specified. 4th. The combination, with a burner tip or tips of a body piece from which the same extend a pipe *E*, adapted to communicate with the nipple of a gas fixture, a coupling piece *E'*, a pipe *E<sub>2</sub>*, a number of pipes *F*, a number of pipes *G*, or a passage communicating with the coupling piece, the pipe *P*, and the hub *b*, of the body piece provided with a cavity communicating with the burner tip or tips, substantially as specified. 5th. The combination, with a burner tip or tips, of a body piece from which the same extend, pipes forming a passage up within or between the burner tip or tips, thence back again so as to communicate with the burner tip or tips and comprising a pipe *P*, and a white material *L*, such as asbestos or any material which will become incandescent when heated applied to the exterior of the pipe *P*, substantially as specified. 6th. The combination with an annular burner tip or a circular series of burner tips, of a body piece from which the same extend, a passage consisting of pipes extending up from the body piece and back again to it so as to then supply gas to the burner tip or tips, and a chimney composed of a lower section and an upper section which is hung on the said pipes, substantially as specified. 7th. The combination, with a burner tip or tips, of a body piece from which the same extend, a passage consisting of pipes extending up from the body piece and back again to it so as then to supply gas to the burner tip or tips, a chimney gallery extending from the body piece, a chimney consisting of an upper section supported by the said pipes and a lower section supported by the chimney gallery, a deflector supported on the chimney gallery and opening in the chimney gallery admitting air within and outside of the deflector, substantially as specified.

**No. 17,694. Potato Planter.** (*Semoire à patates.*)

Samuel H. Fish, and Henry C. Middaugh, Hinsdale, Ill., U. S., 19th September, 1883; 5 years.

*Claim.*—1st. In a potato planter, the combination, with a cylinder provided with pockets for the reception of the potatoes, of forks arranged in pairs about said cylinder and means whereby the forks of each pair are brought toward each other and separated, substantially as and for the purpose specified. 2nd. The combination with the cylinder provided with pockets for the reception of the potatoes, of radially sliding tongues between said pockets, and means whereby said tongues are extended and drawn in, substantially as and for the purpose specified. 3rd. The combination, with a cylinder provided with pockets and forks arranged in pairs about its periphery, of a reciprocating slide adapted to revolve said cylinder step by step, substantially as set forth. 4th. The combination with the cylinder provided with means for securing and dropping the potatoes, of the rotating disks adapted to revolve as the cylinder is moved, whereby large and small potatoes may be fed when mixed together, substantially as shown and described. 5th. The combination, with the cylinder, adapted to be revolved step by step, of means for securing and dropping the potatoes and a reciprocating block adapted to recede as the cylinder advances and to move forward while the cylinder is at rest, substantially as specified. 6th. The combination, substantially as set forth, of the tongues or plates *d*, and the series of forks carried by the cylinder and means whereby said tongues are extended and drawn in and the forks of each pair brought toward each other and separated, as and for the purpose specified. 7th. The combination, with cylinder *a*, of forks *b<sub>1</sub>*, and tongues *d*, said forks and tongues being provided with levers and operated by cams *c<sub>1</sub>* and *d<sub>2</sub>*, and means for turning said cylinder step by step, substantially as set forth. 8th. The combination of the tongues carried step by step with the cylinder and one or more guiders *l* whereby the potatoes are directed to the successive tongues as the tongues are extended, substantially as shown and set forth. 9th. The combination, with cylinder *a*, provided with means for securing and dropping potatoes, of reciprocating slide *e*, adapted to rotate said cylinder step by step and disks *m*, substantially as set forth. 10th. The combination, with the cylinder provided with the forks and tongues, of slide *e*, disk *m*, and block *p*. 11th. The combination, with cylinder *a*, of tongues *a<sub>1</sub>*, and cam *d<sub>2</sub>*, said cam being provided with a sliding section *d<sub>3</sub>*, substantially as and for the purpose specified. 12th. The combination, in a potato planter, of the cylinder provided with pockets, the pairs of forks, the tongues which form partitions between said pockets, the means whereby said cylinder is moved step by step, means whereby the tongues are extended and drawn in successively, means for giving the tongues, one after the other, an extra motion to stir the potatoes before the pair of forks that are about to close and means for preventing potatoes not held by the forks from dropping, substantially as and for the purpose specified. 13th. The hollow cylinder cast in two parts, provided with eight pockets, eight pairs of forks, eight tongues forming partitions between the pockets and means whereby the cylinder is revolved, step by step, eight steps to a revolution, as and for the purpose specified. 14th. The combination in a potato planter with a cylinder adapted to be moved step by step, of pockets provided upon said cylinder, pairs of forks, one pair for each pocket and means whereby the seed is brought into the pockets successively before the pair of forks that are about to close, substantially as and for the purpose specified. 15th. The potato planter described, whereby potatoes of different sizes mixed together may be dropped in hills in a drill and covered, substantially as specified. 16th. The master or driving wheel and the crank shaft, which operates the pitman, said crank shaft and master wheel being adapted to receive pinions of different sizes, whereby the distances of the hills of potatoes from one another may be regulated, substantially as and for the purpose specified. 17th. The combination, with the reciprocating slide of lever *D*, segment gear and detent *D<sub>1</sub>*, and the chain, the rod, the bell crank and guide *V*, whereby the pitman may be thrown out of engagement with said slide, substantially as and for the purpose specified. 18th. The combination of guide *V*, spring *V<sub>1</sub>*, bell crank *w*, and means for operating said bell crank, whereby the machine is thrown in and out of gear, substantially as and for the purpose specified. 19th. The combination of the lever *D*, segment gear and detent *D<sub>1</sub>*, bell crank *D<sub>2</sub>*, and the knee or toggle joint whereby the body of the machine may be

raised and lowered, substantially as and for the purpose specified. 20th. In a potato planter, the combination with the lever D, of the segment gear, detent, knee joint and means for connecting said lever with guide V, whereby the pitman may be thrown out of engagement with the reciprocating slide, and the body of the machine raised at the same time, substantially as and for the purpose specified.

### No. 17,695. Printing Machine.

(Machine à imprimer.)

Merritt H. Dement, Chicago, Ill., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The combination of the cylinder and series of bars, with the fixed cam A, substantially as and for the purposes shown and described. 2nd. A cylinder and a series of bars of different widths, in combination with a cam by means of which the bars are pressed upon the material operated upon, substantially as shown and described. 3rd. The combination of a cylinder, a series of bars of different widths, type, and cam A, substantially as and for the purposes shown and described. 4th. In a printing or type-matrix machine, the combination of a series of bars of different widths or thicknesses corresponding to the widths of the various types, and revolving in a suitable holder, with a cam by which said bars are pressed against the material operated upon, substantially as shown and described. 5th. The combination of the revolving cylinder, type, and a series of bars, with the cam B, substantially as and for the purposes shown and described. 6th. In a printing or type-matrix machine, a series of bars, with means for pressing them upon the paper or material to be operated upon, in combination with a cam for throwing them by a positive action from the paper after printing, substantially as shown and described. 7th. In a printing or type-matrix machine, the combination of a cylinder and a series of bars of different widths or thicknesses at the point of contact with the cam A, corresponding to the widths of the various types, and of uniform width from the rear side of said widened space to the point of contact with the cam B, and said cam B, by means of which the bars are thrown from the paper immediately after printing, by a positive action, substantially as shown and described. 8th. In a printing or type-matrix machine, the cam A, with mechanism for sliding the same, in combination with bars having two or more spaces of different widths, substantially as and for the purposes shown and described. 9th. In a type-writing or type-matrix machine, the combination of a blank type or pin in the type-wheel with pins or milling on the corresponding rod, substantially as and for the purposes shown and described. 10th. The improvement in the method of feeding the matrix strip to produce spaces between works, which consists in making the feeding indentation on the reverse side of the strips, substantially as described, whereby the face of the strip is unaffected by such indentations. 11th. The combination of a cylinder and a series of sliding bars, and means for pressing the bars upon the material operated upon, with a cam by means of which the bars are returned to the cylinder after operating, substantially as shown and described.

### No. 17,696. Churn Power. (Baratte mécanique.)

John Wilber, Gleason, Penn., U. S., 21st September 1883; 5 years.

*Claim.*—The combination, with the shaft a, spring b, ratchet wheel c, pawl d, gear-wheels e, f, g, h, balance wheel i, walking beam k, adjustable connecting rod j, and churn dasher l, of the uprights u, drum o, roller t, cord m, passing round the shaft a, and drum o, cord g, and weights p, all constructed, arranged, and operated, substantially as described.

### No. 17,697. Process for Refining and Oxidizing Fish and Other Oils.

(Procédé à oxyder et à raffiner les huiles de poisson et autres huiles.)

Cleaveland F. Dunderdale, Perth Amboy N. J. U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The process of treating animal, mineral, vegetable, fish or other oils, which consists in subjecting same to the action or contact of, or with atmospheric air, or oxygen gas, that has been treated, prepared or obtained, by being first acted on by currents, sparks, or discharges of static, or induced electricity, or chemical reaction of acid upon mineral salts, or oxides, either with or without the admixture of water with said oils, for the purpose of oxidizing, deodorizing, or bleaching same, as set forth and described. 2nd. The process of treating refined or crude mineral oils, or their distillates, which consists in subjecting same to the action, or contact of with, atmospheric air or oxygen that has been treated, prepared, or obtained, or by being first acted upon by currents, sparks, discharges, of static or induced electricity, or chemical re-action of acid upon mineral salts or oxides, either with or without the admixture of water with said oils, for the purpose of raising the degree of fire-test, or point at which it gives off inflammable vapors, as set forth and described.

### No. 17,698. Wrenches. (Clés à écrous.)

George G. Hadley and George P. Merrill, (assignees of James Hanlan,) Toledo, Ohio, U. S., 21st September 1883; 5 years.

*Claim.*—A wrench, wherein the movable jaw A, shaft E, fixed jaw B, handle D, and pawls C, are all constructed, combined, and operated, substantially as and for the purposes set forth.

### No. 17,699. Machine for Making Pitchforks.

(Machine à fabriquer des fourches.)

Peter E. Bird, Jenkintown, Pa., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The method or process of tapering fork-tines by drawing or moving the same lengthwise through dies simultaneously with moving said dies toward each other transversely of the tine, substantially as set forth. 2nd. A machine for drawing fork-tines, provided with overlapping dies, with registering openings forming

amatrix, said dies being constructed and adapted to slide in opposite directions simultaneously, whereby their matrix is gradually diminished in diameter or area, substantially as set forth. 3rd. In combination with overlapping dies G, H, designed and adapted to slide upon one another, a table D, designed and adapted to move transversely thereto, so as to draw tines through said dies while their matrix is being diminished in area or diameter, substantially as set forth. 4th. The combination, with overlapping dies G, H, having lugs  $g_1, h_2$ , of table D, having spreader  $d_1$ , for causing said dies to slide upon one another as the table advances, substantially as set forth. 5th. The table D, having head J, with opening  $j_2$ , designed for the reception of a fork blank, and the tongs for holding the same, substantially as shown and set forth. 6th. In combination with table D, having racks  $d$ , and knocker M, the shaft B, with pinions  $b, b_1$ , and clutches C, weight T, and levers K, K<sub>1</sub>, L, L<sub>1</sub>, N, whereby the forward and backward movement of said table is effected, substantially as shown and described. 7th. In combination with the drawing dies G, H, the dies I, I<sub>1</sub>, for clearing the tine about the head, substantially as shown and described. 8th. In combination with sliding dies G, H, and I, the shaft E, having eccentrics or cranks  $e, e_2, e_3$ , and clutch E, with cams  $f, f_1$ , whereby one half revolution of said shaft brings said dies into position for drawing, and the other half revolution opens said dies, substantially as shown.

### No. 17,700. Brake Shoe. (Semelle à frein.)

John F. Curtice, Fort Wayne, Ind., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. A shoe, having lugs arranged in pairs, with a dovetail socket between each pair, in combination with a support having dovetails extending lengthwise of the support and a transverse projection formed integral with the forward dovetail, for the purpose set forth. 2nd. A shoe B, having projections B<sub>1</sub>, arranged in pairs with dovetail socket B<sub>2</sub> between each pair, in combination, with a support A, and a dovetail A<sub>2</sub>, provided with projection A<sub>3</sub>, placed transversely to, and formed integral with the dovetail A<sub>2</sub>, and a dovetail A<sub>4</sub>, having a key-seat and key for holding the shoe in place.

### No. 17,701. Apparatus for Consuming Smoke in Furnaces. (Appareil fumivore.)

James Elliott, Montreal, Que., 21st September, 1883; 5 years.

*Claim.*—1st. The introduction of air at the neck, or base of flue in a reverberating furnace, by means of an exterior chamber g, controlled by damper  $g_2$ , in which chamber said air is firstly heated, and passages e e formed in the brickwork through which said air passes to the interior, substantially as and for the purpose described. 2nd. The introduction of air to the fire chamber, above the grate by means of vertical flues j j, formed in the side walls, and opening at their lower ends, into the ash pit, and joined at their upper ends to a flue A, formed at the crown of said fire chamber at right angles to the line of draught, and having openings h h, and a blower or fan for forcing said air through said flues and over the fire, substantially as and for the purpose described. 3rd. In a furnace, the combination, with flues j j, and H, of the steam pipe K, having nozzles k k, and a fan or blower L, substantially as and for the purpose specified.

### No. 17,702. Lady's Work Table.

(Table à ouvrage.)

Bendix G. Borgesen, Chicago, Ill., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The combination, with the cover C, having two strips K, of an embroidery frame L, arranged to slide between said strips, as shown and described. 2nd. In a lady's work table, the combination, of the cornice D, forming the longitudinal compartments E E, and the drawers F, adapted to slide between these compartments from the ends of the box with the hinged cover C, substantially as shown and described and for the purpose set forth.

### No. 17,703. Creamer. (Garde-lait.)

William H. Lynch, Danville, Que., 21st September, 1883; 5 years.

*Claim.*—1st. As an important article of manufacture, a creamer consisting substantially of the chamber A, provided with draw-off faucets at different levels, a trough C, around the outside of said chamber at its top edge, a cover D, provided with a rim fitting within the trough, and raised above the top edge of chamber A, and with or without a double bottom, or chamber B, as set forth for the purpose described. 2nd. In a creaming vessel, the chamber A surrounded at the top edge by a trough C, and provided with a cover D, as set forth, whereby the milk and cream are cooled from the mouth downwardly. 3rd. A creaming vessel, provided with faucets at different levels, whereby a portion of the milk will remain in the vessel A, after the cream has been drawn off, as set forth. 4th. In a creamer, and in combination with the chamber A, and trough C, around the top edge thereof, on the outside the cover D, provided with a rim fitting within the top and crowning above the top of the chamber A, whereby odors of the milk and cream are carried off by absorption in the circulating water, and exterior odors excluded by the water seal of the cover, as set forth. 5th. The cream outlet, having a straight level, and flat flow downwardly inclined, for the purpose set forth.

### No. 17,704. Hay Press. (Presse à foin.)

Peter Lord, Jean B. Vinet and Avila S. Vinet, Montreal, Que., 21st September, 1883; 5 years.

*Claim.*—1st. The combination of a casing arranged, substantially as described, with two rams operated alternately as rams or follower blocks, and as bed blocks, said rams being provided with an operating mechanism, the whole, substantially as described. 2nd. The combination of the ram I, lever N, and actuating capstan, as described, weight S, casing A, and now stationary bed block K, substantially as described. The combination of the ram K, having projections provided with rack teeth D<sub>1</sub>, levers B<sub>1</sub>, pawls E<sub>1</sub>, and H<sub>1</sub>, and actu-

ating capstan, as described, spring K, and now stationary bed block I, substantially as described. 4th. The combination of the casing A, having doors D, F, and G, with rams I, and K, operated as described, substantially as set forth.

### No. 17,705. Car Brake. (*Frein des chars.*)

L. H. Hébert, J. J. Hébert and A. J. Hébert, St. Johns, Que., 21st September, 1883; 5 years.

*Claim.*—1st. In a winding mechanism for an automatic car-brake the combination with an upright frame D, containing a friction-pulley to bear upon the axle of a supporting frame C, having its upper end constructed and secured to the transfer beam, or bolster B, of the truck, and its lower end extending thence downward and outward beneath the axle, whereby it is adapted to support the frame D, in the required position, outside of the wheel. 2nd. The swing frame, consisting of the arms D D, pivoted below to the bracket C, and held above by the links E, journaled upon the pin *d*, the said frame having journaled in it a spindle F, carrying a friction-pulley F<sub>1</sub>, and a guide pulley G, so disposed that the axle comes in contact with the pulleys F and G, when the frame is drawn toward the axle, the lower point *d* carrying a grooved pulley *d*<sub>2</sub>, and a guard D<sub>1</sub> placed over the projecting spindles. 3rd. In an automatic car-brake, the combination, with the axle of a swinging support D, the spindle F journaled therein, and provided with a collar *f*, the friction-pulley F<sub>1</sub>, the spiral spring acting to hold said pulley in contact with the collar means substantially as described, for applying a tension to said spring, and a chain or cord connecting said spindle with the brake mechanism, whereby motion is communicated from the axle to the spindle, and the parts relieved from excessive strain. 4th. In an automatic brake mechanism, the combination of the swinging frame D, its friction pulley adapted to encounter the axle, the chain connected with the said pulley, the centrally pivoted lever I, the rod extending from said lever to the brake-lever K, and the jointed levers E, H, for controlling the position of the frame D. 5th. The combination, in a brake mechanism, of the pulley supporting frame D, pivoted to a supporting arm on the truck, the link E, the lever H pivoted connected to the link E and to the truck, and provided at one end with an extension to serve as a stop, and at the opposite end with an eye or its equivalent adapted to receive the cord or operating device. 6th. The combination of the axle A, and the bogie-frame B, carrying a bracket C to the free end of which is pivoted the swing frame D *d*<sub>1</sub>, which carries the guide pulley G, and friction bevel F<sub>1</sub>, journaled frictionally upon the spindle F, having secured to its end the end of a chain or cord E, led over a grooved pulley *d*<sub>2</sub> to the end of the long arm of the lever I, which is linked to the lever K, pivoted in and working the brake-bars M, M<sub>1</sub>, simultaneously and in opposite directions. 7th. In combination, with an automatic brake mechanism, constructed substantially as described, with a controlling lever H, two hand levers L<sub>1</sub>, mounted upon opposite ends of the car, a rod connecting said levers, and a cord or chain extending over suitable guides from one of said levers to the controlling lever H of the brake mechanism, whereby the brake mechanism may be operated from any point on the top of the car. 8th. The combination, of the automatic brake mechanism for controlling the lever H, a hand lever L<sub>2</sub> mounted within the upper part of the car and connecting devices, substantially as described, extending from said lever externally of the car to the lever H. 9th. The lever L<sub>2</sub>, provided with panels *p*, working in racks *p*<sub>1</sub>, in combination, with a chain T, coupling the levers of adjacent cars, in combination, with the rod R, cords O, pulleys *b* *h*, and the lever H, all substantially as described and for the purpose set forth.

### No. 17,706. Meat Block. (*Blocs des bouchers.*)

Joseph E. Baril, Montreal, Que., 21st September, 1883; 5 years.

*Claim.*—L'emploi de simples planches ou madriers D, de faible épaisseur, cloués ou vissés les uns contre les autres et munis ou non de pieds C, et d'encadrement F, le tout tel que décrit et pour les fins indiquées.

### No. 17,707. Rheumatic Remedy.

(*Remède pour le rhumatisme.*)

Sydney T. Wright, St. Thomas, Ont., 21st September, 1883; 5 years.

*Claim.*—A compound composed of oil of turpentine, oil of juniper, spirits of wine, and iodide of potassium mixed with water, substantially in the proportions and for the purposes set forth.

### No. 17,708. Machine for Stripping and Splitting Rattan. (*Machine à refendre le rotin.*)

Sylvester Sawyer, Hoboken, N. J., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The combination in a rattan-scraping machine, of a beveled revolving cutter-blade, and a stationary cutter-plate having an angular cutting edge, the said blade and plate being arranged to have a shearing action. 2nd. In combination, in a rattan-scraping machine, a revolving cutter-blade and stationary cutter-plate, substantially as described, and an open angular guide in front of said plate. 3rd. In a rattan-scraping or splitting machine, the combination of a guide composed of two parts constructed to conjointly grasp and direct the cane, and a spring arranged to bear upon both of said parts when they are, at rest and equally deflected, and entirely upon either part as becomes the more deflected, thereby relieving the other. 4th. In a rattan-scraping machine, the combination of yielding feeding rolls, scraping knives adapted to be withdrawn from the position in which they act upon the cane, and suitable mechanism for automatically retracting said knives, which is operated by the closing of said rolls after the passage of the cane. 5th. In a rattan-scraping machine, the combination of two or more scraping knives arranged to have radial movement, oppositely rotating cam-ring for retracting said knives, and yielding feed rolls for transmitting the cane through the machine which are connected with and arranged to operate the cam rings by the passage of the cane. 6th. In a rattan-scraping ma-

chine, the combination of scraping knives having radial movement to and from the path of the cane, a cam ring for withdrawing said knives, and a sliding wedge arranged to rotate said cam-ring. 7th. In a rattan-scraping machine, two or more scraping knives arranged to completely encircle the cane, the cutting edges of which each act independently upon the cane at different points along its length, no two edges being in the same vertical plane. 8th. In a rattan-scraping machine, the combination of scraping knives arranged to move to and from the cane, two oppositely-rotating cam-rings for receiving said knives and sliding bar, the ends of which meet in the path of the cane, said bars being arranged to block the cam-rings for the purpose of retaining the knives in the raised position, and to be separated by the end of the cane as it advances for the purposes of releasing the knives from such position. 9th. In a rattan-stripping machine, a stripping knife provided with an adjustable support which is moved laterally by means of a screw moving in a fixed guide, and vertically by means of a wedge moving between such support and a stationary part of the machine. 10th. In a rattan-splitting machine, the combination of transmitting rollers or guides, a swinging pith-catcher and suitable mechanism, operated by the pith as it advances for swinging the pith-catcher into position to receive the pith as it is discharged from the machine. 11th. In a rattan-stripping machine, the combination of yielding transmitting rollers or guides, a swinging pith-catcher springs arranged to move such catcher away from the position in which it receives the pith and suitable mechanism for holding said catcher in the path of the pith which is arranged to release the catcher upon the closing of the guides as the pith leaves them.

### No. 17,709. Foot Rest for Piano Stool.

(*Appui-pieds au tabouret de piano.*)

D. R. Burlingame, Boston, Mass., U. S., 21st September, 1883; 5 years.

*Claim.*—1st. The combination with the low stool *o*, commonly known as a "piano stool," of a foot rest supported by a bar or lever, substantially as shown and described. 2nd. A foot rest for a piano stool composed of the socket *a*, extension lever *b* and stirrups *h* *h* all made, arranged and adjusted, substantially as set forth. 3rd. The combination of the piano stool *o*, with the extension lever *b*, bar *g*, and stirrups *h* *h* all made and adjusted, substantially as and for the purpose specified. 4th. The combination of the adjustable bar *g* with the lever *b* and piano stool *o*, substantially as and for the purpose mentioned and described. 5th. The combination of the bar *g*, having slots *l* *l* therein (best shown in Fig. 5), with the stirrups *h* *h*.

### No. 17,710. Bark Mill. (*Moulin à écorce.*)

La Flavius Reed, Hornellsville, N. Y., U. S., 21st September, 1883; 5 years.

*Claim.*—As an improvement in bark mills, the bowl D provided with the hand-hole A in the vicinity of the discharge pipe E, provided with a lid or cover B, and means for holding the same securely in place when the mill is in use, substantially as and for the purpose shown and set forth.

### No. 17,711. Improvements Relating to Mechanism for Transporting Goods and Passengers by the Aid of Electricity. (*Perfectionnements aux mécanismes de transport d'effets et de passagers à l'aide de l'électricité.*)

Fleming Jenkin, Edinburgh, Scotland, 22nd September, 1883; 15 years.

*Claim.*—1st. The telpher insulators, substantially as described, and which are both competent to sustain heavy stress and also to maintain good insulation. 2nd. The method of forming the road for electric locomotives by mounting ropes, or like flexible conductors, on rocking insulators, to distribute the strain on the sections on either side of the support as the train passes. 3rd. I claim in mounting ropes, or like flexible conductors forming the road for electric locomotives, the employment, substantially as described, of bent horn pieces to facilitate passage around curves and over supports. 4th. The use of stays between posts as a second conductor in electric transport. 5th. The telpher locomotive in which the electro motor is geared with nipping wheels by means of nest gearing. 6th. The nest gearing, substantially as described. 7th. The use of fixed insulated block wires, or conductors, divided into sections and regulating the intervals between the trains by operating electrically upon mechanism on the following train to stop or retard it when the interval becomes too small, and causing it to be driven again as soon as the interval is sufficient. 8th. The use with trains propelled by electric currents transmitted to them by stationary conductors, of leading and trailing connections on the train, and fixed insulated sectional block wires, or conductors, so arranged that when the interval between the trains becomes too small, a portion of the current passes through the block wire and connections and brings into operation apparatus on the following train by which it is stopped or retarded. 9th. The special arrangements of block wires or conductors and connections for the series system, substantially as described. 10th. The special arrangements of block wires or conductors and connections for the old parallel arc system, substantially as described. 11th. The special arrangements of block wires or conductors and connections for my new parallel arc system, substantially as described. 12th. The automatic insertion of a black electro-magnet into the trailing cross connection, or its equivalent, to block a train which is running backwards, substantially as described. 13th. The arrangement by which a guard can set the blocking system in action to stop his own train by temporarily completing a circuit through leading and trailing rubbers and block wires. 14th. The method of propulsion, substantially as described, in respect to Figure 22, in which the trains on the line are connected in parallel arc by conductors arranged in sections corresponding in length with the trains and coupled into a continuous circuit by cross connections, the sections with which the train makes contact thus being alternatively positive and negative. 15th. The

motor governor, substantially as described, in respect to Figure 31, where differential gear actuates a contact maker in the circuit of the motor and secures a large opening whenever contact is broken. 16th. The motor governors, substantially as described, in respect to Figures 32 and 33, where when the speed alters from that to which the governor is set a rotating part is brought into contact with a smooth rim or wheel which it turns by surface friction, and thereby moves a contact maker in the circuit of the motor to a new position where it remains when the motor returns to the normal speed. 17th. The combination with a motor governor, of a contact maker and a time regulator in such manner that the contact maker is liberated when the governor has cut off the current from the motor circuit, such contact maker then (if the speed remain excessive) after a time interval completing a circuit which brings into operation a brake or retarding mechanism, substantially as described in respect to Figures 34.

**No. 17,712. Improvements in the Construction and Government of Electro Motors or Machines which Convert Electrical Energy into Mechanical Energy.** (*Perfectionnements aux machines électriques destinées à convertir la force électrique en force mécanique.*)

William E. Ayrtton and John Perry, London, Eng., 22nd September, 1883; 5 years.

*Claim.*—1st. A fixed Pacinotti ring with three or any greater number of coils inside which rotates a field magnet of the shape shown in figures 1 and 2, substantially as described, or any mere modification of the same. 2nd. A fixed Pacinotti ring inside or alongside which rotates a bobbin shaped like figures 6, 7, or 8, substantially as described, or any mere modification of the same. 3rd. The arrangement shown in figures 9, 10, and 11, and in figures 12, 13, and 14, substantially as described. 4th. The arrangement shown in figure 5, by means of which the relative position of the brushes and field magnet may be altered, substantially as described, or any mere modification of the same. 5th. The arrangement shown in figure 4, by means of which the relative positions of the commutator and the Pacinotti ring may be altered, substantially as described, or any mere modification of the same. 6th. The regulation of a motor by continually introducing or taking out of the circuit a resistance or shunting any portion of the current past the machine periodically in such a way that a governor like an ordinary steam-engine governor alters the fractional part of the whole periodic time during which introduction of the resistance or the shunting occurs. 7th. Effecting the novel object of our sixth claim by apparatus shown in figures 15 and 16, in figure 17, in figures 18, 19, 20 and 21, substantially as described, or any mere modification of the same. 8th. The use of a magneto-electric and a dynamo-electric motor coupled or geared together in the manner described for obtaining constant speed independent of the load when there is constant or nearly constant electro-motive force, or constant or nearly constant current respectively. 9th. The construction of a motor whose field magnet is permanently magnetic and is also wound with wire in the same circuit as the armature in such a way that the current of the second circuit diminishes the magnetism of the field magnet for obtaining constant speed independently of the load where there is a constant or a nearly constant difference of potentials maintained between the terminals of the motor. 10th. The construction of a motor whose field-magnet is mainly wound with a shunt circuit to the whole machine, but is also partially wound with wire in the same circuit as the armature in such a way that the current diminishes the magnetism produced by the shunt circuit for the purpose of obtaining constant speed independently of the load when there is a constant or a nearly constant difference of potentials maintained between the terminals of the motor or when there is a constant or a nearly constant current supplied through the motor, substantially as described. 11th. The use of a shunted motor whose field-magnet cores are partly permanently magnetic but which are also wound with a shunt circuit, the permanent magnetism being opposite to that produced by the shunt circuit for the purpose of obtaining constant speed when there is a constant or nearly constant current supplied through the motor, substantially as described. 12th. The construction of a motor whose field-magnet and armature circuits are in series but whose field-magnet is also partly wound with wire which is a shunt to the armature part only, the permanent magnetism produced by the series circuit being opposite to that produced by the shunt circuit for the purpose of obtaining constant speed independently of the load when there is a constant current supplied to the motor, substantially as described. 13th. The construction of a motor consisting of a motor consisting of a Pacinotti ring as armature and a field-magnet, substantially as described, but the field magnet being merely of soft iron without any wire wound upon it so that current passes from two brushes only through the armature.

**No. 17,713. Apparatus for Amalgamating and Separating Ores by means of Mercury.** (*Appareil à amalgamer et à séparer les minerais au moyen du mercure.*)

Sylvanus L. Trippe, Chicago, Ill., U. S., 22nd September, 1883; 5 years.

*Claim.*—1st. The combination of the vessel A, vertical pipe B having means for rotating it and having a hopper at its upper end, arched perforated diaphragm C supported within the vessel A, above its bottom, horizontal perforated diaphragm D above the diaphragm C, and fixed to the pipe B, whereby it revolves with the pipe and one or more lateral discharge tubes projecting from the pipe B between the bottom of the vessel and the diaphragm C, substantially as described. 2nd. The combination of the vessel A, pipe B having the hopper *u*, and branches *s*, mechanism for revolving the pipe B, perforated diaphragms C and D, adjustable collars *r* and *r'*, for permitting the diaphragms to be raised and lowered on the pipe B, and screw-seat *o*, for permitting the raising and lowering of the pipe B, substantially as described. 3rd. The combination with the vessel A, of the pipe B,

having distributing tubes of varying lengths, as set forth, mechanism for rotating the same and one or more perforated diaphragms supported within the vessel A above the distributing tubes, substantially as described.

**No. 17,714. Metal Washer.** (*Rondelle mécanique.*)

Auguste Bronner, Montreal, Que., 22nd September, 1883; 5 years.

*Claim.*—1st. The described process of making washers which consists as follows: 1st. In feeding a blank along a perforated die block and under three or more punches of different diameters, the centers of which are equal distant from each other and corresponding to the perforations in said block and forcing said punches simultaneously through said blank and into the perforations in said die block in such manner that each of said punches will perforate said blank. 2nd. Retriving said punches. 3rd. Feeding said blank forward. 4th. Causing said punches to again descend so that the first punch will cut a small hole, the second punch will form a complete washer in centre of which the first punch had previously cut and third punch will form a second complete washer, the central hole of which the second punch previously cut, substantially in the manner and for the purpose described. 2nd. In an apparatus for making metal washers, the combination of three or more punches C D E of different diameters, of the die block A made up of upper and lower plates *a b* having perforations *c d e*, of diameters corresponding to said punches and intermediate plates *at* secured together as described, the inner edges of which are bevelled outwards above end and stop F firmly attached to plate A centrally between inner bevelled edges of intermediate plates *at* in line with perforations *c d e*, substantially as and for the purpose specified.

**No. 17,715. Locomotive.** (*Locomotive.*)

Oscar Rothrock, Beech Creek, Penn., U. S., 22nd September, 1883; 5 years.

*Claim.*—1st. A twin locomotive or other portable steam boiler having a longitudinal space or passage between the same, and provided with a front fire box and a rear smoke stack, substantially as and for the purpose set forth. 2nd. A twin locomotive or other portable steam boiler having a space or passage between the same and tanks or bunkers extending along the sides of said passage, substantially as and for the purpose set forth. 3rd. A twin locomotive or other portable steam boiler consisting of two parallel longitudinal sections having a water tank made of two vertical sections, and a transverse bottom section arranged between said boiler sections and forming a passage between the vertical sections of said tank, substantially as and for the purpose set forth. 4th. A twin locomotive or other portable boiler having a space or passage between the same and vertical tanks or bunkers extending along the sides of said passage and provided with a hollow crown piece communicating with said vertical tank sections and constituting roof for the aforesaid passage, substantially as and for the purpose set forth. 5th. In a locomotive, the combination of a twin boiler, a front fire box, a passage or way extending from said fire box to the rear of the boiler, a cab or housing arranged over said passage or way and a smoke stack or stacks applied to the rear of the boiler, substantially as and for the purpose set forth. 6th. In a locomotive, the combination of a series of steps or offsets on the front of the fire box or front end of the locomotive boiler sections leading rearward from said fire box so as to leave an intermediate passage and engine room and a cab or housing surmounting said passage having movable doors, substantially as and for the purpose set forth. 7th. A locomotive or other portable engine boiler having two parallel tanks or bunkers supported thereon, a longitudinal space or passage way arranged between said tanks, a front fire chamber having its door located above the top of the boiler or floor of the passage way and a rear smoke stack, substantially as and for the purpose set forth.

**No. 17,716. Safety Device for Locomotive Pilots.** (*Garde de corps aux charrues de locomotive.*)

Oscar Rothrock, Beech Creek, Penn., U. S., 22nd September, 1883; 5 years.

*Claim.*—1st. The combination with the pilot or cow-catcher of a locomotive engine, of a vertically movable shield sheath or hood extending entirely across the railway track conforming in shape or contour to that of the pilot and placed on roller or slide ways and thereby made capable of being lowered so as to sweep the space over and between the rails, substantially as and for the purpose set forth. 2nd. The combination of a locomotive-pilot having roller or slide ways with a sheath or hood fitted thereon and suitable means for raising and lowering the sheath from the engine room or cab, substantially as and for the purpose set forth. 3rd. The combination of the notched shield sheath or hood and the brushes carried by the same with the locomotive-pilot and suitable means for raising and lowering the sheath, substantially as set forth. 4th. The combination of the pilot or cow-catcher of a locomotive engine with a shield sheath or hood to which is attached a broom of sufficient width to extend entirely across the track or roadway, the shield and broom being made capable of being raised or lowered by mechanism controlled from the cab of the engine, as specified and described.

**No. 17,717. Apparatus for Refining Paper Pulp.** (*Raffinage de la pulpe.*)

Walter Jones, Niagara Falls, N. Y., U. S., 22nd September, 1883; 5 years.

*Claim.*—1st. The method of refining the coarse pulp from wood-grinders and similar pulping-engines by passing said pulp between rollers turning toward each other at different surface speeds, substantially as described. 2nd. The method of reducing or refining paper-stock of wood or other material by passing it mixed with water between grooved rollers turning toward each other, substantially as described. 3rd. The combination with a wood grinder or similar pulping engine, of a refining apparatus applied with coarse pulp

therefrom, said apparatus having rollers for acting on the pulp, substantially as described. 4th. The combination with smooth faced grooved or other suitable rollers and means for revolving the same, as described of the water-tight supply hopper and inlet spout, substantially as set forth. 5th. The combination of the rollers smooth-faced or dressed, the supply hopper, the flaps at the bottom of the hopper, the inlet-spout, the means for revolving the rollers and the discharge spout, as described. 6th. The apparatus described comprising the machine-frame, the grooved or smooth-faced rollers, means for revolving the same, the casing with its supply hopper and collecting chamber, the flaps at the mouth of the hopper, the inlet spout, the overflow and the discharge spout, substantially as described.

### No. 17,718. Middlings Purifier.

(*Epurateur des gruaux.*)

Louis Gathman, Chicago, Ill., U.S., 22nd September, 1883; 5 years.

*Claim.*—1st. In a middlings-purifier, the combination of a screen, a wooden shaft or shafts arranged to revolve in proximity thereto, a series of beaters B made of flexible material each constructed with a metal outlet *r* and staples adapted to secure said beaters upon said shafts, substantially as described and shown. 2nd. The combination of flexible beaters B, shafts A A1, bars C C, connecting brace-bars *c c* grooved or flanged end wheels *a* and guide-rails D, all substantially as and for the purpose set forth. 3rd. The combination of the flexible beaters B, shafts A A1, grooved or flanged end wheels *a*, guide rails D, endless belt *d*, pulleys *e* and oscillating shafts *f*, substantially as described to operate as specified. 4th. The combination of shafts A A1, flexible beaters B, frames C c c1, guide-rails D, endless belt *d*, pulleys *e*, upright shafts *f*, strap or belt *i* and reciprocating bar H, all constructed and arranged, substantially as described and shown. 5th. The combination with screen R, a cloth-cleaner frame below said screen, oscillating shaft *f*, pulley *e*, belt *i* and bar H, of pitman *r*, crank I constructed with arms *r r*, sprocket-wheels L M, and endless chain J constructed with lugs *n*, substantially as set forth. 6th. The combination with the screen, the cloth cleaners arranged to reciprocate thereunder the sliding bar H and means for transmitting motion from said bar to said cleaners, of pitman *r*, crank I having arms *r*, sprocket-wheels L M and chain J constructed with lugs *n* adapted to engage alternately the arms *r r*, all constructed and arranged, substantially as set forth. 7th. The combination with reciprocating frames C c c1, of shaft *f*, sliding bar H adapted to impart oscillation thereto, pitman *r*, crank I having arms *r r*, sprocket-wheels L M and the latter having projections *o*, endless chain J having lugs *n* adapted to engage arms *r r*, sprocket-wheels O P and endless chain N having lugs *n*, the whole being constructed and arranged, substantially as set forth, to operate as specified.

### No. 17,719. Machines for Cleaning Split Grain. (*Machine à nettoyer le grain écaillé.*)

Louis Gathman, Chicago, Ill., U.S., 22nd September, 1883; 5 years.

*Claim.*—1st. In a machine for cleaning split wheat, the cylinder E having screen *e* and bolting-cloth *h*, in combination with flexible beaters L, substantially as and for the purpose set forth. 2nd. In a machine for cleaning split wheat, the rotary screen *e* in combination with fan D and flexible beaters L, composed of leather strips provided on their lower ends with overlapping leather edges, substantially as and for the purpose set forth. 3rd. In a machine for cleaning split wheat, the rotary screen *e*, in combination with fan D and brushes J and beaters L, in alternate order, substantially as and for the purpose set forth. 4th. In a machine for cleaning split wheat, the cylinder E constructed with screen *e* and bolting-cloth *h*, in combination with fan D and beaters L, substantially as and for the purpose set forth. 5th. In a machine for cleaning split wheat, the cylinder E constructed with screen *e* and bolting cloth *h*, in combination with fan D and beaters L and brushes J, in alternate order, substantially as and for the purpose set forth. 6th. In a machine for cleaning split wheat, the rotary screen *e* in combination with the scraper-boards J adjustably secured to rods *n* and carrying brushes J, substantially as and for the purpose set forth. 7th. In a machine for cleaning split wheat, the rotary screen *e* in combination with scraper-boards I and beaters L, substantially as and for the purpose set forth. 8th. In a machine for cleaning split wheat, the cylinder E having screen *e* and bolting-cloth *h*, in combination with scraper-boards I and brushes J, substantially as and for the purpose set forth. 9th. In a machine for cleaning split wheat, the cylinder E with screen *e* and bolting-cloth *h* in combination with scraper-boards I and beaters L, all substantially as and for the purpose set forth. 10th. In a machine for cleaning split wheat, the screen *e*, the scraper-boards I having angular strips *o* and brushes J and beaters L, substantially as and for the purpose set forth.

### No. 17,720. Anaesthetics. (*Anoesthésiques.*)

Uriel K. Mayo, Boston, Mass., U.S., 22nd September, 1883; 5 years.

*Claim.*—An anaesthetic compound consisting of nitrous oxide gas and the vapors of an aqueous alcoholic tincture or infusion of hops and poppies combined, substantially as set forth.

### No. 17,721. Machine for Setting Buttons.

(*Machine à poser les boutons.*)

Mahlon M. Jeller, Kent, Ohio, U.S., and Alexander G. Wilkins, Meadville, Penn., U.S., 22nd September, 1883; 5 years.

*Claim.*—1st. In a button fastening machine, the lever provided with means for delivering the fastener in combination with the spring loop forming bolt and an intermediate plate provided with a mandrel around which the fastening devices or pins are bent. 2nd. In a button fastening machine, the combination of means, substantially as described, for receiving and carrying the fastener, with a spring-bolt having a forming-slot in its lower end and a centrally arranged interior upsetting-tool, substantially as and for the purpose set forth. 3rd. A device adapted to carry the fastening device and a spring-bolt provided with an interior upsetting tool, in combination with an inter-

mediate movable button support, substantially as and for the purpose described. 4th. In a button fastening machine, a loop former for the fastening pin in combination with a mandrel around which the pin is bent after passing through the leather, substantially as set forth. 5th. In a button fastening machine, a loop former for the fastening pin, in combination with a reciprocating mandrel which advances across the loop former after the fastener has been entirely passed through the material and recedes after the loop is formed, substantially as and for the purpose described. 6th. In a button fastening machine, the intermediate plate L for sustaining and steadying the shoe upper while being operated upon, substantially as set forth. 7th. The pivoted plate L adapted to steady and support the upper in combination with a yielding spring resisting device to insure the washer being close against the surface of the goods before the pin is in any degree upset. 8th. In a button-fastening machine, the barrel E provided with the interior plunger F and an opening for the entrance of the fasteners, in combination with a feeding device C which feeds the pin point downward and a tripping device, substantially as described, for turning the fasteners as they fall, whereby they are thrown head downward onto the end of the plunger. 9th. In a button fastening machine, the barrel E provided with plunger F, in combination with lever D having the hollow end and the reciprocating bar *b*, substantially as and for the purpose set forth. 10th. In a button fastening machine, the barrel E provided with an opening to receive the fasteners and lever D in combination with the sliding door *d*1, spring 5, pivoted headed rod *d*11 and eye 3, all constructed, arranged and operated as set forth. 11th. In a button fastening machine, the fastener feedway C and the inverted hook stop 6, in combination with sliding door *d*1, spring 5, pivoted headed rod *d*11, eye 3 and lever D, all constructed and operated as described. 12th. In a button fastening machine, the barrel E and plunger F, in combination with the divided caps G G provided with the conical interior *f* and central opening *g*, substantially as set forth. 13th. In a button fastening machine, a leather sustaining-plate secured directly to and sustained by the yielding spring bolt H, substantially as described. 14th. In a button fastening machine, the leather sustaining-plate having a hinged swinging portion *h* provided with a button receiving recess 15, for the purpose specified. 15th. In a button fastening machine, the hinged swinging plate *h* provided with a cog recess *l* to receive the shank of the button eye, in combination with the plate *h*1 provided with a recess *n* in its upper face, wherein the button eye rests when brought to the fastening point, substantially as and for the purpose set forth. 16th. In a button fastening machine, the mandrel J provided with the beveled face upwardly projecting lug *i* in combination with a beveled face projection *f* on the frame adapted to retract the mandrel, as set forth. 17th. In a button fastening machine, the spring bolt having its side cut away at 26 to allow the body of the button to tip as described. 18th. In a button fastening machine, the button carrying tube K having a flat spring attached bearing, the stops *i*, 10, 11 in combination with the hinged swinging plate *h* which strikes said flat spring and releases a button, substantially as set forth. 19th. In a button fastening machine, the bracket L attached to the standard of the machine and provided with the set screw M in combination with a removable button tube K, substantially as and for the purpose described.

### No. 17,722. Sheet Metal Cans. (*Boîtes de métal.*)

Edwin Norton, Chicago, Ill., U.S., 22nd September, 1883; 5 years.

*Claim.*—1st. The combination, with the can-body provided with an interior shoulder *a*, of a seamless flange B, having its inner edge *b* folded over and soldered to said interior shoulder *a*, and its outer edge *b*1, folded, with cover C, into a double seam, substantially as specified. 2nd. The combination, with a can body A, having its top turned in, a seamless flange B united to the can-body, a thin inner cover C united to said seamless flange by a double seam inside, the interior circumference of the can-body, and a slip-cover D, adapted to fit on the can-body over said seam, substantially as specified. 3rd. The combination of the can-body A, of a seamless flange B, having its inner edge *b*, secured to said can-body, and its outer edge *b*1, folded with cover C into a double seam, substantially as specified.

### No. 17,723. Gong Bells. (*Timbres.*)

William S. Foster, Farnham, Que., 22nd September, 1883; 5 years.

*Claim.*—1st. In a gong-bell, the rocking pull B, formed with two or more arms for connection of a rope or wire, and a third arm for operating the hammer, substantially as shown and described. 2nd. The combination of pull B, formed with arms *b c d*, the pivoted hammer *g*, and spring *k*, connecting the hammer to one of the arms of the pull, substantially as described. 3rd. The combination of pull B, having an arm slotted and notched at *l*, and the spring *k*, connected to the hammer arm, substantially as described.

### No. 17,724. Machine for Shaping Confectionery. (*Machine à façonner les bonbons confits.*)

Oliver R. Chase, Boston, Mass., U.S., 22nd September, 1883; 5 years.

*Claim.*—1st. In a machine for working and shaping plastic materials, the combination of a receiving-cylinder, a right-hand screw-piston and a left-hand screw-piston, both arranged to work in said cylinder, and mechanism for revolving said screw-pistons in opposite directions, substantially as and for the purpose described. 2nd. The combination of two receiving cylinders, one or more screw-pistons working in each of said receiver-cylinders, a hollow screw arranged in a horizontal position, beneath one of said receiver-cylinders and within a cylindrical casing for a portion of its length, a second horizontal screw in axial line with said hollow screw and extending through said hollow screw and having its bearing partly therein and partly within a fixed horizontal cylinder beneath, and projecting from the other receiver-cylinder, and mechanism for imparting to all said screws independent rotary motions, substantially as described. 3rd. The combination of the receiving-cylinder D and E, provided, respectively, with horizontal cylinders D1 and E1, one or more screw-piston arranged to revolve in each of said receiver-cylinders, the two horizontal screws K *h* and L *i*, and the nozzles D2 and W, all con-



structed, arranged, and adapted to operate substantially as and for the purposes described. 4th. In a machine for working and shaping plastic materials, the combination of one or more receiving-cylinders provided with an annular chamber surrounding the same means of causing a circulation of steam or hot water through said annular chamber, and one or more screw-pistons arranged within said receiver cylinder, substantially as described. 5th. In a machine for working, shaping and combining plastic materials, the combination of the cylinders D<sub>1</sub> and E<sub>1</sub>, the screw K<sup>h</sup> and L<sup>i</sup>, the removable non-revolving nozzle D<sub>2</sub>, the revolving nozzle W, and the loose molding nozzle X, all arranged and adapted to operate, substantially as and for the purposes described. 6th. The combination of the cylinder E<sub>1</sub>, provided with the conical discharge-nozzle W, means of supplying a plastic material thereto, and the screw-piston L<sup>i</sup>, provided with the axial hole *t*, substantially as and for the purposes described. 7th. In a machine for working, shaping and combining plastic material, the combination of the cylinders D<sub>1</sub> and E<sub>1</sub>, the screws K<sup>h</sup> and L<sup>i</sup>, the removable non-revolving nozzle D<sub>2</sub>, the revolving nozzle or ring K<sup>1</sup>, the tube D<sub>4</sub>, provided with arms *q* and the ring *v*, and the tube K<sup>2</sup> fitting loosely into the ring K<sup>1</sup> and secured to the ring *v*, substantially as and for the purposes described. 8th. The combination of the cylinders D<sub>1</sub> and E<sub>1</sub>, the screws K<sup>h</sup> and L<sup>i</sup>, the removable non-revolving cone D<sub>2</sub>, the revolving ring K<sup>1</sup>, the non-revolving tube D<sub>4</sub>, provided with the ring *v*, the tube K<sup>2</sup>, provided with the inwardly projecting lip *u* and fitted loosely into the ring K<sup>1</sup> and secured to the ring *v*, and the removable disk X<sup>1</sup>, all arranged and adapted to operate, substantially as and for the purposes described.

**No. 17,725. Machine for Moulding and Shaping Confectionery.** (*Machine à mouler et façonner les bonbons confits.*)

Oliver R. Chase, Boston, Mass., U.S., 22nd September, 1883; 5 years.

*Claim*.—1st. In a machine for working, shaping and combining plastic materials, one or more cylinders or receivers provided with means for forcing the material therefrom, in combination with the tube J, the hub I, provided with one or more grooves or annular spaces surrounding said tube, and communicating therewith and with said cylinder or cylinders, and means of forcing plastic material through the tube J, substantially as and for the purposes described. 2nd. In a machine for working, shaping and combining plastic materials, one or more cylinders or receivers provided with means for forcing the material therefrom, in combination with the tube J, the hub I, provided with one or more grooves or annular spaces communicating with said cylinder or cylinders, one or more tubes projecting into the interior of the tube J, communicating at their outer ends with said annular space or spaces and each having one or more openings upon the side thereof within the tube J, and means of forcing plastic material through said tube J, substantially as and for the purposes described. 3rd. In a machine for working, shaping and combining plastic materials, one or more cylinders or receivers provided with means for forcing the material therefrom, in combination with the hub I, provided with one or more grooves or annular spaces, each communicating with one of said cylinders, the tube J, provided with one or more orifices *a<sub>2</sub>*, *b<sub>2</sub>* or *c<sub>2</sub>*, one or more tubes projecting into the interior of the tube J, and communicating with said groove or grooves and also with the interior of the tube J, by one or more openings in each of said tubes, and means for forcing plastic material through said tube J, substantially as and for the purposes described.

**No. 17,726. Waggon Rack and Top.**

(*Râtelier et soufflets de voiture.*)

Henry G. T. Glazebrook, Woodhouse, Ont., 22nd September, 1883; 5 years.

*Claim*.—1st. In combination with a waggon box, of a series of brackets D constructed with a shoulder E and provided with braces F, the same attached to a frame for a waggon-box rack, substantially as and for the purpose specified. 2nd. In a waggon rack, the combination of the frame pieces B B C C and brackets D, all being constructed and arranged, substantially as and for the purposes specified. 3rd. In a waggon rack, the combination of the frame pieces B B C C, brackets D, box A, hooks *c*, substantially as and for the purpose specified. 4th. In a waggon rack, the combination of the frame pieces B B C C, brackets D, box A, frame H and top I, all constructed and arranged, substantially as and for the purposes specified.

**No. 17,727. Duplex Engine.** (*Engin double.*)

Charles C. Worthington, Irvington, N. Y., U. S., 22nd September, 1883; 5 years.

*Claim*.—1st. The combination of two compound engines arranged to form the two sides of a duplex engine, one of said engines receiving its steam direct from the boiler and the other receiving its steam from the exhaust of the first, substantially as described. 2nd. The combination, with two compound engines arranged to form the two sides of a duplex engine, of a tank as arranged to receive the exhaust of one of said engines and supply the same to the other of said engines, substantially as described. 3rd. The combination, with two compound engines, one of which receives the steam direct from the boiler and the other of which receives the steam from the exhaust of the first, of means by which each engine actuates the inlet and outlet valves of the other, substantially as described.

**No. 17,728. Sleigh.** (*Traineau.*)

George E. Watson, Bannack, Montana, U.S., 22nd September, 1883; 5 years.

*Claim*.—1st. The runners *a*, and parts *b*, *c*, corresponding to the knees and beams of a sleigh, all constructed of one piece of sheet metal and said piece bent in the part *d* and provided with braces *e* and attached to bottom *f*, substantially as described. 2nd. The sheet metal runners *a* having flanges *k*, shoes *l*, and stiffeners *m*, substantially as described. 3rd. The combination of braces *j* with the sheet

metal runners *a*, sides *b*, and top *c*, and with the sheet metal bottom *f*, substantially as described. 4th. A one-piece seat, back and sides consisting of the back *a*, sides *e*, the part *h* and the strips *f* separated by slits *g* from said part *h*, in combination with the standards *b* and seat *z*, as shown and described. 5th. The combination of the false bottom *t* having cleats *u* *v* for the back seat and cleats *z*, and clips *y* for the front seat, with the sheet metal bottom *f*, side *p* and back *o* of the sleigh body, substantially as described. 6th. A sleigh, constructed substantially as shown and described, consisting of runners and body support formed of sheet metal and a body formed of sheet metal and provided with a false bottom having seats detachably secured thereto also of sheet metal or other material.

**No. 17,729. Spinning Machine.**

(*Machine à filer.*)

Timothy D. Brown, Oakland, Cal., U. S., 24th September, 1883; 5 years.

*Claim*.—1st. In a wool spinning machine, the elastic lattice having the bars E pivoted together as shown and carrying the spool or bobbin spindle, substantially in the manner described and for the purpose set forth. 2nd. In a spinning machine the foot pedal H, standard *f*, and rod *g* operating an elastic lattice which carries the spindle and spool to and from the operator, as shown and described. 3rd. In a spinning machine, the bow *b* attached to an elastic lattice and having the removable bearing *d* held in place by the pin *e*, substantially as described, and for the purpose set forth.

**No. 17,730. Hydraulic Motor.**

(*Moteur hydraulique.*)

Elijah B. Benham, Mystic, Conn., and Henry B. Richardson, Amherst, Mass., U. S., 24th September, 1883; 5 years.

*Claim*.—1st. In a piston motor, a series of cylinders provided with pistons adapted to have reciprocating motions therein in lines radiating from a common centre and in the same plane, ports and valves, devices and operating mechanism, substantially as described, for permitting water to enter and leave said cylinders, a ring surrounding and engaging with the ends of said pistons, a driving wheel adapted to be rotated in the plane of the reciprocating movement of the latter, and means, substantially as described, for engaging said ring with said driving wheel combined and operating, substantially as set forth. 2nd. A series of cylinders provided with pistons adapted to have reciprocating motions in the same plane and in lines radiating from a common center, induction and eduction valves, devices, port and operating mechanism, substantially as described, a driving wheel adapted to be rotated in the plane of the movement of said pistons and appliances, substantially as described, interposed between said pistons and said wheel, whereby the reciprocating movements of the former are converted into a rotary movement of the latter, combined and operating, substantially as set forth. 3rd. In combination with the wheel *c* provided with arm *w*, the ring H, the cylinder disk *b* provided with a series of cylinders *n* and pistons *r*, the valve *d* and lever *a*, substantially as set forth. 4th. The combination with the cylinder disk *b* provided with the valve seat *e* and ports *z*, of the valve *d* having the chambered semi-circular valve-face *m* and an eduction opening leading from the rear side of the latter, substantially as set forth. 5th. The combination, with a series of pistons *v*, of the ring H adapted to be oscillated by said pistons to cause its periphery to describe in succession curved inclines eccentric to the center of motion of said pistons, substantially as and for the purpose described.

**No. 17,731. Shoe Buttons.** (*Boutons à souliers.*)

Jefferson G. Wiggins, Auburn, N. Y., U. S., 24th September, 1883; 5 years.

*Claim*.—1st. As a new article of manufacture a button provided with an upper portion, of ordinary construction, and a wedge-shaped shank B, with a curved or rounded end *a* said shank being secured by its ends to the under side of the upper portion of the disk and adjacent edges, substantially as shown and for the purposes set forth. 2nd. A button provided with an upper portion or disk of ordinary construction, and a wedge-shaped shank having a rounded end *a* and attached to the opposite under edges of periphery of the disk by its terminals, substantially as shown and adapted to be attached to a garment by a loop, within which the shank slides for the purpose set forth.

**No. 17,732. Ribbon Holders and Reel.**

(*Porte ruban et Dévidoir.*)

John Mellette, Winamac, Ind., U. S., 24th September, 1883; 5 years.

*Claim*.—1st. The combination with a hollow ribbon roll D having holes in the sides of the disks F padded on the sides of the rolls and provided with the eyelets at the middle, and of the U-shaped wire A having the ends bent towards each other and passed into the said eyelets, substantially as shown and described. 2nd. A ribbon-holder constructed of two wire springs, prongs having their outer bent ends passed into the opposite ends of a tube, substantially as herein shown and described. 3rd. In a ribbon-holder the combination with spring prongs A having outer bent ends, of a tube B<sub>1</sub> into the ends of which the bent ends of the prongs are passed, which ends of the prongs are held in the tube in such a manner that they cannot fall out, substantially as shown and described. 4th. In a ribbon-holder the combination with the spring prongs A having bent rods, of the tube B<sub>1</sub> having one or more cavities or recesses for receiving the upturned bent ends of the prongs, substantially as herein shown and described. 5th. A ribbon roll made of a strip of thin material passed around the edges of two circular pieces and punched or cut out integral with the said strip, substantially as shown and described. 6th. A ribbon roll made of a strip of thin material punched or cut and integral with two circular pieces one on each longitudinal edge of the strip, the edges of the strip being provided with notches and the edges of the circular pieces being provided with projections fitting into the notches in the edges of the strip, substantially as shown and described.

**No. 17,733. Potato Digging Machine.***(Arrache-patates.)*

Mira Seldon, Stafford, (Assignee of Jabez T. Warren,) Le Roy, N. Y., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The endless metallic carrying-belt having upon each side a single line of flat thin links set on edge, with a square hole through one end of the link for rigidly attaching to the square part of the cross-bar, a round hole through the other end of the link for flexibly uniting with the said bar and the lateral offset on bend in the link for lapping the end of one link upon the end of the contiguous one and not throw the links laterally out of line, substantially as described, and for the purposes set forth. 2nd. The endless metallic carrying-belt having upon each side a single line of flat thin links set on edge, with a square hole through one end of the link for rigidly uniting with the cross-bar, a round hole through the other end of the link for flexibly uniting with the same bar, the lateral bend or offset for lapping the end of one link upon the end of the contiguous one, in combination with the rag or carrier driving-wheel, having a shoulder for supporting the carrier, and spurs or teeth upon the periphery, which enter between and impinge against the bars for imparting motion to the carrier, substantially as described.

**No. 17,734. Telephone Supports.***(Supports de téléphone.)*

George A. Wilkins, Philadelphia, Penn., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. A support for supporting a telephone receiver in combination with a switch, said support being adapted to operate the switch in such a manner as to close the battery circuit and open the bell circuit when moved into position to use the receiver, and to be automatically moved out of the way of the operator when released, and thereby open the battery circuit and close the bell circuit, substantially as set forth. 2nd. The standard D, having the arm J, carrying the receiver U, in combination with means for supporting said standard and with means for causing said arm to be automatically moved out of the way of the operator when the arm is released, substantially as specified. 3rd. The standard D, having the arm J, carrying the receiver U, and transmitter Q, in combination with means for supporting said standard, and with means for causing said arm to be automatically moved out of the way of the operator when the arm is released, substantially as set forth. 4th. In a telephone support, the standard D, provided with the studded collet G, in combination with the pedestal A, provided with the cam sleeve F, substantially as and for the purpose described. 5th. In a telephone support, the disk M, in combination with the button 15, armatures h h', screws 14, 17, standard D, proper conducting wires, and means for raising and depressing disk to close and open the circuits, substantially as set forth. 6th. In a telephone support, the arm J, in combination with the rotary standard D and receiver U, the receiver being mounted on said arm, substantially as set forth. 7th. In a telephone support, the arm J, provided with the sleeve L, in combination with the rotary standard D, and receiver U, substantially as and for the purpose specified. 8th. In a telephone support, the auxiliary arm N, carrying the transmitter Q, in combination with the arm J, carrying the receiver U, and with the standard D, substantially as set forth. 9th. In a telephone support, the carrier R, provided with the screw h, in combination with the sleeve S, provided with the screw i, clamp T, sleeve L, and arm J, substantially as described. 10th. In a telephone support, the arm J carrying the receiver U, and provided with the joint K, in combination with the standard D, substantially as and for the purpose set forth. 11th. In a telephone support, an extensible swinging arm carrying a receiver, in combination with means for supporting said arm and moving it out of the way of the operator automatically when released after using the receiver, substantially as set forth. 12th. In a telephone support, an extensible swinging arm carrying a receiver, and provided with an auxiliary swinging arm carrying a transmitter, in combination with means for supporting said arms and moving them out of the way automatically when released after using the receiver or transmitter, substantially as set forth. 13th. In a telephone support, the transmitter Q, rendered adjustable on the swinging arm N, by the screw g and slide P, substantially as set forth. 14th. In a telephone support, the slide I, provided with the screw W, in combination with the sleeve L, arms J N and transmitter Q, substantially as set forth. 15th. A support for supporting a telephone receiver and transmitter, in combination with a switch, said support being adapted to operate the switch, to close the battery circuit when moved into position to use the receiver and transmitter, and to open the battery circuit, close the bell circuit and be automatically moved out of the way of the operator when released after using the receiver or transmitter, substantially as specified. 16th. A telephone support having an arm carrying a receiver, and an auxiliary arm carrying a transmitter, in combination with a switch which is operated by the support and with means for supporting said arms and rendering the receiver and transmitter adjustable thereon, substantially as set forth. 17th. In a telephone support, a rotating standard provided with an arm or arms carrying a receiver and a transmitter, in combination with a switch adapted to close the battery circuit when said arm is moved to bring the same into a position to use the receiver, and open said circuit and close the bell circuit when said arm is moved out of the way of the operator after using the receiver, substantially as specified. 18th. In a telephone support, the combination of the following instrumentalities, to wit: An arm for adjustably supporting a receiver, an arm for adjustably supporting a transmitter, a rotating standard for supporting said arm or arms, a switch, a receiver, a transmitter, proper conducting wires, and a battery, substantially as set forth. 19th. In combination with the arm of a telephone support and a receiver, a holder having a slide or support adapted to be moved longitudinally on said arm, and a part or clamp T adapted to receive and hold the receiver, substantially as specified. 20th. In a telephonic apparatus, substantially such as described, a switch or switches operated by the vertical movements of the standard by which the receiver or transmitter is supported, substantially as set forth. 21st. In a telephonic apparatus, substantially such as described, the armatures h h', screws 14, 17, button 15, and wires 22, 24

25, 20, 21, in combination with the disk M, supporting standard D, and means for giving said standard vertical movements to close and open the circuits, substantially as specified. 22nd. In a telephonic apparatus, substantially such as described, a standard carrying a receiver or a transmitter, or both, in combination with means for rotating or partially rotating said standard to move the receiver or transmitter out of the way of the operator after using the same, with means for raising and depressing the standard to close and open the circuits, and with means for adjusting the standard in reference to its pedestal or support, substantially as described. 23rd. In a telephonic apparatus substantially such as described, the hard rubber disk M, in combination with the standard D, springs h h', button 15, screws 14, 17, proper conducting wires, and means for moving said disk to open and close the circuits, substantially as set forth. 24th. The sleeve F, provided with the cams X, and having its lower part 26 enlarged to fit over and form a cap for the pedestal A, to prevent the entrance of dust and other foreign substances to the interior of the pedestals, substantially as shown. 25th. In a telephone support, the following instrumentalities, to wit: A pedestal, a hollow standard, a receiver, a transmitter, an arm for carrying the receiver, an arm for carrying the transmitter, a battery, a switch or switches, means for rotating or partially rotating the standard and giving its vertical movements to close and open the circuits, means for moving the receiver or transmitter out of the way of the operator after using the same, a battery, a bell and proper conducting wires for connecting the battery, switch or switches, bell, receiver and transmitter, all combined and arranged to operate substantially as set forth.

**No. 17,735. Wagon Brakes. (Freins à voiture.)**

Abraham W. Shue, Fishersville, Virginia, U. S., 24th September, 1883; 5 years.

*Claim.*—The forward axle c, the reach F secured thereto and the brake G secured upon the reach, in combination with the hind axle b, the wheels D thereon, the bounds f secured to the hind axle, the band e binding the forward ends, of the bounds beside the reach and the broad staples H fastened to the hounds, over the brake, substantially as specified, whereby the reach and brake are permitted longitudinal motion relative to the hounds hind axle and wheels yet the brake is firmly held so its duty of braking the hind wheels when they advance against the brake in going down hill, as specified.

**No. 17,736. Middlings Purifier.***(Epurateur des gruaux.)*

George T. Smith, Jackson, Mich., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The combination with the bolt cloth H of the shaker of a middlings purifier, of the moving granules-carrier B grooved on its upper surface and means to impart motion thereto, substantially as and for the purposes described. 2nd. In a machine as described, the combination with the bolt-cloth of a shaker, of devices by which the bolt-cloth of the shaker is kept clean by the action of the granules of middlings after passing through the cloth and in contact therewith, substantially as described.

**No. 17,737. Hay Tedder Teeth.***(Dents de faneuse à foin.)*

John Mudgett and Geo. A. Mudgett, South Tunbridge, Vt., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The combination in a tedder-tooth, of the arm or handle, and the cranked tines pivoted thereto, the volute spring D, mounted on the front of the arm or handle at its upper part, and the connecting-rod, arranged substantially parallel with the arm and having its one end connected with the crank on the tines and its other end adjustably connected with the volute spring, as shown, whereby the tension of the said spring may be regulated by means of a nut on the said rod, and all the parts arranged to operate, as set forth. 2nd. The combination with the arm, the pivoted tines and the volute spring, of the connecting-rod C, provided with a bowed spring-like extremity e, arranged to operate, substantially as set forth. 3rd. The combination with the arm, the pivoted tines, the volute spring and the connecting-rod, all provided and constructed substantially as shown, of the shield over the spring, as and for the purposes set forth.

**No. 17,738. Springs for Buck Board Wagons. (Resorts pour voitures à planche.)**

John B. Preo and Chs. L. Preo, Greenwick, N. Y., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The combination, in the buckboard wagon, of the spring-boards A A, spring wood risers I I, supported thereby and having their ends inserted in lugs c c, attached to said boards, and the re-enforcing wood springs G G, centrally bolted to the under sides of the boards and having their ends adapted to play in loops b b, secured to said boards, substantially as described. 2nd. The combination, in a buckboard-wagon, of the spring-boards A A, mortised cross-pieces F F, re-enforcing wood springs G G, centrally bolted to the under sides of said boards, and adapted to pass through the mortises formed in the cross-pieces and through loops b b, attached to the boards, the spring risers I I, composed of wood and resting upon malleable iron blocks standing upon the spring-boards, with the ends of said risers inserted in lugs d d attached thereto, and the wagon-body H, centrally supported on the risers, substantially as described.

**No. 17,739. Machine for Molding and Shaping Confections. (Machine à mouler et à façonner les bonbons confits.)**

O. R. Chase, Boston, Mass., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. In a machine for molding and shaping plastic materials, the combination of the vertical receiving cylinder F, the screw-

piston V Vi, one or more horizontal screws C and one or more horizontal cylinders Fi, each provided with a discharge nozzle c, substantially as and for the purpose described. 2nd. The combination of the cylinder F, screw-piston V Vi, one or more horizontal screws G, one or more cylinders Fi, each provided with a nozzle c, the grooved boards D and means of moving said board beneath said nozzles in unison with the discharge of the material therefrom, substantially as and for the purpose described.

### No. 17,740. Spring Bed. (*Lit à ressort.*)

H. G. Duguay, Sherbrooke, Que., 21st September, 1883; 5 years.

*Claim.*—The iron frame as divided into two parts with the double hinges B B, with the springs c c, with the iron slats D D and the chains G, and the pillow E with the steps F all in combination, as and for the purpose described.

### No. 17,741. Fire and Waterproof Paint.

(*Peinture à l'épreuve du feu et de l'eau.*)

Albert Patterson, Manhattan, Kansas, U.S., 24th September, 1883; 5 years.

*Claim.*—As an improved paint, gas or coal tar rubber dissolved in carbon, bisulphid white pulverized resin, and extra-fine table salt, the whole compounded together in the proportions mentioned and well mixed together when brought to a boiling point, as specified.

### No. 17,742. Door Knob Roses.

(*Bouton en olive.*)

George Watkins, Detroit, Mich., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. In a rose centering and setting device, a spindle or shaft E fitting the hub B and having two adjustable conical thimbles adapted to fit corresponding recesses in the centre of the roses, each of said thimbles being provided with a device for holding them adjustably in place upon said spindle or shaft, substantially as and for the purposes specified. 2nd. In a rose centering and setting device, in combination with a spindle or shaft and two thimbles sleeved thereon, one of which is provided with a locking device and the other adjusted in place by means of a thumb nut, substantially as and for the purposes specified.

### No. 17,743. Show Cases for Dry Goods.

(*Vitrines.*)

Norman Robertson, Kincardine, Ont., 24th September, 1883; 5 years.

*Claim.*—A show case or stand containing shelves B, having cams C, hung to retain piece goods, or cloths placed upon the shelves for exhibition, as set forth.

### No. 17,744. Plow Clevis. (*Volée de charrue.*)

Andrew Patton, New Orleans, Louisiana, U. S., 24th September, 1883; 5 years.

*Claim.*—1st. An improved clevis attachment consisting of a hook or eye having an inclined and grooved extension to fit upon the head of a clevis, and a small clevis pivoted to said hook or eye, and adapted to engage with the notches of said clevis, substantially as shown and described. 2nd. The combination, with the notched clevis head, of the hook a having the inclined and grooved extension f and the small clevis c pivoted to said hook and engaging with the notches of the said clevis head, substantially as and for the purpose set forth.

### No. 17,745. Station Signals.

(*Signal de chemin de fer.*)

John S. Trites, Moncton, N. B., 24th September, 1883; 5 years.

*Claim.*—The combination of the chain roller or pulley E, and spindle F with the weight J, and hand-piece A which gives the balance motion, substantially as and for the purposes set forth.

### No. 17,746. Lever Lock Fence.

(*Clôture à leviers de sûreté.*)

Richard Russell, Jun., Hamilton, Ont., 24th September, 1883; 5 years.

*Claim.*—The combination of the wire hooked over the top of the second from top rail, then passing downwards and underneath the bottom rail, then upwards on the opposite side to the top rail where it is looped over the top rail and levered up so tightly to form a post as well as a lever lock fence, all substantially as and for the purposes set forth.

### No. 17,747. Apparatus for Electric Lighting on Railway Cars. (*Appareil à lumière électrique aux wagons.*)

William Stroudley, Brighton, and Edward J. Houghton, Peckham, Eng., 24th September, 1883; 5 years.

*Claim.*—1st. In apparatus for generating electricity from motive power applied in different directions, the employment of distinct sets of commutator brushes or rubbers arranged upon swinging carriers, in combination with a swing arm E which is brought into position to bring the one or the other set of brushes into contact with the commutator, substantially as and for the purpose described and illustrated in figures 1 and 2 of the drawings. 2nd. In apparatus for generating electricity from motive power applied in different directions, the employment of a governor acted upon from the revolving armature so as to bring one or other of distinct sets of commutator brushes or rubbers into contact with the commutator to supply the current always in the proper direction, in which ever direction the motive power may be applied, substantially as described

and illustrated in figure 1 of the drawings. 3rd. In apparatus for generating electric currents, the employment of a governor deriving its motion from the revolving armature and operating contact makers in such manner that when a certain speed is attained, the field magnets are first excited and then the circuit to the batteries is completed, substantially as described with reference to the drawings. 4th. In apparatus for generating electric currents, the combination of a governor driven from the armature shaft with a lever which is retained in position to break the circuits for then generation of the current until the machine has obtained a given speed or force, but which when this is attained completes the said circuit, substantially as described with reference to figure 1 of the drawings. 5th. In apparatus for lighting trains or vessels by electricity, arranging the circuits so that whilst one set of accumulators is being stored another set is giving out its current to the lamps and also to the exciting field of the dynamo machine, substantially as described with reference to the drawings. 6th. With machines for generating electric currents used for storing secondary batteries, the combination of a galvanometer so arranged that the battery circuits can be broken when the currents from the machine and from the batteries are equal or nearly so, substantially as described. 7th. In apparatus for lighting trains or vessels, the combination with the machine for generating electric currents of sets of circuits to and from different sets of accumulators or secondary batteries, and of a commutator or switch A capable of being operated to connect the machine and the circuit of consumption with the sets of cells alternately, so that the said sets of cells can be alternately stored and discharged, substantially as described and illustrated by the diagram figure 4 of the drawings. 8th. In dynamo machines for giving an electric current upon trains, vehicles or vessels arranging the commutator to be shifted round through a portion of a revolution so as to alter the point of collection as necessitated by the alteration in the direction of the motion of the train, vehicle or vessel, substantially as described with reference to figures 5 and 6 of the drawings.

### No. 17,748. Milk Pail Strainers.

(*Couloirs aux seaux à lait.*)

William H. Lynch, Danville, Que., 24th September, 1883; 5 years.

*Claim.*—1st. The combination of the strainer pan H, receiving-funnel K and intermediate saucer M, substantially as set forth for the purpose described. 2nd. The saucer M in combination with funnel K, having exterior wall L and pan H telescoping therewith to retain the strainer-cloth, as set forth. 3rd. The pan H having a discharge tube I located eccentrically in the bottom, the strainer-cloth J stretched over the open pan H and held by the vertical wall L of funnel K, and a saucer M interposed between the strainer-cloth and the mouth of the funnel, and combined as set forth. 4th. The combination of the pail A, provided with a close cover B having an inlet eccentrically located in the cover, and the straining-pan H having an eccentrically located outlet I in the bottom and provided with a strainer-cloth J, the funnel K and saucer M, as set forth, whereby the strainer can be adjusted either inward or outward from the pail, as described. 5th. The saucer M, provided with perforations N, in combination with funnel K, pan H and strainer J, as and for the purpose set forth.

### No. 17,749. Butter Tubs. (*Tinettes.*)

William H. Lynch, Danville, Que., 24th September, 1883; 5 years.

*Claim.*—As an improved article of manufacture, a tub, pail or tinnet having a circumferential groove cut into the ends of the staves at the open end and a packet D inserted in the groove to project above the ends of the staves so that when a cover E is pressed down and held by strips G leakage will be prevented and external air excluded to preserve the contents.

### No. 17,750. Feed Water Backs for Boilers.

(*Tuyaux de ré-alimentation aux bouilloires.*)

Augustus K. Young, Stillwater, Minnesota, U. S., 24th September, 1883; 5 years.

*Claim.*—1st. combination with a steam boiler water pipes arranged across the rear end thereof within the smoke arch and connected with the mud drum, whereby feed water may be conveyed in a zig zag course from a point above said boiler downward to said drum, substantially as and for the purpose specified. 2nd. In combination with the boiler A and with the feed water pipes D arranged horizontally across the rear end of the same, the steam pipes F intersecting said pipes D at the bends d and connecting the same with the steam space of said boiler, substantially as and for the purpose shown.

### No. 17,751. Croquet Wicket.

(*Cerceaux de croquet.*)

Henry J. England, Fall Church, Vir., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. A wicket for ball-games having two or more prongs at each of its extremities for the purpose set forth. 2nd. A wicket constructed of two or more wires twisted together and having prongs formed at their extremities, substantially as and for the purpose described. 3rd. A wicket constructed of wires twisted together and having prongs formed at their extremities, so that two prongs at each end of the wicket will be on a line at right angles with the line of position of the wicket, substantially as set forth. 4th. A wicket formed of two or more wires twisted or braided upon each other, the outer ends being bent to form two or more prongs, substantially as and for the purpose set forth.

### No. 17,752. Clinometer for setting out the slope of Rock Embankment. (*Clinomètre.*)

George H. Massy, Montreal, Que., 24th September, 1883; 5 years.

*Claim.*—1st. The combination of the index plate B, having the lines a b a c and b b, graduated and arranged as described, with a long-

tudinal sight C and movable index arm H provided with a cross sight I I at right angles to the sight C, the whole constructed, arranged and operated, substantially as described. 2nd. The combination of the index plate R, having the lines *a b a c* and *b d* graduated as described, with the movable index arm H provided with a cross sight I I, the whole constructed, arranged and operating, substantially as described.

### No. 17,753. Lasts and Blocks for making Boots. (*Formes et billots de botterie.*)

Robert Clerke and Patrick Condon, St. John, N. B., 24th September 1883; 5 years.

*Claim.*—1st. The combination of the button *b* and pivot *p* with the common last *l* and block *b*, substantially and for the purpose set forth. 2nd. The combination of the stud *S*, with a groove or slot in a common last and block, substantially and for the purpose set forth. 3rd. The combination of the button *b* and pivot *f* and the stud *s*, moving in a groove as aforesaid, with a common last and block, substantially and for the purpose set forth. 4th. The combination in a common last and block, either with or without the button *b* and pivot *f* of the stud *S*, in the block moving in a groove therefor in the last *l*, substantially and for the purpose set forth. 5th. The combination in a common last and block, either with or without the stud and groove *S*, of the button *b* and the pivot *p* in the last *l*, with the block *b*, substantially and for the purpose set forth.

### No. 17,754. Whirligig. (*Tournoiuet.*)

Broda M. Peterson, Lawrence Iverson and Peter L. Schan, Billings Bridge, Ont., 24th September, 1883; 5 years.

*Claim.*—The whirligig described, consisting of the platform B hung by rods F from a wheel having hub D, arms E, ribbon pieces F, braces G, and hub H, revolving around post A, and the awning L spread upon rods F, extending from the top of post A, to the ends of arms E, as set forth.

### No. 17,755. Harness. (*Harnais.*)

P. McFadden, Philadelphia, Pa., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The bridge B, having lateral flanges or wings *b* *b*, and side walls *c* *c*, with openings *e* *e*, and end walls *c* *c*, substantially as shown and described. 2nd. The bridge B, having lateral flanges *c* *c*, with openings *e* *e*, for the passage of the back strap, and end walls *c* *c*, with openings for the bearing hook and crupper loop, substantially as shown and described. 3rd. The combination with the bridge B, having openings in its side walls for the passage of the back strap C, of the anti-friction roller *f*, substantially as shown and described. 4th. The combination with the bridge B, having openings in its end walls, of the bearing hook and crupper loop secured thereto, substantially as shown and described. 5th. The combination with saddle A, back-strap C, and roller *f*, of the bridge B, having end walls *c* *c*, in which are secured the crupper loop and bearing hook and having also the lateral plates *b* *b*, and openings *e* *e*, substantially as described.

### No. 17,756. Harness Terrets. (*Porte-guides.*)

P. McFadden, Philadelphia, Pa., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. A terret having an open base for the passage of a sliding back-band, a rein-opening transverse of and above said open base, and a central projecting threaded boss or screw for insertion in a saddle-plate or burr, substantially as shown and described. 2nd. A terret comprising a base A, with central projecting screw on its under side, a female-threaded boss on its under side, and a ring C, with screw *c*, fitting the female screw in the base, substantially as shown and described.

### No. 17,757. Electrical Visual Indicator.

(*Indicateur visuel électrique.*)

James U. Mackenzie, New York, N. Y., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. In an electrical visual indicator, the combination with two or more escapement racks worked by pallets vibrated by one electro-magnet of character wheels operated and controlled directly by such escapement racks, substantially as set forth. 2nd. In an electrical visual indicator, the combination with two or more vertically sliding escapement racks controlled by pallets vibrated by one electro magnet, of a cog-rack carried by such escapement-rack, a character wheel, and a pinion engaging the cog-rack and twining the character wheel, substantially as set forth. 3rd. In an electrical visual indicator, the combination with two or more escapement racks controlled by a pallet vibrated by one electro magnet, of a character wheel for each escapement rack and means independent, of the character wheel, for locking such escapement rack directly at any point of its movement, substantially as set forth. 4th. In an electrical visual indicator, the combination with an escapement controlled by electro magnet, of a device for locking such escapement after it has come to rest, such locking device having a retarded movement, substantially as set forth. 5th. In an electrical visual indicator, the combination with an escapement rack controlled by a pallet vibrated electro magnetically, of a locking device engaging such rack directly and having a retarded movement, substantially as set forth. 6th. In an electrical visual indicator, the combination with an escapement rack controlled by a pallet vibrated electro magnetically, and having a set of locking teeth, of a locking hook forced into the teeth of the rack by a weight having a retarded movement, and a locking device for the weight released by the drop of the escapement rack, substantially as set forth. 7th. In an electrical visual indicator, the combination with an electro magnetic escapement having locking teeth, of a locking hook, a pivoted segment forcing such hook into the teeth of the escapement rack, and a fan for retarding the movement of the segment, substantially as set forth. 8th. In an electrical visual in-

dicator, the combination with a vertically sliding escapement rack controlled by a pallet vibrated electro magnetically, and having a set of locking teeth, of a pivoted hook forced into such teeth when the rack has finished its movement locking such rack and raising it off of the pallet by a pivotal movement of the hook continued after such hook strikes the locking teeth, substantially as set forth. 9th. In an electrical visual indicator, the combination with an escapement rack controlled by a pallet vibrated electro magnetically and having a set of locking teeth, of a pivoted locking hook, a weight keeping such hook normally out of engagement with the locking teeth of the rack, and a weight having a retarded movement, such latter weight being released by the movement of the escapement rack and forcing said locking hook into the teeth of the rack, substantially as set forth. 10th. In an electrical visual indicator, the combination with an escapement rack of a locking hook withdrawn normally, a weighted segment forcing such hook into action, a fan for retarding the movement of the segment and a pivoted hooked lever locking the segment and raised by the rack, the dropping of such rack releasing the lever and unlocking the segment, substantially as set forth. 11th. In an electrical visual indicator, the combination with two or more escapement racks, of character wheels operated and controlled directly by such racks, vibrating pallets controlling the racks and operated by one electro magnet, means for supporting the second and succeeding racks out of operative connection with the pallets and means for locking each rack directly at the completion of its movement and raising it off of the pallet and releasing at the same time the next succeeding escapement rack, substantially as set forth. 12th. In an electrical visual indicator, the combination with two escapement racks controlled by pallets vibrated electro magnetically of a rock shaft provided with a locking hook and a supporting hook thrown in opposite directions by the movement of the shaft and acting directly upon the racks, the locking hook being held normally out of action and the supporting hook normally in action and a part having a retarded movement for twining such shaft and throwing the locking hook into action and the supporting hook out of action, such part being released by the movement of the first of the two escapement racks, substantially as set forth. 13th. In an electrical visual indicator, the combination with two escapement racks, each having locking teeth and one (or each) having a supporting pin or projection, such racks being controlled by pallets vibrated electro magnetically, of a weighted rock shaft provided with oppositely moving locking hook and supporting hook, a weighted segment for twining such shaft against its normal tendency, a fan retarding the movement of such segment and a locking device released by the movement of the first rack for holding such segment, substantially as set forth. 14th. In an electrical visual indicator, the combination with the escapement racks, vibrating pallets, and locking devices of the rock shaft and the arms for raising the racks, substantially as set forth. 15th. In an electrical visual indicator, the combination with the escapement racks, the vibrating pallets, the weighted segments and the locking devices, of the rock shaft having wings and arms for raising such segments and racks in succession, substantially as set forth. 16th. The combination in an electrically operated visual indicator, of means for indicating any one of a number of visual signals and a means indicating a fixed visual signal, substantially as set forth. 17th. The combination with an electrically operated visual indicator indicating any one of a number of visual signals, of a drop or drops indicating a fixed visual signal and released by the action of the indicator mechanism, substantially as set forth. 18th. The combination with an electrical visual indicator, of a drop or drops released by the action of such indicator, and a restoring device out of the indicator mechanism, substantially as set forth. 19th. In an electrical visual indicator, the combination with an electro magnetic escapement or escapements, of a pivoted drop, means for locking said drop in a raised position, and means for releasing the drop operated by the locking device of an escapement, substantially as set forth. 20th. In an electrical visual indicator, the combination with an electro magnetic escapement or escapements, of a pivoted drop having an arm projecting within the indicator case, a pivoted lever for moving such arm and a projection from a moving part of the indicator restoring device for operating such pivoted lever, substantially as set forth. 21st. In an electrical visual indicator, the combination with an electro magnetic escapement or escapements, the locking supporting and releasing devices and the character wheels, of a pivoted drop and a restoring device resetting both the indicator mechanism and the drop simultaneously and an adjustable connection between the drop and the restoring device for giving the parts the desired relation, substantially as set forth.

### No. 17,758. Air Blast Attachment.

(*Appareil soufflant à pression.*)

Elihu Thomson, New Britain, Conn., U. S., 24th September, 1883; 5 years.

*Claim.*—1st. The combination, with the commutator of air-jets or directors applied thereto, as and for the purpose described, and air-blast devices mounted on the armature shaft and connected with said jets. 2nd. The combination, with suitable air-ducts or jets arranged to direct a blast of air upon the commutator, of rotary air-blast apparatus mounted on the shaft carrying said commutator. 3rd. The combination, with air jets directed upon the commutator for a dynamo electric machine, of a box or casing and wings or vanes fitted therein, said box or said wings being stationary as may be desired while the movable portion is mounted on the armature-shaft and air ducts or conduits connecting the casing with the air jets. 4th. The combination, with the armature shaft, of one or more vanes or wings mounted in any suitable manner so as to be capable of radial motion, a casing within which said wings revolve and with whose interior surface they are held in engagement by centrifugal action and air jets directed upon the commutator and connected with said casing. 5th. The combination, with the air jets directed upon the commutator, of air blast apparatus giving impulses or puffs simultaneously with the passage of the commutator divisions past the brushes. 6th. The combination with the commutator of air jets directed upon the same and blast mechanism operating in time with the commutator and having blast spaces equal in number to the jets, and wings or vanes equal in number to the division lines of the commutator. 7th. The combination with the jets directed upon the

commutator, of rotary blast mechanism loose on the armature shaft. 8th. The combination with the commutator of laterally adjustable air jets. 9th. The combination with the commutator circumferentially adjustable air jets. 10th. The combination with the casing for the blast mechanism of air jets supported therefrom and directed upon the commutator and means for adjusting said casing circumferentially. 11th. The combination with the air jets directed upon the commutator of a section of pipes of insulating material between said jets and the air blast mechanism. 12th. The combination with the air jets directed upon the commutator, of a coupling joint of insulating material connecting said jet with the air supply pipe or duct. 13th. The combination with the commutator of insulated air jets or pipes. 14th. The combination in a dynamo electric machine, of casing B supported from the bearing for the armature shaft vanes W W<sub>1</sub> W<sub>2</sub> mounted in slots in a carrier connected to the shaft and air jets J connected with the casing. 15th. The combination in a dynamo electric machine, of casing B, wings or vanes of hard rubber and air jets connected with the casing and directed upon the commutator. 16th. The combination in a dynamo electric machine, of casing B, pipes J<sub>1</sub> carrying the air jets and set screws V. 17th. The combination with a dynamo electric machine of the barrel D connected with the armature shaft by slot and spline, wings W, etc., a casing for the same and air jets directed upon the commutator. 18th. The combination with the commutator, of casing B, pipes J<sub>1</sub> and support P having a recess communicating with the air blast chamber and the ducts carrying pipes J<sub>1</sub>. 19th. The combination in a dynamo electric machine, of the air jets directed upon the commutator, the casing B, the outlet and inlet pipes arranged at opposite extremities of the enlarged air space and the screen or gauze over the inlet pipe.

### No. 17,759. Balanced Slide Valve.

(*Soupape à tiroir balancé.*)

John C. Knecht, Sigel, Ill., U.S., 24th September, 1883; 5 years.

*Claim.*—The combination, in a balanced slide valve, of the reciprocating valve H, having the rectangular recess B through its center and the packing glands C, constructed as described, one of which is provided on its central underside with a circular groove to receive the valve rod, with the packing between the glands and valve and the rectangular cover adapted to be secured to the valve seat in the valve chest over said valve, substantially as specified.

### No. 17,760. Corset. (*Corset.*)

J. W. and B. P. Canniff, Winnipeg, Man., 25th September, 1883; 5 years.

*Claim.*—1st. In a corset, the combination, with the main body of extension at the back arranged to cover and support the upper part of the back and shoulder blades of the wearer, substantially as specified. 2nd. In a corset, the combination of the extensions B B and braces b b with the main body of the corset A, substantially as described. 3rd. A corset steel having a central slot extending to within a short distance of its ends, substantially as and for the purpose described. 4th. In a corset, the combination of the back steels C C, having slotted centres C<sub>1</sub> C<sub>1</sub>, eyelet c c overlapping, the edges of said slots with the body A, substantially as and for the purpose specified. 5th. In combination with ribs or stays of a corset and the material of the body, the clips D provided with spikes d d d arranged to clinch behind said ribs and over the material, substantially as described.

### No. 17,761. Running Gear for Vehicles.

(*Treins de voitures.*)

Michael Barry, Valparaiso, Ind., U. S., 25th September, 1883; 5 years.

*Claim.*—1st. In a running gear for vehicles, the combination of the swinging hinges F, provided with a large central opening f, and small side opening J, and constructed of one piece of metal, with the axle A, the brackets E, the spring G, and the transverse belts or pins, for connecting the brackets and springs with the hangers, as and for the purpose set forth. 2nd. The combination of the front supporting frame H, consisting of intersecting, transverse, and longitudinal bars, with the fifth wheel plates I, king bolt M, the clips i, and spring G, as and for the purpose set forth. 3rd. The combination of the pair of transverse front springs G, with the pair of longitudinal rear springs N, and the curved transverse spring O, all constructed and relatively arranged as set forth, for the purpose set forth.

### No. 17,762. Button Fastening Implement.

(*Appareil à affermir les boutons.*)

Mahlon M. Zellers, Kent, Ohio, and Alexander G. Wilkins, Meadville, Penn., U.S., 25th September, 1883; 5 years.

*Claim.*—1st. In a button fastening implement, two lever arms, mounted on a single pivot, one arm provided with a yielding resistance bolt C, and the other provided with an anvil G, for the purpose set forth. 2nd. In a button fastening implement the arm A B, provided at its end with the barrel B<sub>1</sub>, and spring bolt C, in combination with the arm A<sub>1</sub> B, provided with an anvil and a yielding spring centering device for holding the fastener, substantially as and for the purpose described. 3rd. In a button fastening implement, the spring bolt C, provided with the vertical slot l, in combination with the upsetting tool provided with the bracket d, and secured to the arm B, substantially as specified. 4th. In a button fastening machine, the bolt C, having its face provided with the bracket d, and secured to the arm B, substantially as specified. 4th. In a button fastening machine, the bolt C having its face provided with the tit or stud k to clamp the button eye, substantially as set forth. 5th. In a button fastening implement, the bolt C provided with a groove i in its face to receive the wire of the button eye, substantially as described. 6th. In a button fastening implement the tit or stud k on the face of the bolt C, in combination with the groove i for holding rigidly the button eye, substantially as set forth. 7th. In a button fastening implement the spring plate E, provided

with the upwardly projecting tit or stud p adapted to register with the tit or stud k, for the purpose set forth. 8th. In a button fastening implement, the spring presser foot or plate E, cut away at p<sub>1</sub>, and provided with the socket m, substantially as and for the purpose set forth. 9th. In a button fastening implement, the head A<sub>1</sub>, provided with diagonal guides or ways, in combination with the head sections I I, provided with flaring legs F, and spring g, substantially as and for the purpose described. 10th. In a button fastening implement, the bolt C having the recess in its front to allow the button to set in the fastening point, as specified. 11th. In a button setting device, the combination of two hand levers on a common pivot L, a barrel B<sub>1</sub>, containing a slotted spring bolt c, adapted to sustain the material against the thrust of the fastening pin, an upsetting tool secured to one of the arms, an intermediate spring plate E provided with a socket to receive the button, an anvil G and separable spring clamping, and centering devices, all constructed, arranged, and operated, as and for the purpose set forth.

### No. 17,763. Speed Indicator.

(*Indicateur de vitesse.*)

Nelson P. Bowsher, South Bend Ind., U.S., 25th September, 1883; 5 years.

*Claim.*—1st. The described indicator, consisting of a cylindrical case, having a dial plate and index fingers upon one head, a vertical shaft set centrally in bearings, in said shell the ball governor and sleeve of said shaft, and intermediate connections, as described, between the sleeve and the index-finger and the bell sounding mechanism adapted to be operated by the revolution of the balls to the side of the governor, the said balls being arranged upon the shaft, so as to move when spread in the widest part of the case, all substantially as described. 2nd. In combination, with the sleeve 4 of the governor, the rack bar, and the arm connecting said rack bar to the sleeve, the spring for holding down said arm and bar, and the pinion upon the shaft of the index-finger, all substantially as described. 4rd. The combination of an indicator or dial finger, connected by suitable intermediate mechanism with a revolving shaft, and adapted to show upon the dial face the speed of said shaft, with a sounder adapted to be operated by centrifugally moving arms adapted to come in contact with the sounding mechanism when exceeding certain limits of motion, substantially as described. 4th. In combination with the shaft, the arms and balls, the arms 16, 17, connected as described, to the hammer which strikes the bell whereby any variation from a given rate is made to give an alarm, substantially as described. 5th. The combination, of the shaft 15 the arms 16 and 17, and the wing upon the ball, to pass between them, whereby any variation of speed, either of increase or diminution will cause the alarm to be sounded, substantially as described. 6th. In a dial speed-indicator, the combination of a dial-plate, an index-hand, a governor connected to such index-hand by mechanism, substantially as described and a sounder or alarm operated by such governor when its speed is increased or diminished to a certain extent. 7th. In combination with a dial speed-indicator, the rack bar 6, the pinion 7, the spring 10, and the adjustable pressure roller, and the spring or arm 12, substantially as described.

### No. 17,764. Can Soldering Machine.

(*Soudoir de boites.*)

Jacob G. Jones, Baltimore, Maryland, and Horace H. Thurber, New York, N. Y., U.S., 25th September, 1883; 5 years.

*Claim.*—1st. In a can soldering machine, the combination of a vertical shaft, a hub to turn freely on the shaft, a molten solder applying device, a smooth surfaced circular track, a frame having one end pivoted to the hub, and the other end to rest and slide on the circular track, and a rotary can holder mounted in the frame, said can holder consisting of disks which clamp the opposite end of a can, as set forth. 2nd. In a can soldering machine, the combination of a vertical shaft, a hub to turn freely on the shaft, a gear wheel made fast to the same shaft, a smooth surfaced circular track, a frame having one end pivoted to the hub and the other to rest and slide in the circular track, a rotary can holder mounted in the frame, and mechanism connecting the gear wheel on the vertical shaft with the can holder, to cause the latter to rotate, as set forth.

### No. 17,765. Gas Burner. (*Bec à gaz.*)

William Bell, New York, N. Y., U. S., 25th September, 1883; 5 years.

*Claim.*—1st. A gas burner having a downwardly extending burner tip or downwardly extending burner tips, a flue or passage for conveying air downwardly to the burner tip or tips, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage serving to convey away the products of combustion, the last named flue or passage being arranged inwards of the burner tip or tips and extended a considerable distance below the same and all the parts being so combined and organized that a flame will be caused to burn around the exterior of the lower portion of the last named flue or passage, the waste product of combustion will be caused to pass around the end thereof, and into its interior, and in passing away will heat the down coming air and gas before their arrival at the burner tip or tips, substantially as specified. 2nd. In a gas burner, the combination with downwardly extending burner tip or tips, of a flue or passage serving to convey air downwardly to the same, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage located within the air flue or passage inwards, of the gas conduit or conduits extending considerably below the burner tip or tips and serving to convey products of combustion upwards, substantially as specified. 3rd. In a gas burner, the combination of a downwardly extending burner tip or downwardly extending tips, a flue or passage which serves to convey air downwardly to the burner tip or tips and which leads not only to the outer side of the burner tip or tips, but also to the space surrounded by the burner tip or tips, so as to supply air to the inner as well as the outer side of a flame emanating from the burner tip or tips, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage which serves to convey away the

products of combustion and which is arranged inwards of the burner tip or tips, and extends a considerable distance below the same, substantially as specified. 4th. In a gas burner, the combination of a downwardly extending burner tip, or downwardly extending burner tips, a gas conduit or conduits for conveying gas downwardly, a number of conduits extending laterally from the latter to the burner tip or tips, a flue or passage which serves to convey air downwardly to the outside of the burner tips, and a flue or passage arranged inward of the burner tip or tips, extending below the same and serving to convey away the products of combustion, substantially as specified. 5th. In a gas burner, the combination with a downwardly extending burner tip or tips, of an annular flue or passage serving to convey air downwardly to the same conduits for conveying air downwardly to the burner tip or tips, made integral with the inner wall of the air flue or passage, and a flue or passage extending through the air flue or passage between the gas conduits to a point considerably below the burner tip or tips, and serving to convey the products of combustion upwards, substantially as specified. 6th. In a gas burner, the combination with a downwardly extending burner tip or tips, of a flue or passage serving to convey air downwardly to the same, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage extending within the air flue or passage serving to convey the products of combustion upwards and provided at the lower end with an extension made of incandescent material, terminating at a point considerably below the burner tip or tips, and around which the products of combustion pass from the outer side into said flue or passage, substantially as specified. 7th. In a gas burner the combination with a downwardly extending burner tip or tips, of a flue or passage serving to convey air downwardly to the same, an annular gas chamber conduits extending from the latter, for conveying gas downwardly to the burner tip or tips, a flue or passage located within said air flue or passage inwards of the gas conduits, and extending through the gas chamber to a point considerably below the burner tip or tips for conveying the products of combustion upwards, substantially as specified. 8th. In a gas burner, the combination with a downwardly extending burner tip or tips, of a flue or passage serving to convey air downwardly to the burner tip or tips, a flue or passage arranged inwards of the burner tip or tips extending below the same and serving to convey away the products of combustion, an annular gas chamber, a conduit or conduits extending downwardly from the same through the flue or passage for conveying away the products of combustion and communicating with the burner tip or tips, substantially as specified. 9th. The combination of the burner tip T, the annular gas chamber A, the flue or passage E, extending upwards through said gas chamber, the gas conduits C, the shell F, containing the air flue or passage, and provided with the inlet openings c and the cylinder shield I surrounding the shell F, all substantially as described, 10th. The combination of the burner tip T, the annular gas chamber A, the flue or passage E, extending upwards through said gas chamber, the gas conduits C, the shell F, containing the air flue or passage and provided with inlet openings c and the adjustable flange I, provided with corresponding openings and carrying the shield T, all substantially as described.

### No. 17,766. Mechanism for Operating Railroad Car Brakes. (*Appareil aux freins des chars.*)

John G. Schiller and Josh W. Smith, Youngstown, Ohio, U. S., 25th September, 1883; 5 years.

*Claim.*—In a railroad car provided with ordinary brakes and rods, the lever G centrally pivoted on the brake rod H and constructed at one end to the chain J leading to the brake spindle K and at the other end to the chain F which is fastened to the arm D, in combination with the draw-head A and arm B connected to the same lever as the arm D and so situated that the compression of the draw-head will cause the arm D to rock and through it apply the brakes, substantially as and for the purpose specified.

### No. 17,767. Telephone. (*Telephone.*)

J. B. Cleaver, Brooklyn, N. Y., U. S., 25th September, 1883; 5 years.

*Claim.*—1st. A mechanical telephone system in which the line wire has its extremities respectively attached to thin trussed diaphragms in the receiving and delivering telephones and a prolongation of one of its ends removably attached to an adjustably-moving switch board, a universal phone and tightener, the said switch board-tightener in conjunction with automatically tightening and sustaining line holders and trussed diaphragms, arranged to hold the line wire in uniform or nearly uniform tension. 2nd. In a mechanical telephone, a concave shield piece or reflector surrounding and covering the inner face of the diaphragm at a short distance therefrom so as to collect, concentrate and reflect forward, the sound waves as they are shown off from the diaphragm. 3rd. A flexible tube, with ear piece attached to its outer end and its inner end attached to the concave shield piece or reflector surrounding the inner face of the diaphragm, and the said inner end of the said flexible tube placed in direct and open communication with the semi-conical chamber formed between the diaphragm and the conical shield or reflector, and thereby made a direct and open ended conduit for all sound waves delivered from the diaphragm to the ear piece at the outer end of the flexible tube. 4th. A sound wave absorbent or deadener, attached to the inner face of the base board or back of the telephone box or case, the said absorbent or deadener to consist of a piece of textile, or felted goods, tanned or untanned skin of any animal, india-rubber, or any similarly yielding and sound absorbing material. 5th. In a mechanical telephone, a series of distributing or trussing wires crossing the outer face of the diaphragm plate near the diaphragm aperture thereof, and their inner ends connected together so as to form a continuous trussing frame across the outer face of the diaphragm and the line wire of the telephone attached to the said trussing wires so as to draw them against the outer face of the diaphragm, thereby securing great strength for the anchorage of the line wire and extreme thinness and sensitiveness in the diaphragm. 6th. In a mechanical telephone, a call attachment consisting of a ratchet wheel placed within the telephone box and operated by a shaft or spindle which

Protrudes through the side of the box and has its bearings therein, the outer end of the ratchet wheel shaft provided with a crank or other means for turning it, and a spring pawl placed within the telephone case and connected with the ratchet so as to sound thereon as the ratchet is rotated. 7th. In a mechanical telephone, a call attachment consisting of a ratchet wheel and spring pawl acting thereon and the serrations of the ratchet wheel made in one or more numerical series with intervening blank spaces on the periphery of the said ratchet wheel so that by using on one wheel, a certain number of serrations in one or more series, with corresponding and suitably arranged intervening blank spaces, any desired number may be sounded or called to the central office. 8th. A silken funnel, or funnel-shaped series of sicken cords connecting the diaphragm truss with the line wire.

### No. 17,768. Photographic Camera Box.

(*Chambre noire photographique.*)

E. & H. T. Anthony & Co., New York, N. Y., U. S., 25th September, 1883; 5 years.

*Claim.*—1st. A photographic camera-box capable of adjustment while attached to its support, to dispose its greater axis either in a horizontal or vertical plane, substantially as and for the purpose set forth. 2nd. A photographic camera-box made with a vertically arranged circular support adapted to permit the vertical rotation of the camera, substantially as shown and described. 3rd. The combination with a camera-box, of a circular support G or its equivalent, substantially as described to facilitate the rotation and levelling of the camera box, as set forth. 4th. The combination with the camera, its slide and its circular supports, of a clamping device to hold and lock the camera in any desired position, substantially as shown and described. 5th. In a photographic camera, the clamp H having the central open recess and the curved end grooves, the binding screw A, slide B and curved or circular support G attached to the camera box, substantially as and for the purpose set forth. 6th. The circular support G, constructed in the form of a hoop and adapted for attachment to the camera box, substantially as described. 7th. The combination of the circular support G with the corners *f g h* of the camera box, substantially as shown and described.

### No. 17,769. Ploughs. (*Charrues.*)

Charles Hanson and Frederick Applequist, Rock Island, Ill., U. S., 25th September, 1883; 5 years.

*Claim.*—In a plow, the landside plate A<sub>3</sub> formed in one piece with the frog A<sub>2</sub> and the standard B, in combination with the mould-board share A<sub>1</sub> A<sub>1</sub> and recessed point P, formed to interlock the share and landside, substantially as and for the purpose set forth. 2nd. In a plow, the combination with the landside thereof, having the slotted plate R of the vibrating base plate *f* and screw bolt R<sub>1</sub>, substantially as described and for the purpose set forth. 3rd. The combination with a plow beam and a wheel colter, swiveled to a laterally adjustable standard plate, of the angle plate K having slots *p q*, the travelling screw I and a fastening device for holding the angle plate adjusted to the plow beam, substantially as described and for the purpose set forth. 4th. The plow beam E having at its rear end a transverse slot *i*, in combination with the slotted standard extension C, formed with bearing plate D and adjustably connected to the standard B, and the plate F having the slotted extension *l*, substantially as and for the purpose set forth. 6th. The colter H swiveled to the arm *n*, in combination with the vertically adjustable angle plate K and screw rod I, constructed to operate, substantially as and for the purpose described.

### No. 17,770. Self Closing Gate.

(*Barrière automate.*)

Filmen G. Goff and Richard D. Brecknell, Springfield, Ohio, U. S., 25th September, 1883; 5 years.

*Claim.*—1st. The combination in a gate, of the hinge plate B provided with the opening *a* and stops *f f*, the pivoted bar *b*, plate *c*, having hook *j*, and pintle rod *h*, substantially as described, and for the purposes set forth. 2nd. The combination in a gate, of wheel iron *s*, the four-armed plate D, having two of its arms bent downward, the cross bar D<sub>1</sub> and the rods *u* *ut* and *v* *vt*, substantially as described and for the purposes set forth. 3rd. The combination in a gate, of the slotted plate *k*, slotted bar *kt*, bolt *lt*, rod *h* and plate *m*, substantially as described and for the purposes set forth. 4th. In a gate, the plate B having stops *f f* and opening *a*, pivoted bar *b* and plate *c* having hooks *j*, in combination with the rod *h*, having arm *h* and end *e*, the slotted plate *k*, slotted bar *kt*, bolt *lt* and plate *m*, substantially as described and for the purposes set forth.

### No. 17,771. Vermin Trap. (*Souricidre.*)

Henry T. Windt, Toronto, Ont., 25th September, 1883; 5 years.

*Claim.*—1st. A casing A having a winged platform B within it and an opening leading into one of the wings of the said platform, in combination with the pivoted hooked support C, provided with a bait-hook E, substantially as and for the purpose specified. 2nd. The winged platform B pivoted within the casing A below the openings G and having the wing immediately below the said openings supported by the hooked support C, in combination with the winged platform I provided with the weight L, substantially as and for the purpose specified.

### No. 17,772. Electric Arc Lamps.

(*Lampes électriques.*)

Charles D. Jenny, Fort Wayne, Ind., U. S., 29th September, 1883; 5 years.

*Claim.*—1st. In electric arc lamp regulators and in combination, a solenoid whose core has an adjustable connection with one end of a pivoted lever and a weight and shunt helix at the other end of said lever, substantially as and for the purposes set forth. 2nd. In electric arc lamp regulators, the combination of a solenoid whose core has

an adjustable connection with one end of a pivoted lever, a weight and shunt helix at the other end of said lever and a carbon clutch, substantially as and for the purposes set forth. 3rd. In an automatic electric arc lamp regulator, the coarse wire helices H H, the fine wire helices A h with soft iron cores fixed in their centers, the pivoted lever L, the soft-iron U-magnets M, the soft-iron armature A, the balancing weight B, the clutch, the adjustable screw-stops t and l and the supporting frame combined and operating, substantially as described and set forth. 4th. In a roller clutch to be applied to the carbon or carbon-holder, in an automatic electric arc lamp regulator, a bent lever pivoted to the clutch collar by its shorter arm and to the lifting piece lever or other device of the regulator by the other or longer arm and to the roller at its angle or apex, substantially as described and set forth.

### No. 17,773. Lubricator. (*Graisseur.*)

Allen W. Swift, Elmira, N. Y., U. S., 29th September, 1883 : 5 years.

*Claim.*—1st. In a lubricator, the combination and arrangement with the lubricant reservoir, of a water-trap situated inside of said reservoir at the top of same, substantially as set forth. 2nd. The combination, with the lubricant cup, of a supporting arm connected to the top of the cup and provided with a supplemental lubricant reservoir, connected with the cup and tapped by the lubricant eduction channel, substantially as shown and set forth. 3rd. The combination with a lubricant cup, of a supplemental lubricant reservoir, applied to and communicating with the top of the cup and with an eduction pipe or channel, a water-inlet to the supplemental reservoir, and an observation-port on said reservoir in proximity to the water-inlet, as and for the purposes set forth. 4th. In a lubricator, the combination with the lubricant reservoir, of a steam-condenser arranged above the said reservoir, a water-trap situated inside of the reservoir and communicating with the condenser, the discharge opening of the trap arranged at the extreme upper portion of the lubricant reservoir, and an observing-port in front of the water-discharge, as set forth and shown. 5th. In a lubricator, the combination with the supporting arm "A," of the suspended lubricant-cup and its base and cap formed in one piece, substantially as shown and described. 6th. The supporting arm "A" provided with the cavity "C," nipple "D" and lubricant-duct a, the trap b formed on the upper portion of the cavity "C" and provided with the vent c and the transparent plate d secured in the arm "A" in front of the vent c in connection with the superimposed condensing chamber "E" and the pendent lubricant-cup "F," substantially as described and shown. 6th. In combination with the supporting-arm "A" provided with the screw-threaded nipple "D," the cup "F" formed in one piece with its base e, and cap f, and provided with the screw-threaded orifice g for the detachment of the cup to the supporting-arm, substantially as described and shown. 8th. In combination with the cup "F," the supporting arm "A" provided with the cavity "C" and with the transparent front d and eduction channel a, the condensing chamber "E" mounted on the arm "A" over the cavity "C," the steam pipe "K" connected to and terminating at the top of the chamber "E," the trap b located in the cavity "C" directly under the condenser and having the depression A and end discharge c, and the drip pipe t extended from the base of the condensing chamber to the depression h of the trap, all constructed and combined substantially in the manner described and shown. 9th. The combination of the cup "F" having the screw-threaded extension l provided with the orifice l and annular ridge m, the screw-threaded thimble "T" provided with the channel n, and the packing disk r having an extension of said channel, substantially as and for the purpose shown and set forth.

### No. 17,774. Egg and Fruit Carriers.

(*Boîtes de transport des œufs et des fruits.*)

Alexander G. Wilkins, Meadville, Penn., U. S., 29th September, 1883 : 5 years.

*Claim.*—1st. A tray divided into cells, two walls of each cell being inclined and parallel to each other, substantially as and for the purpose specified. 2nd. A tray divided into cells open at top and bottom and inclined at an angle to the plane of the tray, substantially as and for the purposes specified. 3rd. Two or more trays placed one above another and divided into cells open at top and bottom and inclined at an angle to the plane of the tray, substantially as and for the purposes specified. 4th. Two or more trays placed one above another and divided into cells open at top and bottom and inclined at an angle to the plane of the tray, the cells of one tray being inclined in an opposite direction from that in which the cells of the tray next below are inclined, substantially as and for the purposes specified. 5th. In a tray, the combination of the strips A provided with inclined slots a and cross-strips B having slots b, substantially as and for the purposes specified. 6th. In a tray, the combination of the strips A provided with inclined slots a and cross strips B having slots b, two of said cross strips lying together and forming a compound strip or partition, substantially as and for the purposes specified. 7th. A tray divided into inclined cells and provided at or near one edge with a flap or strip B1, substantially as and for the purposes specified. 8th. Two or more trays placed one above another and divided into cells open at top and bottom and inclined at an angle to the plane of the tray, each tray provided with a flap or strip B1, substantially as and for the purposes specified. 9th. In a tray, the combination of the strips A provided with inclined slots a and cross strips B and strip B1, substantially as and for the purposes specified. 10th. In a tray, the combination of the strips A provided with inclined slots a and strips B provided with slots b and strip B1 provided with slots, substantially as and for the purposes specified.

### No. 17,775. Button Fastener.

(*Machine à affermir les boutons.*)

Alexander G. Wilkins, Meadville, Penn., U. S., 29th September, 1883 : 5 years.

*Claim.*—The button fastening described consisting of the pin c provided with the head a and having a looped or curled point adapted to engage the eye of the button, in combination with a counter sunk washer D, all constructed and arranged, substantially as and for the purpose described.

### No. 17,776. Combined Trunk and Wardrobe. (*Garde-robe et malle combinés.*)

A. Dryfoos, New York, N. Y., U. S., 29th September, 1883 : 5 years.

*Claim.*—1st. The combination, with a trunk and its cover, of a frame hinged to the top of the back of the trunk, which frame fits within the upper part of the trunk, and boards hinged to the said frame and to the cover, substantially as shown and described and for the purpose set forth. 2nd. The combination, with a trunk and its cover, of a frame hinged to the top of the back of the trunk, which frame fits within the upper part, of the trunk boards hinged to the said frame and to the cover, and a removable center board to which doors are hinged, which center board is adapted to be held between the cover and the trunk when the cover is raised, substantially as shown and described and for the purpose set forth. 3rd. The combination, with a trunk and its cover, of a frame hinged to the top of the back of the trunk, which frame fits within the upper part of the trunk boards hinged to the said frame and to the cover, which boards form the sides of the wardrobe when the cover is raised, boards hinged to the frame and adapted to form the back of the wardrobe when the cover is raised and of a board provided with hinged doors adapted to be held between the trunk and the cover when the cover is raised, substantially as shown and described and for the purpose set forth. 4th. The combination with a trunk and its cover, of the frame B hinged to the trunk, the board C and hinged boards for forming the sides and back of a wardrobe when the cover is raised, substantially as shown and described and for the purpose set forth. 5th. The combination with a trunk and its cover, of the hinged frame B, the board C, the hinged boards D D1 E E1, the board G and the board H provided with the hinged doors J J, substantially as shown and described and for the purpose set forth. 6th. The combination with a trunk and its cover, of the hinged frame B, the boards D D1 and E E1, the latter provided with recesses or shoulders e, the board G adapted to slide in the recesses or shoulders e and provided with a flange G1, the board H and the doors J J, substantially as shown and described and for the purpose set forth. 7th. The combination with a trunk and its cover, of the hinged frame B, the folding boards D D1 E E1 hinged to the same, the staples K and the hooks L, substantially as shown and described and for the purpose set forth. 8th. The combination with a trunk and its cover, of the hinged frame B, the folding boards D D1 E E1 hinged to the frame B and of the folding brace M hinged to the side piece of the frame B and to the end of the trunk, substantially as shown and described and for the purpose set forth. 9th. The combination with a trunk and its cover, of the hinged boards D D1, the board H, the hinged doors J and the lock N held to the upper edge of the board D, substantially as shown and described and for the purpose set forth.

### No. 17,777. Lifters for Cooking Utensils.

(*Léviers des ustensiles de cuisine.*)

James B. Fitzpatrick, Wheeling, Ohio, U. S., 29th September, 1883 : 5 years.

*Claim.*—1st. The lifter consisting of two levers A jointed together like a pair of pinchers having flat plate jaws c projecting laterally at one side and a curved prong g near the joint projecting laterally at the other side, as set forth. 2nd. The lifter consisting of the jointed levers having flat plate grip jaws c projecting laterally, a curved prong g near the joint projecting in an opposite direction and a hook e at the extremity of one of the levers, as shown and described.

### No. 17,778. Improvements on Black Leaf Check Book. (*Agenda à feuille noire.*)

Alexander Gardner, Toronto, Ont., 29th September, 1883 : 5 years.

*Claim.*—A black leaf check book in which the paper is bound in a pad attached to a back of mill board or other stiff material made broader than the leaves it is attached to, in combination with a cover having longitudinal flanges found on one half of it into which the stiff back may be slipped, substantially as and for the purpose specified.

### No. 17,779. Manufacturing Half Stuff for Paper Making. (*La fabrication de la demi-pâte à papier.*)

C. Court, London, Eng., 29th September, 1883 : 5 years.

*Claim.*—I claim as my invention, the use and employment of fibrous vegetable materials operated and treated separately and afterwards combining those materials in the mode or manner, substantially as described, for the purpose of producing half stuff.

### No. 17,780. Carbureting Apparatus for Generating Gas. (*Appareil à carbure pour la fabrication du gaz.*)

Aaron W. Frail and A. W. Eames, Ashland, Mass., U. S., 29th September, 1883 : 5 years.

*Claim.*—1st. The combination of the bottom chamber A, and perforated cylinder E, therein, having a gas or air induction pipe in the axis thereof, and internal buckets I, provided with a series of openings j, with the removable pan B, having a central chamber C, an eduction pipe therefrom, and elevated hoods D, projecting from its bottom, substantially as and for the purpose described. 2nd. The combination, of the bottom chamber A, wire gauze cylinder E, having an axial induction pipe J, perforated buckets I, and perforated hoods D, with upper pan B, having an eduction pipe, and perforated hoods D, projecting upward from the bottom of said pan, all arranged substantially as shown and described.

### No. 17,781. Lubricator. (*Graisseur.*)

Charles W. Sherburne, Boston, Mass., U. S., 29th September 1883 : 5 years.

*Claim.*—1st. In a lubricator, the combination of two or more oil chambers, each of which is connected with a sight-feed and a separ-

ate hydrostatic column connected with each other, all substantially as and for the purposes described. 2nd. The sight or visible feed lubricator, having an oil supply cup separated internally into two chambers, and connected with a condensing chamber and adapted to lubricate two independent machines, all substantially as and for the purposes described. 3rd. In a lubricator, an oil supply cup divided by a partition into two chambers, each chamber being attached to or connected with a separate condensing chamber, substantially as and for the purposes set forth. 4th. In a lubricator, two sight or visible feed chambers connected with separate chambers, of a single oil supply cup, substantially as and for the purpose set forth. 5th. In a lubricator, the combination of two sight feed devices, two oil chambers connected therewith, and a separate hydrostatic column for each oil chamber, and suitable connecting pipes, and controlling valves, all substantially as and for the purposes described. 6th. In a lubricator, the combination of the chambers *a*, two sight feed devices, two condensers, one of which is connected directly with the boiler or steam dome, all substantially as and for the purposes described.

### No. 17,782. Bridge Girders and Beams.

(*Poutres d'un pont.*)

Thomas Barland, Eau Claire, Wis., U. S., 29th September, 1883: 5 years.

*Claim.*—1st. A beam or girder consisting of a series of sections of material capable of resisting compression and enforced at its lower part by tension rods, threaded through the compressive and screwed up or otherwise rigidly secured against the ends of the latter, the tension consisting of wire, rod, chain, rope or similar material. 2nd. A beam or girder consisting of a series of sections of material capable of resisting compressive strain, having its lower part enforced by tension members threaded through the compression material, or placed outside the same and secured rigidly at the end thereof, in combination with a stress, simple or compound. 3rd. A laminated beam consisting of the layers *A*, bolted together, or otherwise, secured transversely and provided with longitudinal grooves for the reception of the tension pieces *B*, the latter rigidly secured at the ends of the pieces *A*, all substantially as described and for the purpose set forth.

### No. 17,783. Plough. (*Charrue.*)

Benjamin S. Benson, Baltimore, Maryland, U. S., 29th September, 1883; 5 years.

*Claim.*—1st. In a plow, or supporting wheels mounted upon an axle susceptible of angular movement with reference to the line of draft, and adapted, in connection with a gauge-plate or rolling landside to, automatically steer the plow, substantially as and for the purposes set forth. 2nd. In a plow, a supporting wheel susceptible of angular movement with reference to the line of draft, in combination with a gauge-plate, or rolling landside, adapted to follow the contour of the previous furrow and actuate the wheel to steer the plow, as set forth. 3rd. In a plow, a gauge-plate, or rolling landside, connected with the axle of the supporting wheel, and adapted in connection therewith to steer the plow, as set forth, in combination with means for lifting said plate to clear obstructions, substantially as described. 4th. In combination with the plow, the supporting wheel *D*, susceptible of vertical adjustment and of angular movement with reference to the line of draft, in combination with the bar curved across the frame and carrying a gauge-plate or rolling landside and means for lifting the same and adjusting laterally, as set forth. 5th. In combination with the plow and frame, a series of vertically-adjustable supporting wheels, one or more of which are susceptible of angular movement with reference to the line of draft, and means, substantially as described, for determining such movement automatically with reference to the contour of previous furrow. 6th. In combination with the plow and frame, having supporting wheels, one or both of which is susceptible of an angular movement with reference to the line of

draft, the gauge-plate or roller *G* and swivelling wheel *N*, vertically and laterally adjustable with reference to the frame, as set forth. 7th. In a plow, a rolling colter mounted or hung upon a vertically-swivelling shaft, in combination with a steering arm so arranged as to automatically steer the plow. 8th. The wheel *J* in the previous furrow sustaining that side of the plow frame, in combination with the automatic steering bar *f*, and its connection with landside plate or roller running in the previous furrow. 9th. The wheel or unplowed ground and the wheel in the previous and rolling colter, its support and steering bar or lever, all connected together and automatically steered by landside plate or roller on the wall of the furrow. 10th. The plow beam having its front end bent first up and then down in combination with the vertical shaft *n* arranged in bearings in the beam and having a horizontal draft-arm and an arm at right angles to both the shaft *n*, and its draft-arm and provided with the wheel *N*, as and for the purpose described. 11th. The combination of the plow beam, the offsetting brackets *E*, *E*, the vertical tubes *F*, *G*, cross bar *H*, the screw-threaded wheel standards *F*, and *G*, the adjusting screw-rods *F* and *G*, the said standards and screw-rod being contained in the tubes *F* and *G*, as and for the purposes described. 12th. The combination with the adjusting rod *G*, of the crank *G*, pivoted detent *b*, locking projection *b*, the hand-hold *b*, and spring *b*, as and for the purpose described. 13th. The combination with the rear crank axes and the plow beam, of the two bars *f*, *f*, having a downwardly projecting arm *F*, bearing a horizontally rotating wheel, adapted to bear against the wall of the preceding furrow and made vertically adjustable, substantially as shown and described. 14th. The combination of the platform, the adjusting bar *U*, the lever *T*, the bars *f*, *f*, and the arm and wheel *F*, *G*, substantially as shown and described. 15th. The combination with the running wheel axle of the lever *Q*, bearing wheel *R*, and the push bar *S*, adapted to be projected into the earth to cause the draft of the team to throw the plow out of the ground, substantially as described. 16th. The combination with a plow beam, of a vertical rock shaft at its front end having at the top an arm in the line of draft, and at its bottom another arm at right angles to the first and carrying a supporting wheel as described.

### No. 17,784. Buggy Gearing. (*Treins de voitures.*)

Enoch Ziegler and Benjamin H. Ziegler, Berlin, Ont., 29th September, 1883; 5 years.

*Claim.*—The combination in a buggy gearing of side bars, head block, axles, spring bars, elliptical springs and the continuous metal bars *B*, secured to the side bars, forming hangers *B*, and braces at each end of side bars, braces *F*, between spring and axles, and steps *E*, substantially as set forth.

### No. 17,785. Fire Escape. (*Sauveteur d'incendie.*)

Charles E. Seaburg, Stonybrook, N. Y., U. S., 29th September, 1883; 5 years.

*Claim.*—1st. A fire escape, constructed substantially as shown and described, and consisting the shaft *A*, flexible ladder *B*, the guy-ropes *C*, the brace ropes *D*, and the hauling rope *G*, as set forth. 2nd. In a fire-escape, the combination with the shaft *A*, and flexible ladder *B*, of the guy-ropes *C*, and inclined brace ropes *D*, substantially as shown and described, whereby the said ladder can be held firm and steady, as set forth.

### No. 17,786. Car Coupler. (*Attelage de wagons.*)

John O'Connor, Toronto, Ont., 29th September, 1883; 5 years.

*Claim.*—1st. In a self-acting car-coupler, a coupling pin having a shoulder formed on it as specified, in combination with plate *B*, carried by the support *D* and having a hole *c* made through it, substantially as and for the purpose specified. 2nd. In a self-acting car-coupler, the plate *B* having a hole *b* made through it, in combination with a spring *G*, substantially as and for the purpose specified.



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

62. T. P. W. TATE and C. PAXTON, 2nd 5 years of No. 2888, from 25th day of November 1883. Improvements on a machine for attaching to or connecting with gang ploughs, 1st September, 1883.
63. J. DILDINE, 2nd 5 years of No. 9502, from 18th day of December, 1883. Improvements on adjustable sieves, 6th September, 1883.
64. L. ROYCE and S. SWEET, (administrators of John L. Royce, deceased,) 2nd 5 years of No. 9174 from 10th day of September, 1883. Improvements on harvesters, 6th September, 1883.
65. T. SAUNDERS and R. BAIN, 2nd 5 years of No. 9198, from 23rd September, 1883. Improvements on safes, 14th September, 1883.
66. THE ATLANTIC AND PACIFIC TELEPHONE CO., (assignees,) 2nd 5 years of No. 13586, from the 20th day of October, 1886. Improvements in speaking telephones, 15th September, 1883.
67. J. R. NEWELL and A. LUCASSE, 2nd 5 years of No. 9181 from the 23rd day of September, 1883. Improvements on tubular well pumps, 17th September, 1883.
68. J. S. PALMER, 2nd 5 years of No. 9275, from the 19th day of October, 1883. Improvements on combined box knob and shoe holder, 17th September, 1883.
69. THE GUELPH CARRIAGE GOODS CO., (assignees,) 2nd 5 years of No. 9207, from the 24th day of September, 1883. Improvements in the art and appliances for tempering steel and other materials, 18th September, 1883.
70. THE GUELPH CARRIAGE GOODS CO., (assignees,) 2nd and 3rd 5 years of No. 9227, from the 14th day of October, 1883. Improvements in tires and wheels, 18th September, 1883.
71. THE GUELPH CARRIAGE GOODS CO., (assignees,) 2nd 5 years of No. 9321, from the 5th day of November, 1883. Improvements on carriage jacks, 18th September, 1883.
72. THE GUELPH CARRIAGE GOODS CO., (assignees,) 2nd 5 years of No. 9459, from the 10th day of December, 1883. Improvements in springs, 18th September, 1883.
73. J. E. HICKS, (assignee,) 2nd and 3rd 5 years of No. 9187, from the 23rd day of September, 1883. Improvements on vessel for cooling milk, 20th September, 1883.
74. J. CARTER, 2nd 5 years of No. 9215, from the 3rd day of October, 1883. Machine for cleaning the boilers steam, 30th September, 1883.
75. E. DANFORD, 2nd and 3rd 5 years of No. 9278, from the 19th day of October, 1883. Improvements in railway car axles, 25th September, 1883.
76. A. PETERSON, 2nd and 3rd 5 years of No. 10337, from the 7th day of August, 1884. Improvements on bottle stoppers, 28th September, 1883.

THE

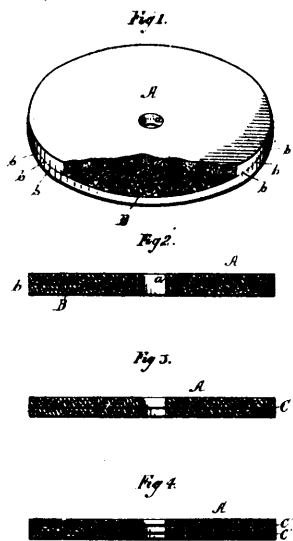
# CANADIAN PATENT OFFICE RECORD.

## ILLUSTRATIONS.

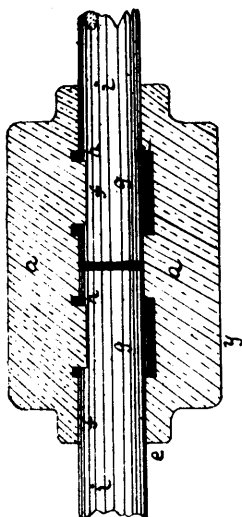
Vol. XI.

OCTOBER, 1883.

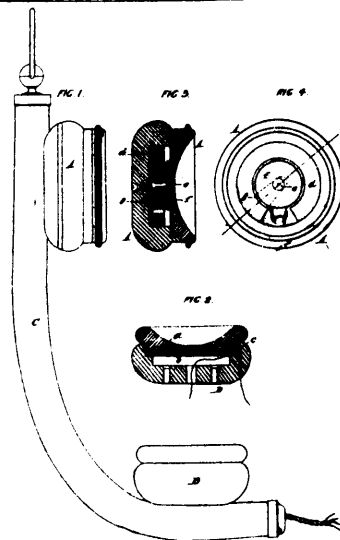
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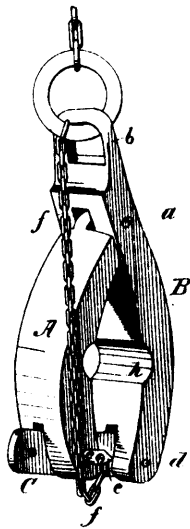
17555 Barnard et al's Emery or Corundum Wheels.



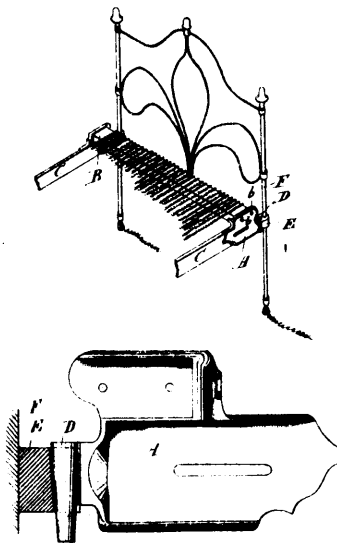
17556 Killip's Couplings for Shafting.



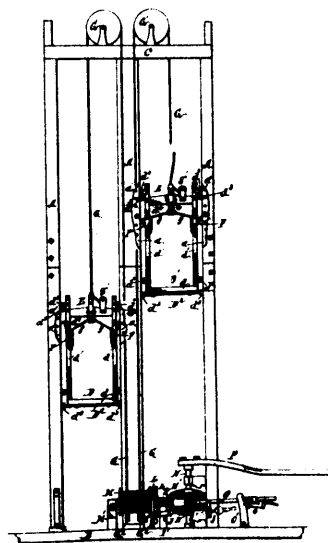
17557 Rose's Telephone.



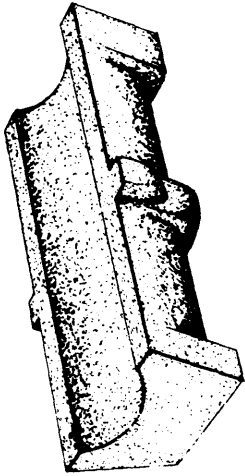
17558 Green's Pipe Grapple.



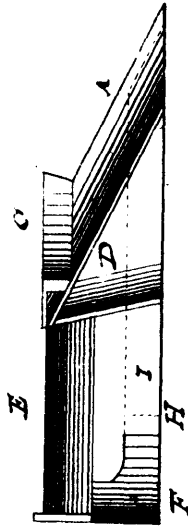
17559 Norman's Mattress and Spring Bed.



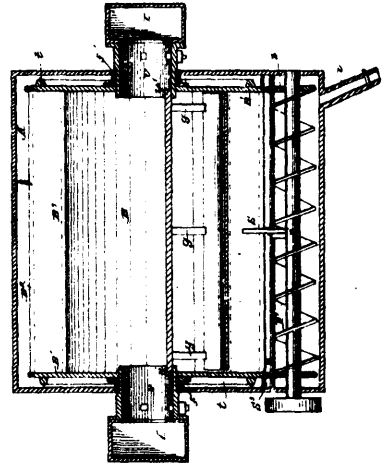
17560 Daso's Elevators.



17561 Traylor's Journal Boxes and Bearings.



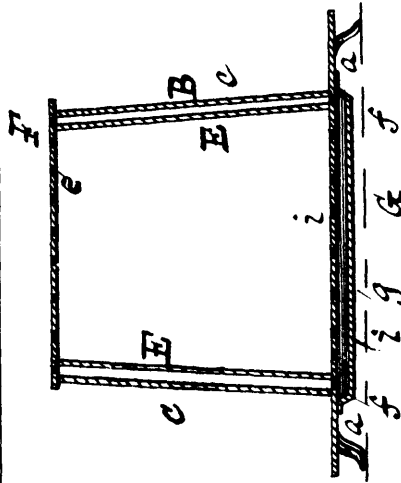
17562 Larchar's Snow Plow.



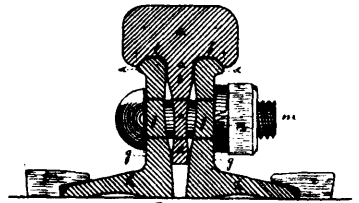
17563 Holt's Dust Collector.



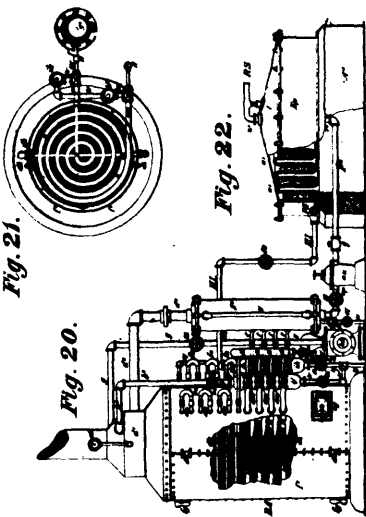
17564 White's Roofing Felt.



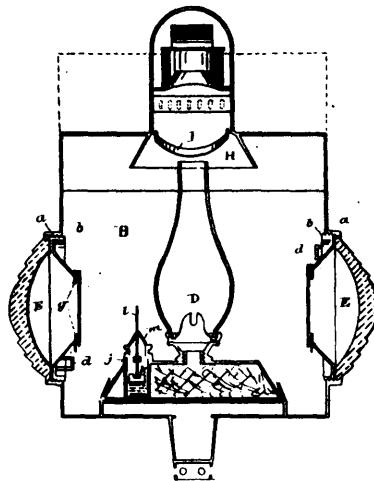
17566 Rembert's Fire Place.



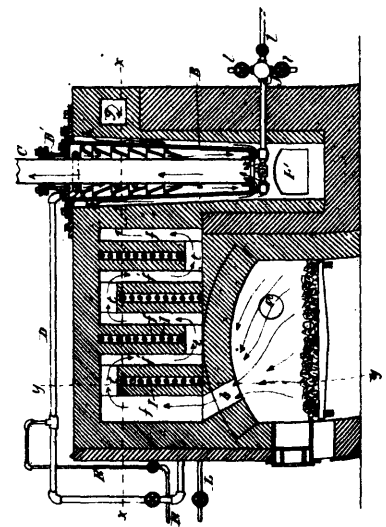
17567 Everson's Compound Railroad Rails.



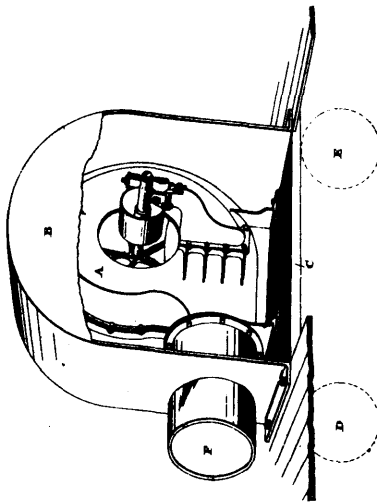
17568 Browne's Evaporator for Liquids.



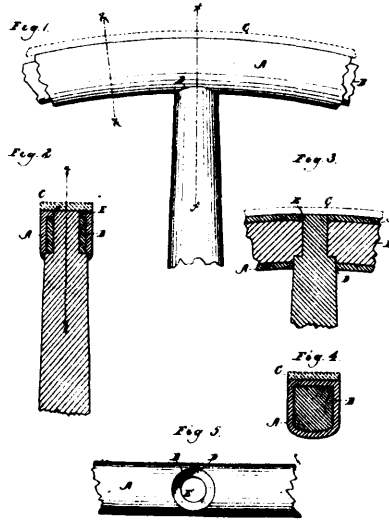
17569 Piper's Signal Lamp.



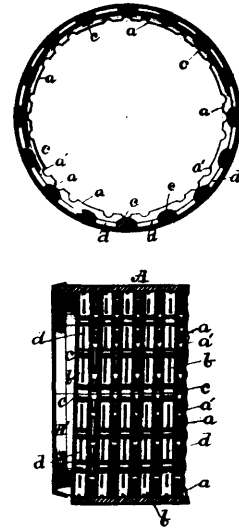
17570 Hayden's Gas and Vapor Generator.



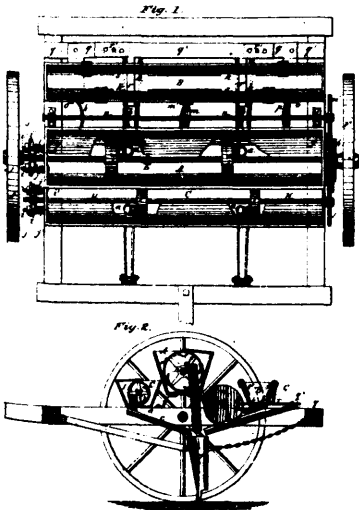
17571 Love's Threshing Machine.



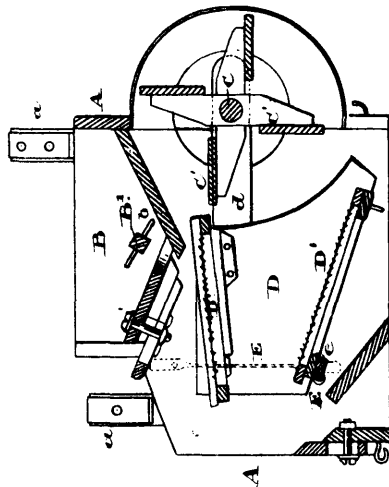
17572 Danford's Fellies.



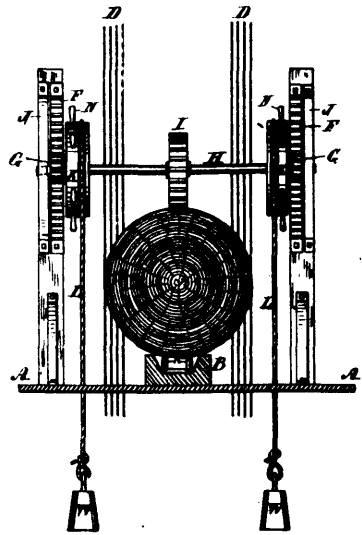
17573 Morgan's Cylinders for Grain Scurers.



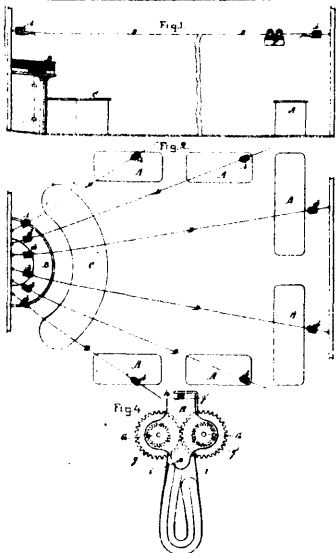
17577 Keith and Harger's Seed Drill and Fertilizer.



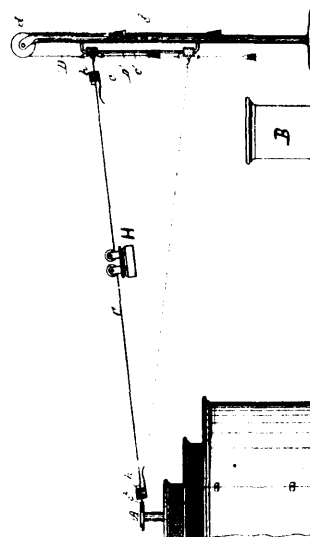
17578 Appleman's Seed Cleaners.



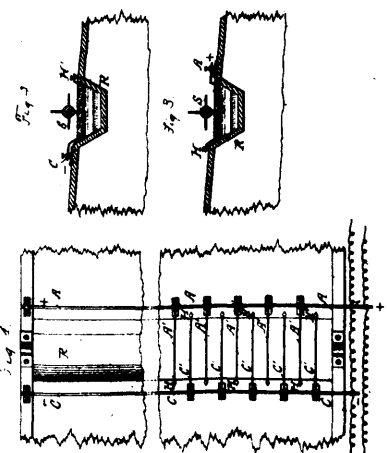
17579 Eddy's Saw Mill Log Holders.



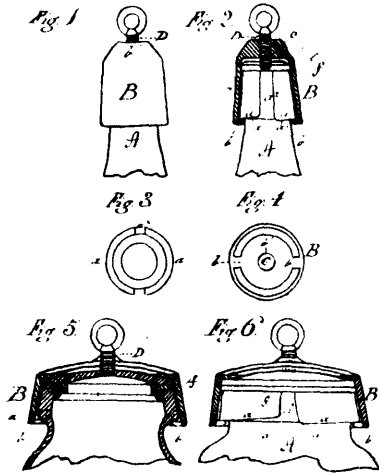
17580 Elliott and Clark's Store Service System.



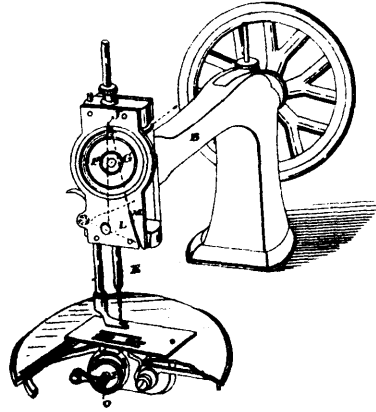
17581 Elliott and Clark's Cash and Parcel Conveyers.



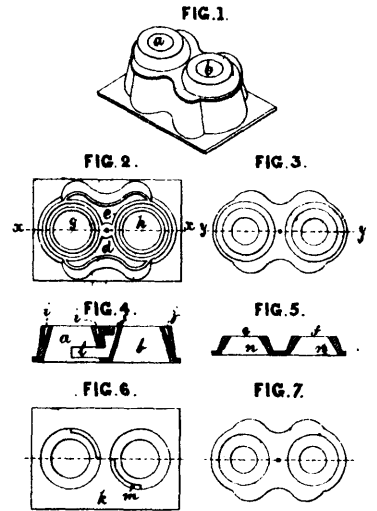
17582 Barker's Gold and Silver Extractor.



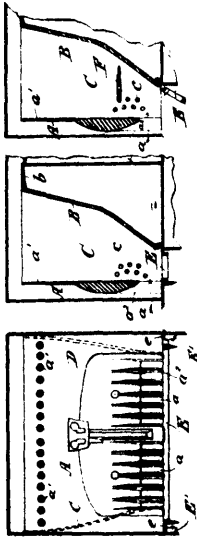
17583 Ducro's Bottle and Fruit Jars Stoppers.



17586 Author's Sewing Machines.



17587 Harrigan's Vacuum Exhaust Pipes.



17588 Whalen's Fire Box.

Fig 1.

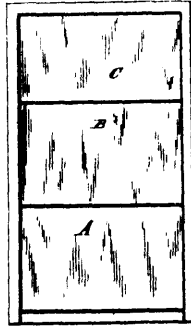
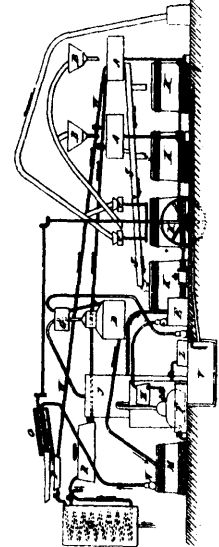
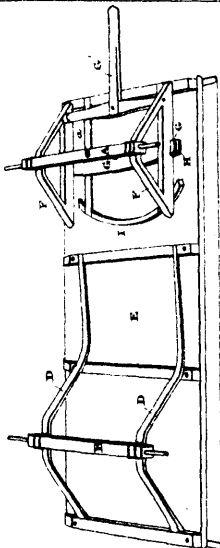


Fig 2.

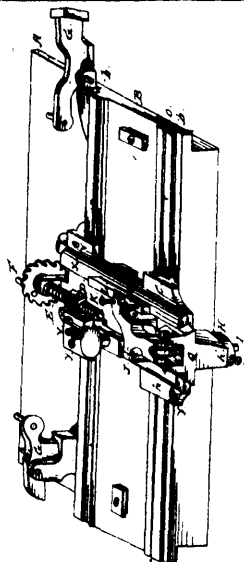
17589 Ward's Glass Roof.



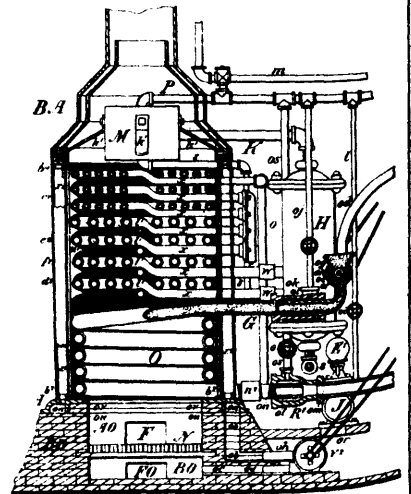
17590 Allen and Bradley's Process of Making Whisky



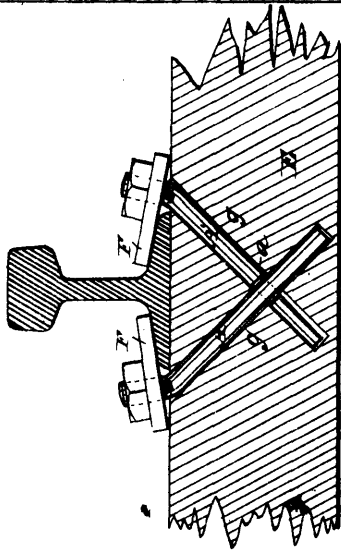
17591 Moses' Waggon.



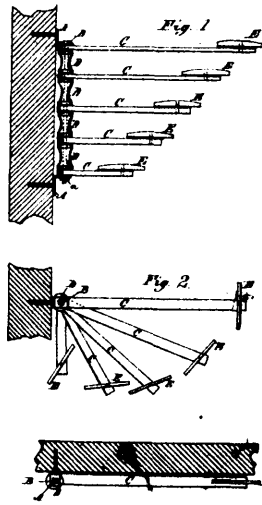
17592 Hoover's Mill Stone Dressing Machine.



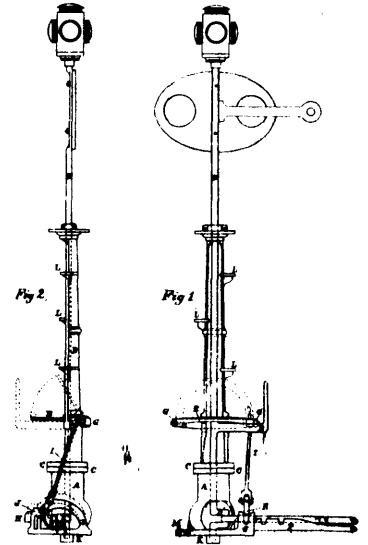
17593 Browne's Apparatus for Desulphurizing Ores.



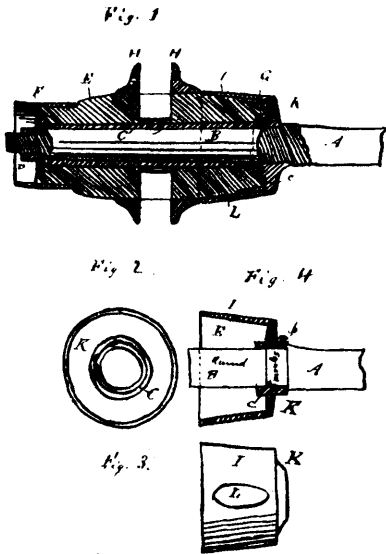
17594 Bush's Interlocking Bolts.



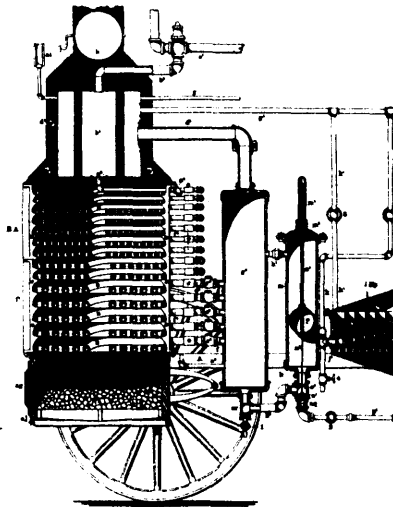
17595 Nelles' Coat Rack.



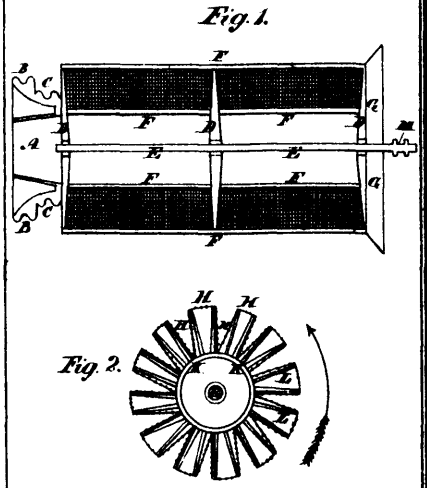
17596 Baker's Switch Stands.



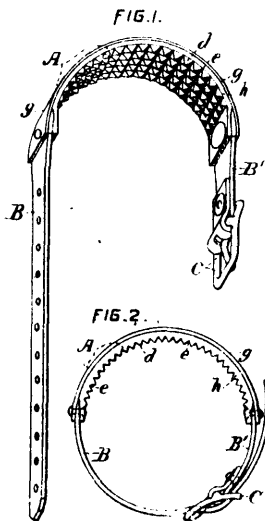
17597 Rolfe's Sand-Band for Vehicle Axles.



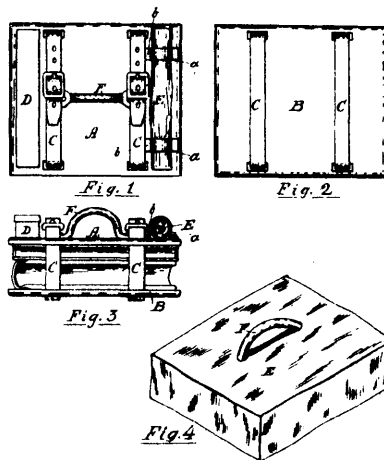
17598 Browne's Machinery for Syrup and Sugar Manufacture.



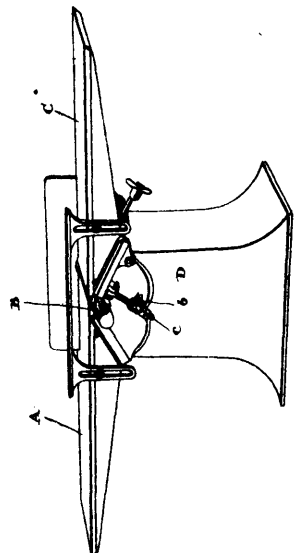
17599 Cadell's Revolving Screens.



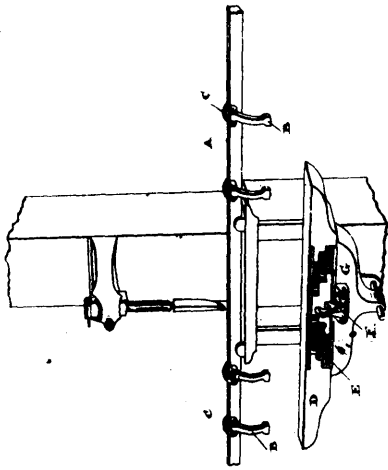
17600 Smith and Powell's Horse Tail Holder.



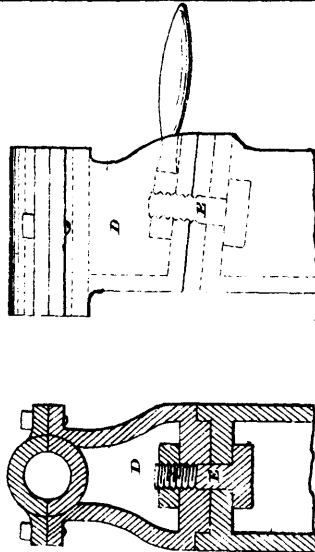
17601 Breton's Book Protectors.



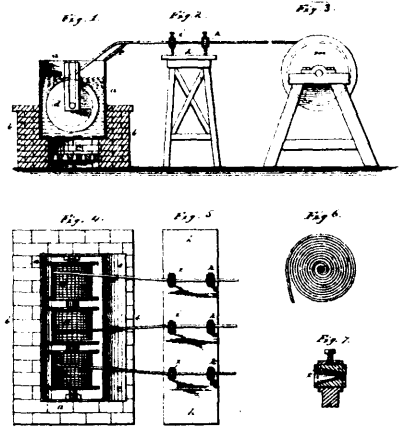
17602 Laidlaw's Buzz or Truing-up Planers.



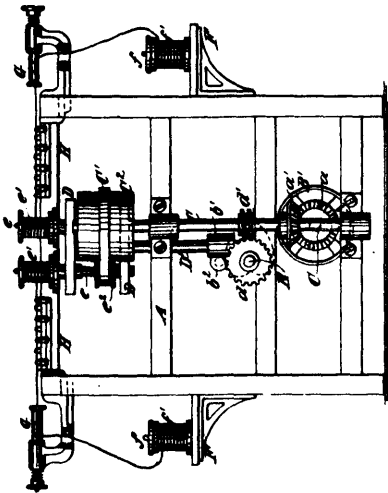
17604 Cant et al's Mortising Machine.



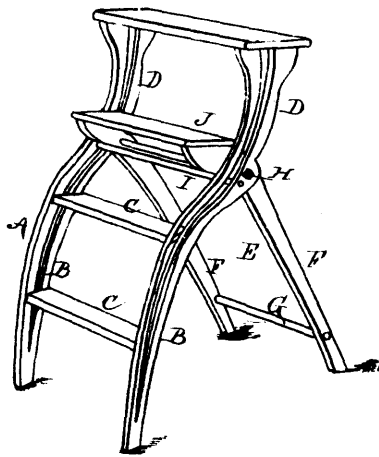
17605 Cant et al's Moulding Machine.



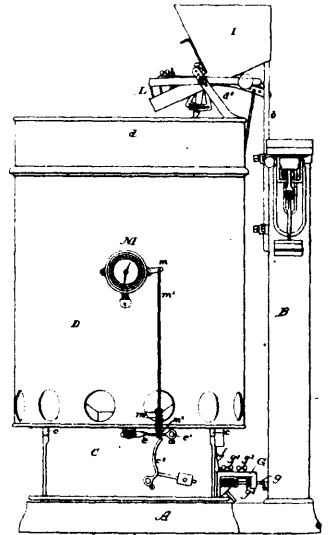
17606 Waring and Hyde's Insulating Wire Process.



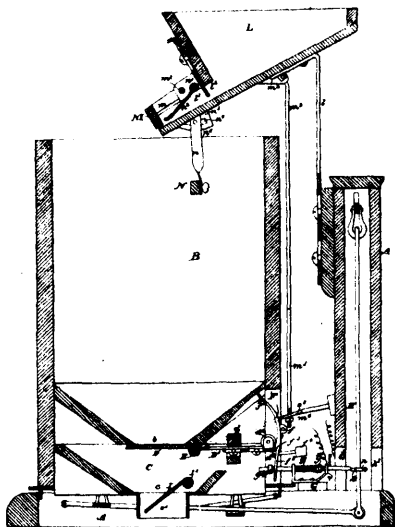
17608 Landfear's Silk and Thread Polishing Machine.



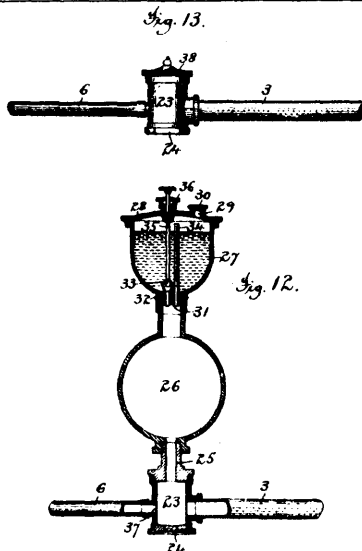
17609 Flint's Step Ladder.



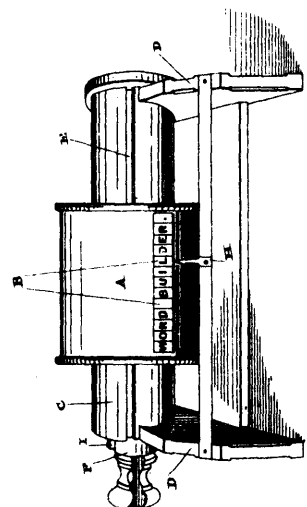
17610 Stevens' Weighing Machines.



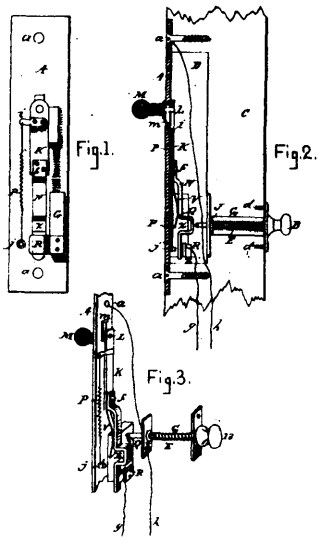
17611 Stevens' Weighing Apparatus.



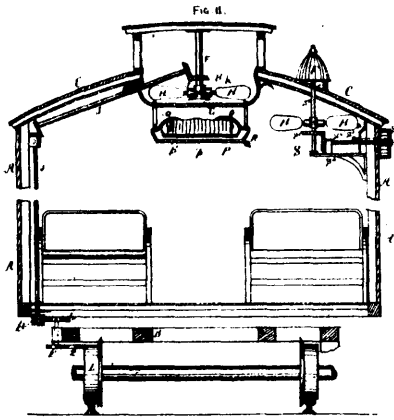
17612 Rosenfeld's Bathing Liquid Apparatus.



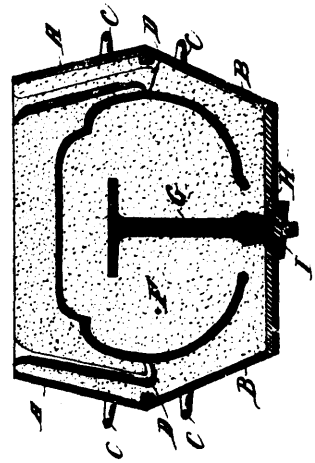
17613 Forrester's Educational Instrument.



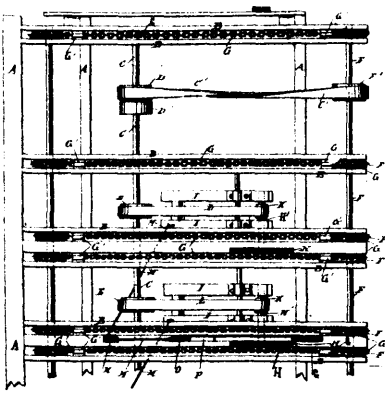
17614 Wall's Electric Bell Pull.



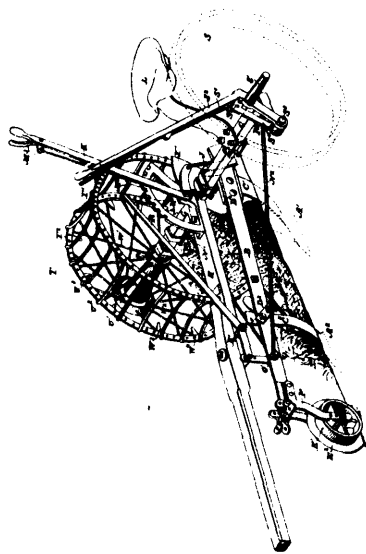
17615 McIntosh's Air Circulators.



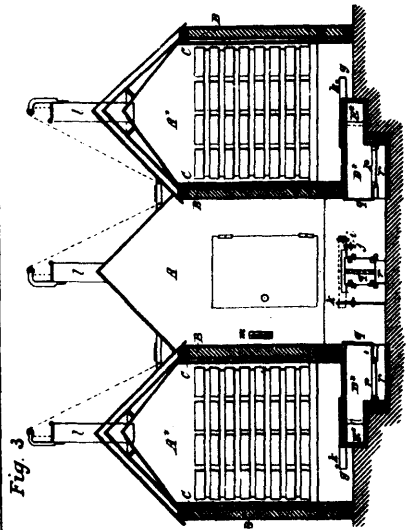
17616 Harker's Casting Hollow Ware.



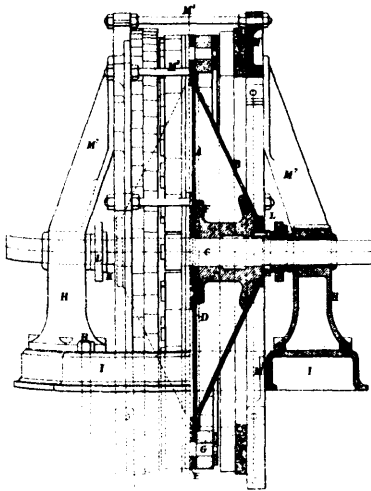
17617 Swartwout's Lumber Trimming Machine.



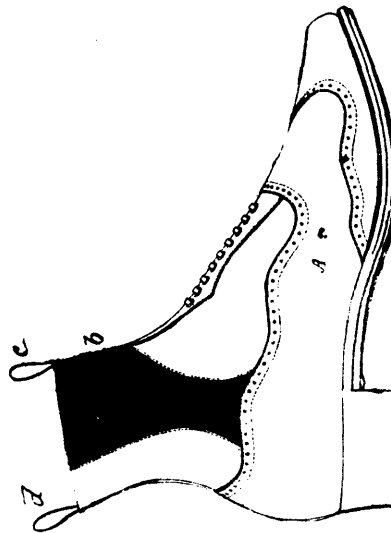
17618 Sackett's Tilling Machine.



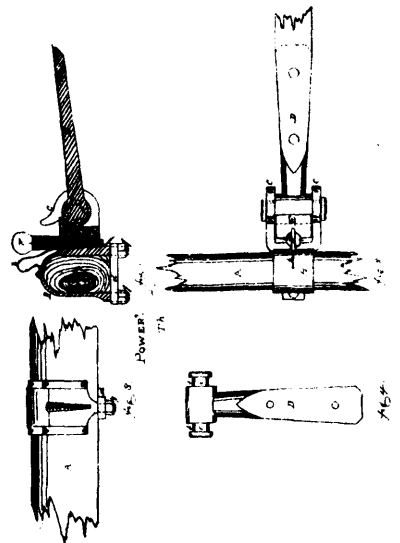
17619 McNelle's Drying and Seasoning Timber Apparatus.



17620 Gordon's Dynamo Electric Machines.

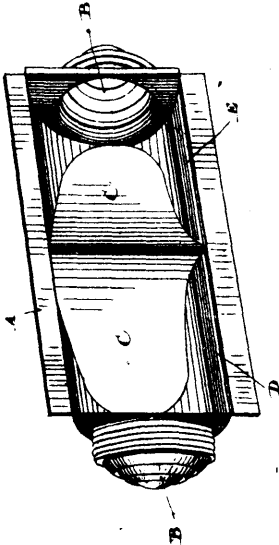


17621 Reals' Shoes.

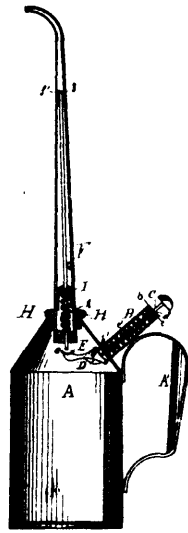


17622 Power's Thill Couplings.

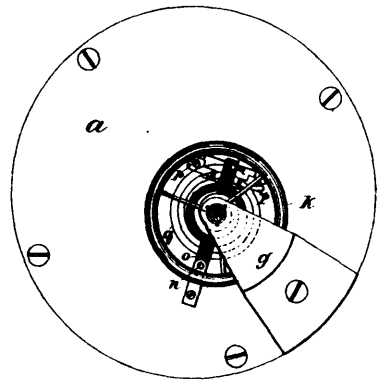




17623 Piper's Signal Lamps.



17624 Jackson's Oil Can.



17626 Kentoff's Chronometer Escapement.



17627 Maguire's Waterproof Coats.

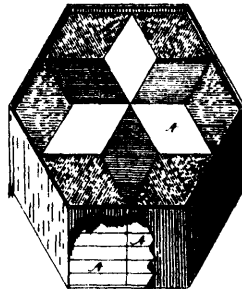


Fig. 1.

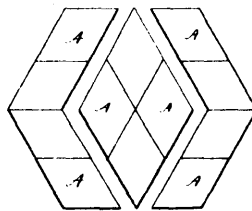
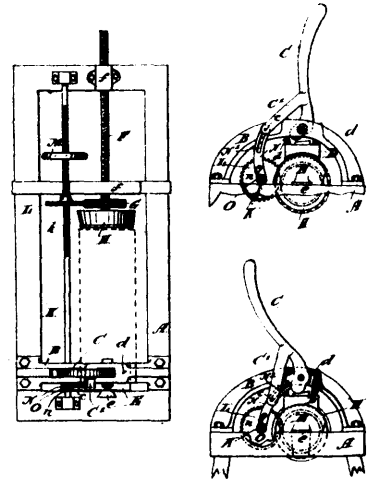
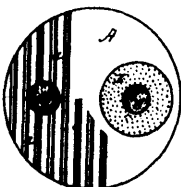
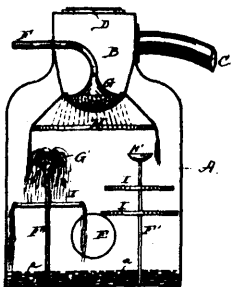


Fig. 2.

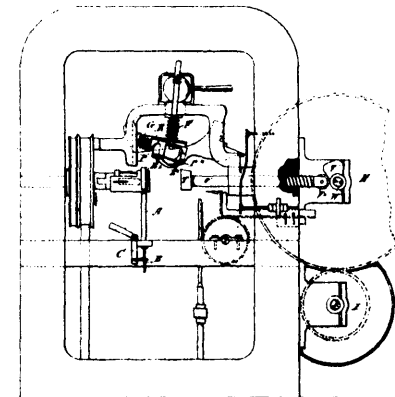
17628 Johnston's Games.



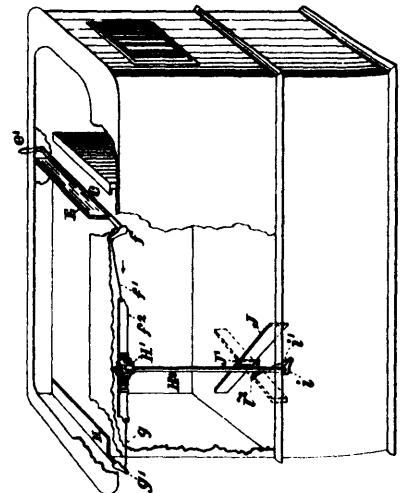
17629 Cameron's Screwing Apparatus.



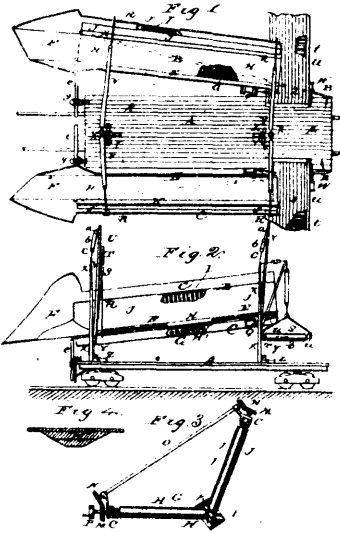
17630 Hoeverler's Vacuum Fans.



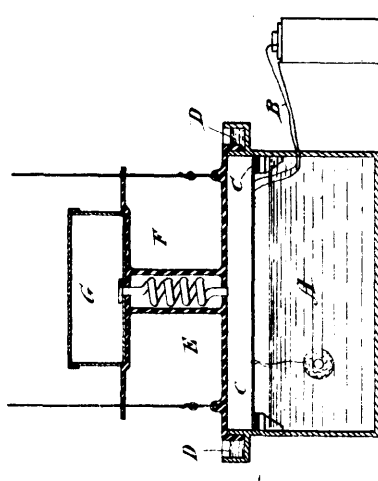
17631 Outlan's Heel-paring Machine.



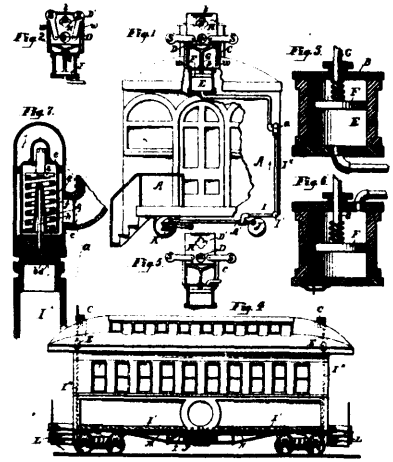
17632 Scott's Cooking Ranges.



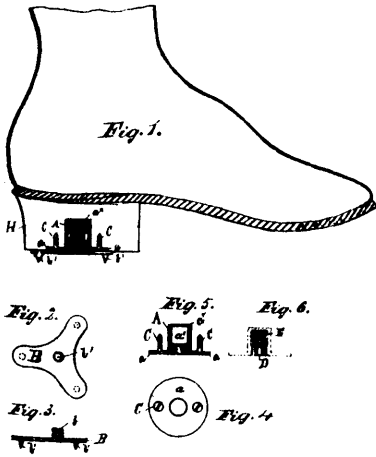
17633 Grove's Railway Ditching Machine.



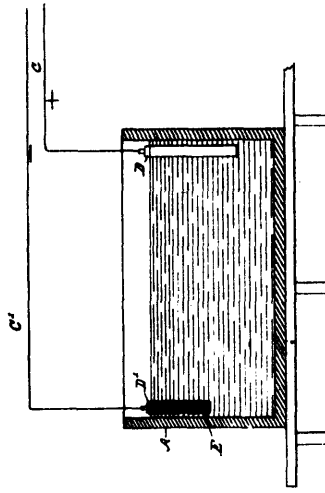
17634 Walenn's Electro Depositor.



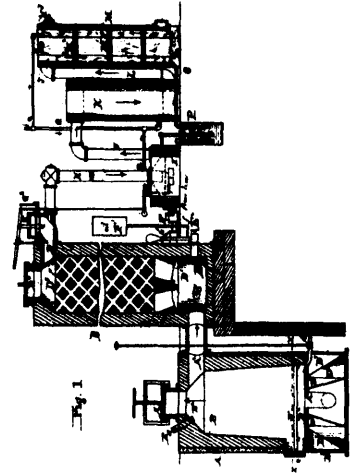
17635 Rushforth's Automatic Safety Car Signals.



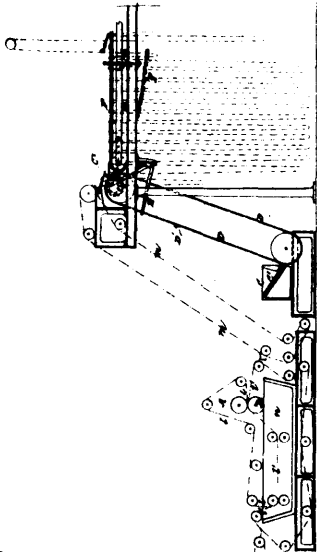
17636 West's Ice Creepers.



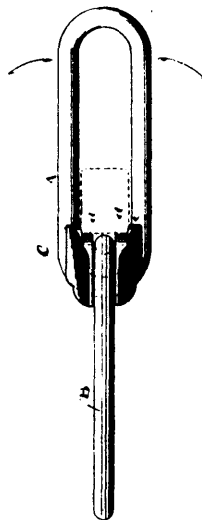
17637 Tichner's Liquor Purifier.



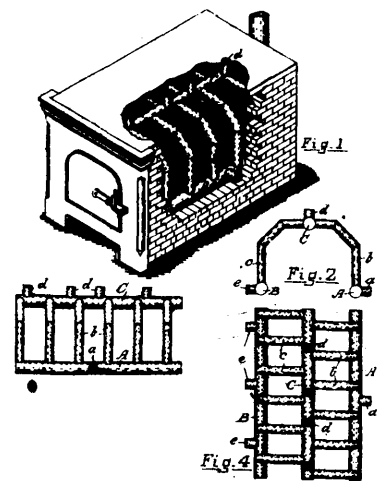
17638 Granger and Collin's Gas Apparatus.



17639 Armandale's Paper Manufacturing Machine.



17640 Dodge's Chain Cables.



17641 Charland's Hot Water Heating Apparatus.

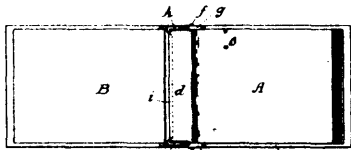


Fig. 1

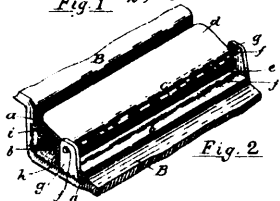


Fig. 2

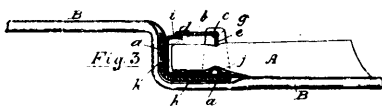
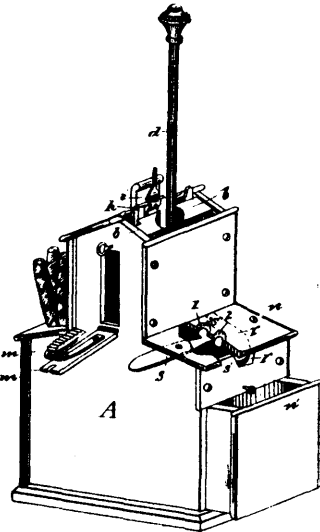
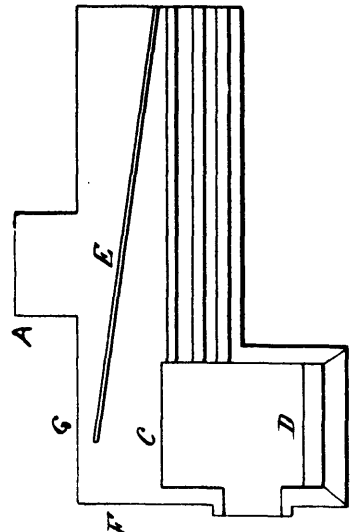


Fig. 3

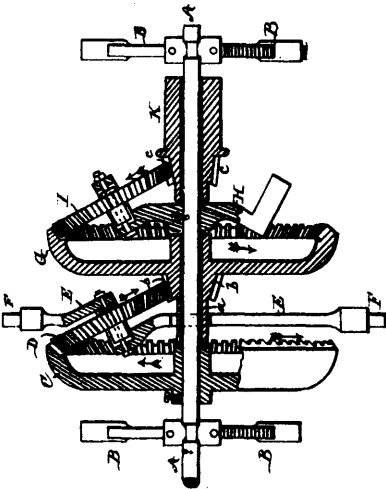
17642 Gordon's Detachable Book Cover.



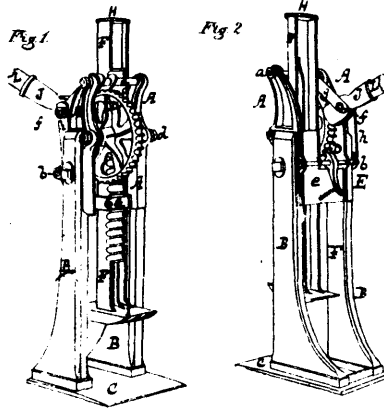
17644 Isenhart's Match Lighter and Cigar Cutter.



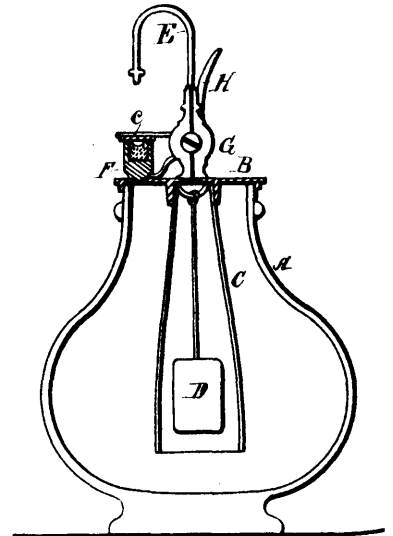
17646 Burnett's Steam Boilers.



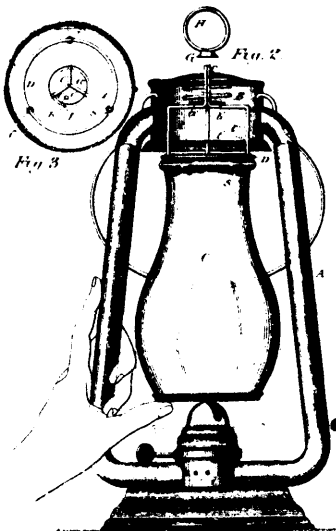
17647 Fithian's Mechanical Movement.



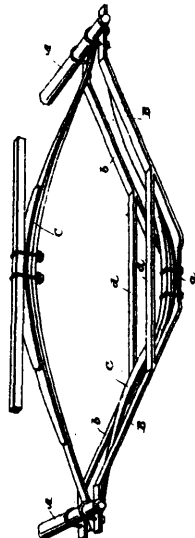
17651 Naramore's Elevators and Lifting Jacks.



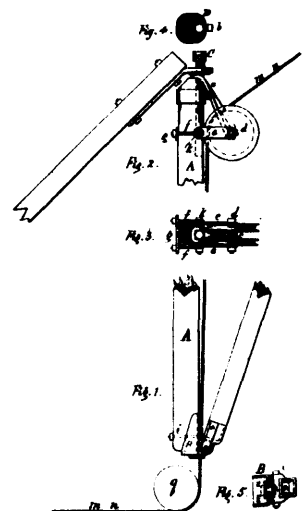
17652 Hinden's Hydrogen Lamps.



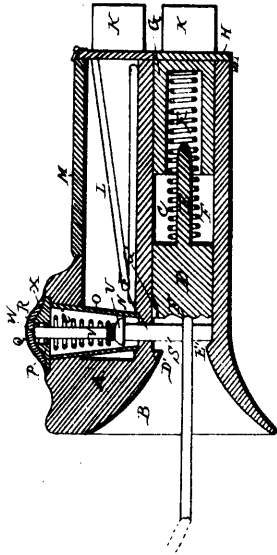
17653 Stone's Tubular Lantern.



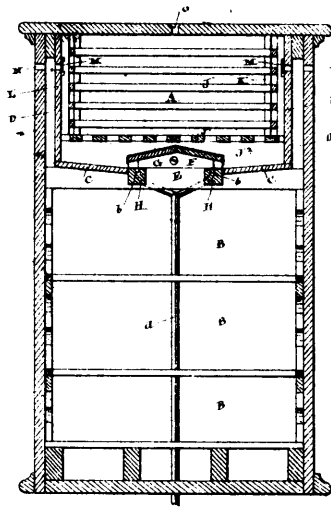
17654 Hawkey's Spring Gear.



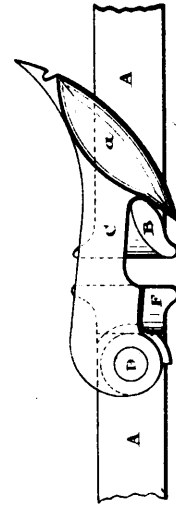
17655 Cramer's Derricks.



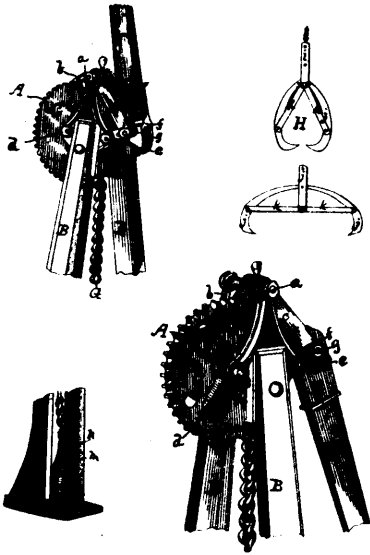
17656 Martin's Car Couplings.



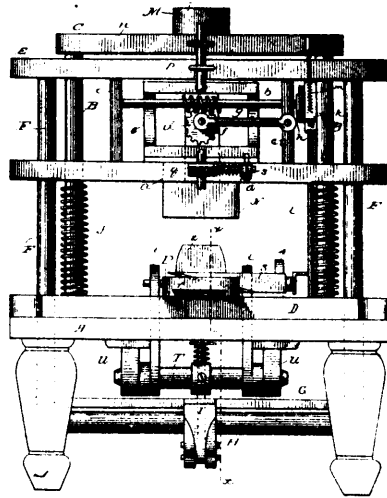
17657 Alexander's Refrigerators.



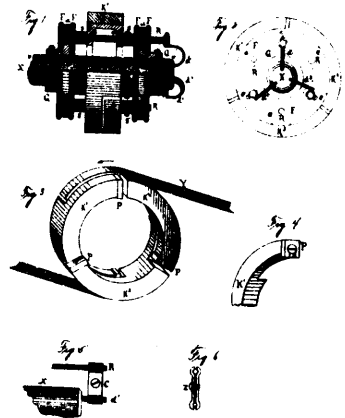
17658 Ambrose's Car Couplers.



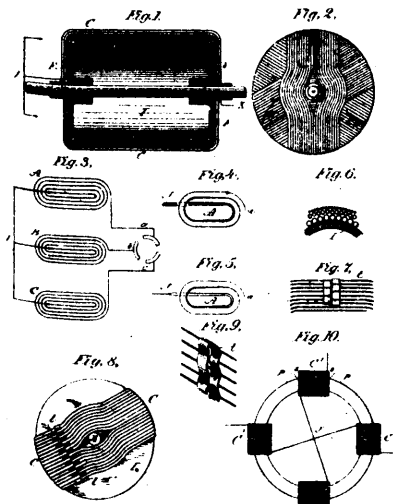
17659 Naramore's Tie and Rail Elevators.



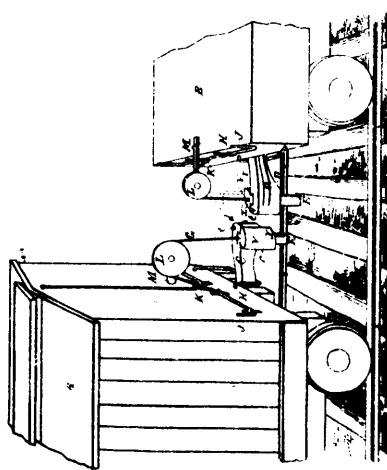
17660 Mansell's Heel Blank Cutting Machine.



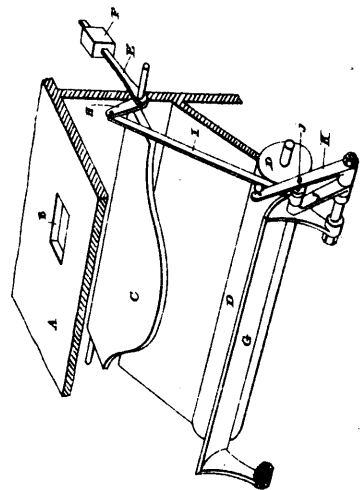
17661 Thomson's Commutators.



17662 Thomson's Generators.



17663 Clapp et al's Car Couplers.



17664 Goldie and McCulloch's Roller Mills.

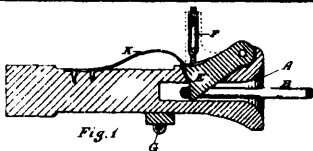


Fig. 1

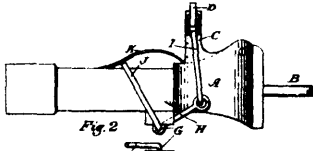


Fig. 2



Fig. 3

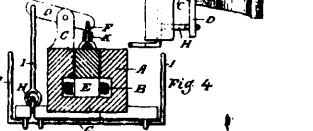


Fig. 4

17665 Mitchell and Martin's Automatic Car Couplers.

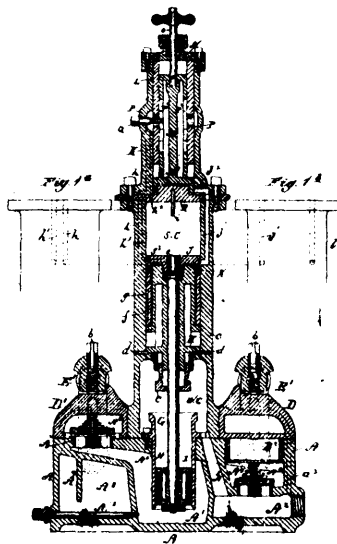
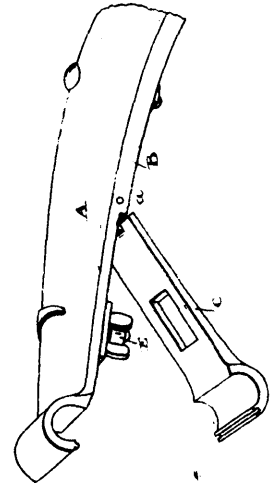


Fig. 1

17666 Shortt's Direct Acting Pumping Engine.



17667 Clouston's Thrill Couplings.

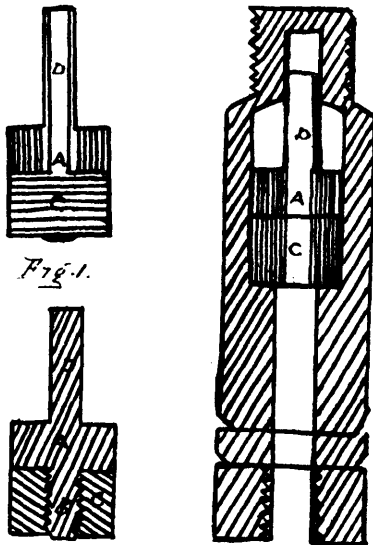


Fig. 1.

17668 Barrett's Pump Valves.

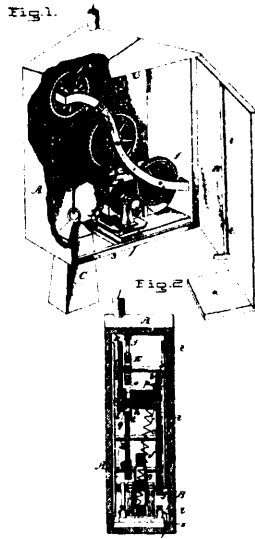
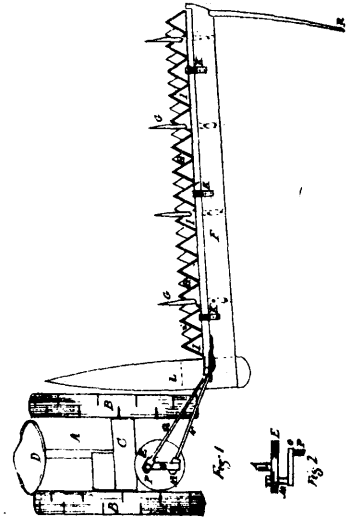


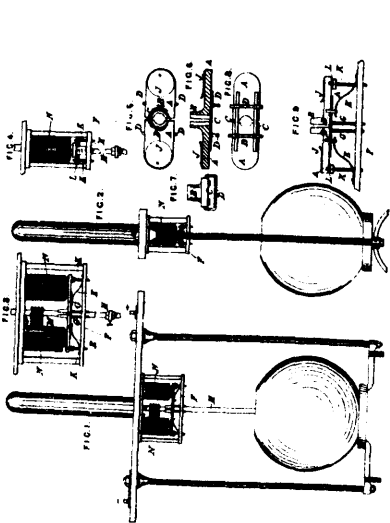
Fig. 1.

Fig. 2.

17669 Ahearn's Fire Alarm Telegraph.



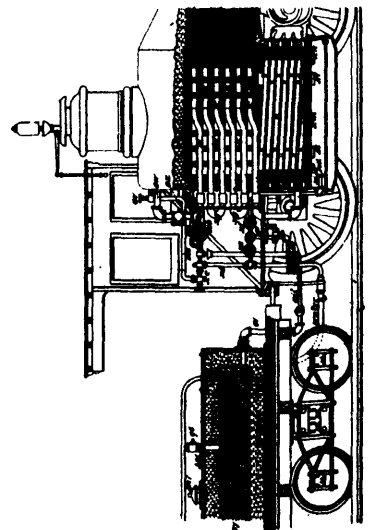
17670 Lemon and Jones' Cutters in Mowing Machines.



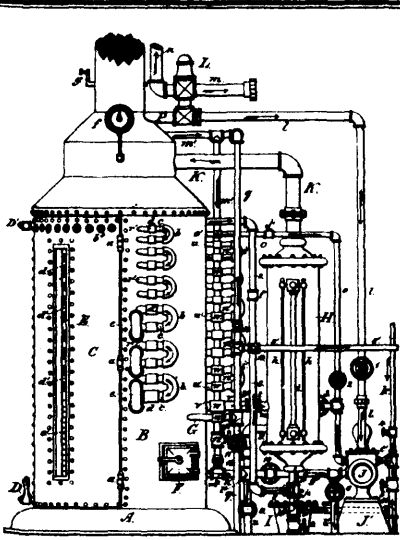
17671 McKenzie's Electric Arc Lamp.



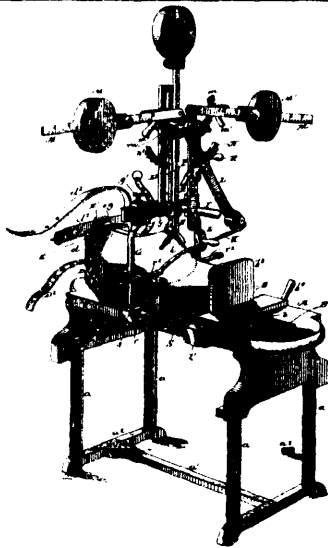
17673 Willcox's Fire Escape.



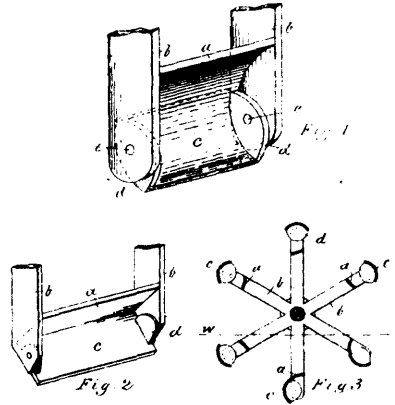
17674 Browne's Gas Generator &c.



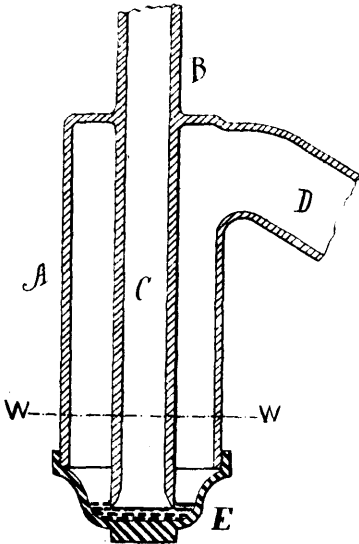
17675 Browne's Gas Generator for Motive Power &c.



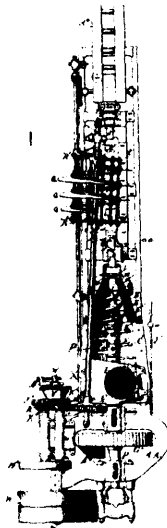
17676 Shaefer's Feet Measurer and Lasts Fitter.



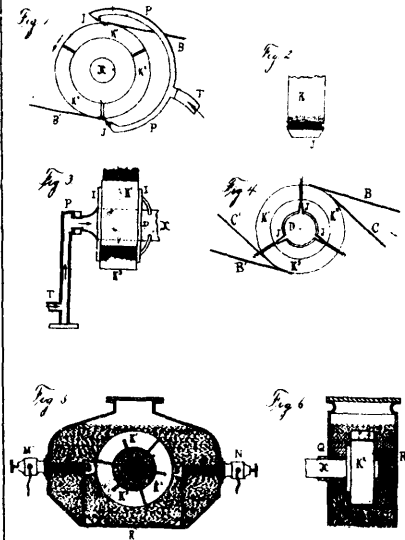
17677 Fogg's Paddle Wheels.



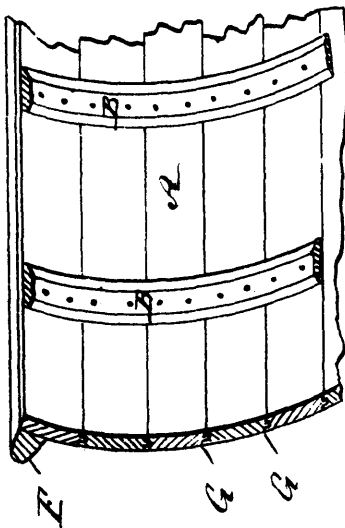
17678 Edward's Seal Joint Traps.



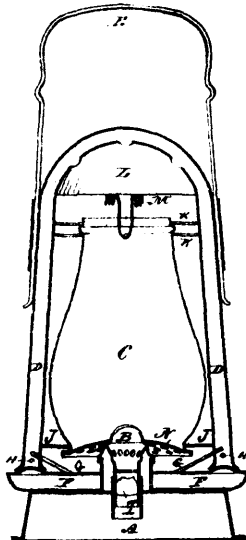
17679 Chamber's Brick Making Machine



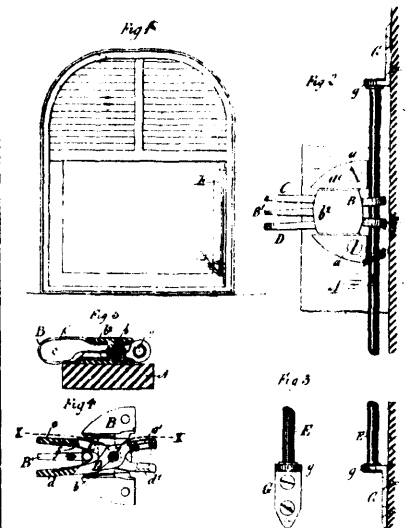
17680 Thompson's Flash Preventor.



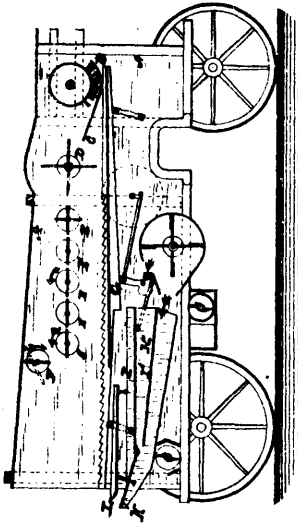
17681 Stephenson's Boats.



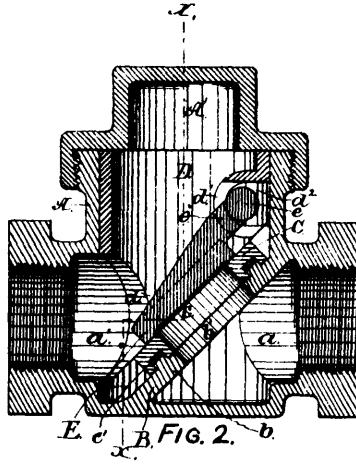
17682 Kennedy's Tubular Lanterns.



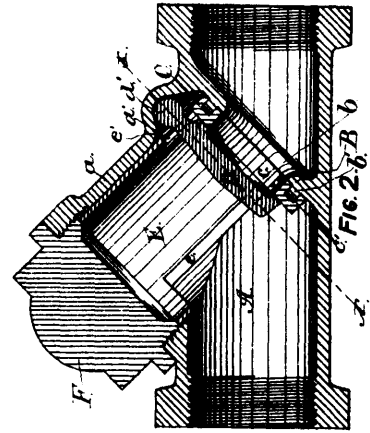
17683 Cooke's Sash Holders.



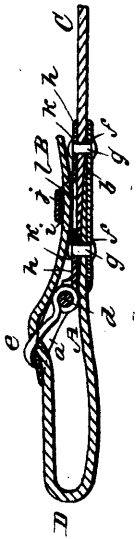
17684 Miller's Grain Thrasher and Cleaner.



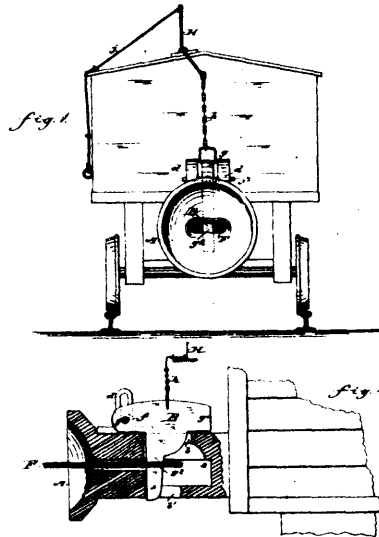
17685 Blessing's Check Valves.



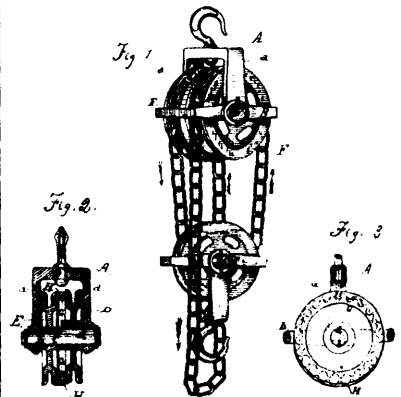
17686 Blessing's Straightway Check Valves.



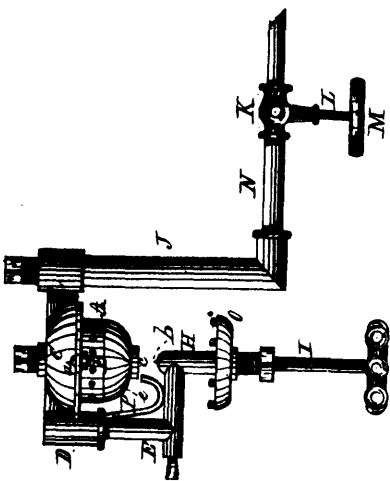
17687 Hartson's Harness Buckles and Loops.



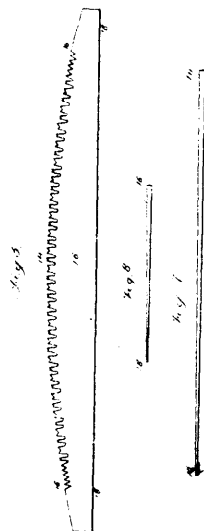
17688 Edward's Car Couplings.



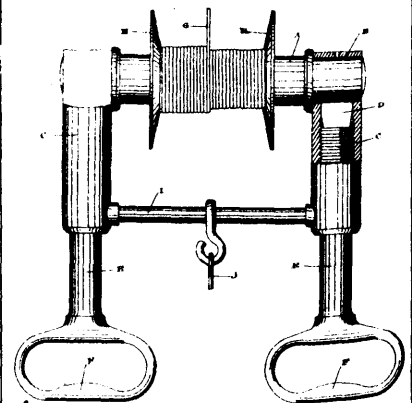
17689 Murray and Dennis's Differential Pulley.



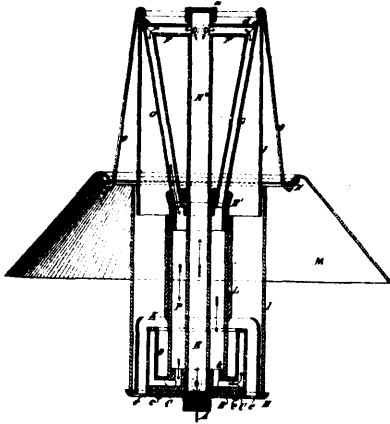
17690 Dangler's Vapor Torches.



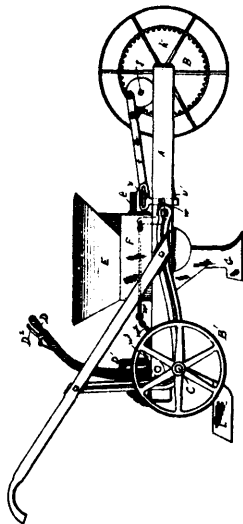
17691 Simond's Cross Cut Saws.



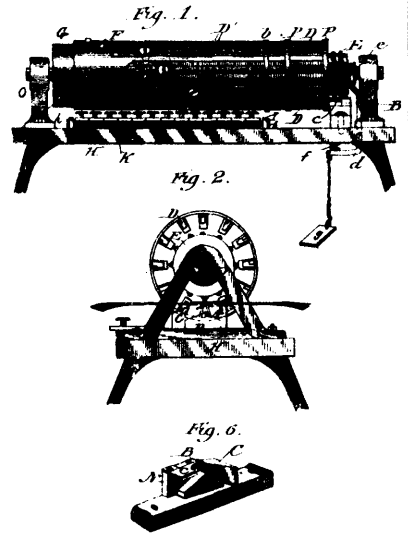
17692 Long's Fire-Escapes.



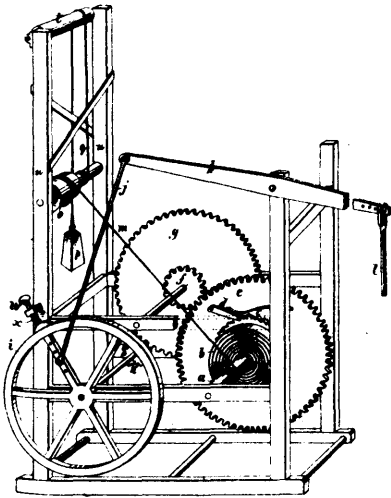
17693 Bell's Gas Burners.



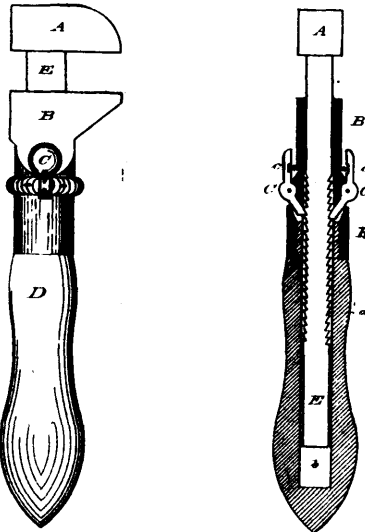
17694 Fish and Middaugh's Potato Planter.



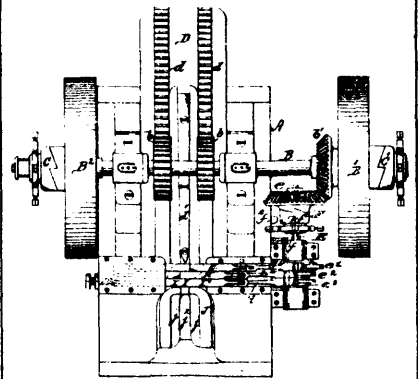
17695 Dement's Type Writing and Printing Machine.



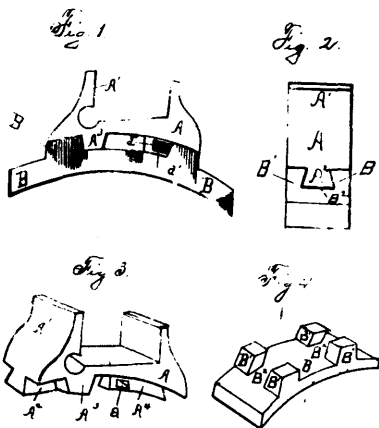
17696 Wilbur's Churn Power.



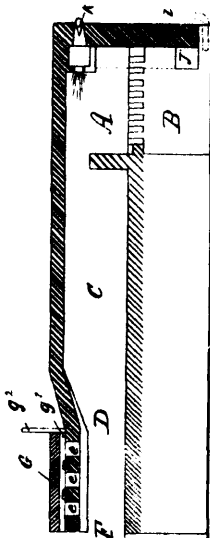
17698 Hadley and Merrill's Wrenches.



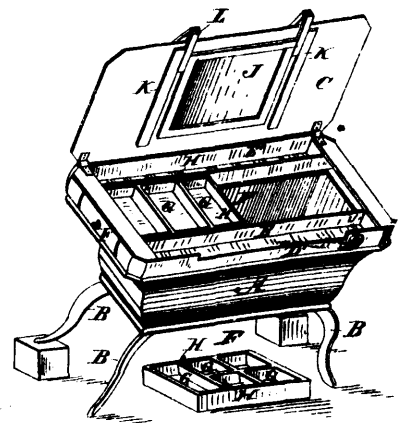
17699 Bird's Pitchfork Making Machine.



17700 Curtice's Brake Shoes.

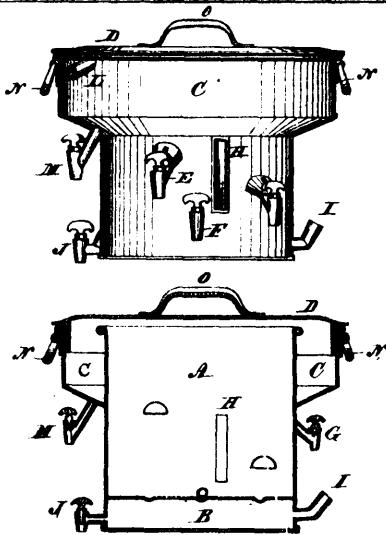


17701 Elliott's Smoke Consumer.

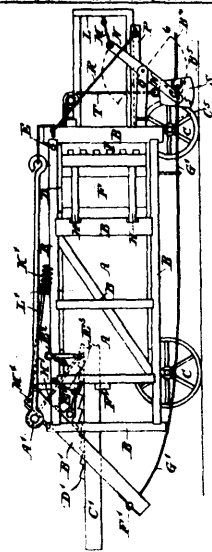


17702 Borgesen's Ladies Work Table.

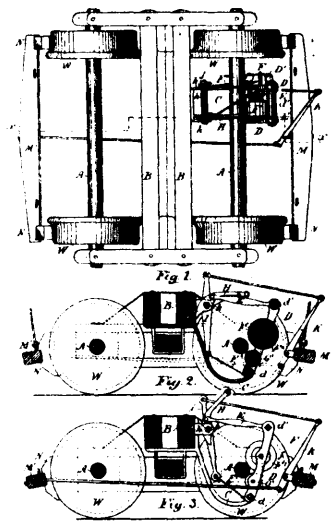




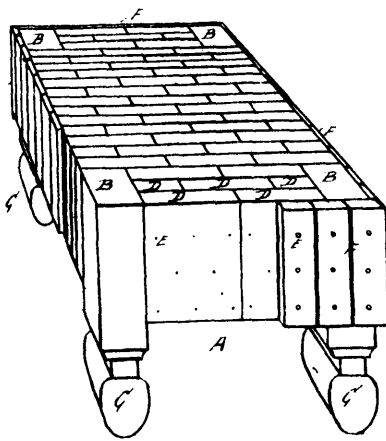
17703 Lynch's Creamers.



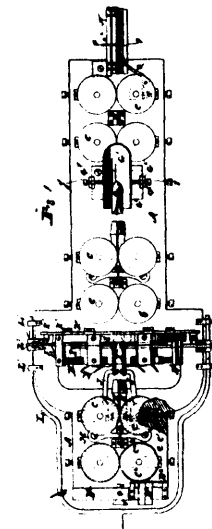
17704 Lord et al's, Hay Press.



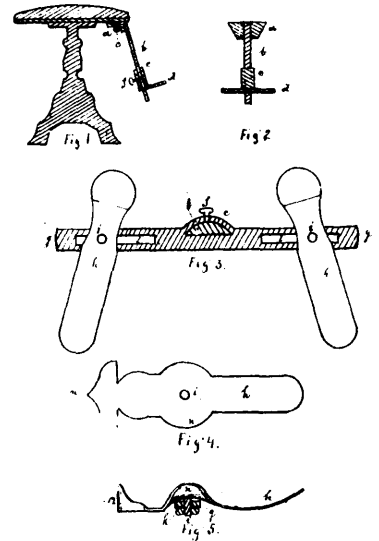
17705 Hébert et al's, Car Brake.



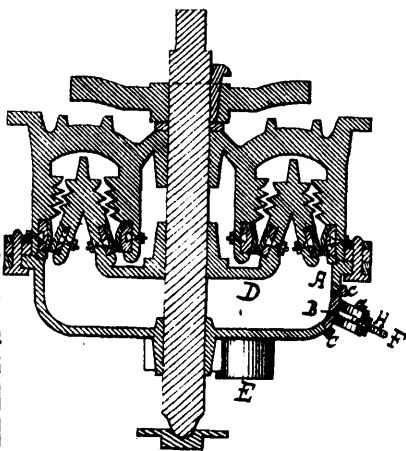
17706 Baril's Meat Blocks.



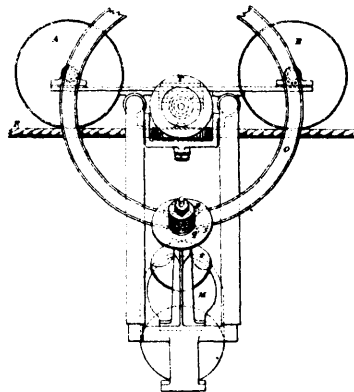
17708 Hay's Rattan Stripping.



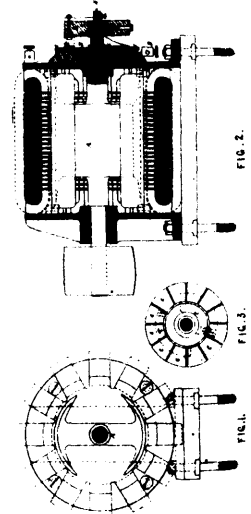
17739 Burlingame's Foot Rest for Pianos.



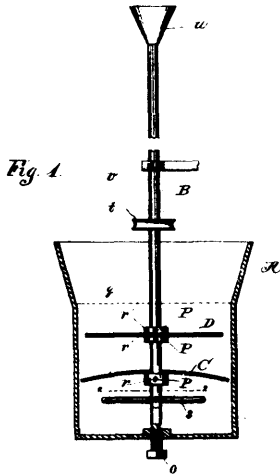
17710 Reed's Bark Mills.



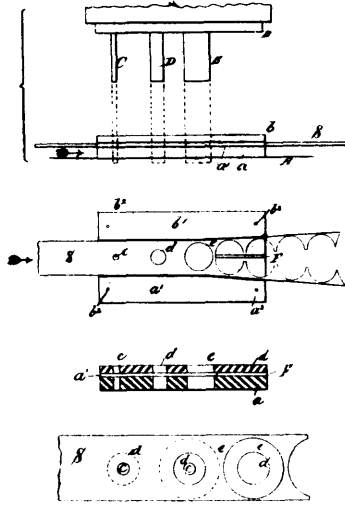
17711 Jenkin's Electrical Mechanism for Transportation.



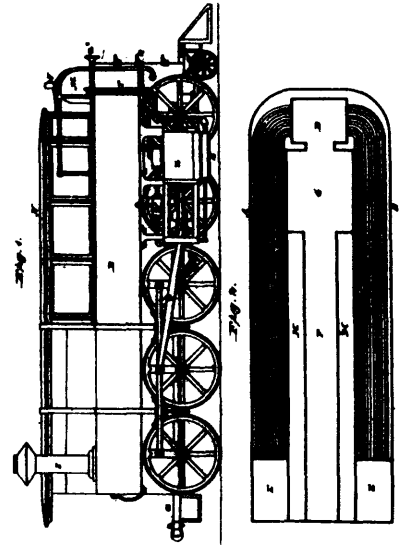
17712 Ayrton and Perry's Electro Motors.



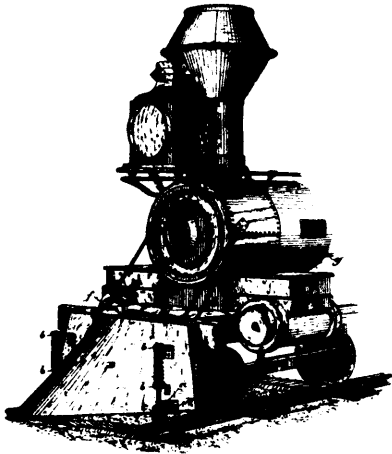
17713 Trippe's Amalgamator and Separator.



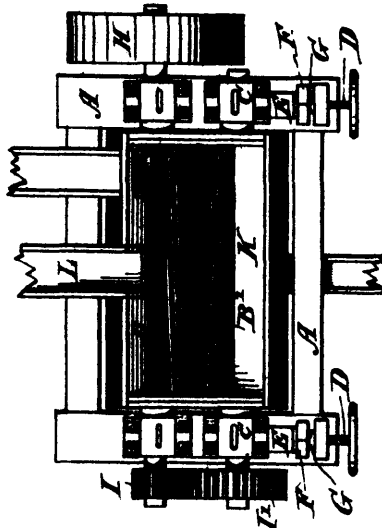
17714 Bronner's Metal Washer Making Machine.



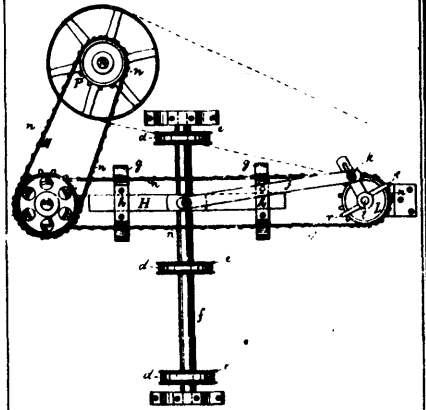
17715 Rothrock's Locomotives.



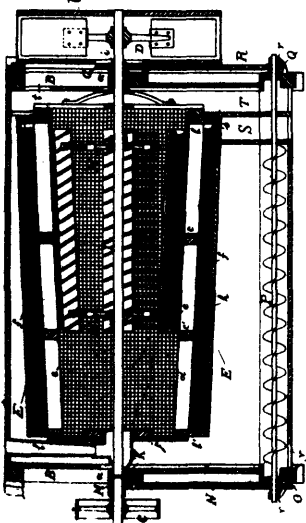
17716 Rothrock's Safety Device for Locomotive Pilots.



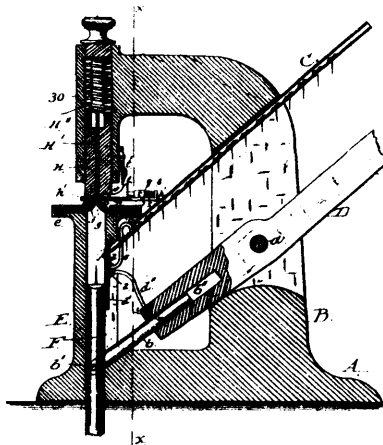
17717 Jones' Paper Pulp Refining Machine



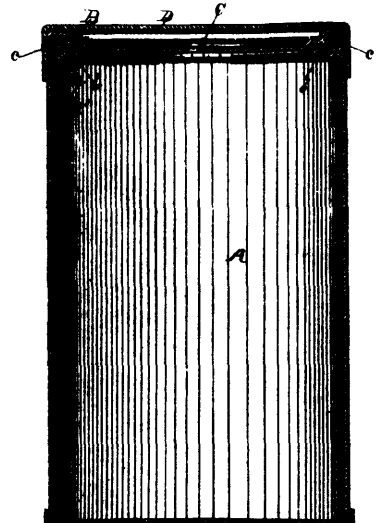
17718 Gathmann's Middlings Purifier.



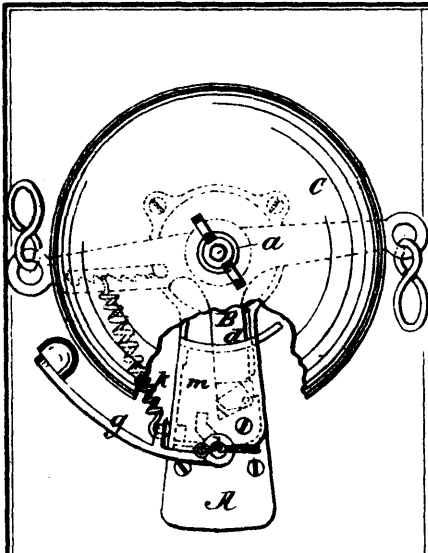
17719 Gathmann's Split Grain Cleaning Machine.



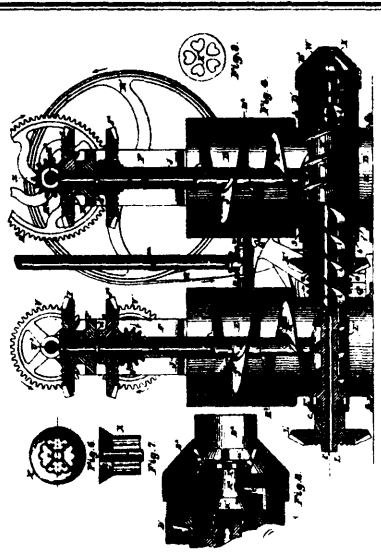
17721 Zellers and Wilkin's Button Setting Machine.



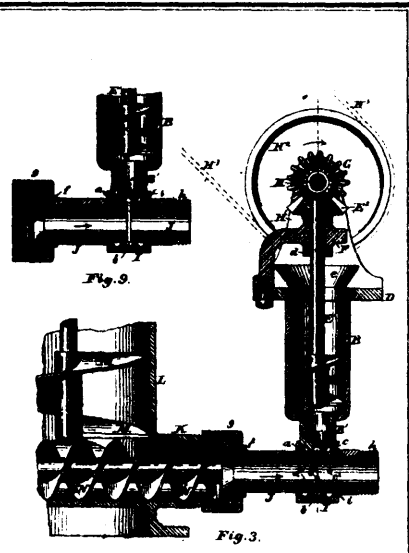
17722 Norton's Sheet Metal Cans.



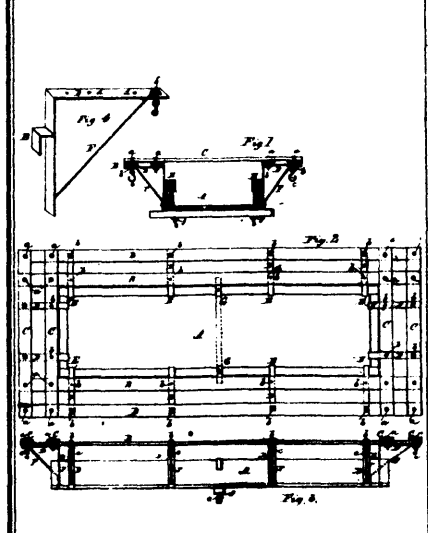
17723 Foster's Gong Bells.



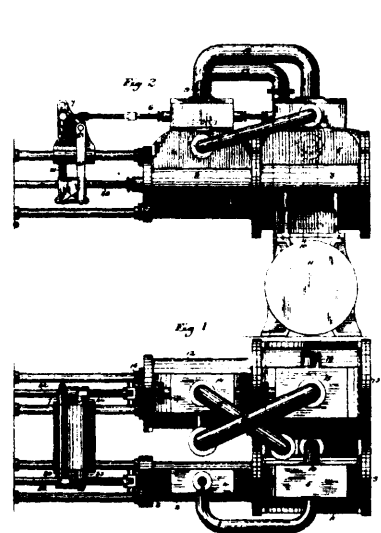
17724 Chase's Confectionery Shaping Machine.



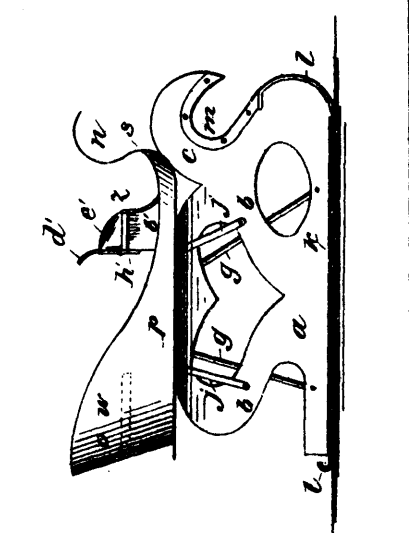
17725 Chase's Confectionery Molds.



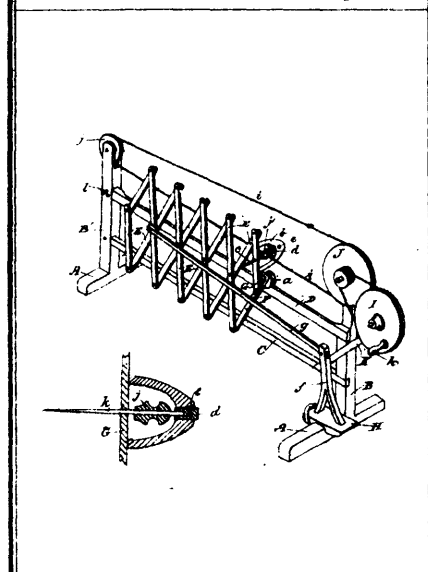
17726 Glazebrook's Back and Top for Waggon.



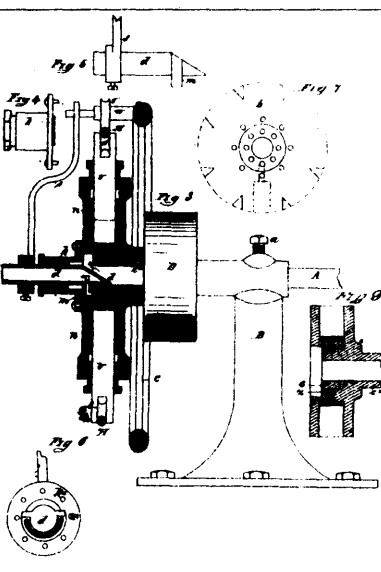
17727 Worthington's Direct Acting Duplex Engine.



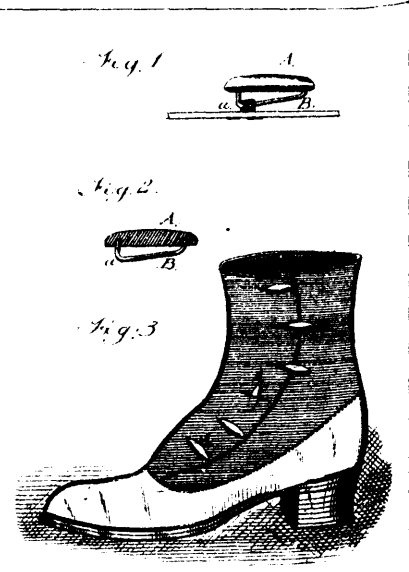
17728 Watson's Sleighs.



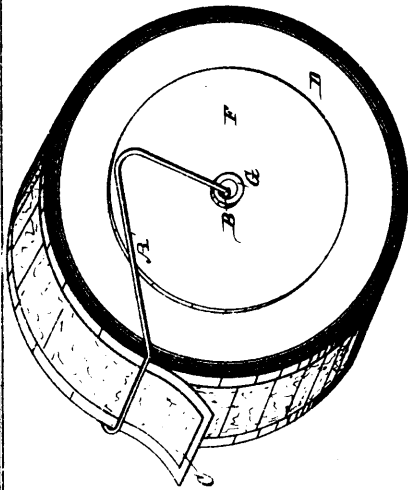
17729 Brown's Wool Spinning Machines.



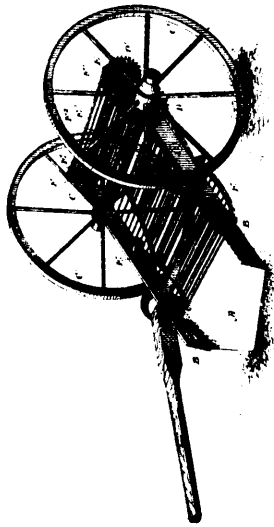
17730 Benham et al's, Hydraulic Motors.



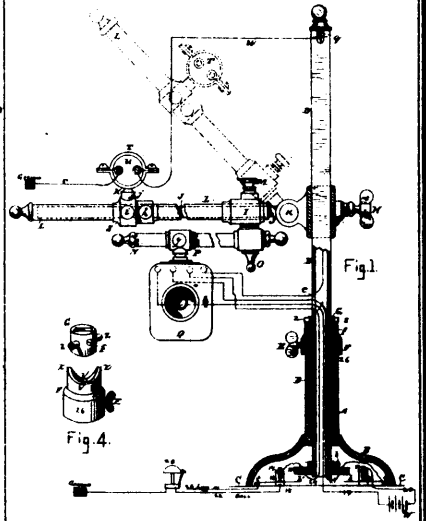
17731 Wiggins' Shoe Buttons.



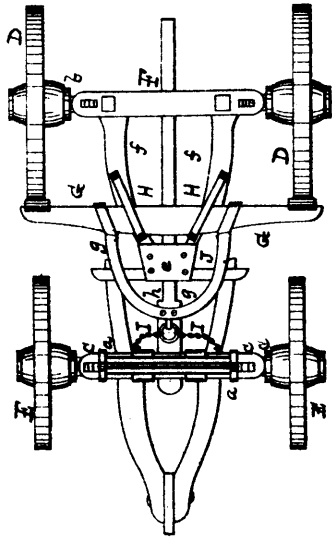
17732 Mellette's Ribbon Reels and Holder.



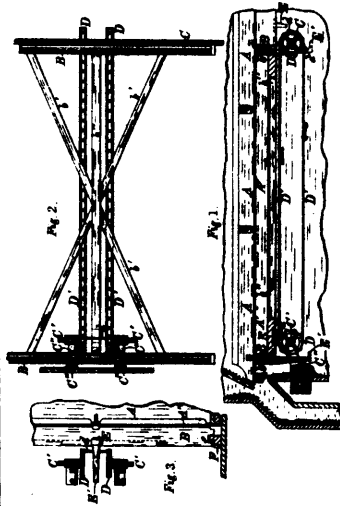
17733 Seidon's Potato Digging Machine.



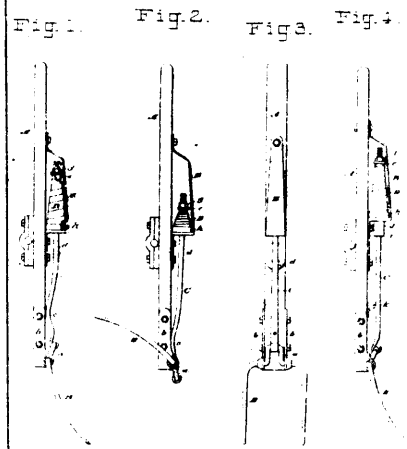
17734 Wilkin's Telephone Supports.



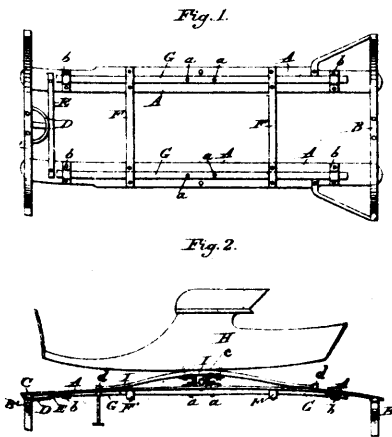
17735 Shue's Waggon Brakes.



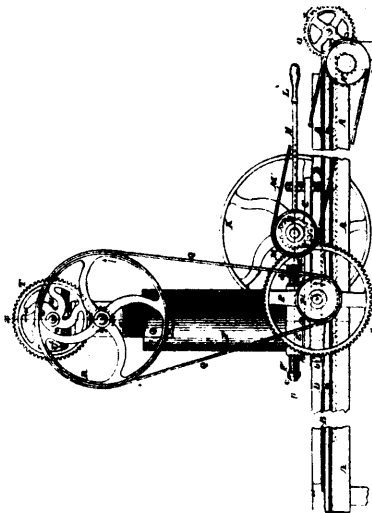
17736 Smith's Middlings Purifier.



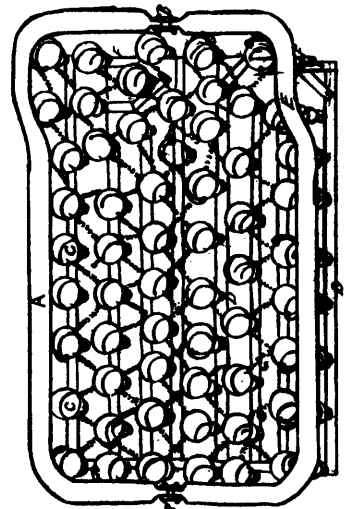
17737 Mudgett's Hay Tedder Teeth.



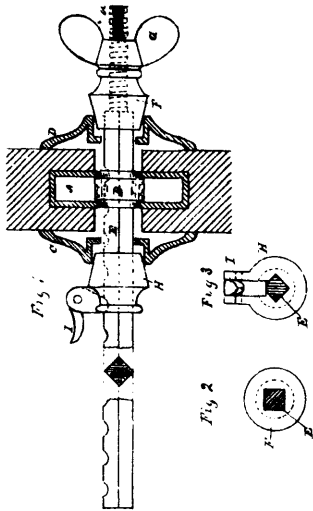
17738 Pree's Springs for Buckboard Waggon.



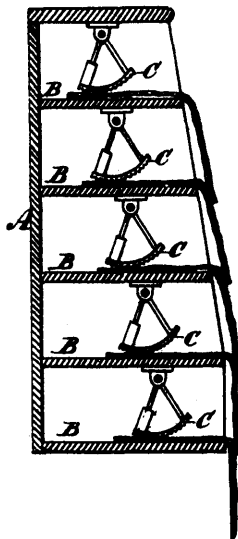
17739 Chase's Confectionery Molding Machine.



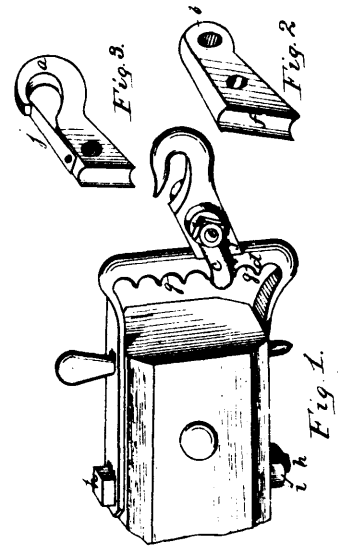
17740 Duguay's Spring Bed.



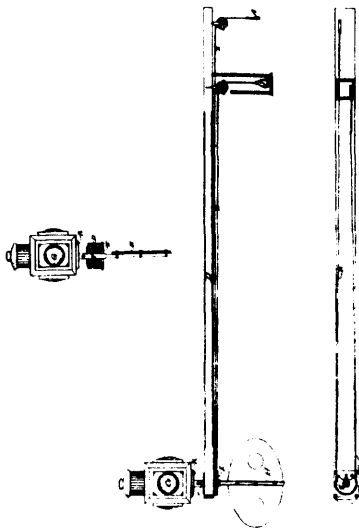
17742 Watkins' Knob Roses for Doors.



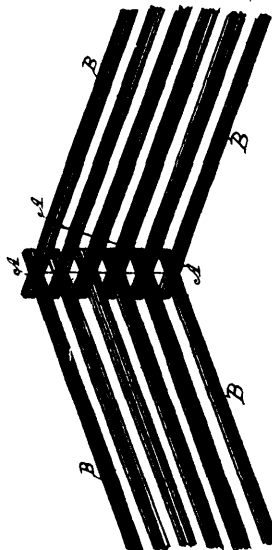
17743 Robinson's Show Cases.



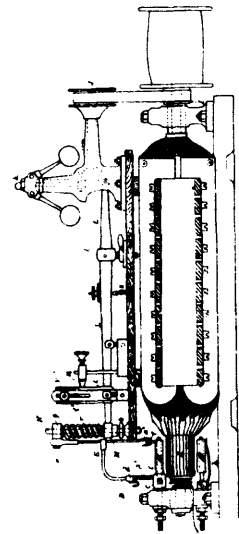
17744 Patton's Flow Clevises



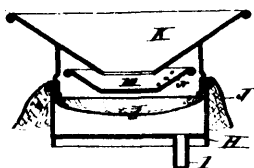
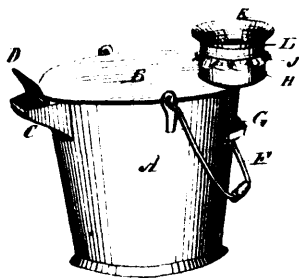
17745 Triton's Station Signals



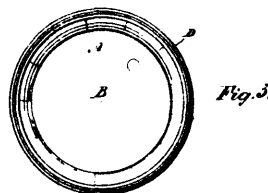
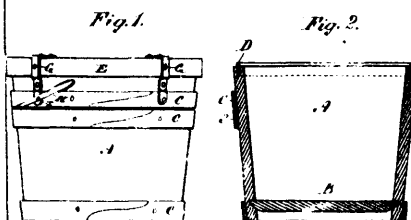
17746 Russel's Lever Lock Fences



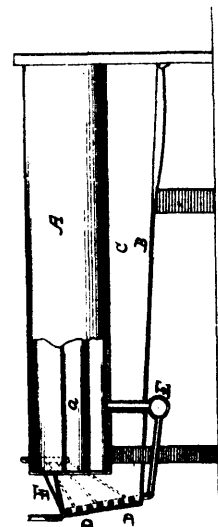
17747 Stroudley and Houghton's Electric Apparatus.



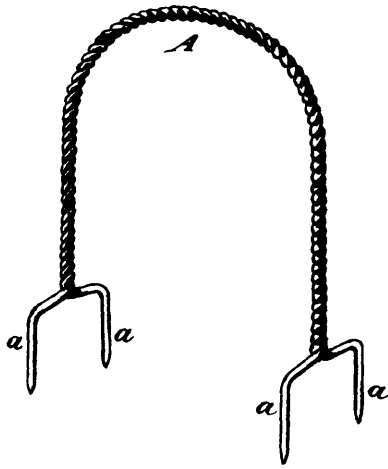
17748 Lynch's Milk Pail Strainers.



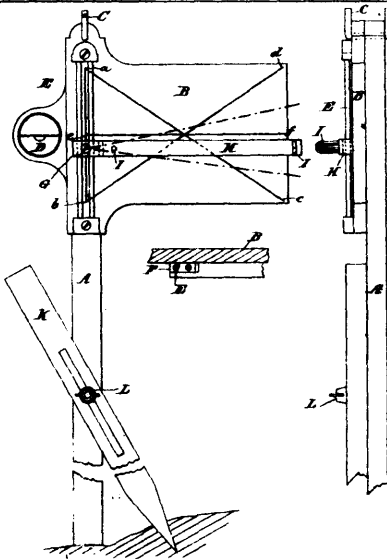
17749 Lynch's Butter Tubs.



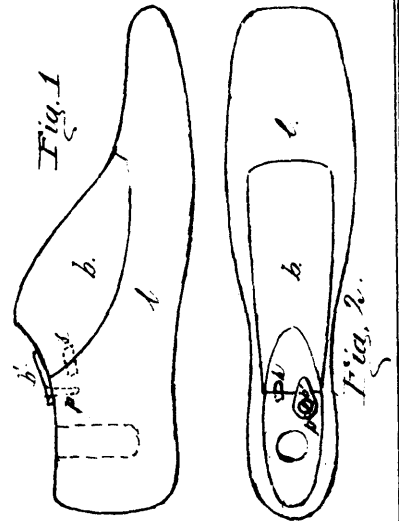
17750 Young's Feed Water Backs.



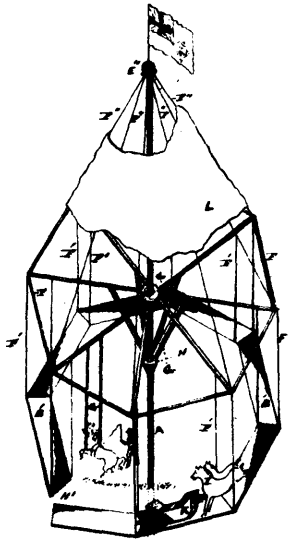
17751 England's Croquet Wickets.



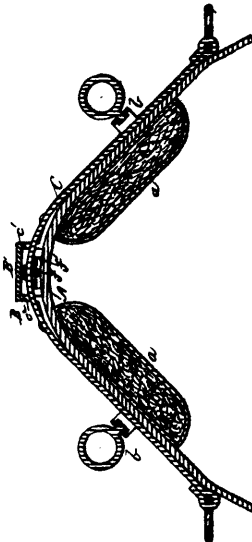
17752 Massy's Clinometer.



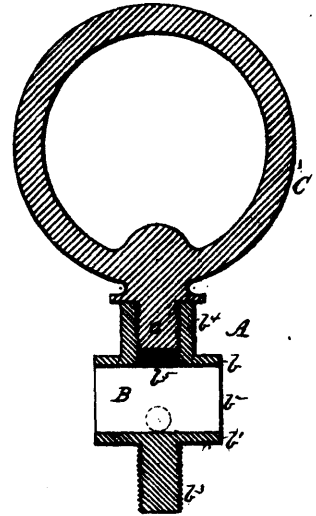
17753 Clerke and Condon's Lasts and Blocks.



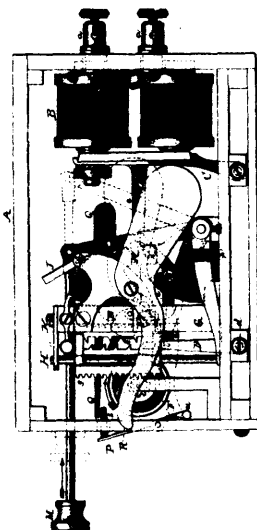
17754 Peterson et al's Whirligig.



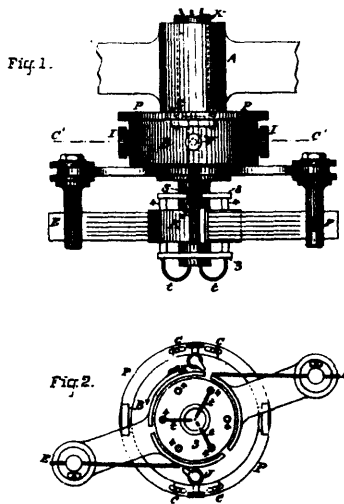
17755 McFadden's Harness Saddles.



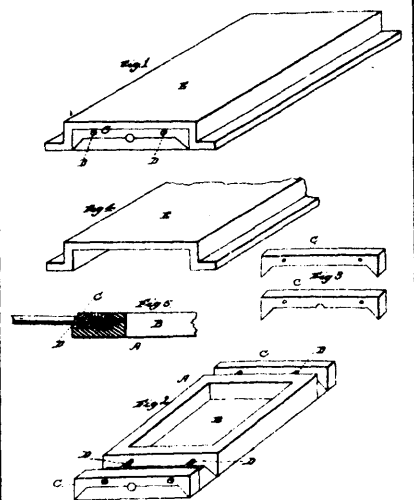
17756 McFadden's Harness Terrets.



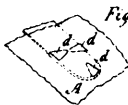
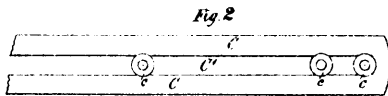
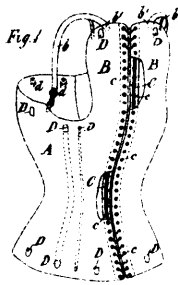
17757 MacKenzie's Electrical Visual Indicators.



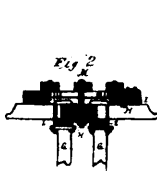
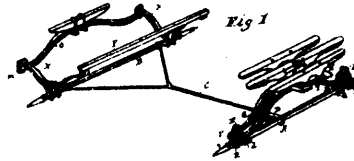
17758 Thomson's Air Blast Attachment.



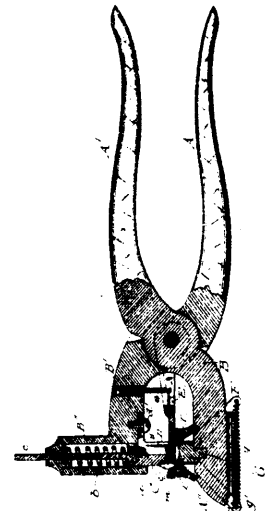
17759 Knecht's Balanced Slide Valves.



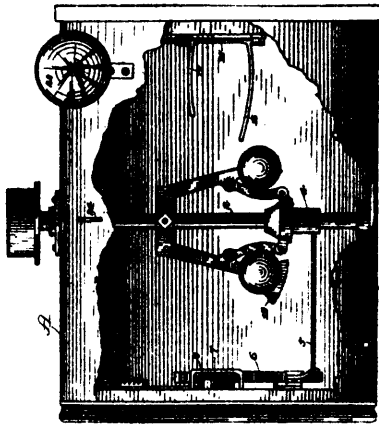
17760 Cauff's Corsets.



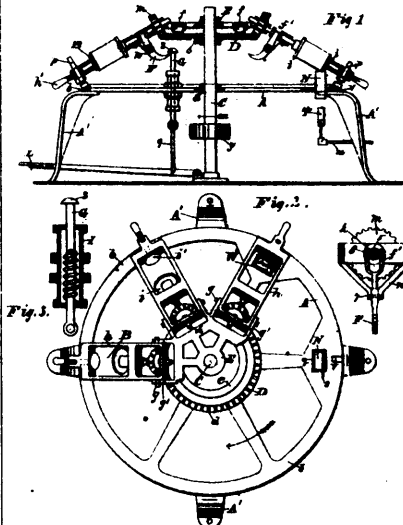
17761 Barry's Running Gears.



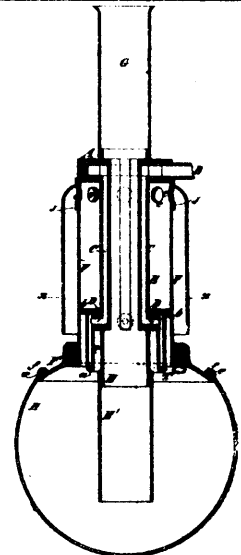
17762 Zellers and Wilkin's Button Fastening Implements.



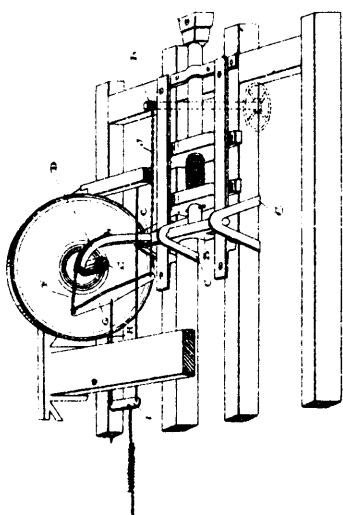
17763 Bowsher's Indicator.



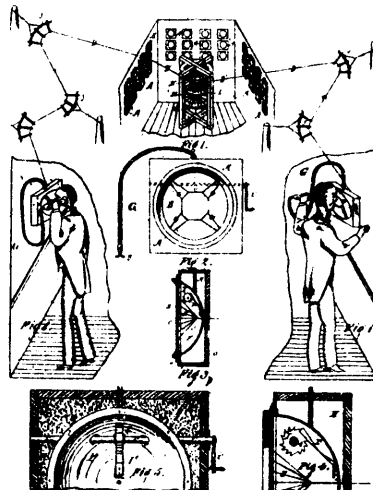
17764 Jones and Thurber's Can Soldering Machine.



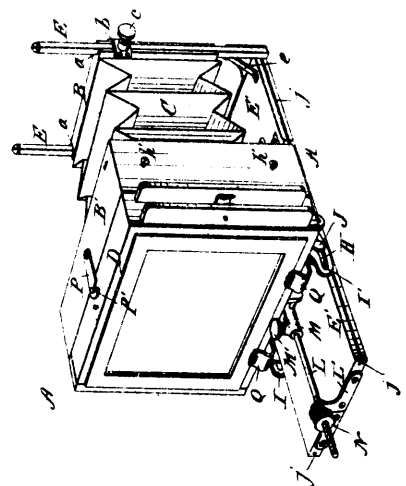
17765 Bell's Gas Burners.



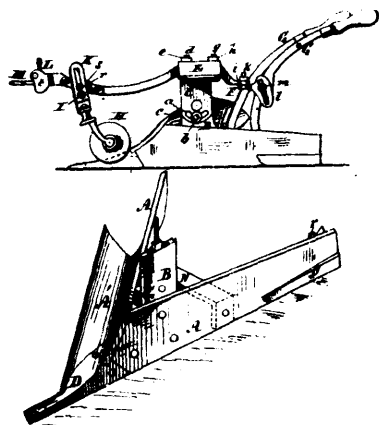
17766 Schiller and Smith's Car Brake.



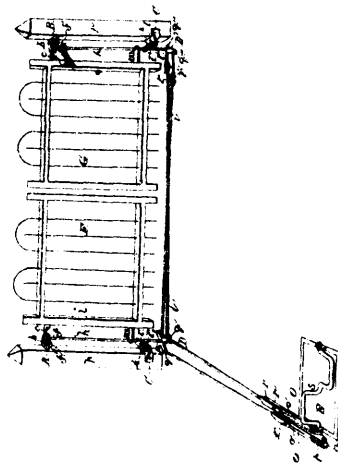
17767 Cleaver's Telephone.



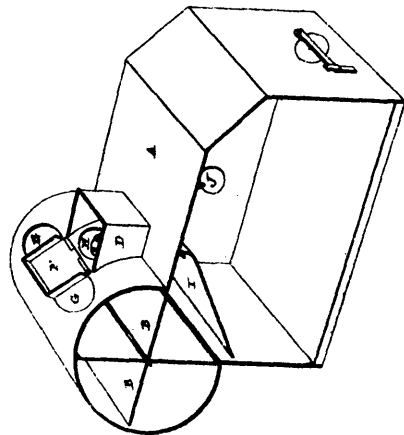
17768 Anthony & Co's Photographic Camera Box.



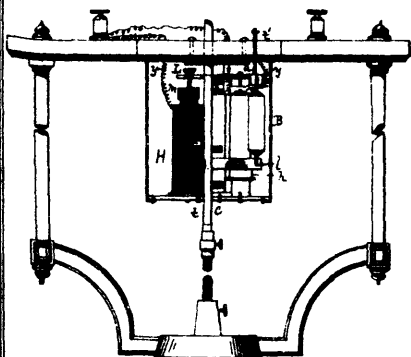
17769 Hanson and Applequist's Plows.



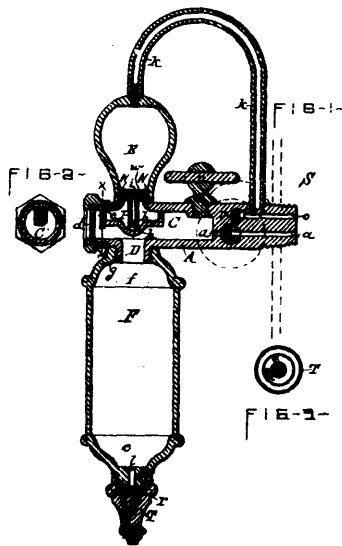
17770 Goff and Brocknell's Gates.



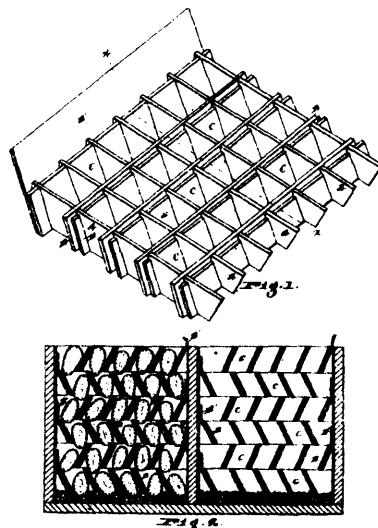
17771 Windt's Vermin Traps.



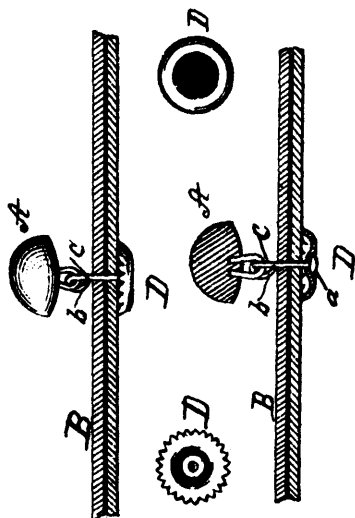
17772 Jenney's Electric Arc Lamps.



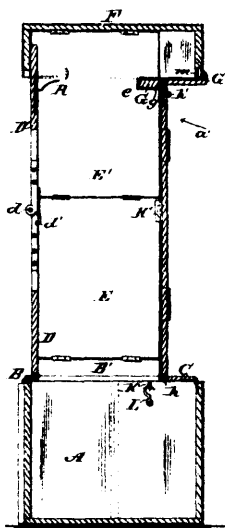
17773 Swift's Lubricators.



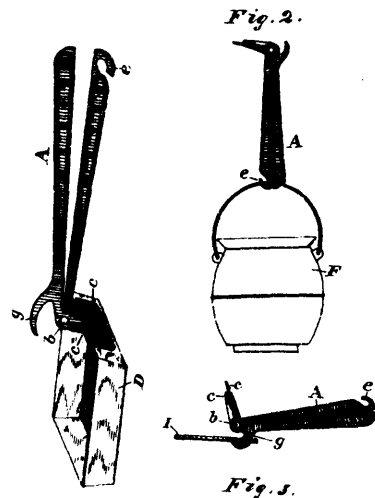
17774 Parmenter's Egg and Fruit Carriers.



17775 Wilkin's Button Fastener.

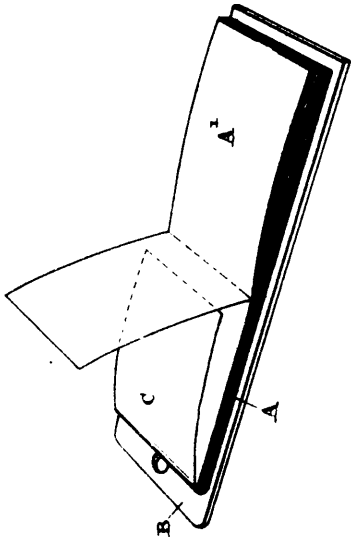


17776 Dryfoos' Trunk and Wardrobe.

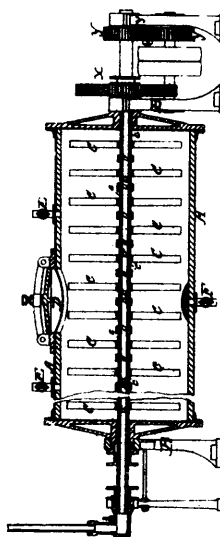


17777 Fitzpatrick's Lifters for Cooking Utensils.

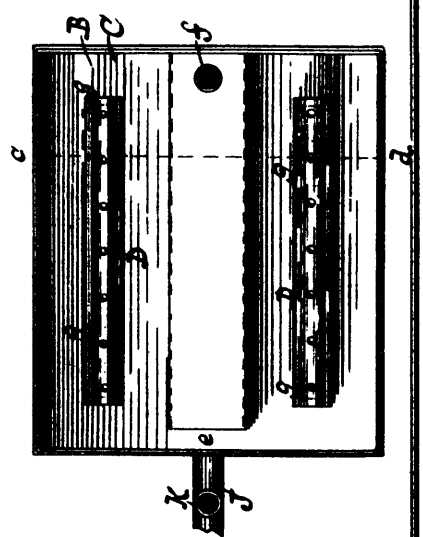




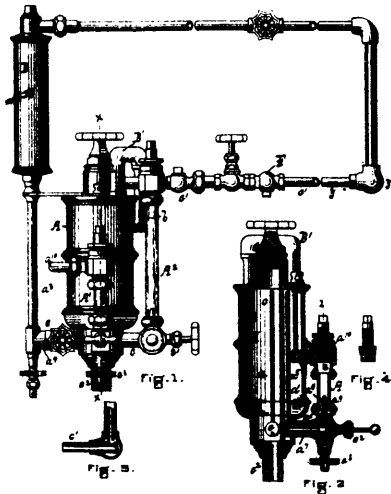
17776 Gardner's Black Leaf Check Books.



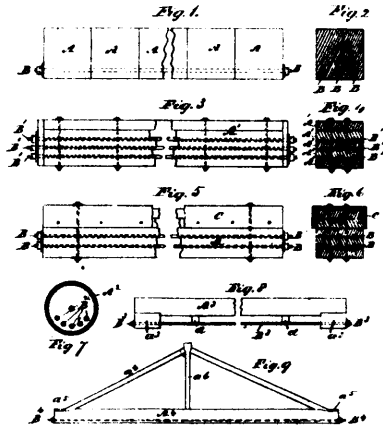
17778 Court's Paper Making Improvements.



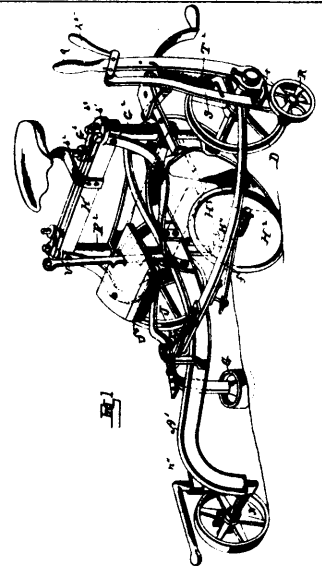
17780 Trail and Eames' Carburetting Apparatus.



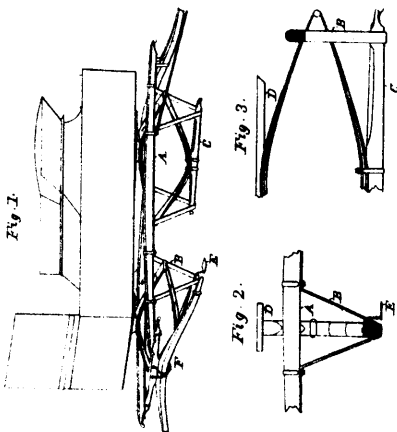
17781 Sherburne's Lubricators.



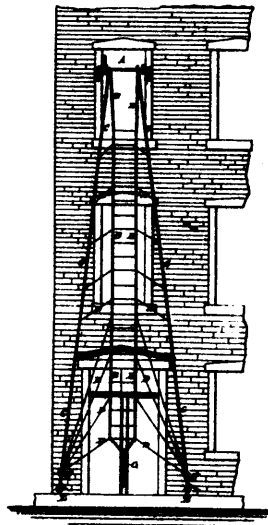
17782 Barland's Bridge Girders and Beams.



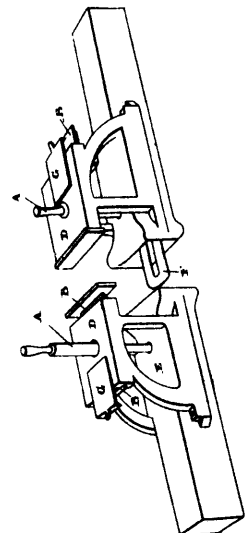
17783 Benson's Plows.



17784 Ziegler's Buggy Gearing.



17785 Seabury's Fire Escapes.



17786 O'Connor's Car Coupler.