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# The Canadian Patent Office

## RECORD




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### CONTENTS.

INVENTIONS PATENTED.....	201
ILLUSTRATIONS.....	231
INDEX OF INVENTIONS.....	I
INDEX OF PATENTEES.....	II

### 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. 23,738. Commutator Connection for Dynamo-Electric Machine. (*Communication de Commutateur pour Machines Dynamo-Electriques.*)

Charles Batchelor, New York, N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In a dynamo-electric machine, the combination, with the commutator bars, of the radial strips extending therefrom, and the cups for the armature wires each having a flange or disc secured to the backs of said radial strips, substantially as set forth. 2nd. In a dynamo-electric machine, the combination, with the commutator bars, of the radial strips extending therefrom, provided with projecting lips at their outer ends, and the cups for the armature wires secured to the backs of said radial strips under said lips, substantially as set forth. 3rd. In a dynamo-electric machine, the combination, with the commutator bars, of the radial strips extending therefrom, provided with projecting lips at their outer ends, the cups for the armature wires having flanges or plates secured to the backs of said radial strips beneath said lips, substantially as set forth. 4th. In a dynamo-electric machine, the cups in which the armature wires are soldered, having their edges provided with tongues bent down upon said wires, substantially as set forth.

#### No. 23,739. Truck for Centre Rail Elevated Railway. (*Châssis pour Char de Chemin de Fer Aérien à Rail au Centre.*)

Francis A. Bartholomew, Bloomfield, N.J., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. A truck-frame supporting the car, wholly above the railway structure, and carrying wheels of varied heights of bearings, said truck frame being centrally pivoted, so that all the wheels thereon may act in concert. 2nd. A truck-frame provided with upward projecting brackets carrying in the centre line lengthwise of the truck, two main or sustaining wheels, and provided also with downward projecting brackets carrying on axles in the center-line crosswise of the truck, two auxiliary or balancing side-wheels, said truck frame being attached to the car by vertical swivel or pivotal connection, located centrally between the said four wheels. 3rd. A truck-frame provided with two main or sustaining wheels, to run in line with each other upon the elevated center-rail, and two lateral auxiliary or balancing wheels to run parallel with each other upon the lower side-rails, and provided also with a centrally located swivel or pivot, in combination with a car movable upon the said pivot, and a spring interposed in the said pivotal connection, between the said car and truck frame. 4th. A truck provided with two sustaining wheels, two balancing-wheels and a central pivot, all arranged as before stated, in combination with a car bottom hung below the centres of the sustaining wheels by a bridge-bracket swiveled upon the said pivot, with or without a spring interposed in the pivotal connection between the said bridge-bracket and truck. 5th. A truck frame of two similar parts A and A', bolted together in the middle by means of flanges N, around a central pivot, for attachment to the car, and united at the ends by stay-rods a, leaving end openings with sustaining-wheels C mounted therein, between upward projecting brackets D, said truck frame having also lateral extensions a' with rubbing-pieces a'', and downward projecting brackets E carrying balancing wheels F, in combination with tie-bars d, connecting the fore and aft brackets D at

each side of the truck, and cross-braces e secured to the said tie bars a and secured with their end flanges f, also to the said lateral extensions a', substantially as shown and described. 6th. A truck provided with two sustaining-wheels, two balancing wheels and a central pivot, all arranged as and for the purpose before stated, in combination with a brake lever fulcrumed upon the said pivot, and connected to actuate brake-shoes or friction blocks against the faces of the said sustaining wheels.

#### No. 23,740. Saw Punching and Setting Machine. (*Machine à Etamper les Scies et leur donner la Voie.*)

Josiah Laybolt, Wakefield, Mass., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The combination, in a saw-setting device, of the arm A, having the bed B adapted to support the die-block or a set block, the lever C adapted to support the punch or set, and the operating lever D, all substantially as and for the purposes described. 2nd. The combination of the block A1, the set block B1 having the surface shaped as described, and supported by the bed B, the set C2 adapted to have an oscillating movement to and from the bed imparted to it, the jaw E and the lever e, and its contact-point G for regulating the extent or degree of the set governed or controlled by the thickness of the saw-blade, all substantially as and for the purposes described. 3rd. The combination of the lever C, adapted to support a set or punch, with the jaw E, the lever e, and the movable fulcrum G, substantially as described. 4th. The combination of the set-block B1 and the oscillating saw-set C2, with the jaw E pivoted as described, the lever e, and movable fulcrumed point G, all substantially as and for the purposes set forth. 5th. In a saw setting machine, the jaw E, pivoted as described, and having the two arms e e' with the lever e operated as described, all substantially as and for the purposes set forth. 6th. The combination of the set block B1 and the oscillating set C2, with the jaw E, the lever e, and the adjusting screw or stud F, all substantially as and for the purposes described. 7th. The combination of the set block B1 and the oscillating set C2, the jaw E, lever e, and the adjustable fulcrum point or support G, all substantially as and for the purposes described. 8th. The combination of the set block B1 and the oscillating set C2, the jaw E, the lever e, and the stop g, all substantially as and for the purposes described. 9th. The combination of the lever C, having the inclined surface c and shoulder c2, with the punch or set having the inclined surface as described, with its upper edge in contact with the shoulder c2, all substantially as and for the purposes set forth. 10th. The combination of the lever C carrying the set or punch, with the operating lever D pivoted at D1 all substantially as and for the purposes described. 11th. The combination of the support A1, carrying the bed for the support of the set block, the lever C supporting the set, the jaw E, lever e, and the operating lever D, all substantially as and for the purposes described. 12th. In a saw setting machine, the set governing or regulating jaw E, the lever e, and the contacting point or surface G, in combination with the saw set C2 supported as described, and mechanism for operating the same, whereby the jaw is caused, by the thickness of the saw blade, to adjust or regulate the degree or extent of the set of each tooth, all substantially as and for the purposes described.

#### No. 23,741. Shoe. (*Soulier.*)

Peter Kelly and Joseph Kelly, Hagersville, Ont., 5th April, 1886; 5 years.

*Claim.*—1st. As an improved article of manufacture, a seamless upper plough shoe having the vamp B and quarter C cut in the form shown at A, Fig. 1, in one entire piece, the vamp B being crimped on the line B1, and the quarter bent on the line C1, and united to the vamp on the inner wearing side of the boot, substantially as and for the purpose specified. 2nd. The combination of the ear shaped gauge D, strip and buckle D1, and the vamp and quarter B C cut of one piece of leather, as shown, all arranged and constructed substantially as described.

#### No. 23,742. Mowing Machine. (*Faucheuse.*)

Richard A. Leonard, Fitchburg, Mass., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In the herein described mowing machine, the com-

bination of the main frame A hinged upon the axle and tapered to a narrow neck at its forward end, the transverse rigid metal bar bolted rigidly to the forward neck of the main frame and terminating in an eye or socket, for the passage of the bolt upon which the shoe is hinged, and the rigid metal bar I bolted rigidly at its rear end to the main frame near the axle, and extending forward therefrom parallel to the line of draft of the machine and bolted at its front end to the transverse bar II, all said parts constituting a very light, strong, rigid and economical extended frame for the attachment and support of the cutting apparatus, as set forth. 2nd. In the herein described mowing machine, the top frame M having the pole socket Q, the tool box O, the axle or stud 3 projecting from the end of the tool box and serving to support the lifting lever, the ratchet teeth 4 for the engagement of the spring dog of the lifting lever and the seat standard socket, all said parts being cast integral with the frame and arranged with respect to each other as herein shown and described. 3rd. The combination of the finger bar frame, the shoe pivoted thereto having an offset projecting inwardly under a portion of said frame, and having a finger bar projecting outwardly therefrom, and the lever II pivoted beneath the finger bar frame and connected at its longer end to the lifting lever on the main frame, and projecting at its shorter end over the offset of the shoe and adapted to come in contact above its fulcrum with the upper edge of brace E of the finger bar frame, as set forth.

**No. 23,743. Apparatus for Generating Heating and Illuminating Gas. (Apparatus de Production du Gaz de Chauffage et d'Éclairage.)**

James J. Nowell, Adrian, Mich., U.S. 5th April, 1886; 5 years.

*Claim.*—1st. In an apparatus for generating heating and illuminating gases from atmospheric air, petroleum or other hydrocarbons and superheated steam, the combination of a heating chamber, one or more retorts for decomposing and fixing the gases, an injector and a tubular atomizer of approximately the same length as the retorts, exterior to said chamber in which the petroleum or other hydrocarbons are vaporized and then blended with the steam and air, substantially as described. 2nd. In an apparatus for generating heating and illuminating gases from atmospheric air and petroleum or other hydrocarbons and superheated steam, the combination of a fire chamber with gang-pipes on either side thereof and adjacent thereto, a heating chamber containing a series of retorts to fix the gases, an atomizer of tubular form extending to said chambers, provided with a drip-pipe, and an injector so constructed as to blend the superheated steam and air before the same comes in contact with the hydrocarbon, substantially as described. 3rd. In an apparatus for generating heating and illuminating gases from atmospheric air and petroleum or other hydrocarbons and superheated steam a fire chamber with gang pipes for superheating the steam adjacent thereto, a heating chamber containing a series of retorts, one of which contains a gang of pipes for completing the superheating of the steam, an atomizer, an injector and a test-jet to determine the quality of the gases produced, substantially as described.

**No. 23,744. Injector. (Injecteur.)**

T. McAvity & Sons, (Assignees of William McShane, St. John, N.B., 5th April, 1886; 5 years.

*Claim.*—1st. The construction of a hollow poppet valve *p* in the delivery chamber *D*<sub>2</sub> of an injector, so that, when the pressure is developed, it will fly to its seat *p*, closing the low pressure overflow (so called) and either working on the outside of the forcing combining tube *d* (and there confined by the nut *u* or other corresponding device) or sliding in the casing *B*, as and for the purpose described. 2nd. In an injector, the construction of a hollow poppet valve *p* with two seats *p*<sup>1</sup> and *p*<sup>2</sup> in the delivery chamber *D*<sub>2</sub>, so that, when the pressure is developed, it will fly to its seats *p*<sup>1</sup> and *p*<sup>2</sup>, closing the low pressure overflow (so called) and preventing any return of water from the pressure or delivery chamber *D*<sub>2</sub>, either working on the outside of the forcing combining-tube *d* (and there confined by the nut *u* or corresponding device) or sliding in the casing *B*, as and for the purpose described. 3rd. The combination of the lever *L* with the steam valve *v* in the injector, and the *T* or corresponding overflow valve *r* in the delivery pipe *D*, so that *v* opens before *r* closes, as and for the purpose described. 4th. In an injector, the combination, with the lever *L*, of the lock nut *rs*, as and for the purpose described. 5th. The combination of the lever *L* with the spindle of valve *v*, connected by loose coupling *rs*, and with the standard *e* attached to the casing of the injector, and with the spindle of the valve *r*, by the coupling *rs*, and the swinging link *rs* and movable coupling *rs*, as and for the purpose described. 6th. The combination of the steam valve *v* in an injector, and the overflow valve *r* in the delivery pipe, and the lever *L*, with the poppet *p* in the delivery chamber *D*<sub>2</sub>, all as and for the purpose described.

**No. 23,745. Method of, and Apparatus for Cleaning and Separating the Pulp Matters from the Fibres of Leaves and Plants. (Mode de Nettoyage et de Séparation des Matières Pulpeuses des Fibres des Feuilles et Plantes, et Appareil pour cet objet.)**

Delphin E. Theband, New York, (Assignee of John G. Stephens, Brooklyn,) N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable substances from the fibres thereof, by carding or combing the same from the said substances suspended in front of, that is to say, the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, substantially in the manner described. 2nd. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable

substances from the fibres thereof, by carding or combing the same from the said substance suspended in front of the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, and caused to move along the same, substantially in the manner described. 3rd. The method of separating the pulp of fibrous leaves, stalks and other parts of vegetable substances from the fibres thereof, by carding or combing the same from the said substances suspended in front of the descending side of a carding cylinder or belt, having combing or carding teeth, pins or bristles, and caused to move along the same, and also caused to touch or have contact with the card or comb at one end first, and to gradually increase the range of the contact therefrom along the leaves and the cylinder, substantially as described. 4th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of leaves or plants sidewise along the same, of a feeding bar or rail adapted for suspending the leaves or plants in the described relation with, and feeding them along said cylinder, as herein set forth. 5th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of leaves or plants sidewise along the same, of a feeding bar or rail and suspending clutches thereon, adapted for suspending the leaves or plants in the described relation with, and feeding them along said cylinder, as herein set forth. 6th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of the leaves or plants sidewise along the same, of a feeding guard or shield adapted to cause the leaves or plants to touch the card first at their points, and to gradually increase the range of the contact along said leaves or plants and the cylinder or belt, substantially as described. 7th. The combination, with a carding or combing cylinder having combing or carding teeth, pins or bristles, and being adapted for the feeding of the leaves or plants sidewise along the same, of a feeding guard or shield adapted to cause the leaves or plants to touch the card first at their points, and to gradually increase the range of the contact along said leaves or plants and the cylinder or belt, also to feed the leaves or other vegetable substances along the cylinder or belt in said suspended condition, substantially as described. 8th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also mechanism contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts, and the cylinder or belt, substantially as described. 9th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also mechanism contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts, and the cylinder or belt, substantially as described. 10th. The combination, with a carding or combing cylinder or belt having combing or carding teeth, pins or bristles, of mechanism contrived to hold and suspend the leaves, stalks or other parts of vegetable fibre-bearing substances in front of the descending side of the cylinder or belt, also to feed the same along the cylinder, and also mechanism contrived to cause the leaves or other parts to touch the card first at their points, and to gradually increase the range of the contact from the points of the leaves along said leaves or other parts, and the cylinder or belt, substantially as described. 11th. The combination, of feeding chains *d*, having clutches *l*, *m*, and grooved guides *n*, *o*, with the card cylinder *a*, or belt *a*<sup>2</sup>, having combing or carding teeth, pins or bristles, substantially as described. 12th. The combination of feeding chains *d* having clutches *l*, *m*, and grooved guides *n*, *o*, with carding or combing cylinder *a*, or belt *a*<sup>2</sup>, having the shield *b*, substantially as described. 13th. The combination of the feeding chain *d* having clutches *l*, *m*, and grooved guides *n*, *o*, with the cylinder *a*, or belt *a*<sup>2</sup>, having the cone or a curved guide *h*, to guide the leaves on to the shield *b*, substantially as described. 14th. The combination of the feeding apron *f*, feeding chains *d*, and depressing roller *g*, with the card cylinder *a*, or belt *a*<sup>2</sup>, having combing or carding teeth or pins, substantially as described. 15th. The combination, with the carding cylinder *a*, or belt *a*<sup>2</sup>, having combing or carding teeth, pins or bristles, of the feeding chains *d* adapted to suspend and carry the leaves or plants along the same, and the shifting rolls adapted to grip and shift the leaves or plants in the carrying chains and with relation to the cylinder or belt, substantially as described. 16th. The combination of chains *d*, having clutches *l*, *m*, and grooved guides *n*, *o* one of which is adjustable with the carding cylinder *a*, or belt *a*<sup>2</sup>, substantially as described. 17th. The combination of a card cylinder or belt leaf, or a stalk-carrying and suspending mechanism adapted to carry the leaves laterally along the cylinder or belt, and water sprinklers or jet apparatus adapted to lubricate and wash the cards or combs, and the fibres, while the carding or combing is in progress, substantially as described.

**No. 23,746. Clip for Fastening Teeth on Harrows, etc. (Lien pour Assujétir les Dents des Herse, etc.)**

William J. Copp, (assignee of James McCreath,) Hamilton, Ont., 5th April, 1886; 5 years.

*Claim.*—The clip *A*, bull *G*, bolt *D*, and nut *I*, as described and shown, in combination with the beam or bar *F* for fastening the teeth *H* on harrows, cultivators, ploughs or other implements, substantially as herein set forth.

**No. 23,747. Safety Gate for Swing Bridges. (Barrière de Sécurité pour Ponts-Lévis.)**

Henry Marcheter and Theodore Martin, Wallacburgh, Ont., 5th April, 1886; 5 years.

*Claim.*—1st. The combination of the lever *B* with the roller *H*, and the wheel *E* with the chain *D*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bearer *I*, on the end of the swing, substantially for the purpose hereinbefore set forth.

**No. 23,748. Vehicle Spring. (Resort de Voiture.)**

Thomas J. Magnor, Job King and George W. Rockwell, Buffalo, N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The double coil and torsion spring consisting of isometric branches, having opposite coils formed upon vertical axis, and having their inner and outer arms parallel and extending in the same vertical plane in opposite directions, substantially as specified. 2nd. The double torsion and coil spring consisting of two single coil branches, having their upper and lower portions extended to form parallel arms, which are firmly clipped together to brace each other, substantially as specified. 3rd. An isometric double torsion and coil spring consisting of the coil branches, having their upper arms extending inward and parallel for attachment to the body, and their lower arms extending outward and parallel, and turned upward in their outer portions for shackle connection to the running gear, substantially as specified. 4th. An isometric double torsion spring, consisting of two vertically coiled branches having their upper ends securely braced together for connection to the body, and their lower ends firmly braced together and extended outward for the shackle connection, substantially as specified. 4th. A vehicle spring consisting of single laterally-opposite coils, having parallel attachment and extending in opposite directions from the higher and lower portions of said single coils, substantially as specified.

**No. 23,749. Construction of Staterooms for Railway Cars, Steamboats, etc. (Construction des Cabines de Chars et de Bateaux à Vapeur, etc.)**

Mann's Boudoir Company, (assignee William D. Mann,) New York, N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—A sliding panel constructed with guiding tongues for a small portion of its length, and with a thin or bevelled edge for the remainder thereof, in combination with a frame or jamb having guiding grooves into which said tongues and edges project, substantially as and for the purpose specified.

**No. 23,750. Method of Producing Moulded Articles from Substances Containing Ligneous Fibres. (Mode de Production d'Articles Moulés avec des Substances Contenant des Fibres Ligneuses.)**

Sally G. Cohnfeld, Dresden, (assignee of Ferdinand Thiemon, Bischofswarda,) Germany, 5th April, 1886; 5 years.

*Claim.*—1st. The process of producing moulded articles from saw-dust, wood shavings, wood pulp, dry leaves, straw, hay and other ligneous materials, by treatment with chloride of zinc and basic chloride of magnesium, compression into moulds and drying, substantially as and for the purpose described. 2nd. As an article of manufacture, the material obtained from saw-dust, wood shavings, wood pulp, dry leaves, straw, hay and other ligneous substances, by treatment with chloride of zinc and basic chloride of magnesium, compression into moulds and drying, substantially as and for the purpose specified.

**No. 23,751. Bee-Hive. (Ruche.)**

The D. A. Jones Company, Beeton, Ont., (assignee of James Heldon, Dowagiac, Mich., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In a bee-hive, a case consisting of a frame one of the sides of which is provided with thumb-screws extending through said side, and the opposite of which is provided at the corners with narrow cleats facing said thumb-screws, substantially as and for the purpose set forth. 2nd. The combinator of the bee-hive, the bottom stand having end-pieces of less height than the side pieces, and the detachable bottom-board, the ends of which are provided with downwardly extending cleats resting upon the end-pieces of the bottom stand and the upper side, and rear edges of which are provided with cleats adapted to support the lower case of the bee-hive and afford admission space for bees, substantially as and for the purposes set forth. 3rd. In a honey-board for bee-hives, the combination, with a frame, of a number of slats secured to the bottom side thereof, at a bee-space distance apart, said frame being even with the bottoms of the said slats and projecting a bee-space above them, substantially as and for the purpose set forth. 4th. In a bee-hive of the described class, the combination, with the brood chamber of a hive, the tops of the frames of which are a bee-space below the top edges of the hive, and a case for surplus honey, the bottom of the frames of which are even with the bottom of the case in which they are secured, said frames for surplus honey hanging parallel with, and directly above the frames of the brood-chamber, of a honey-board consisting of slats secured to a frame, said frame being even with the bottoms of said slats and projecting a bee-space above them, said slats being so arranged that the spaces between them will be between the tops of the frames in the brood-chamber below, and the bottoms of the frames in the case above, and the slats themselves will be parallel with the frames and between the spaces between the said frames, substantially as and for the purpose set forth. 5th. In a bee-hive, a brood-chamber consisting of a series of reversible and interchangeable cases, each of said cases being provided with thumb-screws extending through one side, and with cleats at the corners of the other side and facing said thumb-screws, and of a number of reversible frames rigidly secured therein between the said thumb-screws and cleats, and a stand and cover, substantially as and for the purpose set forth.

**No. 23,752. Process of Preparing Iron Ore for Smelting. (Procédé de Préparation du Minerai de Fer pour la Fonte.)**

William Bell, New York, (assignee of Michael R. Conley, Brooklyn,) N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The process of preparing finely divided ores for reduction, consisting in mixing about ninety-five per cent. by weight of said ores, with about five per cent. by weight of pitch or analogous material, heating the same in a pan or other vessel until the pitch or analogous material becomes liquid, thoroughly incorporating the pitch or analogous material with the ore, and, while the mass is in a heated state, forming the compound into bricks, blocks or lumps, substantially as specified. 2nd. A brick block, or lump, consisting of about ninety-five per cent. by weight of sea-sand ores, or other finely divided ores, and about five per cent. by weight of pitch or analogous material, substantially as specified.

**No. 23,753. Nailing Machine. (Machine à Clouer.)**

James W. Brooks, Cambridge, Trustee of the McKay Metallic Fastening Association, Boston (Assignee of Louis Godda, Winchester, Mass., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In a nailing machine, a movable head, an awl and driver bar carried therein, and a nail guiding chute attached to and made movable in unison with the said head, and provided with the nail rest, combined with a shield bar for the heads of the nails, and with an independently movable lever and finger thereon, to act upon the heads of the nails in the said rest, substantially as described. 2nd. The rotating nail receiving drum to deposit nails into a chute, a chute and a shielding bar above it to cover the heads of the nails, combined with a toothed wheel located above the chute, at the point where the nails pass from the drum into the chute, and with means to operate the said toothed wheel when the nails clog to throw from the chute nails improperly lodged therein or thereon, substantially as described. 3rd. The nail chute, provided with the nail rest at its lower end, the shielding bar located above the said chute over the heads of the nails, and the finger-carrying lever and finger, and means to actuate them to throw the finger against the head of the foremost nail and at the rear side of its centre, and also on the head of the nail next to the foremost nails, whereby the said two foremost nails are separated, substantially as described. 4th. The nail chute provided with the nail rest at its lower end, the shielding bar located above the said chute over the heads of the nails, and the finger carrying lever and finger, and means to move the said lever combined with the separator, and means to operate it at the proper time, substantially as described. 5th. The nose and the nail centering devices 57, provided with recesses to receive the nails dropped into the said nose, and with shoulders 59, combined with a spring to operate upon the said centering devices and cause them to hold up the nails to be driven until acted upon by the driver, substantially as described. 6th. In a nailing machine, a nose having a driver passage, a chute to conduct nails directly into it and a finger to act upon the head of the foremost nail in the chute and throw its body out from the end of the chute or toward the drivers, combined with a driver bar and an attached driver, the latter acting to support the endmost nail and the column of nails back of it when the separator is withdrawn, as described. 7th. The chute, provided with rest 44, and a cover, combined with an independently movable rigid pivoted lever 34 and finger 42, to operate substantially as described.

**No. 23,754. Furnace. (Fourneau.)**

Gates A. Clarke, Rochester, N.Y., and William B. Vail, Dover, N.J., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In a furnace provided with a fire-chamber for burning solid fuel, a rotary feed chamber, oven or retort exposed to the fire, and a flue leading from the said fuel-chamber to the fire-chamber, the fuel-chamber normally communicating with the fire-chamber only through the said flue, substantially as described. 2nd. A furnace, provided with a fire-chamber combined with a rotary fuel chamber exposed to the fire, but normally without direct communication with the said fire-chamber, a flue leading from the said fuel-chamber, and means for establishing direct communication between the fuel-chamber and the fire-chamber, for discharging the fuel from the former into the latter, substantially as described. 3rd. In a furnace, a grate and a fire-chamber above it, and an ash pit or air inlet chamber below the same, combined with a rotatable fuel-chamber or retort exposed to the fire in the said fire-chamber, and a flue leading from the said fuel-chamber to the ash-pit, substantially as and for the purpose described. 4th. In a furnace provided with a fire chamber, a fuel-chamber, oven or retort, capable of rotation upon a longitudinal axis, normally without direct communication with the fire-chamber, and having an opening or door to receive fuel from the outside of the furnace, combined with a flue leading from the said fuel-chamber into the fire-chamber, and means for discharging fuel from the fuel-chamber, substantially as described. 5th. In a furnace, provided with a fire-chamber, a rotatory-movable fuel-chamber and a flue leading therefrom, the said fuel-chamber having an opening which may, by its movement, be placed in communication with the said flue or with the fire-chamber, substantially as and for the purpose described. 6th. A furnace, having a fire-chamber combined with a cylindrical fuel-chamber capable of rotation about its axis, and a flue leading from said fuel-chamber to the fire, the said fuel-chamber being placed by its rotary movement in communication with the said flue or with the fire-chamber, substantially as and for the purpose described.

**No. 23,755. Shears. (Cisailles.)**

William Richard, Jeremiah W. Hoy and Uzal E. Cory, Bloomville, Ohio, U.S., 5th April, 1886; 5 years.

*Claim.*—The combination of the main blade having the circular recess open at one side for about one-fourth of its circumference, the operating lever having the nearly-circular lower projection adapted to fit and turn within the said recess, and provided with the upper projection, and the auxiliary sliding blade having the pivot-slot and the inner ear or projection, and pivotally connected at its upper end above the said slot to the upper projection of the operating lever, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

**No. 23,756. Pruning Shears. (Ciseaux de Jardinier.)**

William Richard, Jeremiah W. Hoy and Uzal E. Cory, Bloomville, Ohio, U.S., 5th April, 1886; 5 years.

*Claim.*—In a pair of pruning shears, the combination of a stationary blade or jaw having a rounded recess C in its shank, at the rear side of the same, a curved lever J having rounded lugs I and L upon the forward and rear sides of its upper end, a short bar or link M pivoted upon the side of the shank of the stationary blade, and pivoted at its outer end to the forwardly projecting tip L of the curved lever, and a movable jaw or blade pivoted to the stationary blade and to the rearwardly projecting lug of the curved lever, and having an oblique slot in its shank, in which the pivotal bolt having a friction roller or washer slides, as and for the purpose shown and set forth.

**No. 23,757. Anti-Frictional Chock for the Rigging of Vessels. (Cosse à Anti-Friction pour Agrès de Vaisseau.)**

Lucius Dyer, George S. Sawyer and Charles H. Dyer, Millbridge, Me., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In combination with a sheave journalled in a slot, a flanged plate lining the upper end of the slot, and a pivoted frame above the sheave having guide-rollers for the passage of a sheet, as and for the purpose shown and set forth. 2nd. In combination with a sheave journalled in a slot, a pivoted frame above the sheave having guide-rollers in its outer end, forming a passage for a sheet or rope, as and for the purpose shown and set forth. 3rd. In combination with a sheave journalled in a slot, a bail having its outer end bent at right angles to its arms and pivoted at the top of the slot with the ends of the arms, and guide-rollers journalled in the outer bent portion of the bail, as and for the purpose shown and set forth. 4th. In combination with a sheave journalled in a slot, a bail having its outer end bent outward at a right angle to its arms, and having the ends of its arms pivoted near the outer end of the slot, a frame having its ends pivoted between the bent portion of the bail, and guide rollers journalled in the pivoted frame, as and for the purpose shown and set forth. 5th. In combination with a sheave journalled in a slot, a plate having a downwardly-projecting flange and lining the upper end and the edges of the slot, and provided with two pairs of upwardly projecting lips, a bail having its outer end bent at a right angle to its arms and having the ends of the arms pivoted between the lips, a rectangular frame having trunnions at its ends pivoted in the sides of the bent portion of the bail, and two guide-rollers journalled in the sides of the pivoted frame forming a passage for a sheet or rope, as and for the purpose shown and set forth.

**No. 23,758. Composition for Treating Cordage. (Composition pour le Traitement du Cordage.)**

The United States Waterproofing Fiber Company, New York (Assignee of William H. Hooper, New York, and Francis Hyde, Brooklyn), N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The improved cold and self-setting water-proofing and preserving composition for cordage, consisting of resin and paraffine wax, assimilated or mixed with each other, and reduced to a proper consistency by a volatile liquid, for the purpose set forth. 2nd. A cold and self-setting composition for treating cordage, fish nets or fabrics, having as a base resin and paraffine wax, which are assimilated or mixed with each other, residuum or distillate, and benzene for thinning the same, substantially as and in the proportion specified. 3rd. The improved cold and self-setting composition for treating cordage, fish-nets and fabrics, consisting of resin, paraffine wax and a thinning liquid to which is added a residuum or distillate and a coloring material, substantially as set forth.

**No. 23,759. Sled. (Traîneau.)**

George G. Haslup, Buffalo, N.Y. (Assignee of William Haslup, Sidney, Ohio.) U.S., 5th April, 1885; 5 years.

*Claim.*—1st. The runners A formed of T-iron or steel, having web a notched and bent down to overlap the web b, to form the terminus of the bent runner, substantially as set forth. 2nd. In combination with the T-runners A and beams D, the standards B, C, united at their lower ends to the web a of the runner, and at their upper ends to the beams D, substantially as set forth. 3rd. In combination with the runners A and beams D, the standards B, C, provided with the forks b, d, at the lower end, and bent flange c at the upper end, substantially as set forth. 4th. In combination with the runners A, beams D and their supporting standards, the girders G, H, riveted to the web of the runners at their front and rear ends, substantially as set forth. 5th. In combination with the runners A, the girders G, H, and diverging standards B, C, rigidly connected together, substantially as set forth. 6th. In combination with the runners A, the diverging brace B, C, beams D and longitudinal rail I connected to the beams, substantially as set forth.

**No. 23,760. Trunk. (Coffre.)**

Jacob Lagowitz (Assignee of Alexander C. Frankel), Newark, N. J., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. In combination with a trunk, its tray and lid, the herein-described tray support, consisting of the parts a, b, and c, the part a being attached at one end to the trunk, the part b being attached at one end to the lid above the tray, and the part c being pivotally connected at two points with the parts a and b, as shown and described, whereby the tray may be lifted and held in raised position without the use of other supports. 2nd. In combination with trunk-body A and lid B, bars a pivotally attached to said body A, bars b pivotally attached to the lid B, bars c connecting and pivotally attached to bars a and b and tray C carried by the bars c, substantially as described and shown. 3rd. In combination with

body A and lid B, a tray-support consisting of bars a pivotally attached to the ends of the body A, bars b pivotally attached to the ends of the lid and provided with slots f, pins g passing through said slots, and parts c connecting and pivotally attached to the bars a, b, 4th. In combination with trunk-body A, lid B and the tray support consisting of bars a, b, c, attached to the body, to the lid and to each other, as explained, tray C having hooks or ears to rest upon the bars c, whereby the tray is adapted to be applied to, or removed from, its support at will.

**No. 23,761. Heater. (Calorifère.)**

William H. Donelow and James Mathar, Ulster, Penn., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The combined heater and boiler comprising the outer casing C, the combustion chamber E, and steam boiler G, formed together and of like diameter, the boiler being above the combustion chamber, and the said boiler and combustion chamber being of smaller diameter than the outer casing, whereby an air-space is left surrounding them, pipes for supplying air to this space to be heated, and pipes for conveying the heated air therefrom, the smoke-pipe M leading from the combustion chamber up through the centre of the boiler, and the flues g in the boiler arranged around the smoke-pipe and communicating therewith, at their upper ends, below the top of the outer casing, substantially as described. 2nd. The combination, with the casing A, of the steam-boiler and air-heater inclosed in the casing, and the oven having double-walls located above and outside the casing, and the pipes P and Pi connecting the oven with the boiler to circulate steam around the oven and support the same, substantially as described.

**No. 23,762. Lead and Crayon Holder. (Porte-Crayon.)**

The Eagle Pencil Company, (assignee of Cloes W. Boman,) New York, N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. The combination, with the spring-controlled lead-clamping and releasing mechanism, of a lead and crayon holder, of a "back-stop" arrangement, and operating substantially in the manner and for the purposes hereinbefore set forth. 2nd. The combination, with the sheath or handle, the stop-gauge mechanism, and the spring-controlled lead-clamping and releasing mechanism of a lead and crayon holder, of a "back-stop" arranged and operating substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the sheath or handle, the guide tube, the receiver connected therewith by a pin and inclined slot connection, the toothed back-stop the stop-gauge, jaws carried by the receiver, the collapsible or split nozzle carried by the guide tube, the pressure cap and the retracting spring, these parts being connected and arranged together for joint operation, substantially as hereinbefore set forth.

**No. 23,763. Device for Projecting Marbles. (Appareil pour Lancer les Billes.)**

Frederick H. Voigt and Bernard Deltzsch, Buffalo, N.Y., U.S., 5th April, 1886; 5 years.

*Claim.*—1st. An implement for projecting marbles composed of two arms, and spring jaws attached thereto, between which the marble is placed and whereby the marble is projected, substantially as set forth. 2nd. The combination, with the connected arms A, of projecting jaws B, and springs c, whereby the jaws B are attached to the front ends of said arms, substantially as set forth.

**No. 23,764. Button Setting Instrument. (Outil pour Poser les Boutons.)**

The Pratt Manufacturing Company, Portland, Me., (assignee of Arnaldo M. English, Boston, Mass.,) U.S., 6th April, 1886; 5 years.

*Claim.*—1st. In apparatus for setting buttons consisting of a frame A, provided with a guide n, and a button-carrying plunger, the combination with a lever and link, of the spring m having one end resting on a shoulder at the lower end of the said lever, and the other embracing the said link, substantially as described. 2nd. In an apparatus for setting buttons, the lower frame-work or head provided with spring-rests, a fastener-rest or support and a spring-retaining pin, in combination with a fastener-holding spring O provided with jaws t, z, and lips b, dt, all arranged as and for the purpose set forth, substantially as described. 3rd. In an apparatus for setting buttons, a fastener-rest or support, in combination with a spring provided with jaws t, z, and lips b, dt, whereby the fastener is firmly held in position by the jaws, and automatically released by the action of the plunger or button-holding device, substantially as described. 4th. In an apparatus for setting buttons, a U-shaped fastener-holding spring provided with shoulders, and a pin or lug adapted to carry and position said spring, whereby the free lateral movement of said spring allows the fastener to centre and position itself, substantially as described. 5th. In an apparatus for setting buttons, the combination, with a fastener-rest or support, of a spring O provided with jaws t, z, and lips b, dt, substantially as described.

**No. 23,765. Machine for Crimping Leather. (Machine pour Cambre le Cuir.)**

John A. McRae, Montreal, Que., (assignee of Thomas T. Marshall, Hamilton, Ont.,) 6th April, 1885; 15 years.

*Claim.*—1st. The combination, in a leather crimping machine, of the two frames a with their bearings and shaft, for transmitting power to the surface faced eccentric c keyed on the shaft c3, thus giving power to the instep-shaped punch E, substantially as and for the purpose hereinbefore set forth. 2nd. In a leather crimping machine, with the ram D and punch E, the combination of the cam I, oscillating arm J provided with screw to oscillate on the shaft J1, the arms K attached to the press plate F by means of set screws, for

adjusting the same, and the counter arm K<sup>c</sup> with weight K<sup>a</sup>, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a leather crimping machine, of the frames a and the mode of transmitting power to the instep-shaped punch E, the rigid bed G, and the bearings H, substantially as and for the purpose hereinbefore set forth. 4th. The combination, in a leather crimping machine, of the punch and press plate with the mould G in two halves, provided with rubber strips at the sides, adjusted in proper position by means of set screws through the flanges of the bed G, and that portion of mould G, to slip in the round end of mould, substantially as and for the purpose hereinbefore set forth. 5th. In a leather crimping machine, the combination of the crimping punch e, the press plate and the mould with the concave and instep-shaped under pressure foot I, and the apparatus for moving the said foot up and down, all operating substantially as and for the purposes hereinbefore set forth. 6th. The combination, in a leather crimping machine, of the machine frames and legs, with the operating parts operating conjointly in transmitting power to the punch and press plate, with the mould and bed for same, and the under pressure foot with its apparatus for working the same, substantially as and for the purpose hereinbefore set forth.

**No 23,766. Process of, and Apparatus for Treating Essential Oils to obtain the Concrete or Crystalline part thereof separate and apart from the Liquid Portion.** (*Procédé de Traitement des Huiles Volatiles pour en Extraire le Cristallin de la Partie Liquide*)

Albert M. Todd, Nottawa, Mich., U.S., 6th April, 1886; 5 years.

*Claim.*—1st. The process of obtaining a crystalline product from the oil of Mentha Piperita by first, congealing it or rendering it in a semi-solid or jelly-like form, then separating or isolating it by gradually draining off the oil therefrom, and, thirdly, perfecting or hardening the crystalline mass by fusing the crystals and subjecting them to a second congealing and a gradual raising in temperature, substantially as described and for the purposes specified. 2nd. The process of obtaining a crystalline product from the oil of Mentha Piperita, by first, congealing or rendering it in a semi-solid or jelly-like form, then isolating the crystalline portion by separating the oil therefrom, and, thirdly, perfecting or hardening the crystalline product by a gradual raising in temperature, substantially as described. 3rd. The process of obtaining a crystalline product from the oil of Mentha Piperita which consists in first, congealing it in a semi-solid or jelly-like form, then isolating the crystals by separating the liquid portion thereof, substantially as described. 4th. In an apparatus for crystallizing essential oils, the combination of an oil containing receptacle, a tank situated inside of said receptacle, and a vat surrounding the same on the outside, said inner and outer vessels being adapted to be supplied with a suitable refrigerating substance, substantially as described. 5th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having a suitable drainage, a tank situated inside of said receptacle, a vat surrounding the same, said inner and outer vessels being adapted to be filled with a refrigerating substance and means for heating the device, substantially as described. 6th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle, having a removable cover, drain pipes having valves connected to the receptacle, a tank situated within the receptacle, an outer vat surrounding the oil-containing vessel, and means for feeding the said inner and outer vessels with a refrigerating substance, substantially as described. 7th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having a depressed bottom, a drain pipe connected to the apex of said bottom, a removable cover having an air pipe with suitable valves, a tank removably situated within the oil-containing receptacle, and a vat surrounding the outside thereof, said inside and outside vessels being adapted to be fed with a refrigerating substance, substantially as described. 8th. In an apparatus for crystallizing essential oils, the combination of an oil containing receptacle having suitable drainage, an air pipe supporting a trap connected to the removable cover of said containing receptacle, an inside tank containing suitable means of refrigeration, a surrounding vat also provided with refrigerating appliances, and a coil of pipe in the bottom of said vat adapted to be supplied with a suitable heating substance, substantially as described. 9th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain pipes in its sides and bottom, an air pipe connected to the top thereof, having an elbow extending into, and surrounded by a closed jacket, and means for feeding this jacket with a suitable refrigerating substance, substantially as described. 10th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain pipes in its sides and depressed bottom, a removable cover therefor having an air pipe entering and supporting a trap connected thereto with suitable valves and an escape pipe, an internal tank resting on the depressed bottom of said containing receptacle having suitable handles and a removable top, a vat surrounding these vessels, said inner and outer vat being adapted to be fed with a refrigerating substance by suitable means, and a heating coil lying in the bottom of the surrounding vat being adapted to be fed with a suitable heating material, substantially as described. 11th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle having suitable drain pipes, an internal tank removably situated inside of the containing receptacle, a vat surrounding these vessels, said internal and external vessels being provided with a coil of refrigerating pipes suitably supported therein, and supplied with a suitable refrigerating substance, and a coil of pipe in the bottom of the surrounding vat supplied with a heating material when desired, substantially as described. 12th. In an apparatus for crystallizing essential oils, the combination, with a surrounding vat containing a suitable refrigerating substance, of a centrifugal drying device consisting of a perforated vessel in the form of an inverted frustum of a cone, a vessel surrounding this perforated vessel for catching the oil, and suitable gears and shafts to which power is applied for turning

the said perforated vessel at a desirable rate of speed, substantially as described. 13th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle provided with suitable drainage, for separating the liquid from the solid portion, and means for ingress of air above the surface of the oil, substantially as described. 14th. In an apparatus for crystallizing essential oils, the combination of an oil-containing receptacle surrounded by, or enclosing a tank suitably adapted for containing a refrigerating medium, said receptacle having suitable drainage adapted for separating the liquid from the solid portion, substantially as described. 15th. In an apparatus for crystallizing essential oils, the combination, with a containing vessel A, of an air pipe or opening D, provided with a condenser D adapted to condense and recover the vapors from said containing vessel, substantially as described. 16th. In an apparatus for crystallizing essential oils, the combination of a containing vessel A having suitable drain pipes A<sup>3</sup>, a tank C situated within said containing vessel A, an outer vat B, surrounding vessels A and C, said inner and outer vessel being fed with a refrigerating substance, and a heating coil E in the bottom of the vat, substantially as described. 17th. The hereinbefore described concentrated and crystalline product obtained as stated from the oil of Mentha Piperita, fusible only at high temperatures and having the properties of remaining dry and hard and if not liquifying at ordinary atmospheric temperatures.

**No. 23,767. Bottle Stopper.**

(*Bouchon de Bouteille.*)

William Beardsley, Beacon, Iowa, U.S., 6th March, 1885; 5 years.

*Claim.*—The combination, with the apertured cap fitted upon the bottle-neck, of the apertured packing interposed directly between the cap and the upper edge of the bottle-neck, and provided, upon the inner surface around its aperture, with a pendent annulus or flange, and the ball-valve, substantially as and for the purpose set forth.

**No. 23,768. Regenerative Gas Stove.**

(*Poêle à Gaz Rénovificateur.*)

John W. Baker, Philadelphia, Penn., U.S., 6th April, 1886; 5 years.

*Claim.*—1st. A gas stove having a drum of the form of an annulus with a thimble communicating therewith, a burner surrounding the same with a passages, and a chamber receiving products of combustion and air, said chamber being in communication with the thimble, whereby the mingled products of combustion and air are directed into the drum, substantially as described. 2nd. A gas stove consisting of upper and lower drums and flues communicating therewith, a thimble, a gas burner with air passages around the same, and a chamber, whereby the products of combustion and air are directed into said chamber, and then passed through the thimble into the drums and flues, substantially as described. 3rd. A gas stove consisting of upper and lower drums and vertical flues communicating therewith, the lower drum being of the form of an annulus, pipes radiating from the inner periphery of the lower drum, an inverted thimble connected with said pipes, air passages surrounding the burner, and a chamber, said parts being arranged and combined substantially as described, whereby the products of combustion enter the chamber and then pass into the thimble by which they are directed into the lower drum, and from thence through the flues into the upper drum, substantially as described.

**No. 23,769. Drying Frame for Lace Curtain.**

(*Châssis pour Sécher les Rideaux de Dentelle.*)

John Ptolomy, Winnipeg, Man., 7th April, 1886; 5 years.

*Claim.*—The combination of the bars A, A, with legs K, K, braces F, F, either fixed or folding, adjusting strut G, G, covering plates C, C, with centre legs D, D, cross-bars B, B, pins, bolts and perforations H, H, substantially as and for the purpose hereinbefore set forth.

**No. 23,770. Machine for Tile Ditching.**

(*Machine à Drainage en Tuile.*)

William A. Boyd, Ekfrid, Ont., 7th April, 1886; 5 years.

*Claim.*—1st. The combination of the shovel B, the elevator D, D, and the discharge elevator L, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the lower F, with the shovel B, the elevator D, D, and the discharge elevator L, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the lower F, the shovel B, the elevator D, D, and the discharge elevator L, with the combined bevelled gear wheel H, and the square gear wheel S, the pinion wheel T, and the pulley K, as operating parts, substantially as and for the purposes hereinbefore set forth.

**No. 23,771. Barley Machine.**

(*Machine à Perler l'Orge.*)

Sigmund Spitzer, Chicago, Ill., U.S., 7th April, 1886; 5 years.

*Claim.*—1st. The combination of the revolving stone, the perforated enclosing casing revolving in opposite direction to said stone, and the stationary casing, with the shafts *f*, valves *f* provided with the arms *f*, weight *w*, and the tappets *p*, rod *a*, cam *s*, and the gearing, whereby said valves are actuated, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the revolving stone B, pulley *b*, the perforated revolving casing C revolving in opposite direction to said stone, gear-wheel *d*, the pinion *d*, shaft *d*, and cone pulleys *e* and *e*, substantially as and for the purpose hereinbefore set forth. 3rd. A pearl barley machine comprising the frame A, shell D, the revolving stone B, revolving perforated casing C, provided with the opening *e*, and forming, with said shell, the space *a*, the mechanism for actuating said stone and casing, and the shafts *f*, arms *f*, tappets *p*, valves *f*, and weights *w* secured on

said casing and revolving therewith, rod *h*, cam *i*, and the mechanism for actuating said cam consisting of the gearing *k*, *k1*, *k2*, face wheel *l*, the shaft *m*, the work wheel *n*, worm *o*, pinion *p*, and gear wheel *q*, substantially as and for the purpose hereinbefore set forth.

### No. 23,772. Hulling Machine.

(*Machine à Eplucher.*)

Sigmund Spitzer, Chicago, Ill., U.S., 7th April, 1886; 5 years.

*Claim.*—The combination of the movable bisected casing *C*, set-screws *c*, *c*, having pointers *n*, indicator scales *m*, and a hulling stone, substantially as and for the purpose hereinbefore set forth.

### No. 23,773. Grain Tally. (*Compteur à Grain.*)

Thomas Bellaire and John Bousha, Bello River, Ont., 7th April, 1886; 5 years.

*Claim.*—1st. The combination, in a grain tally, of the reciprocating platform *D* carrying the slide *E*, and provided with the slotted curved bar *E*, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, in a grain tally, of the hinged lever *J*, the connecting rod *K*, levers *S* and pawl *T*, for rotating the wheels *U* and *V*, which operate the pointers on the dials *L* and *I*, substantially as described and for the purposes specified. 3rd. In combination with a grain tally, the dials *L* and *I* provided with two pointers, each of which are operated from the interior of box *H* by disks *e1*, *e2*, *e3* and *e4*, substantially as described and for the purposes specified. 4th. In combination with a grain tally, the tunnel *L*, supported from the frame *A* by the standards *M*, substantially as and for the purposes hereinbefore set forth.

### No. 23,774. Portable Ventilating Apparatus. (*Appareil Portatif de Ventilation.*)

Robert E. Walsh, New York, N.Y., U.S., 7th April, 1886; 5 years.

*Claim.*—In a portable ventilating apparatus, the combination of the box *A*, and the box *B* having the racks *a* upon their sides, with the frame *G* carrying the pinions *a1*, shaft *a2*, ratchet *a3*, and pawl *a4*, whereby the boxes *A* and *B* and their connections may be raised or lowered at will, substantially as herein shown and described.

### No. 23,775. Blast Pipe for Locomotive Engines, etc. (*Tuyère d'Echappement pour Locomotives, etc.*)

Henry Adams and William Adams, London, Eng., 7th April, 1886; 15 years.

*Claim.*—1st. An engine with a blast-pipe, having an annular orifice, and a mouth communicating with the interior of the annulus, and facing or adjacent to the extremities of the lower boiler tubes. 2nd. An engine with a blast-pipe, having an annular orifice, and the mouth communicating with the interior of the annulus so screened so to cause the passage through the annulus to be supplied mainly or entirely by the gases drawn from the lower boiler tubes. 3rd. An engine with a blast-pipe having an aperture of annular or elongated form, and a mouth facing or adjacent to the lower boiler tubes. 4th. A blast-pipe with an aperture of annular form, and an expanded mouth facing or adjacent to a tube or passage from which air or gas is drawn into the interior of the chamber, all substantially as and for the purpose hereinbefore set forth.

### No. 23,776. Spring Board Waggon.

(*Voiture Planche.*)

Edward Stone and Charles E. Rhicard, Waterloo, Quo., 7th April, 1886; 5 years.

*Claim.*—1st. The combination, with the bolster *A*, and rear axle *B*, of the side bars *C*, and flexible platform *D* consisting of slats *G*, and cleats *E*, supported from the bolster and rear axle by springs *F*, as set forth. 2nd. The blocks *I* interposed between the platform and springs, and having a curved face to take the bearing of the springs in the direction of their length when the platform is depressed to the purpose set forth. 3rd. The spring *K* having a flat portion secured to slats of the platform, and upturned ends secured to the base of the seat, as set forth.

### No. 23,777. Wood Preserving.

(*Conservation des Bois.*)

Joseph P. Card, St. Louis, Mo., U.S., 7th April, 1886, 65 years.

*Claim.*—1st. The herein-described mode of introducing dead-oil into wood for its preservation, which consists in introducing dead-oil into the wood, and then, by the introduction of a second fluid into the wood, causing the dead-oil to be distributed further into the wood. 2nd. The herein-described mode of introducing liquid dead-oil into wood for its preservation, which consists in introducing liquid dead-oil into the wood and then, by the introduction of a soluble antiseptic solution, suitable for wood-preserving in conjunction with dead-oil, causing the dead-oil to be distributed farther into the wood, substantially as described.

### No. 23,778. Electric Signal Device.

(*Appareil de Signal Electrique.*)

William Hand, Hamilton, Marcus C. Wright and Francis A. Pockey, Toronto, Ont., 7th April, 1886; 5 years.

*Claim.*—1st. As a danger signal for railroads, one or more torches placed in proximity to the track and connected to an electrical device by which the torch may be fired from one or more points on the railroad. 2nd. As a danger signal for railroads, one or more detonating cartridges placed in proximity to the track, and connected to an electrical device by which the detonating cartridge may be fired from one or more points on the railroad. 3rd. As a danger signal for rail-

roads, one or more torches arranged in connection with one or more detonating cartridges placed in proximity to the track, and connected to an electrical device by which each pair of torches and detonating cartridges may be simultaneously fired from one or more points on the railroad. 4th. An open-ended vessel pivoted at its base, overbalanced by a weighted arm, and supported by the armature of an electro-magnet, so that the charging of the magnet or the breaking of the current shall cause the armature to release the pivoted vessel and permit it to discharge its contents on to the fuse of a torch or detonating cartridge, substantially as and for the purpose specified. 5th. An electrical device in which the armature of an electro-magnet is arranged to hold a spring plunger until actuated by a current of electricity, when the said plunger is caused to strike a percussion cap, or its equivalent, by which the detonating cartridge or torch is fired, substantially as and for the purpose specified.

### No. 23,779. Injector. (*Injecteur.*)

Horace B. Murdock, Detroit, Mich., U.S., 7th April, 1886; 5 years.

*Claim.*—1st. In an injector, a delivery tube constructed with its entrance end, and relief orifices opening into the same overflow chamber and, in connection therewith, an escape valve located below the entrance to said tube, said valve constructed to open automatically under the pressure of water in the overflow chamber, when the same has risen to a level a little below the entrance end of the delivery tube, and to automatically close when the water has wasted below said level, substantially as described. 2nd. An automatic injector consisting of the combination, with a force tube and a combining tube, of a delivery tube having its entrance end, and relief orifices opening into said overflow chamber, and a single escape valve, said valve constructed to automatically open whenever the pressure within the overflow chamber equals or exceeds that exerted by a column of water at a level a little below the entrance end of the said delivery tube, and to automatically close, and to remain closed whenever there is less pressure within said chamber, substantially as described. 3rd. The combination, with an injector having an overflow chamber *G*, a steam inlet *B*, a water inlet *C*, and a vertical delivery tube *F*, provided with an entrance and located within the overflow chamber, of an escape valve *G1* arranged below the upper entrance end to said delivery tube, and opened automatically by the column of water before the latter can rise to said upper entrance end, substantially as described. 4th. In an injector, a reversible forcing tube adapted, by reversing the tube, to present its discharge end at a different distance from the mouth of the combining tube, substantially as and for the purpose described. 5th. In an injector, a delivery tube adapted to be inserted through an opening in the end of the case, said case provided with a screw-cap adapted to close said opening and clamp said delivery tube rapidly in position, substantially as shown and described.

### No. 23,780. Art of Making Dry Sand Cores and Apparatus therefor. (*Art de Faire les Noyaux en Sable Gras et Appareil pour cet objet.*)

James H. Blossing, Albany, N.Y., U.S., 7th April, 1886; 5 years.

*Claim.*—A core-box for forming cores of the character herein described, consisting of the corresponding parts *C*, semi-cylindrical slides *D*, and destructible model *B*, the said several parts being constructed, combined and arranged to produce the required form of said core, in the manner substantially as specified.

### No. 23,781. Oil Burner. (*Foyer à Huile.*)

Evan A. Edwards, Chicago, Ill., U.S., 7th April, 1886; 5 years.

*Claim.*—1st. The combination of the gas-generating retort, the tube *T* opening thereinto at a level with the floor of the retort and connecting the same with the vent-tube, the vent-tube *T* situated under the retort, and having vents upon its upper side, inverted funnel-shaped flues situated above such vents and passing through the retort, and the doffetor situated above the retort, all being constructed and combined substantially as and for the purpose set forth. 2nd. The combination, in an oil-burner, substantially as described, of a gas-generating retort, constructed as shown, with inverted funnel-shaped flues passing upward therethrough, a gas pipe, the mouth of which is on a level with the floor of the retort, and gas-vents connected with the retort by such pipe, and situated beneath the mouth of the flues, substantially as set forth, whereby the flame is caused to heat the upper portion of the retort in excess of the bottom of the retort where the oil is vaporized, so that the oil is subjected to a moderate heat and the vapor is subjected to excessive heat.

### No. 23,782. Pencil and Tool Holder.

(*Porte Crayon et Porte-Outil.*)

Stephen W. Wood, New York, N.Y., U.S., 7th April, 1886; 5 years.

*Claim.*—1st. A pocket implement herein described and shown, consisting of a casing open at both ends, a sliding tool-carrier within said casing capable of movement back and forth, a stop or stops on said casing to engage and hold said carrier at the limit of its movement in either direction, and in a central position, substantially as herein set forth. 2nd. In an implement of the character described, a sliding hollow tool-carrier with longitudinal openings in its side or sides, the edges of said openings turned inward to form substantially radial flanges, in combination with an inclosing casing, and a stop or stops projecting into said openings, substantially as herein set forth. 3rd. In an implement of the character herein described and shown, the combination of a tubular casing, a tool-carrier capable of moving back and forth therein, and having slots in its opposite sides, each slot having a wide and a narrow part, the wide portions being in opposite sides of a central point, and headed stops on the casing, the heads adapted to the wide parts of the slots, and the necks to the narrow parts, whereby the slide is engaged and held in a central position, substantially as set forth.

**No. 23,783. Milk Cooler. (Garde-Lait.)**

Horatio Arthur, Lowville, N.Y., U.S., 8th April, 1836; 5 years.

*Claim.*—In the milk-cooler, the combination of the cooling tank A, the exit pipe F, the cylindrical can C with its discharge tube H, cover N, the stopple J, the trough V, constructed, arranged and operating in the manner and for the purposes set forth.

**No. 23,784. Churn. (Baratte.)**

Edward S. Cassan, Campbellford, Ont., 8th April, 1836; 5 years.

*Claim.*—The combination, in a churn dasher, of the shaft A having the collar a, and a socket or cup formed in the shaft, with the wings c united in pairs by the hubs d, the sleeves e, and the nut f engaging in a screw-thread formed on the shaft A, as herein shown and described. 2nd. The combination of the above described churn-dasher with the base b, secured to the bottom of a churn, and having the pivot B formed on it, and projecting upward into a socket or cup formed in the shaft of the dasher.

**No. 23,785. Grinding Mill. (Moulin à Moudre.)**

William R. Eynon, Cleveland, Ohio, U.S., 8th April, 1836; 5 years.

*Claim.*—1st. A grinding mill comprising the concave A having vertical corrugations, the cylinder B having both longitudinal and annular corrugations, and cylinders C and D having both longitudinal and annular corrugations, all arranged and operating substantially as shown and described. 2nd. A grinding mill comprising the concave A, having the hood A', and vertical corrugations, the cylinder B having both annular and longitudinal corrugations, and the cylinders C and D having both annular and longitudinal corrugations, all arranged and operating substantially as shown and described.

**No. 23,786. Heating and Ventilating Apparatus. (Appareil de Chauffage et de Ventilation.)**

George W. LeVin, Chicago, Ill., U.S., 8th April, 1836; 5 years.

*Claim.*—1st. The combination, with the fire-space A, of an air-heating chamber or reservoir fixedly arranged within, or contiguous thereto, provided with an air-induction space S, or one or more supply parts C, an eduction pipe or conveyor E provided with one or more valves or dampers, for controlling the volume and direction of discharge of the heated air passing from said chamber or reservoir, and an exhaust opening e, and one or more distributing and ventilating ports, all arranged and operating substantially as and for the purpose described. 2nd. The combination, with the fire-space A, of an air-heating chamber or reservoir fixedly arranged therein or contiguous thereto, an eduction pipe or conveyor E provided with an exhaust opening e, and one or more valves or dampers, for controlling the volume and direction of discharge of the heated air passing from said chamber or reservoir, one or more distributing and ventilating ports, and one or more eduction or ventilating ports F, all arranged and operating substantially as and for the purpose described. 3rd. The combination, with the fire-space A, of an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, two or more eduction pipes or conveyors E, each provided with an exhaust opening e, one or more valves or damper v, for controlling the volume and direction of discharge of the heated air passing from said chamber or reservoir, and one or more distributing and ventilating ports, all arranged and operating substantially as and for the purpose described. 4th. The combination, with the fire-space A, and an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, provided with suitable air-supplying eduction and distributing devices, of one or more eduction or ventilating ports P, substantially as and for the purpose described. 5th. The combination, with the fire-space A, of an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, one or more eduction pipes or conveyors E, each provided with a terminal or exhaust opening e, and one or more valves or dampers, for controlling the volume and direction of discharge of the heated air passing from distributing and ventilating ports, each provided with a suitable register H, substantially as and for the purpose described. 6th. The combination, with the fire-space A, and an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, provided with suitable air-conveying and distributing devices, of the air conveyor D, substantially as and for the purpose described. 7th. The combination, with the fire-space A, and the chamber or air-heating reservoir fixedly arranged therein, or contiguous thereto, provided with suitable air-conveying and distributing devices, of the cold-air supply-port C3, substantially as and for the purpose described. 8th. The combination, with the fire-space A, and the air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, of the air conveyor D, and the connecting flue C2, substantially as and for the purpose described. 9th. The combination, with the fire-space A, and an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, provided with the induction space S, or other means of air supply from interior of the compartment within which said chamber or reservoir is located, and with suitable air-conveying and distributing devices, of an air conveyor D, or supply port C3, substantially as and for the purpose described. 10th. The combination, with the fire-space A, and an air conveyor D, or supply port C3, of an air-heating chamber or reservoir fixedly arranged within, or contiguous to said fire-space, provided with suitable air-conveying and distributing devices and a valve or damper A, substantially as and for the purpose described. 11th. The combination, with the fire-space A, of an air-heating chamber or reservoir C, having the extended portion c, and induction space S, and provided with suitable air-conveying and distributing devices, and a damper or register v, for regulating the volume of air admitted to said chamber or reservoir through said induction space, substantially as and for the purpose described. 12th. The combination, with the fire-space A, of an air-heating chamber or reservoir fixedly arranged therein, or contiguous thereto, provided with suitable air conveying and distributing devices, an air conveyor D, and a furnace W, all arranged and operating substantially as and for the purpose described.

**No. 23,787. Nut Lock. (Serre-Ecrou.)**

Percy Webb, Montreal, Que., 8th April, 1836; 5 years.

*Claim.*—The combination, with the bolt C, and nut D, of the gravitating block E sleeved on the nut, and spring F sleeved on the bolt and under the nut, and turned over upon the block, whereby the heavier side of the block will offer resistance to the nut being turned, and the spring retain the block on the nut, as set forth.

**No. 23,788. Rein-Holder. (Porte-Guide.)**

Thomas O. Butler, Chicago, Ill., U.S., 8th April, 1836; 5 years.

*Claim.*—In line supports, the round-bored standard A provided with square-holed cap B, the adjusting screw F I holding the cap on the standard, and the forked plate H holding the set-screw in place, in combination with the square shank C, and line supports D, D', E, as and for the purpose specified.

**No. 23,789. Car-Coupler. (Attelage de Chars.)**

Daniel J. Summers, Waynesborough, Penn., U.S., 8th April, 1836; 6 years.

*Claim.*—1st. In a car-coupler, the combination, with a two-branch draw-head and a cross-pin loosely secured in the branches, of a vertically and laterally swinging coupling hook, a spring-actuated buffer and a sliding hook connected with the buffer, and located in the same plane with and behind the coupling-hook, substantially as set forth. 2nd. In a car-coupler, the combination, with a two-branch draw-head and a cross-pin loosely secured in the branches, of a coupling-hook consisting of a vertically swinging section on the cross pin between the branches of the draw-head, and a laterally swinging section pivotally secured in the free end of the aforesaid section, substantially as set forth. 3rd. In a car-coupler, the combination, with the two-branch draw-head and the vertically-swinging coupling-hook secured between the branches, of the spring-actuated double-headed buffer, adapted to slide in channels formed in the branches of the draw-head, and provided with a hook adapted to engage the shank of the coupling-hook and hold the same in a position for coupling, substantially as set forth. 4th. In a car-coupler, the combination, with the two-branch draw-head and the vertically-swinging coupling-hook, of the spring actuated buffer adapted to lock and release the coupling-hook, and provided with guide-studs adapted to work in sockets in the draw-head and steady the sliding movement of the buffer, substantially as set forth. 5th. In a car-coupler, the combination, with the two-branch draw-head and the vertically-swinging coupling-hook and formed integral with the latter, of a pair of jaws adapted for use with ordinary coupling links, substantially as set forth.

**No. 23,790. Combined Brooch and Flower-Holder. (Broche Porte-Bouquet.)**

John Duorn, Toronto, Ont., 9th April, 1836; 5 years.

*Claim.*—In a brooch, the combination, with the front A, of the back B so connected as to leave an open space between said front and back for holding flowers, substantially as described.

**No. 23,791. Injector. (Injecteur.)**

John Desmond, Detroit, Mich., U.S., 9th April, 1836; 5 years.

*Claim.*—1st. In an injector, the combination, with the enclosing case, of combining and discharge cones, made in one piece and provided with relief outlets to the overflow near the base c of the combining tube, substantially as described. 2nd. In an injector, the combination, with the enclosing case, of combining and discharging cones, made in one piece and provided with radial holes R near the base of the combining tube, said radial holes affording a relief upon all sides into the overflow chamber, substantially as described. 3rd. In an injector, the combination, with the enclosing case having the diaphragm partition J provided with a central opening, of combining and discharging cones, made in one piece and provided with the necks a, b, of the plug E having flanged bushing d, all arranged substantially as described. 4th. In an injector, the combination, of the main casting A having inlet and discharge openings, and lateral branches B, C, of a diaphragm plate forming a water inlet chamber at one end, and an overflow chamber at the other end, of a steam nozzle secured in the water chamber of combining and discharge cones, made in one piece and provided with relief passages R and S, of the plug E having the flanges bushing d, and of the overflow valve G, all arranged substantially as shown and described.

**No. 23,792. Automatic Axle Oiler, (Graisseur Automatique d'Essieu.)**

Joseph Blais, St. Charles, Que., 9th April, 1836; 5 years.

*Reclame.*—1o. La combinaison des ouvertures F and G, du collet C, de la vis E, tel que décrit. 2o. La combinaison des ouvertures F and G, du collet C, de la vis E, avec la boîte faite en pas de vis et le réservoir H, tel que ci-dessus écrit et pour les fins indiquées.

**No. 23,793. Stove-Pipe and Elbow. (Tuyau et Coude de Tuyau de Poêle.)**

Frances A. Estabrook, Parma, and Amelia E. Clark, Brockport (Assignees of John S. Brooks, Parma), N.Y., U.S., 10th April, 1836; 5 years.

*Claim.*—1st. As a new article of manufacture, a section of stove-pipe or elbow having its surface embossed with any suitable design, as set forth. 2nd. As a new article of manufacture, section of stove-pipe or elbow having its surface embossed with any suitable design, and provided with plain or ribbed ends to fit the adjoining sections of pipe, as set forth. 3rd. As a new article of manufacture, a section of stove-pipe or elbow having its surface embossed with any suitable design and the embossing polished or enamelled in any desired way, as set forth.



**No. 23,794. Wire Fence Tool.***(Machine à Clôture en Fil de Fer.)*

James B. Barron, Brnswick, John B. Winslow, Standish, James A. Winslow and Albert G. Winslow, Bath, Mo., U. S., 10th April, 1886; 5 years.

*Claim.*—1st. The combination, with the stock A extended to form a handle B and having a transverse groove across its face, of the jaw C, pivoted at e to the stock, and having a slot c at its lower end, the screw D hinged to the stock to enter the said slot c, and a nut E adapted to clamp the jaw C over the wire groove in the stock, substantially as set forth. 2nd. A combined fence wire stretcher, cutter and twister, consisting essentially of the stock A, having a handle B and a transverse wire groove in its side face, the jaw C pivoted to swing over said groove and slotted at its lower end, the screw D hinged to the stock to enter the slot, a hand nut E adapted to clamp the jaw over the transverse groove, the spring cutter H, h on the end face of the stock, the twisting-bar I having holes J and K, k, and the loop l, over which the stock for holding the splicing tool in place, substantially as set forth.

**No. 23,795. Stuffing Box for Steam Engines.***(Boite d'Etoupe pour Machines à Vapeur.)*

Solby C. Berry, Williamstown, W. V., and J. B. Waters, Marietta, Ohio, U. S., 10th April, 1886; 5 years.

*Claim.*—1st. The combination, with the cylinder head, of a flanged adjustable stuffing box, which has a sliding movement upon the cylinder head, so as to adapt itself to the movement of the piston rod, substantially as shown. 2nd. The combination of a perforated cylinder head, the flanged stuffing box, and a ring which secures the stuffing box in position upon the cylinder head, substantially as described. 3rd. The combination of the perforated cylinder head, the movable stuffing box, the ring which holds the stuffing box in position, the clamping screws and the gland, substantially as specified.

**No. 23,796. Manufacture of Hollow Axles.***(Fabrication des Essieux Creux.)*

Walter Gillespie and Pillaus S. Stevenson, Montreal, Que., 10th April, 1886; 5 years.

*Claim.*—1st. The art of forging hollow axles on a mandrel by forming them in such mandrel in shaping dies, and then turning them constantly on a flat surface while under the impact of a hammer of like shape operating at right angles thereto, thereby spreading the axle end and loosening the mandrel so that it can be drawn out, all substantially as herein set forth. 2nd. A hollow axle forged in a mandrel, as herein set forth.

**No. 23,797. Hub Boring Machine.***(Machine à Percer les Moyeux.)*

Andrew B. Jardine (Assignee of Cyrus Boehl), Hespeler, Ont., 10th April, 1886; 5 years.

*Claim.*—1st. In a hub boring machine, the combination, with the carriage F, of the pivoted tool-bar G, spring L and adjustable carriage J, provided with a mould-board K, as set forth. 2nd. In a hub boring machine, the combination, with the pivoted tool-bar G, of the adjustable carriage J having mould-board K, stop bar M and spring L, as set forth. 3rd. In a hub-boring machine, the combination, with the adjustable carriage J, having a mould-board K, of the pivoted tool-bar G and spring L, as set forth. 4th. The combination of the pivoted tool-bar C, having cam I, and carriage J having mould-board K, as set forth.

**No. 23,798. Boiler Tube Cleaner.***(Nettoyeur de Bouilleur de Chaudière.)*

Frank M. Clark, Tilton, N. H., Frederick R. Low, Chelsea, Mass., and Charles F. Hunt, Worcester, Mass., U. S., 10th April, 1886; 5 years.

*Claim.*—1st. In a tube-cleaning device, the combination of a curved tubular guide suitably supported outside the fire-box, and longitudinally slotted near the outer end, with an internal flexible connecting-rod carrying a scraper at its end, with an external sleeve fastened to said connecting-rod through said slot, and adapted to be reciprocated longitudinally on said guide-tube and to reciprocate the connecting-rod longitudinally of said slot, substantially as described. 2nd. The combination of the curved guide-tube and the interior flexible connecting-rod carrying at one end the scraper II, and at the other end to a handle whereby said connecting-rod may be reciprocated to and fro along the axis of said guide-tube, substantially as described. 3rd. The combination of a curved guide-tube, the ribbon connecting-rod, the tube-scraper and the foot for supporting the guide-tube, all substantially as described.

**No. 23,799. Truss. (Bandage Herniaire.)**

Adeline M. L. Armstrong (Assignee of James L. Armstrong), Ottawa, Ont., 10th April, 1886; 5 years.

*Claim.*—1st. A truss, consisting of a round steel wire band having sliding extensions attached by tubular couplings, and a sectional pad carried detachably by a spiral spring, applied torsionally and adjustably secured to the band by a movable collar. 2nd. The combination of the band A, tubular couplings a, extension A', loops A'', collar B, spiral spring C and pad D, Di, Du. 3rd. The combination of the band A, extensions A', tubular couplings a, series of holes a', set screws a'', collar B, eye b, set screw b1 and eye b11. 4th. The combination of the band A, A', collar B, spring C, and pad D, Di, Du. 5th. The combination of the pad D, rim D1, staple d1, plate D1, pin d, post d1, set screw d11 and spring stem c1. 6th. The combination of the collar B, eye b, set screw b1, eye b11, spring C, end c and stem c1, all substantially, as shown and described and as and for the purpose set forth.

**No. 23,800. Lime Kiln. (Four à Chaux.)**

David D. L. McCulloch, Gardiner, Me., U. S., and The Dudswell Lime and Marble Company, Sherbrooke, Que., 10th April, 1886; 5 years.

*Claim.*—1st. In a lime kiln having a number of fire arches on one side, with their flare inward to embrace the sides of the cupola, a lesser number of fire arches on the other side with their flare to the centre of the cupola, as shown and described for the purposes set forth. 2nd. In a lime kiln, having a number of fire arches on one side, with their flare towards the centre of the cupola, a greater number of fire arches on the opposite side with their flare towards the sides of the cupola, as shown and described and for the purposes set forth. 3rd. The combination, with a lime kiln, of a series of water boxes on the sides of the ash pits, or other suitable position, as shown and described and for the purposes set forth. 4th. In a lime kiln, a draw, with draw-plate lining the upper surface, and having a lip or groove on its outer edge to receive the upper edge of the door, having an internal cylindrical face and axially pivoted and provided with arms lever, and handle or other suitable means to open the same, all as shown and described and for the purposes set forth.

**No. 23,801. System of Heating Buildings and Houses by Gas. (Système de Chauffage des Edifices et Maisons par le Gaz.)**

Cyrillo Duquet, Quebec, Que., 14th April, 1886; 5 years.

*Claim.*—1st. In a steam or hot water furnace, the draft tubes F provided with sliding valves F', substantially as and for the purpose hereinbefore set forth. 2nd. In a steam or hot water furnace, a crown sheet D, an inner cylinder shell rivetted thereto, a series of drop tubes D, and draft tubes F, substantially as and for the purpose hereinbefore set forth. 3rd. In a steam or hot water heating furnace, a gas burner H, in combination with draft tubes F and valves, substantially as and for the purpose hereinbefore set forth. 4th. In a steam or hot water heating furnace, the draft tubes E, gas burner H, and controlling draft tubes F', substantially as and for the purpose hereinbefore set forth. 5th. In a steam or hot water heating furnace, boiler C provided with steam pipes B, in combination with pipes G, I and E, substantially as and for the purpose hereinbefore set forth. 6th. In a steam or hot water heating furnace, the double casing A having pipe B, and fitted through with pipes, and tubes K, G, I and E, substantially as and for the purpose hereinbefore set forth. 7th. In a steam and hot water heating furnace, a series of tubes in an inner shell, provided with draft tubes F, a steam or water space having draft tubes E, and steam pipes B and B1, a hot water space having controlling draft tubes F, cold water and return tubes G and I, and a gas burner f for mixed gas and air, all for the purpose of heating buildings and dwellings by gas, as described, and for the purpose hereinbefore set forth.

**No. 23,802. Toboggan. (Taboganne.)**

Camillo Goutesse, Montreal, Que., 14th April, 1886; 5 years.

*Claim.*—1st. The novel construction in a toboggan, of the wood formed of a double curved configuration, substantially as described. 2nd. The novel construction in a toboggan, of the rail r formed of two heights o and p, substantially as described. 3rd. The novel construction in a toboggan, of the underside formed with grooves e, having the under part of the fasteners arranged therewith, substantially as shown and described.

**No. 23,803. Communicating to and from Railway Vehicles by Electricity. (Communication entre les Voitures de Chemin de Fer par l'Electricité.)**

Lucius J. Phelps, New York, N. Y., U. S., 14th April, 1886; 5 years.

*Claim.*—1st. The combination, substantially as described, of a line conductor, a vehicle movable in a direction parallel with the same, and conductor upon the vehicle, substantially parallel with and in inductive proximity to the line conductor, the ends of said vehicle conductor being joined in closed electric circuit. 2nd. The combination, in a system of electric transmission or transfer to and from a moving vehicle, of a line conductor, one or more strands of conductor placed upon the vehicle, and arranged substantially parallel with but in suitable inductive proximity to the line conductor, and return connections of said strands removed as far as practicable from close inductive proximity to the line. 3rd. The combination with a line conductor extending along a track, of a coil of wire (as B C) carried upon a vehicle moving over said track, and having its portion B parallel or substantially parallel with the line conductor. 4th. The combination, with a line conductor extending along a railway, of a coil of wire suspended beneath a car or vehicle, and having one portion (as B) parallel or substantially parallel to the line conductor. 5th. The combination, substantially as described, of the line conductor, the vehicle conductor, and the containing pipe or conduit suspended beneath the car, and connecting with depending pipes or conduits (as O), as and for the purpose described. 6th. The combination, with the line conductor, of the vehicle conductor having its return portions carried to one side out of plane with the line conductor. 7th. In a system of electric induction, transmission or transfer to and from a moving vehicle, the combination of a line conductor, a vehicle conductor, and a polarized relay in closed circuit in the vehicle conductor. 8th. The combination, substantially as described, of a line conductor, a vehicle conductor, a transmitting apparatus for sending currents through the closed circuit of the vehicle conductor, and a polarized relay connected with the line conductor. 9th. The combination, with the line conductor, of a closed circuit conductor upon the vehicle, a generator and circuit breaker upon the vehicle, and a polarized relay connected to the line conductor. 10th. The combination, in a system of transmission by induction to and from a moving vehicle, of a transmitter, a relay, and contact points controlled by the transmitter for momentarily closing a shunt around

the relay when the circuit closed by the transmitter is broken. 11th. The combination, in a system of transmission, to and from a moving vehicle, of a transmitter for opening and closing the circuit from a polarized relay in a back contact circuit for the transmitter, a shunt or branch around the relay, and a circuit controller therefor governed by the transmitter, and serving to close a circuit around the relay at the instant of breaking off the generator circuit. 12th. The combination, in a system of railway telegraphing by induction, of a polarized relay or transmitter, and a supplemental circuit closer and breaker having three points of closure, one controlling a shunt around the relay, and the other, a circuit through the relay and transmitter, as and for the purposes described. 13th. The combination, in a system of railway telegraphing substantially such as described, of a polarized relay, a Morse key, a supplemental circuit closer playing between two contacts, one of which is on the key, and a third contact for said lever forming a portion of a shunt around the polarized relay.

**No. 23,804. Railroad Track Clearer.**

(Grattoir pour Voie de Chemin de Fer.)

Charles C. Quinn, Fargo, Dak. U.S., 14th April, 1886; 5 years.

*Claim.*—1st. The combination of the main frame, the tunnel excavators secured diagonally across the frame at an angle to the line of the rail, and pivoted on bolts a, a, which are secured to the diagonal drop-hangers, said hangers being secured to the main frame with safety straps secured to the tunnel excavators, and the main frame, substantially as described. 2nd. In combination with the perpendicular flange cutters, the elbows b, b, on the upper ends of the square bars, set-screws and set-nuts, lifting-chains, tumbling shaft, vertical trirabers, and the connection-rod, substantially as described. 3rd. In combination with the automatic locking plate, the stop-bolt spring, and the stop bolt spring-box, substantially as described. 4th. In combination with the governor cylinder D, the steam or air cylinder D', the steam or air pipes, the follower-stem, the regulating diaphragm-system, and the regulating spring, substantially as described. 5th. The tunnel excavators and flange-cutters, in combination with a common lever which simultaneously operates both excavators and flange-cutters, substantially as described. 6th. The main frame and the tunnel excavators, in combination with the safety-straps E, E, as set forth. 7th. The combination, with the perpendicular flange cutters, and the excavators, of the levers which connect them, and the locking device, substantially as described. 8th. In combination with the excavators, and the flange-cutters, the locking device consisting of the plate H, bolt C', spring C', and spring-box C', as set forth. 9th. In combination, the flange-cutters A', tread-clearer O, conical scoop U, and the perpendicular adjustable bar I, substantially as described. 10th. In combination, with a railroad track, the funnel-shaped surface-clearers, adjustable as described. 11th. The combination in a railway track-clearer for cars, of a perpendicular flange-cutter, and tread-clearer, of a funnel-shaped excavator adjustable to cut above and below the faces of the rails, substantially as described. 12th. The combination of the flange-cutters, the tread-clearers vertically adjustable, the funnel-shaped excavators adapted to be lifted over switches, and an automatic lock, substantially as described. 13th. In a track-clearer, the overhanging deflector U, and perpendicular clearer, in combination with the vertically adjustable bar and a car, substantially as described. 14th. The combination, with a car, of a vertically independently adjustable excavating funnel suspended flexibly from a rock-shaft, substantially as described. 15th. The combination, in a railroad track clearer, of a truck frame which is laterally adjustable on its axles, substantially as described. 16th. The combination in a railway track clearer, of a curved surface deflector, a clearer and a broom, arranged to operate as described. 17th. A railway truck frame laterally adjustable on its axles, in combination with vertical frog, and side rail clearers, substantially as described.

**No. 23,805. Coal or Coal and Wood Cook Stove.**  
(Poêle de Cuisine à Charbon ou à Charbon et Bois.)

John S. Larke, Oshawa, Ont., 14th April, 1886; 5 years.

*Claim.*—1st. The combination, in a coal cook-stove, of the grate rest I I, and oval grate E E, substantially as and for the purpose hereinbefore set forth. 2nd. The toothed lower section of the fire pot B B, and in combination therewith, the rotary grate C E, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the lower sections of the fire pot B B, with the four or more bricks A A being made to fit together with spur and spur eyes b b, or their equivalents, substantially as and for the purpose hereinbefore set forth.

**No. 23,806. Machine for Making Matches.**

(Machine pour Faire les Allumettes.)

George E. Norris and William E. Hogan, Troy, N. Y., U.S., 14th April, 1886; 15 yrs.

*Claim.*—1st. In a machine for making match splints, the rollers R<sub>1</sub> and R<sub>2</sub> formed with the parallel straight grooves G<sub>1</sub> with coincident severing edges extended entirely across the faces thereof, and the flat guide-plate P, all combined to operate substantially as and for the purposes set forth. 2nd. In a machine for making match splints, the combination of the rollers R<sub>1</sub> and R<sub>2</sub>, connected by gears to rotate, as described, said rollers having grooves, and intermediate cutting edges arranged parallel to the axis, and the ring-form grooves G<sub>2</sub>, G<sub>2</sub> arranged in the cylindrical faces thereof circumferentially to their axis, and the fingers d<sub>1</sub> and d<sub>2</sub>, substantially as and for the purposes set forth. 3rd. The combination, with the rollers R<sub>1</sub> and R<sub>2</sub>, each having the grooves G<sub>1</sub> with intermediate cutting edges, and the circumferential grooves G<sub>2</sub>, G<sub>2</sub>, said rollers being arranged to operate, substantially as described, of the fingers d<sub>1</sub>, d<sub>1</sub> and d<sub>2</sub>, d<sub>2</sub>, constructed to enter said circumferential grooves and extended rearwardly to produce the intermediate guide passage U, substantially as and for the purposes set forth. 4th. The combi-

nation of the guide passage U adapted to receive match splints, the guide-way C having the concave surface C<sub>2</sub> arranged at the rear end of guide passage U, the rollers I, and the endless belt B<sub>1</sub>, constructed and arranged to operate, substantially in the manner as and for the purposes set forth. 5th. The combination of the guide passage U adapted to receive match splints, the guide-way C made with the concave surface C<sub>2</sub>, and arranged at the rear end of said guide passage U, the roller I arranged to turn within said concave, substantially as described, the endless belt B<sub>1</sub> arranged to be operated by the roller I, and to run on a return pulley, the wheel D, and the belt B<sub>2</sub> adapted to run on the latter, and a return pulley, and belts being arranged with reference to each other and said concave guide, substantially as and for the purposes set forth. 6th. The combination of the endless belt B<sub>1</sub> and B<sub>2</sub>, arranged to be operated, substantially as described, the dipping tank T<sub>1</sub> made with the slot a, and the dipping wheel d<sub>1</sub> arranged to be rotated in said tank relatively to the downward movements of said belts, substantially as described. 7th. The combination of the splint-delivery passage U, the guide-way C made with the concave surface C<sub>2</sub>, the roller I adapted to rotate in the latter, substantially as described, the wheel D, the pulleys N, N', N', and the belts B<sub>1</sub> and B<sub>2</sub>, substantially as and for the purposes set forth. 8th. The combination of the tank T<sub>1</sub> made with the side slot a, and the roller d<sub>1</sub> adapted to rotate in said tank with reference to said slot, substantially as and for the purposes set forth. 9th. In a machine for dipping match splints, that are held between two belts, the combination, with a tank adapted to be heated, and contain match composition, of a roller made with a groove in its cylindrical face, circumferentially to its axis, and said roller constructed to be rotated with its lower surface where the latter will be immersed in composition contained within the tank, substantially in the manner as shown and described. 10th. In a machine for dipping match splints that are held between two belts, the combination, with a tank or receptacle that is adapted to be heated, and to contain match composition, of a roller made with a groove in its cylindrical face circumferentially to its axis, said roller being constructed to rotate with its lower surface immersed in match composition where within the tank, and a scraper adapted to remove from the cylindrical face of the roller, the adhering composition, excepting that portion of the latter which is within the groove, substantially in the manner as and for the purposes set forth. 11th. In a mechanism for dipping matches, the combination of two endless belts, provided with pulleys that bring them together one above the other, adapted to intermediately contain match splints, and to run on a set of intermediate pulleys, and return pulleys that separate said belts at the end of their stretch to free the matches, substantially in the manner as shown and described. 12th. In a mechanism for dipping matches, the combination of two endless belts provided with pulleys that bring them together one above the other, to grasp the splints, a dipping tank, and wheel with the latter rotated so as to come in contact with adjacent ends of the splints, being moved by the belts, and pulleys to separate the belts to free the matches, substantially as shown and described.

**No. 23,807. Machine for Crushing Quartz Rock.**  
(Machine à Broyer le Quartz.)

Jool B. Low, San Francisco, Cal., U.S., 14th April, 1886; 5 years.

*Claim.*—1st. The ore-crushing machine herein described, consisting essentially of the casing A, supported by and revolving with the shaft C, lining plates D, crushing ball H and vertical annular screw G, arranged and operating substantially as herein set forth. 2nd. The adjustable feeding device herein described, consisting essentially of the hopper O, casing P, spout P', plate Q, lever R, shaft S, arcs W and pins v, lever U and hooks X, X, and cam V secured on shaft C, arranged and operating substantially as herein set forth. 3rd. The crushing ball, herein described, consisting essentially of the interior perforated ball H, outer shell sections h, h', rods i and wedges i', i', substantially as herein set forth.

**No. 23,808. Process of Oxydizing Linseed Oil, etc.**  
(Procédé d'Oxydation de l'Huile de Lin, etc.)

John W. Hoard and Frederick R. Hoard, Providence, R.I., U.S., 14th April, 1886; 5 years.

*Claim.*—The process of oxidizing linseed oil and other liquids, by passing and repassing the same by the agency of a blast of air through an atomizer within the vessel containing the liquid under treatment, substantially as above set forth.

**No. 23,809. Mechanical Traverse Table.**

(Table de Point Mécanique.)

William D. Patterson, Victoria, B.C., 14th April, 1886; 5 years.

*Claim.*—1st. A mechanical traverse table, consisting of an arc laid off in degrees and fractions, a swinging radial arm playing over said arc laid off in chains and fractions, a scale of chains and fractions laid off on a line forming a side radius of said arc, and a slide moving at right angles with said radius and laid off in chains and fractions, substantially as herein described. 2nd. A mechanical traverse table, consisting of the rectangular frame A, having its side or sides graduated, as described, the arc C within it, and graduated, as described, the pivoted swinging radial graduated arm D playing over said arc, and the graduated slide-bar E moving on and at true right angles with the sides of the frame and over the radial arm and arc, substantially as herein described. 3rd. A mechanical traverse table, comprising the rectangular frame A, having its side or sides graduated, as described, and provided on one side with a raised track, and on the other with a longitudinal rest, the arc C within the frame and graduated, as described, the swinging radial graduated arm D pivoted to the frame and playing over said arc, said arm having at one end a sight aperture, and at the other a set screw for clamping it, the journal of said screw being back of the pivot-point of the arm, and the graduated slide-bar E mounted and adapted to be adjusted and fixed on the track and rest on the sides of the frame, and to move at true right angles therewith and over the radial arm and gra-

duated arc, substantially as herein described. 4th. The pierced glass disks F, whereby the mechanical traverso table, herein described, may be adjusted when once moved, substantially as herein described.

### No. 23,810. Saw Mill Dog. (*Clameau de Scierie.*)

James W. Peck, Brantford, Ont., 14th April, 1886; 5 years.

*Claim.*—1st. The combination of the bar G, dog J and slot a with the cam lever H passing through bar C, having a spur or projection R and secured to the upper end of bar A, to operate bars I and C simultaneously, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the bar O, dog J and slot a, cam lever H, with bar C, having a slot to receive cam lever H, adjustable head D, dog E and stationary bar A, having slots to receive movable bars I and C, and springs M, substantially as and for the purpose hereinbefore set forth.

### No. 23,811. Organ Sounding Board.

(*Sommier d'Orgue.*)

John G. C. Siefker, Chicago, Ill., U.S., 11th April, 1886; 5 years.

*Claim.*—1st. In an organ, the sounding board made narrower at the base end than the base end thereof, substantially as described and for the purpose set forth. 2nd. In an organ, the sounding board wherein the vibrating board, between the reed tongues and the support, shall be widest at the base and taper to the treble end thereof, where it shall be narrower, substantially as described. 3rd. In an organ, the sounding board made thickest at the base end and gradually decreasing in thickness to the treble end thereof, substantially as described. 4th. In an organ, the sounding board so constructed as to be both thicker and wider at the base than the treble end, and gradually decreasing in thickness and width from the former to the latter, substantially as described and for the purpose set forth.

### No. 23,812. Machine for Hardening Seamless Felt Boots, etc. (*Machine pour Durcir les Bottes, etc., de Feutre Sans Couture.*)

Walter P. Hyatt, Matteawan, N.Y., U.S., 14th April, 1886; 5 years.

*Claim.*—1st. A machine for hardening felt boots and shoes, the combination, with a mould formed of the sections hinged together at the ends, and swinging from each other in the planes of said sections, which sections have their inner edges recessed, to form a recess or cavity, having a shape approaching that of a boot, of a core having a shape similar to that of the recess or cavity, which core can be placed into said recess or cavity, substantially as herein shown and described. 2nd. In a machine for hardening felt boots and shoes, the combination, with a mould formed of two sections hinged to each other, in which sections a cavity of a shape approaching that of a boot or shoe is formed, of a vibrating core in said mould, substantially as herein shown and described. 3rd. The combination, with the hinged sections A, of the core B and the spring D, for pressing the mould sections against the core, substantially as herein shown and described. 4th. In a machine for hardening felt articles, the combination, with a mould having a recess or cavity, of a core, which can be placed into the said recess or cavity, and of a hardening board on the mould and core, substantially as herein shown and described.

### No. 23,813. Draft Equalizer.

(*Régulateur de Tirage.*)

George W. Arnold and Frederick E. Arnold, Ionia, Mich., U.S., 14th April, 1886; 5 years.

*Claim.*—The combination, in a draft equalizer, of the beam A, the clips C and pulleys D, the chain E extending along the beam in the groove B, and around the pulleys at the end of the beam, and the chain G extending around the intermediate pulley, substantially as specified.

### No. 23,814. Quilting Frame. (*Méier à Piquer.*)

John Wilson, Blenheim, Ont., 14th April, 1886; 5 years.

*Claim.*—1st. In a quilting frame, the combination of the hinged side bars with the hinged and notched legs, substantially as described. 2d. A "knock down" quilting frame, consisting of the hinged side-bars, hinged and notched legs, cross-bars and clamps, all arranged to operate substantially as described.

### No. 23,815. Steam Engine Slide Valve.

(*Trou de Vapeur.*)

Charles H. Baker, Racine, Wis., U.S., 14th April, 1886; 5 years.

*Claim.*—The combination, with a steam engine slide valve, of one or more pairs of supporting rolls running in side grooves b, journalled at c in the sides of the valve, and having arc grooves worked on studs d of valve, as and for the purpose described.

### No. 23,816. Horse Shoe. (*Fer à Cheval.*)

William Somerville, Sr., Buffalo, N. Y., U.S., 14th April, 1886; 5 years.

*Claim.*—1st. In a horse shoe, the combination, with the upper plate A provided with a dull toe calk B and dull heel calks C, of a detachable lower plate D, provided with removable sharp toe calks and sharp heel calks, seated in sockets in the lower plate, substantially as set forth. 2nd. In a horse shoe, the combination, with an upper plate A provided with a dull toe calk B and dull heel calks C, of a detachable lower plate D provided with tapering sockets and sharp toe and heel calks loosely seated in said sockets and fastenings, whereby the lower plate is secured to the upper plate, thereby securing the detachable calks in place, substantially as set forth. 3rd. In a horse shoe, the combination, with the upper plate A provided

with a dull toe calk B and an opening b, and dull heel calks C, C, provided with openings c, of a lower plate D provided with a tenon g entering the opening b, tenons h, h, entering the openings c, fastening pins or rivets i and sharp calks E, F, substantially as set forth.

### No. 23,817. Apparatus for Forging Screws by Rollers. (*Appareil à Cylindres pour Forger les Vis.*)

Charles Fairbairn, Maybank Salo, Eng., 14th April, 1886; 5 years.

*Claim.*—1st. The construction, substantially as herein described, of apparatus for forging screws by the rotation and longitudinal travel of the blank between the peripheries of three or four rotating and pressing rollers, grooved to suit the thread of the screw to be produced. 2nd. In employing four rollers for forging screws of comparatively small diameter, arranging these rollers so that the one pair that are opposite to one another overlap the other pair, substantially as herein described.

### No. 23,818. Refrigerator. (*Garde-Manger.*)

James J. Ross, Buffalo, N.Y., U.S., 14th April, 1886; 5 years.

*Claim.*—1st. In a refrigerator, the combination of the inner and outer walls with the sheets 3 of thin water-proof paper, or other suitable water-proof material, secured substantially as specified, thereby forming the three dead air spaces 5, 6 and 7, the outer space acting as a protection against the entrance of the warmer temperature from the outside, while the inner space serves as a protection to the colder temperature generated by the ice within the refrigerator, and the middle air space acts as a neutral and prevents the warm and cold temperatures from coming in contact with each other, substantially as described. 2nd. In a refrigerator, an ice chamber having a floor provided with a raised edge and made to incline downward from one side and front and back, a rack to keep the ice from the back of the ice chamber, for the cold air to pass down to the provision chamber, the bars or slats forming the rack having downwardly-projecting diamond-shaped sharp edges, from which the water of condensation drips down to the ice chamber floor, and from thence, together with the dripping from the ice, flows to and through a tube leading outside of the refrigerator, thereby keeping the provision chamber dry. 3rd. In a refrigerator, an ice chamber provided with the rack or bars 23 at the back, an opening below said slats or bars forming a cold air flue, and a cold air flue at the lower end of the ice chamber flue, in combination with the provision chamber, and the warm air flue 36 for producing a circulation from the ice chamber down through the provision chamber, and then as it gradually absorbs heat from the articles in the provision chamber up through the warm air flue and over the ice, where it becomes cooled, and again descends, thereby producing a constant circulation. 4th. In a refrigerator, an ice chamber floor, consisting of the upper sheet metal lined portion, for receiving the ice, an intermediate thin partition of water-proof paper, or other suitable water-proof material, and a lower floor forming the ceiling of the provision chamber, thereby leaving two air spaces through which the cold temperature, caused by the ice on the floor, produces a constant circulation of cold air in the direction of the arrows, as an additional means for producing a circulation of cold air in the provision chamber. 5th. In a refrigerator, the suspended rack and shelves within the provision chamber, for leaving a space below them for large articles, substantially as described.

### No. 23,819. Steam Engine. (*Machine à Vapeur.*)

William J. Lane, Poughkeepsie, N. Y., U.S., 15th April, 1886; 5 years.

*Claim.*—1st. A steam engine, consisting of a cylinder provided with induction and eduction ports, a piston working therein having corresponding ports, a crank-shaft set in bearings at right angles to the piston, with the crank connected to a wrist-pin fixed to the piston, substantially as described. 2nd. In a steam engine, a cylinder having induction and eduction ports, a piston working therein and having corresponding ports opened and closed by the longitudinal and rotary reciprocation of the piston, and a wrist-pin fixed to the piston and connected directly to the crank, substantially as described. 3rd. In a steam engine, a cylinder having an induction port and a substantially elliptical side opening, a piston having induction and eduction ports arranged to take steam by the lateral and longitudinal reciprocation of the piston, and, by the same movements, to exhaust through said elliptical opening, and a wrist-pin fixed to the piston and moving in the elliptical opening, said wrist-pin being connected to the crank-shaft, substantially as described. 4th. In a steam engine, a cylinder having an induction port and a substantially elliptical side opening, a piston having induction and eduction ports arranged to take steam by the lateral and longitudinal reciprocation of the piston, and, by the same movements, to exhaust through said elliptical opening, said wrist-pin fixed to the piston and moving in the elliptical opening, said wrist-pin being connected directly to the crank, and an exhaust chamber covering the elliptical opening and enclosing the crank, all substantially as described. 5th. In a steam engine, a piston having chambered ends and a solid centre carrying a wrist-pin, and having also ports, with corresponding ports, and a wrist-pin aperture in the cylinder, substantially as described. 6th. In a steam engine, a piston having chambered ends and a solid centre carrying a wrist-pin, and having also ports, with corresponding ports, and a wrist-pin aperture in the cylinder, and inwardly-projecting cylinder heads to reduce clearance, substantially as described. 7th. In a steam engine, a cylinder having an induction port c and an aperture C, a piston having a wrist-pin set therein and projecting through the aperture C, induction ports A, A, having elongated mouths, and induction ports L, L, arranged to move across the aperture C as the piston reciprocates. 8th. In a steam engine, an automatic cut-off consisting of a rotary cylindrical valve having ports on its opposite sides, said valve being located in a cylinder in the steam supply passage, and connections between said valve, and a governor arranged to cause the valve to rotate in unison with the movement of the induction valve, at a prescribed rate of speed of the engine, and to move in advance of the induction valve, when the speed of

the engine exceeds the prescribed limit, substantially as described. 9th. In combination with the induction port *c*, and piston, and its cylinder parts, the cylinder and rotary valve *q*, having parts *r*, *s*, the governor and the connections between the governor and the valve *q*, all substantially as described. 10th. In combination with the cylinder and piston, and the wrist-pin set in the side of the piston, a crank connected to said piston, and an exhaust chamber enclosing the crank having a port for discharging steam therefrom, situated above the lowest part of the circle described by the path of the crank, substantially as described.

## No. 23,820. Bicycle and Tricycle.

(*Bicycle et Tricycle.*)

William S. Kelly, Smithville, N.J., U.S., 15th April, 1886; 5 years.

*Claim.*—1st. The frame section for a bicycle, consisting of the arms *a*, *c*, *d*, *e* and *f*, as described and shown. 2nd. In combination with the foot-lever, the main-frame having the arm *f* doubled or returned in the manner described, whereby it is adapted to support the fulcrum of the lever at both ends. 3rd. In combination with the main-frame and axle, the step and the bolt *i*, adapted to serve the two-fold purpose of sustaining the step and of contracting the frame upon the axle. 4th. In a bicycle, the combination, with the main-frame, of the pendant screw or bolt *s*, and the step *L* adjustably secured upon said bolt by means of nuts. 5th. In combination with the rear-driving wheel and its axle, the main-frame mounted on said axle and provided with the arms *c* and *d*, the bearings attached to the extremities of said arms, and the steering shaft mounted in said bearings and fixed against end motion therein. 6th. In a bicycle, the combination of the rigid main frame, the rear wheel mounted thereon, the forward steering wheel and the inclined steering shaft connected at its two extremities to the main frame, and serving in effect as a front bar for said frame, to impart the requisite strength and rigidity thereto. 7th. In combination with the rear driving wheel, the main frame, the front steering wheel, the steering bar or shaft mounted in fixed bearings on the main frame, and the seat-supporting bar mounted, substantially as described and shown, to move bodily forward with respect to the frame, and to return automatically to its normal position. 8th. In a machine, comprising a main frame and sustaining wheels therefor, a seat-supporting bar connected to the frame at its forward end by means of a pendant link, and at its rear end by means of an upright yielding arm, as described and shown. 9th. In a bicycle, two ground wheels in combination with a connecting frame, whereby a fixed distance is maintained between the wheels, and a seat-supporting bar movable bodily forward and backward upon the frame, said bar being supported in substantially the manner described, whereby it is adapted to resume its normal position automatically. 10th. In a bicycle or similar machine, a wheeled frame and a seat or saddle supported, at its two ends, by yielding devices adapted to permit the saddle to move freely forward and backward in relation to the frame and wheels. 11th. In combination with the main frame, the rear driving wheel and the forward steering wheel, of relatively small size, the seat-supporting bar pivoted at its rear end to the arm of the frame, and connected at its forward end to the frame by means of a pendant link or support. 2nd. In combination with the main frame, the driving wheel and the steering wheel, the seat-supporting bar *o*, jointed at its rear end to an arm of the main frame, and a spring *p* connecting the forward end of said bar with the main frame, substantially as described and shown. 13th. In combination with the fixed axle, the driving wheel revolving thereon, the rotary drum or pulley revolving independently on the axle, the connecting pawls and a frictional collar connected with the pawls, substantially described, whereby the pawls are thrown positively into engagement. 14th. In a bicycle, a rotary drum, a foot-lever and a strap extending from the lever to the drum, to turn the same in a forward direction, combined with an internal coiled spring, to turn the drum in a backward direction, a driving wheel, pawls connecting the drum and wheel, and a frictional device tending to resist both the forward and backward movement of the pawls, substantially as described and shown, whereby the pawls are caused to engage and disengage noiselessly and positively, and the backward rotation of the driving wheel permitted. 15th. In combination with the non-rotating axle, the driving wheel provided with a toothed rim or flange, the independently revolving drum, provided with pawls to engage the rim, the divided collar confined by spring pressure upon the axle, and a connection between said collar and the pawls. 16th. In a bicycle, the combination of foot-lever or pedal, a driving wheel, a strap for operating said wheel, and intermediate devices connecting the strap and lever movable to and from the fulcrum of the latter, and devices adapted to be operated by the foot of the rider, for changing the position of the connecting devices. 17th. In a bicycle, the combination of the foot-lever and the wheel-operating strap, with the connecting link arranged to swing forward and backward, substantially as described. 18th. In a bicycle, the combination, with a driving wheel, of an operating strap, a lever to actuate said strap, and a swinging connection between the strap and lever, provided with a projection to be moved by the foot of the operator, whereby an instantaneous adjustment of the connection may be effected. 19th. The drum and the spring tending to revolve the same in a backward direction, in combination with the operating strap, the lever and the swinging link *u*, whereby the point of connection between the lever and strap may be arranged at will, and the adjustment maintained by the tension of the strap. 20th. In connection with the strap and lever, the swinging link *u*, the secondary link *v* and the arm *w*. 21st. The axle and the revolving drum or pulley, in combination with the spring *g*, having a hooked inner end, and the stationary collet provided with a series of shoulders or notches to receive the end of the spring. 22nd. In combination with the axle and spring, the stationary collet if made of hollow or tubular form, and the drum or pulley *E* having its journal extended around the axle within the collet. 23rd. In combination with the plate or book *r*, having in its interior the spring *g*, having a hooked outer end to engage therewith. 24th. In combination with the drum or pulley, its internal spring and its holding plate *r*, the external strap and its holding plate *q*, and the screw or screws *g*, applied as described and shown. 25th. In combination with the driving wheel, having the annular flange *k*, the drum or pulley provided with pawls to drive the wheel, the internal shell

or casing, applied as shown, to encircle the hub and flange, whereby the parts are concealed and protected. 26th. The combination, with the supporting bar, the flexible seat or saddle and the independent supporting springs *e* and *f*, each consisting of a coiled portion having one extremity secured to the bar, and the opposite extremity attached to the saddle. 27th. The combination, with the flexible seat or saddle, the supporting springs *e* and *f*, each consisting of a continuous or endless wire, having coils formed thereon. 28th. The improved rim for a bicycle wheel having, in its outer surface, the groove with the flat seat and outwardly inclined sides. 29th. The improved rim for a bicycle wheel having, in the outer surface, a groove with a flat bottom and flaring sides, and also having, on the back, the central rib, substantially as shown. 30th. In an elastic tire for bicycle and other wheels, the combination of a central body of light and highly elastic rubber, and an exterior skin or coating of thin tough rubber, combining the qualities of pliability and of relatively great tensile strength. 31st. The combination, with a wheel, of an elastic tire consisting of an inner portion applied under tension, to act with a contractile effect on the wheel, and an outer portion connected firmly to the inner portion and free from, or under relatively low tension, whereby the tire is retained firmly in position upon the wheel, but prevented from opening in the event of its surface being cut or ruptured. 32nd. In combination with a wheel, an elastic tire consisting of inner and outer portions, the inner portion being under high tension, and the outer portion free from tension or under relatively low tension. 33rd. In an elastic tire for road wheels, the combination of a base portion of highly contractile rubber, and an outer portion of light elastic rubber, and a thin covering or envelope of relatively tough rubber, as described. 34th. In combination with the steering shaft and the main frame sections, a divided box or bearing for said shaft, connected to the frame by means of a transverse bolt, substantially as described. 35th. In a bicycle, the combination, with the main wheel of said supporting bar located directly thereover, said bar constructed of a U-form in cross-section, as and for the purpose described. 36th. In combination with the main frame and the wheel fixed therein, the brake-shoe, the rotary steering shaft and its handle, the overhanging operating lever pivoted and swinging with the handle, and united by a swinging connection with the brake.

## No. 23,821. Bicycle and Tricycle.

(*Bicycle et Tricycle.*)

William S. Kelly, Smithville, N.J., U.S., 15th April, 1886; 5 years.

*Claim.*—1st. In a bicycle of the general character herein described, the combination of the wheel having the tubular hub or axle, the main frame and the central non-rotating axle, having its ends made of round form in cross-section, and confined firmly and adjustably in the frame, as described, whereby the rotary adjustment of the axle is permitted to equalize the wear thereon. 2nd. The combination of the main wheel having a tubular hub, the non-rotating axle having rounded ends, and the main frame divided and drawn together upon the ends of the axle by contracting screws, substantially as described and shown. 3rd. In a bicycle or similar vehicle, the combination of the wheel having a tubular hub, the fixed tubular shaft, and the main frame having the two ends of the shaft secured thereon. 4th. In a bicycle, a main frame, a wheel mounted centrally therein, and provided with a tubular hub, and a tubular axle extended through the hub and fixed at its two ends in the frame, said axle being provided with oil inlets passing to the outside of the frame, and with oil outlets opening to the exterior of the hub. 5th. In combination with the frame, and axle and the drum or pulley, and the spring, the collet encircling the axle, and secured to the frame. 6th. The spring-retaining collet secured to the main frame independently of the axle. 7th. In combination with the main wheel, having the driving rim or flange, the non-rotating axle, the pawls, the pawl-carrier having a friction connection with the axle, and the driving pulley having the hub to engage the heel ends of the pawls, whereby the parts are rendered noiseless and positive in their action. 8th. In a bicycle or tricycle, a pawl-supporting device having a frictional connection with a non-rotating part, a driving wheel with which the forward ends of the pawls engage, and a driving drum or drums arranged to turn independently, and connected with the inner heel ends of the pawls, substantially as described, whereby a forward motion of the drum is caused to throw the parts into engagement with the wheel, and vice versa. 9th. In a clutch machine, substantially as described, the combination of a shaft or support, a rotary pawl-carrier divided and provided with means, whereby it may be contracted for frictional engagement with its shaft, and pawls pivoted on and carried by said support. 10th. In a bicycle or tricycle, a driving drum or pulley, a rotating frictionally-retained pawl-carrier wholly independent of the drum, pawls mounted on said carrier and connected with the drum, and a wheel driven by the active ends of the pawls, substantially as described and shown. 11th. In a wheel for bicycles, etc., the hub having the annular face provided with spoke openings, and with side flange *z*. 12th. In combination with the hub, having the perforated and notched flange or edge, the spokes passed through the flange and thence outward through the notches. 13th. The hubs having the openings *y* arranged in pairs, and the notched flange *z*, in combination with the U-shaped spokes inserted through the openings, and extended thence outward through the notches. 14th. In a wheel for a bicycle or tricycle, spokes constructed of wire bent into a U-form, having their middle portion passed through separate holes in the hub, and its ends or arms reunited at a point outside of said holes, and then extended in different lines to the rim of the wheel. 15th. The tubular rim, having in its outer side or face the tire receiving groove or channel, with a flat base, and substantially upright sides, whereby the rim is given increased stiffness, and adapted the better to retain the tire in position. 16th. The seamless tubular rim, having its base portion of increased thickness and of solid metal, as contradistinguished from thin metal folded or doubled upon itself. 17th. In a suspension wheel, a rim and a hub combined with wire spokes, made in pairs by bending wire to a U-form, the spokes of each pair extending from the hub outward in different lines without crossing each other, and the spokes of the different pairs arranged to cross one another, as described. 18th. The combination of the main frame, the wheel having a tubular hub,

the fixed hollow axle, and the screw located at the outside of the frame, and affording access to the interior of the axle. 19th. In combination with the wheel, and the main frame, the fixed axle seated at its end in the frame, the nut applied on the end of the axle, and the screw applied to the axle to secure the nut, as shown.

### No. 23,822, Fence. (*Clôture*.)

James A. Wholley, Greenwich, N.B., 15th April, 1886; 5 years.

*Claim.*—1st. In a twisted wire fence, the diamond-shaped tablets C provided with a barb c, the said tablets being arranged to stand at various angles, substantially as shown and for the purpose set forth. 2nd. In a twisted wire fence, the diamond-shaped tablets D provided with a tube d, having slots e, e, through which the strands B, B of the twisted wire are passed and kept extended by the spiral spring f, substantially as shown and for the purpose set forth. 3rd. In a twisted wire fence, the diamond-shaped tablets C, in combination with the diamond-shaped tablets D, provided with a spiral spring g, substantially as shown and for the purpose set forth.

### No. 23,823, Filter. (*Filtere*.)

John F. LeBeau, Toledo, Ohio, U.S., 15th April, 1886; 10 years.

*Claim.*—1st. Filters A and A', in combination with intervening sediment chamber S, S, and connecting horizontal filter C, substantially as shown and described and for the purposes specified. 2nd. In a filter consisting of vessels A and A', intervening sediment chambers S, S, and connecting filter C, the cleaning device consisting of aperture e and e', arranged substantially as shown and described for the purposes set forth.

### No. 23,824, Stove Boiler.

(*Douilloire de Cuisine*.)

William Churchill, Yarmouth, N.S., 15th April, 1886; 5 years.

*Claim.*—1st. The combination, with a stove boiler or vessel, the downward tube B, substantially as and for the purpose hereinbefore set forth. 2nd. In combination, with a boiler or vessel having the tube B, the seal formed by the rim X, X, the channel N, N, and the flange O, O, substantially as and for the purpose hereinbefore set forth.

### No. 23,825, Ore Concentrator.

(*Concentrateur de Minerai*.)

William A. Koneman and Hiram H. Seoville, Chicago, Ill., U.S., 15th April, 1886; 5 years.

*Claim.*—1st. In an ore concentrator or vanning machine, a vanning surface vibrating in a horizontal plane, combined with mechanism adapted coincidentally with said vibration to lift and drop said surface, whereby each point of said vanning surface is caused to describe a triangular path, as described. 2nd. In an ore concentrator or vanning machine, a vanning surface provided with mechanism adapted to vibrate said surface in a horizontal plane, and operative mechanism to coincidentally lift said surface gradually and drop it suddenly, combined with mechanism whereby said horizontal and vertical vibrations may be altered, regulated and controlled while the machine is running. 3rd. The combination, in an ore concentrator or vanning machine, of a vanning surface, horizontal transversely but higher at one end than at the other, a cam and operative mechanism whereby said surface may be coincidentally vibrated horizontally and vertically, the upward and downward movements being made different in speed and direction, as described, and sluices for delivering upon said surface the pulverized ore and gangue and water, whereby said pulverized ore and gangue is subjected simultaneously to both horizontal and vertical vibrations, in the presence of a thin sheet, or running water. 4th. In an ore concentrator or vanning machine, a swinging frame set higher at one end than at the other, and a crank, and operative mechanism to control the horizontal swing, or vibration of said frame, combined with a cam and operating mechanism to cause the higher end of said frame to be lifted gradually and dropped suddenly for the purpose set forth. 5th. The combination, in a vanning machine, of a swinging frame set level transversely but lower at one end than the other, and an endless belt mounted thereon having its upper surface moving toward the higher end of said frame to periodically cause it to rise gradually, and drop suddenly, whereby the mineral matters upon the surface of the belt will be differentially affected according to their specific gravities, and caused to separate. 6th. The combination, in a vanning machine, of a swinging frame set level transversely, and lower at one end than at the other, and an endless belt mounted on said frame, having its upper part moving towards the higher end of said frame, with vibrating levers provided with fulcrums adjustable longitudinally as to said lever, and a cam adjustably connected with the higher end of said frame to periodically cause it to rise gradually, and drop suddenly through a greater or less distance as may be desired, whereby the movements of said frame and belt as to oscillation, and as to rise and drop may be separately, or jointly varied to adapt the machine to the separation of ores under various conditions, substantially as set forth. 7th. The carrier frame B, provided with the drums E, G, the intermediate rollers G, G, the belt D carried and supported on said rollers, the guides H, and the sliding boxes I fitted to said guides, combined with the screws A, A' which penetrate said boxes I, bevel gears A, A' attached to said screws, and bevel gears A, A' on shaft I in mesh with bevel gears A, whereby the two boxes I may be simultaneously moved to adjust the tension of the belt D. 8th. The combination, in an ore concentrating or vanning machine, of a suspended swinging carrier frame B, drums E, G, and travelling belt D mounted thereon, with the belt wipers or scrapers x, x also carried by said frame, and the travelling chains V, V, and their connecting gearing, whereby motion is transmitted from the wheel V on the main frame to the wipers on the swinging frame. 9th. The combination, in an ore

belt, suitable drums to support said belt, and a swinging carrier frame B, with the vibrating arms R at their lower ends joined to said carrier frame, adjustable pivoted slides R<sub>2</sub> for said arms, whereby length of vibrating is regulated, the crank rod n, and the driving cranks P, substantially as and for the purpose set forth. 10th. The combination, in an ore concentrating or vanning machine, of oscillating frame B, belt D, adjustable vibrating arms R, rods n, cranks P, shaft l, cam N fastened to and rotated said shaft l, yoke O, radial arm S, connecting rod T, slide S<sub>1</sub> mounted on the radial arm S, adjusting screw s, and adjusting arms U, whereby the height to which the frame B is raised and dropped at each revolution of said cam N may be adjusted, substantially as described. 11th. The shaft n, and arm S, and the arms U attached thereto, combined with link block S<sub>1</sub> fitted to slide longitudinally in said arm S, the screw s mounted on said arm to move and hold said link-block, and the connecting rod T jointed to said block, whereby with a uniform reciprocation of said connecting rod the angular movement of the arm S may be varied at will. 12th. The connecting rod T, the arm S, the link block S<sub>1</sub> which is longitudinally adjustable in the arm S, and the adjusting screw s for the said block, combined with the bevel wheel z, and bevel wheels in mesh therewith, the chain wheel t, and the chain r, whereby said screw may be rotated at will to shift the adjustment of the link block S<sub>1</sub>. 13th. The connecting rod T, and the arms S, provided with a curved slot whose radius equals the length between centers of said connecting rod, combined with a slide S<sub>2</sub> fitted to slide in said slot, a link block S<sub>1</sub>, a joint pin s<sub>2</sub> penetrating said slide, and adapted to connect with said connecting rod T, and the adjusting screw s passing through said block S<sub>1</sub>, and in pivotal engagement with said arm S, whereby the position of the joint in s<sub>2</sub> may be shifted without changing the angular position of said arm S. 14th. In combination with the suspended swinging frame B, its belt D, the vibrating lever R jointed at the lower ends to said frame B, its belt D, the vibrating lever R jointed at the lower ends to said frame, and the reciprocating connecting rods n, combined with the pivot or fulcrum pins R<sub>2</sub> longitudinally adjustable as to said levers R, whereby the relative lengths of the arms of said lever may be varied, as and for the purpose set forth. 15th. A swinging frame B, its belt D, and vibrating lever R on each side of said frame, jointed thereto at their lower ends, connecting rods combined with adjustable pivot or fulcrum pins R<sub>2</sub>, adjustable screws R<sub>2</sub> for the same, bevel gears y attached to said screws, and the shaft y<sub>2</sub> provided with bevel gears y<sub>1</sub>, in mesh with the bevel gear y, whereby both of said pins R<sub>2</sub> may be coincidentally raised or lowered. 16th. The travelling belt D, its frame B, and supporting cords a at the lower end, combined with the drums d upon which said cords are wound, the sprocket e, chain e<sub>2</sub>, the sprocket, ratchet and pawl f, f<sub>1</sub> on shaft e<sub>1</sub>, and counterweight W<sub>1</sub>, whereby the pitch of the frame B may be adjusted at will. 17th. The combination, in an ore concentrating or vanning machine, of a reciprocating frame B, travelling endless belt D, adjustable vibrating arms R, shaft l, crank P, and cam N mounted thereon, crank rods n connecting rod T, and radial arm S, whereby the lift of said frame is controlled, as set forth. 18th. The endless wide belt or apron D, combined with a driving pulley in engagement with the medial portion of said belt, and the loose supporting pulleys, one on each side of said pulley, whereby the apron is driven by traction applied at its middle only, and the edges are supported by loose belt-driven pulleys, as set forth. 19th. An endless wide belt or apron D provided with a thickened portion, combined with a driving pulley in engagement with said thickened portion, and loose supporting pulleys on each side of said driving pulley, whereby the belt is reinforced in the line of its traction along its medial portion, and its margins are supported without traction. 20th. In a vanning machine, a swinging frame B provided with mechanism suitable to vibrate said made horizontally, and mechanism to said frame gradually, and drop it suddenly, as set forth, combined with an adjustable counterweight W adapted to regulate the force of said sudden drop by partly counterbalancing the weight of said frame.

### No. 23,826, Pulverizer. (*Machine à Broyer*.)

William A. Koneman and Hiram H. Seoville, Chicago, Ill., U.S., 15th April, 1886; 5 years.

*Claim.*—1st. The combination, in a pulverizing apparatus, of a surrounding frame A, step B, resting upon the foundation of frame A and secured to said frame, vertical shaft or axle C rotating in and supported by step B, and held in its vertical position by a top bearing, also supported by the frame A, driving-wheel or gear H fastened to vertical shaft or axle C and in engagement therewith, a driving pinion, the spider D fastened to axle C, and bed plate F fastened to spider D, a series of conical rolls, and means for imparting to them independent and positive rotation, substantially as and for the purpose set forth. 2nd. The combination, in a pulverizing apparatus, of frame A, hopper frame N firmly held suspended by frame A, inner and outer bearings P supported by frame A, roller axles R rotating in bearings P, conical rolls S held by axles R, bed plate F and mechanism for revolving said rollers independently of said bed plate, substantially as and for the purpose set forth. 3rd. The combination, in a pulverizing apparatus, of frame A, bed plate F, with deflection in said bed plate, as shown and described, and rollers S rotating on bed plate F, substantially as set forth. 4th. The combination, in a pulverizing apparatus, of a rotating bed plate F, independently rotating conical rolls S and retarding guards U adjusted between conical rolls S and held suspended from floor A in stationary position on the rotating bed plate, substantially as and for the purpose set forth. 5th. The combination, in a pulverizing apparatus, of bed plate F, rotating rolls S, roller axles R, bearings P, adjusting rods and screws P<sub>1</sub> and P<sub>2</sub> for raising and lowering roller axles R and springs P<sub>3</sub> in bearings P, substantially as and for the purposes set forth. 6th. The combination, in a pulverizing apparatus, of frame A, bed plate F, rotating rolls S, roller axles R, bearings P, pulleys T fastened to axles R and power connection with pulleys T, substantially as and for the purpose set forth. 7th. The combination, in a pulverizing apparatus of frame A, shaft C, spider D, bed plate F, rollers S, trough supporting brackets V fashioned to spider D, and centrifugally discharging trough W supported by and resting in supporting brackets V, substantially as and for the purposes set forth.

**No. 23,827. Bouquet Holder. (Porte-Bouquet.)**

Morton L. Cardell, Hancock, Mich., U.S., 15th April, 1886, 5 years.

*Claim.*—The bouquet holder, herein described, consisting of the vessel A, having upon one side the vertically-extended lip B, provided with side notches C, carrying a band G, and upon the opposite side a downwardly-bent lip D, provided with projections F on the inner side, substantially as set forth.

**No. 23,828. Process of Obtaining Cellulose from Wood, etc., and Preparation of Lye therefor. (Procédé de Production de la Cellulose du Bois, etc., et Préparation de Lescive pour cet objet.)**

Carl F. Dahl, Danzig, Prussia, 15th April, 1886, 5 years.

*Claim.*—1st. The employment of sulphate of soda, in lieu of carbonate of soda, in boiling wood and other vegetable substances. 2nd. The preparation of the boiling solution by adding to sulphate of soda the salts recovered from a previous boiling process by means of evaporating the lye and boiling the mixture with caustic lime.

**No. 23,829. Butcher's Block. (Bloc (Billots) de Boucher.)**

Jean B. Gratton, Montreal, Que., 15th April, 1886, 5 years.

*Reclame.*—Dans un bloc de boucher, la combinaison des pièces A, A', la doublure G, les triangles C et les mortaises B, avec le fond F, le brancard H, I, les planchettes J et la baquette K, le tout tel que ci-dessus décrit et pour les fins sus mentionnées.

**No. 23,830. Door Lock. (Serrure de Porte.)**

George B. Underwood, Toronto, Ont., 15th April, 1886, 5 years.

*Claim.*—1st. The combination, with the lock case A having posts E, F, G, of the bolt H having slots E', F', and stud H', tumblers J pivoted in post F and slotted to engage with stud H, and the gravitating levers L pivoted on post G and bearing edgewise against the edge of the tumblers, as set forth. 2nd. The combination, with the lock case, having posts E, F, G, and bolt H having slots E', F' and stud H', of the tumblers J and gravitating levers L oppositely pivoted, whereby the pivoted end of the levers will be above the free end of the tumblers and the free end of the levers be above the pivoted end of the tumblers, as set forth. 3rd. In combination with case A, bolt H and tumblers J, the gravitating levers L, to depress the tumblers, as set forth. 4th. The rock shaft M, provided with projection M' and having key holes at both ends, in combination with the case A having lug N for locking down the levers L, when desired, to prevent the tumblers being raised, and the bolt H slid by a key, as set forth.

**No. 23,831. Method of Constructing the Walls of Buildings, etc. (Méthode de Construction des Murs de Balusses, etc.)**

William H. Orr, Carlisle, Ind., U.S., 15th April, 1886, 5 years.

*Claim.*—1st. In a wall fence, or other like structure, the combination of the bales A, A' of hay, straw, or other fibrous balable material arranged to break joint with one another, the plates and sills B, C and the inside and outside screw or tightening bolts D, essentially as shown and described. 2nd. In a wall fence, or other like structure, the combination of bales of hay, straw or other fibrous balable material arranged to break joint with one another, and having a layer of plaster or similar material between the bales and spikes or pins for holding the same in place, substantially as herein shown and described.

**No. 23,832. Combined Table and Clothes Rack. (Table et Portemanteau Combinés.)**

John Lochner, New York, N.Y., U.S., 17th April, 1886, 5 years.

*Claim.*—1st. The combination of a supporting stand, having a hollow centre pillar, an extensible standard composed of telescoping sections, a top attached to the inner section of the standard, and provided with suspension hooks at the under side, and locking devices by which the sections of the standard are locked in extended state respectively to the pillar and to the intermediate section, substantially as set forth. 2nd. The combination of a supporting stand, having a hollow centre pillar, the extensible standard formed of telescoping sections spring, locking devices for locking said sections in extended state, a top attached to the innermost section, suspension hooks arranged at the under side of the top, and suspension-hooks hinged to recesses of one of the telescoping sections, substantially as set forth. 3rd. The combination of a supporting stand having a hollow centre pillar, a depressed shelf at the upper end of said pillar, an extensible standard formed of telescoping sections, devices for locking said sections in extended position, a top attached to a disk of the innermost section of the standard, said top being provided with suspension hooks on the under side, and suspension-hooks pivoted to recesses of the innermost section, substantially as set forth.

**No. 23,833. Bed Bottom Frame. (Sommer de Lit.)**

Dallas Knowlton, Braunford, Ont., 17th April, 1886, 5 years.

*Claim.*—1st. In a bed-bottom frame, the combination of bars Band C, with truss bars D and screw E and G, substantially as and for the purposes hereinbefore set forth. 2nd. In a bed-bottom frame, the combination of straps or glands I with bolts K and nuts L and belts M and nuts N, substantially as and for the purposes hereinbefore set forth.

**No. 23,834. Cinder Sifter. (Crible à Cendres.)**

William Warminton, Montreal, Que., 17th April, 1886, 5 years.

*Claim.*—The combination of box A, with semicircular bottom having handle B and lugs C, receiver D having handles E and perforated bottom F and flanged cover G, all combined and arranged substantially as and for the purpose hereinbefore set forth.

**No. 23,835. High and Low Water and High Steam Indicator and Alarm for Steam Boilers. (Indicateur d'Eau et de Vapeur à Sonnerie pour Machines à Vapeur.)**

Charles E. Brown, Rome, N.Y., U.S., 17th April, 1886, 5 years.

*Claim.*—1st. In a water and steam indicator and alarm for steam boilers, the combination of a body having a vertical recess terminating in an interiorly and exteriorly threaded nipple at the upper end, lugs extending laterally from the said body, and having passages connected at their inner ends with the said recess, and terminating in valve-seats at their outer ends, the vertically-sliding valves fitted to the said seats, the vertically-sliding yokes connected adjustably with the stems of the said valves, oppositely faced cams mounted adjustably upon a transverse rock-shaft, and adapted to act alternately against the lower ends of the said yokes, a lever mounted adjustably upon the said rock-shaft and having a yoke at its free end of the body, all arranged and operating substantially as and for the purpose herein set forth. 2nd. In a high and low water indicator of the class described, the combination of the vertically recessed body having laterally extended lugs, provided with passages connected at their inner end with the recess in said body, and having valve-seats at their outer ends, the valves having upwardly-extending stems, the laterally-extending lugs having bearings for the said valve-stems, the vertically-sliding yokes inclosing the lower lugs and connected adjustably with the valve-stems, and mechanism, substantially as described, for operating the said yokes, all arranged and operating substantially as and for the purpose herein set forth. 3rd. The herein described improved combined high and low water and high steam indicator and alarm for steam boilers, the same consisting of a vertically-recessed body, having a pair of laterally-extending lugs provided with channels or passages connected at their inner ends with the vertical recess in the body and having valve-seats at their outer ends, the vertically-sliding valves having upwardly-extending stems, the vertically-extending bearing lugs for the said valve-stems, the yokes connected with the said valve-stems, the transverse rock-shaft at the lower end of the casing having a float-lever and a pair of oppositely-facing cams adapted to bear against the lower end of said yokes, a pipe extending forwardly from the body connecting the recess in the latter with the steam-space in the boiler and having a valve-seat, a valve opening from the steam space into the recess in the body, a spring arranged to keep the said valve closed against the pressure of the steam mechanism for regulating the tension of the spring, and a steam-whistle connected to the upper end of the recess in the body, all arranged and operating substantially as and for the purpose herein shown and specified.

**No. 23,836. Warm Air Furnace. (Calorifère à Air.)**

Thomas G. Wanless, Parkdale, Ont., 17th April, 1886, 5 years.

*Claim.*—1st. In a warm air furnace, constructed as described, the circular fire pot F, with perpendicularly or slightly sloping rim  $f_1$  cast in one or more pieces with ribs  $f_2$ , cast on the interior of the same and jutting inwardly at the base, as shown at  $f_3$ , to prevent the upper portion of the fuel falling down when cleaning the grate, the spaces between the ribs  $f_2$  form passages through which air is admitted to the burning fuel, and will pass to the top of the same, assisting materially in the combustion of the smoke and gases arising therefrom, substantially as set forth. 2nd. In a warm air furnace, constructed as described, a series of tubes B arranged vertically around the combustion chamber A, and fire pot F, and connected at the top to the dome A' of the combustion chamber A, and at the bottom to the circular radiating flue c, for the purposes set forth. 3rd. In a warm air furnace, constructed as described, the combination, with the fire pot F, the fuel chute A, ash chamber L with pipe J, and damper P, the combustion chamber A with dome A', the tubes B, the circular radiating flue c, the flues D, the smoke pipe E with direct damper H, the casing G with fresh air opening M, and warm air conducting pipes O, the whole arranged and operating, as set forth.

**No. 23,837. Apparatus for Supplying Air to Oil Lamps. (Appareil pour Fournir l'Air aux Lampes à Huile.)**

John H. Ross, (Co-inventor with John McVey,) and Richard Nolan, Dublin, Ireland, 17th April, 1886, 5 years.

*Claim.*—1st. The combination, with an oil lamp having a casing O enclosing the oil reservoir O', of an air fan A, holder E and compressor F for forcing and supplying air under pressure to the wicks or burners of the same, as described. 2nd. In apparatus for supplying air under pressure to oil lamps, the combination of a meter drum fan, or like forcing apparatus, with a movable bell or air-holder, and regulating valve connected to, and in combination with pipes arranged to supply and direct the air under pressure on the wicks or burners, substantially as and for the purposes described.

**No. 23,838. Machine for Semi-Dovetailing, Tongue and Grooving and Dressing Lumber. (Machine d'assemblage à Semi-Queue d'Arrière, à Rainure et Languette et pour Travailler le Bois.)**

Samuel C. Burris and W. H. Lovett de la Penouère, Victoria, B.C., 17th April, 1886, 5 years.

*Claim.*—1st. In a semi-dovetail tongue and groove lumber machine,

the saw-carrying mandrels W and W at an angle to each other, governed by the right and left hand screw Y at their base, and the pinion a and a to actuate the upper right and left hand screw shaft Y carrying the head of the saw mandrels W and W, as shown and described for the purpose set forth. 2nd. In a semi-dovetail tongue and groove lumber machine, the crossed saw mandrels W and W, driven and governed as shown, and the upper and lower drosser mandrels X and X, provided with saws  $\rho$  and  $\rho$ , having dressing cutters  $\gamma$  and  $\gamma$ , as shown and described for the purpose set forth. 3rd. In a semi-dovetail tongue and groove lumber machine, the guide pieces I, L, L, the upper and lower right and left hand screw shafts Y and Y, and the crossed saw mandrels W and W, as shown and described for the purpose set forth. 4th. In a semi-dovetail tongue and groove lumber machine, a frame F provided with feed rollers P, P, and O, O, shafts X and X provided with circular saws  $\sigma$  and  $\sigma$ , having dressing cutters  $\gamma$  and  $\gamma$ , crossed shafts W and W provided with circular saws  $b$ ,  $b$ ,  $b$ ,  $b$  and  $b$ ,  $b$ ,  $b$ ,  $b$ , and regulated by the right and left hand screw shafts Y and Y, united by pinion gears  $\alpha$  and  $\alpha$ , the whole arranged and combined as described for the purpose set forth.

### No. 23,839. Double-Acting Pump.

(*Pompe à Double Action.*)

George D. Carr, Sarnia, Ont., 17th April, 1886, 5 years.

*Claim.*—The combination of the two chambers A and B, of the two upper inlet valves F, F, with the lower inlet valve G, of the upper and lower discharge valves H, H, of the contrivances of the two levers I, I, to open the valves to which they are respectively attached, of the two stops K, K, and of the coiled metal springs L, L, L, L, attached to said valves respectively, substantially as and for the purposes hereinbefore set forth.

### No. 23,840. Palette Knife and Brush Support.

(*Porte-Spatule et Porte-Pinceau.*)

Arthur S. Campbell, Manchester, N.H., U.S., 17th April, 1886; 5 years.

*Claim.*—1st. In a palette knife and brush support, the combination with a standard adapted to be secured to the edge of a can or pot, of a handle rest attached to the standard, substantially as set forth. 2nd. In a palette knife and brush support, the combination with a standard adapted to be removably secured to the side of a paint receptacle, and provided with diverging arms for the reception of a knife blade or brush, of a handle support attached to the standard, substantially as set forth. 3rd. In a palette knife and brush support, a standard adapted to embrace the edge of a can, and provided with a pair of spring-arms set in its upper end, adapted to receive the knife or brush, or both, substantially as set forth. 4th. In a palette knife and brush supporter, the combination, with a standard having leg  $\alpha$ , and arm  $\alpha$ , and provided with a pair of diverging spring-arms set in its upper end, and with a thumb screw for locking it to a can, of a handle support secured to the standard, substantially as set forth. 5th. In a palette knife and brush support, the combination, with a standard adapted to be removably secured to a paint receptacle, of a bent wire bracket extending outwardly from the standard, and provided with a pair of branches adapted to receive the handle of a knife or brush between them, substantially as set forth.

### No. 23,841. Pulp Digester for Paper Making.

(*Pourisseur pour la Fabrication du Papier.*)

Charles C. Springer, Yarmouth, Me., U.S., 17th April, 1886, 5 years.

*Claim.*—1st. The boiler-shell and sheets, plates or sections of lining placed therein, and an acid-resisting packing placed at the joints of the lining, combined with the acid-resisting stay-strips B, to overlap the joints of the lining, substantially as described. 2nd. The boiler-shell and sheets, plates or sections of lining placed therein, and an acid-resisting packing placed at the joints of the lining, combined with the acid-resisting stay-strips to overlap the joints of the lining, and with the bolts to clamp the stay-strips, lining and sheets together, substantially as described.

### No. 23,842. Globe Guard for Tubular Lanterns.

(*Garde-Globe pour Lanternes Tubulaires.*)

Walter S. Burn, Hamilton, Ont., 17th April, 1886, 5 years.

*Claim.*—In a tubular lantern, in combination with the wires A, A, of the wire or bars  $\alpha$ ,  $\alpha$ , rigidly secured to the said wires on three sides, and a movable hinged bar or wire hook  $\alpha$ , hinged to one bar  $\alpha$ , and made to hook in a loop of the other, by which the globe can be held in place or quickly removed, substantially as specified.

### No. 23,843. Hay Fork.

(*Fourche à Poin.*)

The Ney Manufacturing Company, (assignee of Jacob Ney,) Canton, Ohio, U.S., 17th April, 1886; 5 years.

*Claim.*—1st. The body A, provided with the frame or bar B, in combination with the sliding bar C, provided with the locking bar D, said locking bar D being provided with the notch or recess F, and the shoulder G, and the spring E, substantially as and for the purpose specified. 2nd. The sliding bar C, provided with the locking bar D, and the spring E, substantially as and for the purpose specified.

### No. 23,844. Car-Coupling.

(*Attelage de Chars.*)

Richard Preston, (assignee of Frank R. Wilkins,) Lawrence, Mass., U.S., 17th April, 1886, 5 years.

*Claim.*—1st. In a car-coupling, the main plate A having formed upon it the bumper B, the guard  $\alpha$ , and the two plates  $\alpha$ ,  $\alpha$ , supporting the hook D and its connecting pin d, all substantially as set forth. 2nd. In a car coupling, the main plate A, provided with an

opening to receive the draw-bar, and with two plates  $\alpha$ ,  $\alpha$ , projecting outwardly from said main plate, and clear of the tender frame, and fitted with pin d, whereby, when the draw-bar is removed, the tender may be coupled to the adjoining car by means of a link, substantially as set forth.

### No. 23,845. Single Acting Compound Steam Engine.

(*Machine à Vapeur Composée à Simple Effet.*)

Gustavo A. Schaaf, (assignee of John H. Eickershoff,) Cincinnati, Ohio, U.S., 17th April, 1886; 5 years.

*Claim.*—1st. In a single-acting steam engine, two or more cylinders, each having two diameters with corresponding double pistons, and provided with ports  $\mu$ , the intermediate port  $\mu$ , of each cylinder, being inter-connected, directly and without the intervention of a receiver, or valves, with the adjacent cylinder, substantially as and for the purpose set forth. 2nd. In a single-acting compound engine, two or more cylinders, each of two diameters, with suitable port connections for admitting live steam into the smaller or "high pressure" end, and for exhausting the spent steam ultimately from the larger or "expansion" end, in combination with a double piston or "piston plunger" operating in each cylinder, and an intermediate port governed by said piston as a valve, for permitting the expansion of the live steam, after a partial stroke of the piston, into an adjoining cylinder, substantially as and for the purpose set forth. 3rd. In a single-acting steam engine, the combination of two or more cylinders having ports, arranged as shown, and connections d, with pistons and suitable induction and eduction valves, substantially as and for the purpose set forth. 4th. In a multiple cylinder single-acting steam engine, in combination with the double cylinders, their pistons and induction and eduction valves and ports, the intermediate ports connected as described, and governed by the pistons acting as valve, substantially as and for the purpose set forth. 5th. In a multiple cylinder single-acting steam engine, a valve chest having two parallel seats with ports respectively, for induction and eduction, connected with the cylinders, and two disc valves carried upon a single stem, projecting through the seats and arranged to govern the ports by rotation, substantially as set forth. 6th. In a three-cylinder single-acting steam engine, in combination with the cylinders, and their working connection, a cylindrical valve seat having port seats, disc valves and a stem projecting through, and operating both valves, the valves and seats arranged in relation to the stem connections, substantially as set forth. 7th. In a compound engine of the character described, duplicated steam passages connecting the intermediate ports of each high pressure cylinder directly with two low pressure cylinders in series, provided with controlling valves, for regulating the order of admission from one to the other, substantially as set forth. 8th. In a compound engine of the character described, the crossed steam passages connecting the intermediate ports of adjacent high pressure cylinders with the low pressure cylinders in series provided, at each crossing, with a single-way valve adapted to control the passages, and open only one such passage at a time, as set forth. 9th. In a compound steam engine of the character described, in combination with the rotary induction and eduction valves mounted upon a common valve rod, the divided valve rod provided with a collar covering the point of division of said rod in which said rods may be adjustably secured in relatively different radial positions, substantially as set forth. 10th. In a compound steam engine of the character described, the crossed steam passages connecting the cylinders, as and for the purpose described, said crossings being provided with controlling valves with actuating cranks connected with a single actuating lever operating the same in uni-ori, substantially as set forth. 11th. The combination of the two-part valve rod, the collar, segment rack and engaging arm, substantially as set forth. 12th. In a steam engine, in combination with a plate or disc induction valve, an adjustable hollow covering valve constituting in effect a balancing plate to relieve the valve of steam pressure, otherwise operating to force it against its seat, and a steam supply chamber and valve, to regulate the admission of steam to the valve seat ports independent of the induction valve, substantially as set forth. 13th. In a steam engine, the combination of a circular seat with one or more concentric radial ports, a hollow adjustable cut-off valve into and through which the live steam passes, having a face with ports corresponding with the valve seat, and an interposed disc or plate rotary induction valve having an aperture corresponding with one of the seat ports, substantially as and for the purpose set forth. 14th. The combination of the steam chest, valve seat, valve rod, induction valve, cut-off valve having the hollow stem, and the adjustable collar, substantially as set forth. 15th. The combination of the steam chest, valve seat with enlarged central perforation, valve rod, valve with down projecting hollow stem, cut-off valve with lower central orifice and vertical hollow stem, adjustable bearing collar, and actuating arm, substantially as set forth. 16th. In combination with the steam chest, valve rod, induction valve and cut-off valve, the supporting frame, the independent governor shaft and governor driving gears, and interposed connecting mechanism, for transmitting the vertical movement of the collar of the governor to the adjusting arm of the cut-off valve, substantially as set forth. 17th. The combination of the frame with extensions, the governor shaft, and its collar, the arm and its rock shaft, gears, shaft arm, connecting rod and arm of the cut-off valve, substantially as set forth. 18th. The combination of the separable steam chest in two parts, with the valves, valve rod and stuffing boxes, constructed and arranged, as set forth. 19th. The valve with port provided with cross bridges, in combination with the seat and cut-off valve, substantially as and for the purpose set forth.

### No. 23,846. Car-Coupling.

(*Attelage de Chars.*)

Frederick A. Casey, Boston, Richard Preston, Lawrence, Charles H. Hiseock, Somerville, and William F. Miller, Chelsea, Mass., U.S., 17th April, 1886; 5 years.

*Claim.*—1st. A draw-head, having the hook pivoted to the plates below the line of draw, and keyed to said plates above said pivot, whereby, as the key is removed from contact with the hook, the hook

swings down out of contact with the hook of the adjoining car, substantially as shown and described. 2nd. The combination, with the plates c, c, and hook A, of the key k and its lever l, and the cam-roll n, actuated as described for the purposes set forth. 3rd. The combination, with the hook A and plates c, c, of the slotted link q and lever p pivoted to said plates, substantially as shown and described. 4th. The combination, with a draw-head having a pivoted hook, of the link q attached thereto, and the bent levers p and r, whereby the coupler may be operated from the platform of a car, substantially as shown and described.

### No. 23,847. Boot and Shoe Stretcher.

(*Forme Brisée pour Chaussures.*)

Marshall S. Driggs, Brooklyn, N.Y. (Assignee of Wiley Jones, Norfolk, Va.), U.S., 17th April, 1886; 5 years.

*Claim.*—1st. In a boot and shoe stretcher, the combination, with the side parts A, B, of a divided last, hinged at their rear ends, of a socket block G, bars F hinged to the said socket block and to the said side parts, a hand screw H swivelled to the said socket block, a nut K having horizontal screw-hole receiving the said hand screw and connected with the rear ends of the said side parts, and the adjustable heel brace M, substantially as herein shown and described, whereby the forward ends of the said side parts can be forced apart to widen the boot or shoe, as set forth. 2nd. In a boot and shoe stretcher, the combination, with the side parts A, B, having perforated lugs N hinged at their rear ends, and provided with projections L, and the bottom part C hinged at its forward end, of the pin U locking the said side parts in place, the hand screw H, the nut K engaging with the said projections and having vertical screw hole receiving the said hand screw and the adjustable heel-brace M, substantially as herein shown and described, whereby the rear ends of the said side parts can be raised to stretch the instep of a boot or shoe, as set forth. 3rd. In a boot and shoe stretcher, the combination, with the hand screw H and the heel-brace M placed upon the said hand screw, of the toe-piece Q having socket to receive the forward end of the said hand-screw, substantially as herein shown and described, whereby the said toe-piece can be forced forward to stretch the boot or shoe lengthwise, as set forth. 4th. In a boot and shoe stretcher, the combination, with a horizontal screw hole and a vertical screw hole, to adapt the said nut to receive its screw when arranged vertically, as set forth.

### No. 23,848. Means of, and Apparatus for Climbing Chimneys, etc. (*Moyens de Monter dans les Cheminées, etc., et Appareil pour cet Objet.*)

James Brown, Liverpool, Andrew Porter, Bootle, and John Howard, Liverpool, 17th April, 1886; 5 years.

*Claim.*—1st. The means, substantially herein described, of ascending and descending chimneys and like erections, which means consist in the employment of two or more clamping devices connected together and adjustable in their position, one over the other, as set forth and operating as described. 2nd. The combination of a clamping device a with a clamping device b, and adjusting screws, or their equivalent, d, and platform or staging k, the whole constructed and operating as herein set forth for the purposes specified. 3rd. In a climbing apparatus, the combination of an upper clamping device b and a lower clamping device a, operated by cramping screws h and extension and contraction screws d, substantially as set forth. 4th. In a climbing apparatus, the novel combination device constructed of the clamping device a, the cramping screws h, hinged arms or levers a, blocks a, and blocks a', and adjusting screws d, all working together substantially in the manner and for the purposes described. 5th. In a climbing apparatus, the novel combination of clamping device shown, constructed of the clamping device a, the blocks a, the cramping screws h and the adjusting screws d, all working together substantially in the manner and for the purposes described. 6th. In a climbing apparatus, the novel combination of clamping device constructed of the clamping device a, the cramping ropes h, or the cramping screws h, as shown, and the adjusting screws d, all working together substantially in the manner and for the purposes described. 7th. In a climbing apparatus, the novel combination of the clamping device a, the clamping device b, the forked guide a' and the block and tackle gear d, all working together substantially in the manner and for the purposes described.

### No. 23,849. Plane. (*Rabat.*)

Louis C. Rodier, Detroit, Mich., U.S., and Edmond J. Scully, Windsor, Ont., 17th April, 1886; 5 years.

*Claim.*—1st. The combination of a plane stock, a knife-rest provided near its lower end with a support, which permits the rest to be tilted in the direction of the length of the stock and also transversely thereto, a spring to exert an upward pressure upon the rest, and means to regulate the longitudinal tilting of the rest, substantially as described. 2nd. The combination of a plane stock, a knife-rest, screws passed through said rest near opposite sides thereof, and bearing against a stock, to permit the rest to be tilted in the direction of the length of the stock and transversely thereto, a spring to exert an upward pressure upon the rest, and means to regulate the longitudinal tilting of the rest, substantially as described. 3rd. The combination of a plane stock, a knife rest, screws passed through said rest near the opposite sides thereof, and bearing against said stock, to permit the rest to be tilted in the direction of the length of the stock and transversely thereto, a spring to exert an upward pressure upon the rest, means to regulate the tension of said spring, and a screw to regulate the longitudinal tilting of the rest, substantially as described. 4th. The combination of the plane stock, the knife-rest, a support under the rest, a lug G supported by and capable of sliding longitudinally on the support, and adapted to engage and move with a knife, a knife clamp above the rest, and a screw en-

gaging a screw socket in the clamp for holding the knife upon the rest, substantially as described. 5th. The combination, with a metallic plane stock, of a removable toothed iron or scraper, composed of two clamps, provided each with a clamping screw, one of said clamps being provided with a wing to engage with a knife-rest on the stock, substantially as described. 6th. The combination, with a plane stock provided with a knife-rest and knife-clamp, of a removable toothed iron or scraper attachment, consisting of front and rear clamps constructed and arranged to be engaged with each other, and provided with clamping screws, said rear clamp provided with a wing h adapted to be engaged upon the knife-rest, the construction being such that said attachment may be removed and the knife be clamped upon the rest, and vice-versa, substantially as described.

### No. 23,850. Explosive Compound.

(*Composition Explosible.*)

The Deutsche Sprengstoff Actien Gesellschaft, Hamburg (Assignee of Heinrich Dultz, Duren), Germany, 17th April, 1886; 5 years.

*Claim.*—1st. The manufacture of an explosive compound, consisting of an intimate admixture of a finely-pulverized oxidizing agent, wholly or principally potassium-chlorate with a jelly formed by dissolving nitro-cellulose in nitro-benzine, or analogous solvents, the mixture and solution being substantially in the proportions herein described. 2nd. In an explosive compound, the combination of a finely pulverized oxidizing agent, wholly or principally potassium chlorate, with a jelly formed by dissolving nitro-cellulose in nitro-benzine, or analogous solvents, substantially as herein described.

### No. 23,851. Machine for Forming Heel Counters. (*Machine pour Façonner les Contreforts des Chaussures.*)

Napoléon J. Côté, François M. Pepin and Joseph Normandin, Montreal, Que., 17th April, 1886; 5 years.

*Claim.*—1st. In a heel counter forming machine, a plunger carried in a reciprocating slide holding the blank up against a fixed projection, and rotating cams also carried in reciprocating slide and operating to form heel counter on said plunger, all as herein set forth. 2nd. In a heel counter forming machine, the upturn Q carried from the slide Q' and timed to move when the forming cams are at rest, all as herein described. 3rd. The combination, with the plunger E, of the lever R, operated by detent S, substantially as and for the purposes set forth. 4th. The combination, with a toothed plate carried over, and corresponding to the outline of the plunger, of toothed segments mounted on the spindles of the forming cams and intermeshing with said plate, as and for the purposes set forth. 5th. In combination with ratchet wheels carried on the spindles l, l, of the forming cams spring, pawls released therefrom by contact with a fixed stop, all as herein set forth. 6th. The combination, with the guide K, K, secured on bed plate, of the arms H, H' mounted on slides G and pressing against said guides, and the arms H, H, carrying spindles l, l, all as and for the purposes set forth.

### No. 23,852. Refrigerator House. (*Glacière.*)

John J. Withrow and John Hillock (Assignees of Robert Wilson), Toronto, Ont., 17th April, 1886; 5 years.

*Claim.*—1st. An ice-chamber A, placed above the cooling chamber B, in combination with the cold air flues C extending from a point at or near the bottom of the chamber B, and the flues D extending from a point at or near the top or ceiling of the chamber B to an air-space E. 2nd. The flues D, extending from a point at or near the top or ceiling of the cooling chamber B to the space E, in combination with the ventilator K and opening J made respectively in the roof E and ceiling d, substantially as and for the purpose specified. 3rd. In a refrigerator house, in which the ice-chamber is located above the cooling chamber, the combination with a warm air flue D, of a detachable cold air flue G located in the warm air flue D, substantially as and for the purpose specified. 4th. In a refrigerator house, in which the ice-chamber is located above the cooling chamber, cold air flues c extending from the bottom of the chamber B, in combination with apertures b provided with doors, substantially as and for the purpose specified. 5th. In a refrigerator house, in which the ice-chamber is located above the cooling chamber, cold air flues extending from the bottom of the cooling chamber B and communicating therewith through apertures b, provided with doors, in combination with the warm air flues D leading from the top of the cooling chamber to the space E, opening f provided with doors or valves 3.

### No. 23,853. Sash Bolt. (*Targette.*)

Hubert R. Ives (Assignee of Eugène Beaujoo, Montreal, Que., 17th April, 1886; 5 years.

*Claim.*—1st. In a sash bolt, the combination, with the bolt proper, having rack formed in its upper end, of toothed or pinion segment carried in bearings on slide and operated by a handle, as and for the purposes set forth. 2nd. The combination, with the segment C, intermeshing with rack A on bolt A, of handle with hooks or catches D, D, as and for the purposes set forth.

### No. 23,854. Clothes Line-Holder.

(*Poulie de Ligne d'Etendage.*)

François X. Boyer and Séraphin D. Marquis, Montreal, Que., 17th April, 1886; 5 years.

*Claim.*—1st. A clothes line-holder, and consisting of a bar, a sheave working in a slot in such bar, and a side opening into such slot, the whole being fixed or slung to any point of support, all as herein set forth. 2nd. The combination, with the lines 1 and 2, of the bar A with sheave C, carried on line 1 and supporting line 2, to equalize the weight on the clothes line, as herein described.



**No. 23,855. Manufacture of Rolled Metal Articles and Apparatus therefor.** (*Fabrication d'Objets en Metal Cylindré et appareil pour cet objet.*)

George F. Simonds, Fitchburg, Mass., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. The manufacture of a metal article, object or body circular in transverse section, by shaping the same and simultaneously condensing or compacting its substance, and smoothing or finishing its surface by one operation, between a pair of dies made with diverging surfaces, for spreading the surplus metal or forcing the same longitudinally outwards, and with forming surface to give the article the required shape, and provided with means for forcing and controlling the rotation of the blank, as above set forth. 2nd. The manufacture of wrought metal articles, annular in transverse section throughout, or partially throughout their length, by rolling tubes or hollow cylinders between dies subjected to pressure, as above specified. 3rd. A hollow projectile, or other wrought metal article, consisting of one piece or mass of metal, annular in transverse section throughout, or partially throughout its length, manufactured in the manner above described. 4th. A hollow projectile with its pointed or conical end compressed and condensed, and its walls thickened in the manufacture of the same, as and for the purpose specified. 5th. A hollow projectile or shell, consisting of two parts, which have been rolled between suitably shaped dies and then united by screw-threads, substantially as set forth. 6th. A die for the purpose above specified, having a smooth, flat or plane surface, and a bevelled or inclined surface, on each side thereof, provided with serrations or teeth, substantially as described with reference to Fig. 19 of the drawings. 7th. A die for the purpose above specified, having a flat surface and a bevelled or inclined surface on each side thereof, all of which surfaces are provided with serrations or teeth, substantially as described with reference to Fig. 20 of the drawings. 8th. A die for the purpose above specified, formed with a convex upper surface, having a smooth portion at the centre, and serrations or teeth on each side thereof, substantially as described, with reference to Fig. 21 of the drawings. 9th. A die provided with serrations or teeth, which are larger or coarser near the edges than near the centre of the die, substantially as and for the purpose set forth. 10th. Forming the teeth or serrations of the dies, in the manner shown in figure 22, or as in Fig. 23, or as in Fig. 24 of the drawings.

**No. 23,856. Water Pipe.** (*Tuyau d'Eau.*)

Conrad Bitz, Linden, N.J., U.S., 21st April, 1886; 5 years.

*Claim.*—A water pipe provided with a lining of cork, composed of ring-shaped sections, substantially as set forth.

**No. 23,857. Folding Table.** (*Table Pliante.*)

Abiel Odell, Toronto, Ont., 21st April, 1886; 5 years.

*Claim.*—The joint in the top of a folding table, in combination with a joint at the end of each leg connecting it to the top, and a joint at the point where each pair of legs cross each other and upon which they turn as upon an axle.

**No. 23,858. End Gate Fastening.**

(*Fermeture de Cul de Voiture.*)

Joseph M. Reams, Curwensville, Penn., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. An end gate fastening, comprising a plate E provided with a stud, as at G, and fixed to the end gate, a hub H having a side opening h, and fixed to the wagon body, a head K held in the hub H, and adapted to be rotated therein, and provided with a flange k<sub>2</sub>, having a side opening, as at O, substantially as herein set forth. 2nd. An end gate fastening, comprising a plate E, provided with a stud G, and fixed to the end gate, a hub H, having an opening h, and fixed to the wagon body, and a head K held loosely in hub H, and having a flange k<sub>2</sub>, formed at its inner face, as a cam, and provided with a side opening I, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, in an end gate fastening, of a plate E, provided with a stud G, and fixed to the end gate, a plate I having notches i<sub>1</sub>, i<sub>2</sub>, a hub H having a side opening h, and fixed to the wagon body, a head K held loosely in hub H, and having a flange k<sub>2</sub>, provided with a side opening O, and a spring-pressed button L fitted on head K, and having a stud N adapted to the notches of plate I, substantially as herein set forth. 4th. The combination, in an end gate fastening, of a plate E, provided with a stud G, and fixed to the end gate, a plate I, having a hub H, provided with a side opening h, and a closed inner end A, a head K held loosely in hub H, and having a flange k<sub>2</sub>, provided with a side opening O, and a plate J held to plate I and on the shank of head K, substantially as and for the purposes herein set forth. 5th. The combination, in an end gate fastening, of a plate E, provided with a stud G, and fixed to the end gate, a plate I notched at i<sub>1</sub>, i<sub>2</sub>, a hub having a side opening h and a closed inner end A, a head K held loosely in hub H, and having a flange k<sub>2</sub>, provided with a side opening O, a plate J held to plate I and head K, a spring-pressed button L fitted on head K and held by a pin l, and having a stop N adapted to lock into the notches of plate I, substantially as herein set forth. 6th. The combination, in an end gate fastening, of a plate C having a socket c and fixed to one side of the wagon body, a hook B on the end gate, a plate E on the gate, and provided with a stud G, a plate I on the wagon body, and provided with a hub H, having a side opening h, a head K held loosely in hub H, and having a flange k<sub>2</sub>, provided with a side opening O, and means, substantially as described, for holding the head K to hub H, as and for the purposes herein set forth.

**No. 23,859. Grain Harvesting and Binding Machine.** (*Moissonneuse-Lieuse.*)

David M. Osborn, Auburn, N.Y., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. In a combined harvesting and binding machine, a

draft-pole pivotally attached thereto, so that it may be placed in line with, or at right angles to the cutter bar, in combination with means, substantially such as described, for locking the pole in either of the said positions at will. 2nd. The harvester frame, in combination with the pole pivoted thereto, to swing horizontally, the eye-plate on the pole, the eye-plates on the frame, and the changeable brace to hold the tongue against lateral motion. 3rd. In combination with the harvester frame, and the horizontally-turning pole pivoted thereto, the interlocking devices on the frame and pole, to lock the latter against vertical motion when extended in line with the cutter bar, whereby the pole is adapted to maintain the frame in an inclined position during transportation on a truck. 4th. The harvester frame, in combination with the draft-pole, and the intermediate swiveling block connecting them. 5th. In combination with the harvester frame, provided with the stud, the draft-pole provided with the slotted plate to engage the stud. 6th. In combination with the main frame, provided with the stud, the swinging pole jointed thereto, and the pole plate provided with the slot to receive the stud, and with the eye to connect with the tilting devices.

**No. 23,860. Process of Ornamenting Surfaces.** (*Art d'Orner les Surfaces.*)

Franklin Rudolph, Chicago, Ill., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. The herein described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and rubbing dry colouring matter upon the parts of the surface on which the gummy substance deposits, substantially as described. 2nd. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, and containing colouring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, and rubbing additional dry colouring-matter upon the gummy substance, substantially as described. 3rd. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, rubbing dry colouring matter upon the surface and removing therefrom superfluous colouring matter, substantially as described. 4th. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved and containing colouring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, rubbing additional dry colouring-matter upon the surface, and removing therefrom superfluous dry colouring matter, substantially as described. 5th. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, forming a background, applying upon the background a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, rubbing additional dry colouring-matter upon the surface, and removing therefrom superfluous dry colouring-matter, substantially as described. 6th. The herein-described process of ornamenting a metallic surface, which consists in applying to it a liquid, such as turpentine, in which a gummy substance is dissolved, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, forming a background, applying upon the background a liquid, such as turpentine, in which a gummy substance is dissolved, and containing colouring-matter in solution, evaporating the liquid until the gummy substance becomes reduced to a desired consistency, and the colouring-matter deposited in spots, rubbing additional dry colouring-matter upon the surface, and removing therefrom superfluous dry colouring-matter, and varnishing the surface thus treated, substantially as described.

**No. 23,861. Vehicle Spring.**

(*Ressort de Voiture.*)

Thomas J. Magner and Charles L. Thomas, Buffalo, N.Y., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. A spring for vehicles, consisting of the spiral coils 1 and 2, the inner ends of which terminate in arms secured together, and the outer sides of which terminate in arms bent and united, substantially as described. 2nd. A vehicle spring, consisting of two spiral coils, the inner and outer sides of which terminate in arms, united and secured together by clips, substantially as described. 3rd. A vehicle spring, consisting of two spiral coils having the arms, which connect with the running gear, or side bars rigidly secured together by a clip, or other suitable means.

**No. 23,862. Boot and Shoe Counter.**

(*Contrefort de Chaussure.*)

Walter A. Watson, Sharon, Mass., U.S., 21st April, 1886; 5 years.

*Claim.*—1st. The improved heel counter reinforce, substantially as described, consisting of two ranges of teeth in which the angular space between any two teeth of each range is extended into a tooth of the other range from its base towards its front, essentially as set forth, and each of the teeth of either or each range only is hooked or bent near its point at an angle to the rest of the tooth. 2nd. The improved heel stiffener, consisting of the duplex serrated reinforce, and of the band or belt fastened to one range of the teeth thereof, and extended a short distance both above and below the points of such range, essentially as represented, without being lapped on or projected below the other range of teeth, all being substantially as set forth. 3rd. The improved heel counter reinforce, substantially as de-

scribed, consisting of two ranges of teeth in which the angular space between any two teeth of each range is extended into a tooth of the other range from its base toward its point, essentially as set forth.

### No. 23,863. Pump. (Pompe.)

Hiram Field, Smithville, and John H. Smith, North Grimsby, Ont., 21st April, 1886; 5 years.

**Claim.**—1st. A pump having a barrel, provided at its lower end with a suction valve, and attached to a suction pipe, a loosely fitted tubular plunger having elongated ports or passages near the top, and fitted at each end with an inwardly opening valve. 2nd. The combination of a pump-barrel A, valve C, tubular plunger D with ports d, and valves E and F, rod G, coupling G, handle H, link I, collar J, spout K, and collar K. 3d. The combination of a pump-barrel A, cap A', stuffing box A'', and C plunger D, ports d, valves E and F, and plunger rod G. 4th. The combination of a pump-barrel A, having an induction valve C at its lower end, a cap and stuffing box A' A'' at the upper end, a discharge orifice covered by a packed and clamped collar K, provided with spout J, a tubular plunger D leaving an annular space in the barrel, and having posts and an inwardly opening valve at each end, the upper end carrying a plunger rod connected with the means for operating said plunger. 5th. The combination of the barrel A, valve C, collar K, spout J, collar I, link I, handle H, coupling G, rod G, and loosely fitting tubular plunger D having valve E. 6th. The combination of a tubular plunger D, ports d, bushing e, valve E, cover J, opening B, and valve F. 7th. The combination of the barrel A, valve C, collar I, collar K and spout J, all substantially as shown and described and as for the purpose set forth.

### No. 23,864. Feed Water Purifier for Locomotive Engine. (Epurateur de l'Eau d'Alimentation pour Locomotives.)

John T. Mead and John Thomson, Cleveland, Ohio, U.S., 21st April, 1886; 5 years.

**Claim.**—The combination, with a locomotive engine, of a heater located above the boiler, a steam pipe connected with the boiler and located within, and terminating near the top of the heater, a purifier located below the boiler, and pipes connecting the several parts, and arranged substantially as shown, whereby the feed water is conducted through the heater and purifier, and from the latter to the boiler, substantially as set forth.

### No. 23,865. Filter. (Filtre.)

Gustave Behrens, Lubeck, Germany, 21st April, 1886; 15 years.

**Claim.**—1st. A filtering apparatus, consisting of a bag having its open end at the bottom, and means for creating a current of the fluid to be filtered into and through the bag, in combination with means for keeping the bag expanded, for allowing it to collapse at intervals and closing it, and for thereupon re-expanding, and finally reopening the same, substantially as and for the purpose described. 2nd. A filtering apparatus, consisting of a bag having its open end at the bottom, and enclosed in a casing connected to a suction apparatus adapted to draw the fluid to be filtered through the bag into the casing, in combination with means for keeping the bag expanded, for allowing it to collapse at intervals, for closing it, and simultaneously stopping the communication of the casing with the suction apparatus, and for thereupon re-expanding and finally reopening the bag, and also re-establishing communication with the suction apparatus, substantially as and for the purpose specified. 3rd. The combination, with the bag a fixed with its lower open end to an aperture p in the top of a compartment n, and means for creating a current of the fluid to be filtered from the compartment n into and through the bag, of a rope d running over guiding sheaves and attached with its ends respectively to the bag a, and a weight c, lever e, connected to the rope d, and having a slit e' with enlargement e<sub>3</sub> through which passes the endless rope f provided with driver g, and a slide b resting on the continuously rotating roller e, and connected by the ropes h and h' to the weight c, substantially as and for the purpose set forth. 4th. The combination, with the bag a fixed with its lower open end to an aperture p in the top of a compartment n, and enclosed in a casing r connected by a pipe l to a suction apparatus, of a rope d running over guiding sheaves, and attached with its ends respectively to the bag a, and a weight c, a lever e<sub>3</sub> connected to the rope d, and having a slit e' with enlargement e<sub>3</sub> through which passes the endless rope f, provided with driver g, a slide b resting on the continuously rotating roller e, and connected by the ropes h and h' to the weight c, a throttle-valve m in pipe l carrying the sheave q over which a guiding pulley r is passed, the rope h and the rope s attached to rope h, and carrying the weight t, substantially as and for the purpose described. 5th. The combination, with the bag a fixed with its lower open end to an aperture p in the top of a compartment n, means for creating a current of fluid from the said compartment into and through the bag, for keeping the bag expanded for allowing it to collapse, and for re-expanding it, of a slide b consisting of a sheet of flexible material with transverse ledges, a continuously rotating roller r placed outside of the compartment n, and supporting the slide b, and means for drawing the said slide under the aperture p when the bag collapses, substantially as and for the purpose set forth.

### No. 23,866. Cut-off Valve Gear.

(Appareil de Soupape de Ddente.)

Joseph D. Coté, Fishkill, N.Y., U.S., 21st April, 1886; 5 years.

**Claim.**—1st. The combination, with mechanism, substantially as described, for opening the valve, of the toggle-like mechanism, substantially as described, for liberating the valve-lever, whereby the point of cut-off may be controlled by the governor without any appreciable strain being thrown on the governor at the moment of liberation of the valve, as set forth. 2nd. The combination of the valve-lever, the operating-arm mounted on the same axis of vibration as the valve-lever, the rock-shaft mounted in the operating-arm, the swinging catch to engage the valve-lever fixed to said rock-shaft, and

provided with a wrist pin, the link provided with a slot which engages said wrist-pin, and the bell crank to which said link is coupled, all arranged to operate substantially as set forth, whereby the governor may control or indicate the point of cut-off without being disturbed by the strain necessary to effect the liberation of the valve-lever, as set forth. 3rd. The combination of the valve-stem A, the valve-lever B fixed to said stem, the operating arm C mounted to vibrate on the same axis with lever B, the rock-shaft D mounted in arm C, the catch E fixed on the rock-shaft D in the same plane with the lever B, the crank F fixed to the rock-shaft D and provided with the wrist pin A, the bell-crank H mounted to vibrate on the same axis, with the operating-arm C, and the slotted link I, coupled at J to the bell-crank H, and its slot engaging the wrist-pin A, substantially as and for the purpose set forth. 4th. In a valve-gear wherein the valve-lever is actuated by a catch, substantially as described, the catch plate which takes the wear made square, and secured in place by a centrally arranged screw, substantially as and for the purposes set forth. 5th. The combination, with the valve-lever, operating-arm, rock-shaft, catch-crank and bell-crank, all arranged to operate substantially as described, of the slotted link I connecting the bell-crank with the crank F, and a stop device, as described, for limiting the movement of the link in one direction, whereby when the governor ceases to revolve it will still continue to act on and stop the engine as set forth.

### No. 23,867. Apparatus for Tightening Bed Bottoms, etc. (Appareil pour Serrer les Sommiers des Lits, etc.)

Joseph E. Townshend, Montreal, Que., 21st April, 1886; 5 years.

**Claim.**—1st. The combination of the longitudinal A having knees H, cross-pieces B, sliding block C having nuts D, screw-threaded bolts E having levers G, the whole substantially as shown and described. 2nd. The novel construction and arrangement of the tightening screw-threaded bolts E, having G made integral therewith, substantially as and for the purpose described.

### No. 23,868. Middlings Purifier.

(Epurateur des Gruaux.)

William McCallum, Stratford, Ont., 21st April, 1886; 5 years.

**Claim.**—The combination of the spiral roller G, and the fan H, working in the revolving frame F, substantially as and for the purpose hereinbefore set forth.

### No. 23,869. Vehicle Wheel. (Roue de Voiture.)

Henry M. Horns, Paris, Texas, U.S., 21st April, 1886; 5 years.

**Claim.**—1st. The herein described method of constructing a wheel, which method consists in first placing the tire on a suitable support, next inserting the spokes into the felly sections, and placing said sections again on the inner face of the tire with the inner ends of the spokes raised above the plane of the tire and felly and placed side by side in a circle in immediate contact with one another, next pressing the raised central portion of the wheel down to the required place, and lastly applying the hub to the inner ends of the spokes and thereby binding them firmly together, as set forth. 2nd. In the process of constructing wheels, the method of tightening the felly and spokes, which consists in placing the felly sections against the interior of the tire with the outer ends of the spokes inserted in the felly sections, and their inner ends placed side by side and in immediate contact with one another in a plane above the plane of the tire and felly, and then forcing the inner ends of the spokes simultaneously and equally toward the plane of the tire and felly, whereby the outward pressure is effected by the spokes wholly independent of the hub. 3rd. A wheel, provided with a removable hub and removable spokes, and a removable bearing plate or washer, interposed between the shoulder of the spoke and the felly, whereby the spokes and felly may be made tight at any time by removing the plate or washer and substituting a thicker one. 4th. In a wheel, the combination, with the felly and spokes, of bearing plates and washers interposed between the felly and spoke shoulder, and provided with a raised rib to embed itself in said shoulder, substantially as described and shown. 5th. In a wheel, the combination of a tire having a concave inner face, a sectional felly having its outer face made to conform to the inner face of the tire spokes, having their outer ends seated in mortises in the felly sections, and their inner ends bearing against each other side by side, and a divided hub clamping the inner ends of the spokes, substantially as described and shown. 6th. In a wheel, the combination of a tire felly and spokes, and a hub consisting of part G having disk E, with radial ribs m, body t, provided with threaded portion s, sleeve g and notches r and nut f applied to the end of the box and serving to retain the same in place, substantially as set forth. 7th. The combination of a wheel, of a tire, a felly, a series of spokes having their corners cut away to form bevel faces d, e, at their inner ends, disks J, K, provided with V-shaped ribs projecting from their faces to enter between the bevel faces d, e, and bolts for drawing the disks together, said disks being adapted to move to and fro from each other without turning. 8th. A metallic tire for vehicles, having a concave inner face forming a seat for the felly. 9th. In combination with a tire having a concave seat, a felly composed of sections seated therein and blocks as a, between the contiguous ends of the felly sections. 10th. In combination with a tire A having a concave seat, a felly B composed of sections seated therein and having their ends rounded and blocks a inserted between the ends of the felly sections, and conforming in shape to the felly sections and tire. 11th. In combination with a tire, a felly made in sections and seated therein, a dowel block between the ends of the felly sections, and a spring catch to retain said block in place. 12th. In combination with a tire, a felly and spokes inserted therein and abutting at their inner ends, an axle sleeve or box threaded, or its exterior disks encircling the box or sleeve and bearing against the spokes, and collars screwed upon the sleeve or box and against the disk, substantially as shown and described. 13th. In combination with tire A, felly B, spokes C abutting at their inner ends, provided with inclines c, c on one face only and wedges d, disks I provided with wedges e and incline f and sleeve

II and collar J. 14th. In combination with tire A, felly B, spokes C abutting at their inner ends and provided with inclines e, e on one face only, disks I provided with wedges e, bolts g passing between each pair of spokes, and alternating with the wedges II and collars J, all arranged as shown. 15th. In combination with a wheel, constructed substantially as herein described and shown, and provided with wedges e and bolts g, alternating as shown, the plates or wedges h inserted on the plain bevelled faces of the spokes above the wedges e and below the bolts g, as and for the purpose set forth. 16th. In a wheel, the combination, with a tire, a felly and spokes, the sleeve II right and left, threaded, as shown, disks I, I and collars or caps J, J, substantially as shown.

### No. 23,870. Pipe Joint. (*Joint de Tuyau.*)

Joseph Bird (as Administrator of the Estate and Assignee of Henry Green), Osakis, Minn., U.S., 21st April, 1886; 5 years.

*Claim.*—A stove-pipe section, having at its ends and on opposite sides thereof double depressions a, b forming parallel spiral grooves on the outer ends of said section, substantially as shown and described and for the purpose set forth.

### No. 23,871. Poke for Horses, Cattle and Sheep. (*Carcan pour Chevaux, Bestiaux et Moutons.*)

James O. Pearson, Percy, Ont., 22nd April, 1886; 5 years.

*Claim.*—A poke, having the curved form A, the cross-piece C, the blade E and the strap D, substantially as and for the purpose hereinbefore set forth.

### No. 23,872. Stove. (*Poêle.*)

William Stephenson, Morris, Man., 22nd April, 1886; 5 years.

*Claim.*—1st. In a heating or cooking stove, the combination of the fire-box G and the feed-pipe B, the latter made to pass through the partition J, substantially as and for the purpose specified. 2nd. In a heating or cooking stove, the combination of the fire-box C, and the perforated draught pipe H, substantially as and for the purpose specified. 3rd. In a heating or cooking stove, the combination of the fire-box C, return flue D, feed-pipe B and oven F, substantially as and for the purpose specified. 4th. In a heating or cooking stove, the combination of the fire-box C, feed-pipe B, draught pipe H, return flue D, oven F, exit pipe G, all constructed substantially as and for the purpose specified.

### No. 23,873. Bevel. (*Sauterelle.*)

John W. H. Doubler, Rockford, Edgar S. Boynton and Samuel C. Skinner, Chicago, Ill., U.S., 22nd April, 1886; 15 years.

*Claim.*—1st. The combination of the stock and the two blades, said blades having a pivotal connection with the stock, and a gear-toothed connection with each other, substantially as and for the purpose set forth. 2nd. The combination, with the grooved stud-journals, of a clamping-bar slotted to engage the grooved portions of the journals, and made removable, substantially as and for the purpose set forth. 3rd. The combination, with the stock and with the slotted clamping-bar to engage the stud-journals of the blades, of a clamping-screw having a screw-thread connection with the clamping-bar, and a counter-sink connection with the stock, substantially as and for the purpose set forth. 4th. The combination, with the blades geared at their pivotal ends to move together, of a stock provided with a graduated scale, substantially as set forth. 5th. The combination, with the blades geared at their pivotal ends to move together, of a stock provided with a lengthwise slot, substantially as set forth.

### No. 23,874. Grain Binder. (*Lieuse à Grain.*)

The Milwaukee Harvester Company (Assignee of Joseph P Bullock), Milwaukee, Wis., U.S., 22nd April, 1886; 5 years.

*Claim.*—1st. The combination, with the needle having a lug at or near its hub, of the bell-crank carrying the compressor upon one arm, a spring catch for engagement with the inner end of the other arm of the bell crank, while the bundle is being compressed and a finger connecting the lug of the needle with the frame of the spring catch for tripping the bell-crank and allowing the compressor to fall, as and for the purpose set forth. 2nd. The frame F and brackets to which it is pivoted, in combination with spring E<sub>2</sub>, spring catch F<sub>1</sub>, bell crank C, finger g<sub>1</sub>, needle having lug e and compressor, as and for the purpose set forth. 3rd. The frame F, bracket E<sub>1</sub>, spring E<sub>2</sub>, spring catch F<sub>1</sub>, bell crank C, finger g<sub>1</sub> and spring g<sub>2</sub>, as and for the purpose set forth.

### No. 23,875. Art of Making Joints in Wood Work. (*Art de Faire les Joints dans les Ouvrages en Bois*)

George J. Tagg, East Moulsoy, Eng., 22nd April, 1886; 5 years.

*Claim.*—1st. An air and water-tight jointing material for use between two materials, one of them being wood, in constructional and other wood work, consisting of lengths of fibrous material, partly spun and partly woven, or wholly, the one or the other soaked to saturation in vegetable gum waste, or varnish of the hereinbefore described kind, and subsequently exposed until oxidation of the gum is effected. 2nd. An air and water-tight joint between two materials, one of them being wood in constructional and other wood-work, made by inserting between the pieces to be joined lengths of fibrous material, woven or spun, or partly woven and partly spun, the edge of the wood having been hallowed and the fibrous material steeped to saturation in vegetable gum waste or varnish of the hereinbefore described kind and afterwards forcing the two pieces together, substantially as hereinbefore described. 3rd. An air and water-tight joint between two materials, one of them being wood, and both hav-

ing parallel faces in constructional wood-work other than boat-building, made by soaking woven fibrous material in vegetable gum waste, varnish, or varnish waste, inserting them between the two pieces to be joined and closing up the joint. 4th. An air and water-tight joint between two adjoining edges of constructional work, one of the materials to be joined being wood-made by inverting in the joint space cores of loosely spun fibrous material previously soaked in vegetable gum, or gum waste, or in varnish, or varnish waste, and pressing said cores down. 5th. The combination, with a joint made of fibrous material soaked in vegetable gum, gum waste, varnish or varnish waste, of a projecting closing bead or beads, for the purpose of preventing the gum or the like from exuding.

### No. 23,876. Folding Bed. (*Lit Pliant.*)

George H. Richards, Jr. (Assignee of George L. Slaton and William A. Eaton), Buchanan, Mich., U.S., 22nd April, 1886; 5 years.

*Claim.*—In a folding bed, the combination, with the bed-bottom hinged to the base of the vertical back, of the circular rack secured to the said base within the same, the transverse spring-actuated shafts journaled in the side rails of the hinged bottom, and the pinion secured to one or both ends of said shaft to engage the rack, substantially as specified.

### No. 23,877. Bag-Holder. (*Acroche-Sac.*)

James E. Parker, Whiting, Vt., and Charles P. Parker, Port Henry, N.Y., U.S., 22nd April, 1886; 5 years.

*Claim.*—1st. In a bag-holder, the ring, having each of its free ends bent to form a spring-clutch, substantially as set forth. 2nd. The combination of the ring, having each of its free ends bent to form a spring-clutch, with the cross-bar provided with a post or catch, as set forth. 3rd. The combination of the ring A, having the spring-clutches B, B, consisting of the loops a, a, and b, b, the free end of the latter being cut away to form one side of a wedge, and the cross-bar C provided with the post D, as set forth.

### No. 23,878. Lock Fastening for the Bottom Hoops of Milk Cans. (*Joint de Sûreté pour les Cerceles de Fond des Bidons à Lait.*)

Walter S. Burn (Assignee of John O'Neil, Jr.), Hamilton, Ont., 22nd April, 1886; 5 years.

*Claim.*—1st. The combination, in a lock for bottom hoops of milk cans, of the horizontal slot A, A<sub>1</sub>, cut in the ends of the bottom hoop B, the lock-plate C formed with upper and lower projections d, d, e, e, made to pass through the said slots and clinched in the rear of the said hoop, substantially as and for the purpose specified. 2nd. The combination of the bottom hoop B and the lock-plate C, substantially as and for the purpose specified. 3rd. The combination of the bottom D with its flange f, the bottom hoop B with projection h, the lock-plate C with its projections d, d, e, e, all arranged and constructed substantially as and for the purpose specified.

### No. 23,879. Lamp Heated Apparatus.

(*Fourneau-Lampe.*)

Victor Lahais and Joseph Lévoillé, Montreal, Que., 22nd April, 1886; 5 years.

*Claim.*—A lamp heated apparatus, having a funnel shape composed of the conical portion B and cylindrical part C, to fit on ordinary lamp globes, and provided with thumb screws O, whereby utensils E, containing liquids or other substances, are put on the same to be heated, while the lamp continues to give light as usual, substantially as described.

### No. 23,880. Heeling Machine. (*Machine à Talons.*)

Walter M. Tomlinson, Lennoxville, Que. (Assignee of Henrie D. Stone, Boston, Mass., U.S.), 22nd April, 1886; 5 years.

*Claim.*—1st. In a heeling machine, the plate g against which the outer end of the heel is pressed, the reciprocating carriage, the arm E connected therewith, and the driver-plate provided with the drivers b<sub>1</sub>, combined with the rod D and its connected supporting-plate provided with the guides l<sub>1</sub> to operate, all substantially as described. 2nd. In a heeling machine, the plate g against which the outer end of the heel is pressed, the carriage c, and the arm E connected with the said carriage, and the driver-plate and drivers, and the rod D provided at its upper end with the supporting-plate, and extended into guides in the said arm, and the spring surrounding the said rod and normally keeping the supporting-plate elevated above the driver-plate, combined with means, substantially as described, to actuate the said parts, whereby the sole and heel of the boot and shoe are first held between the plate g and the supporting-plate, upward movement of the arm E, after the sole and heel are held in place between the said plates, effecting the elevation of the driver-plate to drive the fastenings, further upward movement of the arm, after driving the fastenings and securing the heel to the boots and shoes, consolidating or compacting the heel, as set forth. 3rd. In a heeling machine, the carriage and its arm provided at top with awls, and the rod D, and supporting-plate, and spring e<sub>1</sub> and the plate g, combined with means to move the carriage, the heel to be pricked being first caught between the supporting-plate and the plate g, when the supporting-plate and rod remain at rest while the arm E and carriage continue to rise, to enable the awls to penetrate the work, substantially as described. 4th. In a heeling machine, the supporting-plate provided with the conical pointed tubes 4 and open ended nail-tubes 5, combined with the rod, its plate d<sub>2</sub>, a set of awls and a driver 7, and with means, substantially as described, to operate the said rod and plate. 5th. In a heeling machine, the carriage and the arm E pivoted thereon, combined with the locking device to hold the arm in upright position, all operating substantially as described. 6th. The carriage, the arm E, its plate and the rod D, the plate attached to its upper end, and the spiral spring surrounding the shaft, combined with a projection to arrest the said rod as the arm E is lowered,

substantially as described. 7th. The arm E and its attached staple-drivers, combined with the spring-supporting rod, held in bearings in the said arm and provided with a supporting-plate having staple guides, the said parts being constructed and combined to operate substantially as described.

### No. 23,881. Heeling Machine. (*Machine à Talons.*)

Walter M. Tomlinson, Lennoxville, Que. (Assignee of Henri D Stone, Boston, and Artemas C. Ambler, Natick, Mass., U.S.), 22nd April, 1866; 5 years.

*Claim.*—1st. The corrugator plate *g*, and the post provided at top with the plate *D*, and the thospindle, and detachableawl-holder or carriage moved by it, combined with means for reciprocating the said post and spindle, substantially as described. 2nd. The corrugator plate *g* and sleeve to hold it, and heel-lift corrugators, combined with the post to receive the boot or shoe, and force its heel against the corrugator plate, to have the edges of the lifts corrugated or indented, as described. 3rd. The carriage and post pivoted to it, the perforated plate carried by the post, and the jointed spindle having its bearings in the post, andawl-holder or carriage, combined with means, substantially as described, to operate the said post and spindle. 4th. In a heeling machine, the post and attached perforated plate, provided with conical projections concentric with the said perforations, to countersink the inner sole where the awls enter and pass through the same, substantially as described. 5th. In a heeling machine, a post to receive the boot or shoe, and a plate thereon provided with projecting conical pointed steel tubes, to not only act as guides for the awls, but also prevent lateral movement of the sole on the said plate and post when being pricked, and also form register holes to enable the boot or shoe to be correctly placed in position with relation to the staples or fastening holes of a second plate on a second post, through which the latter are driven into the sole and heel, substantially as described. 6th. The post *F* and its attached staple or fastening guides 19 and plate 22, the heel-plate combined with the driver-spindle and driver, to act upon and drive the staple from between the said guides into and through the holes in the sole and heel, substantially as described. 7th. The post *F*, its attached staple guides, the plate 22 provided with the register spurs 23, and the heel-plate *n* combined with the driver-spindle and its driver to operate, substantially as described. 8th. In a heeling machine, corrugators, substantially as described, to corrugate the heel across its lifts, substantially as described. 9th. In a heeling machine, the heel-plate *n* and the supporting plate 22 for the sole, and the staple-guides 19, combined with the driver-plate and its attached drivers, to act upon the crowns of the staples and force them through the sole from its inner side and into the heel, substantially as set forth.

### No. 23,882. Washing Machine.

(*Machine à Laver.*)

John E. Mitchell, Keokuk, Iowa, U.S., 22nd April, 1866; 5 years.

*Claim.*—1st. The combination, with the standards, of a hinged cross-bar and a supporting bracket, which latter receives the free end of the cross-bar, and a ring arranged upon said cross-bar to engage the bracket, substantially as set forth. 2nd. The combination, with the standards A and B, of a cross-bar hinged to the standard A by arms *e, e*, below the top edge of the tub, a bracket projecting from the standard B and pivotally secured upon the cross-bar to engage said bracket, substantially as set forth.

### No. 23,883. Machine for Bending and Forming Springs. (*Machine à Courber et Former les Ressorts.*)

George Norwood, Bridgeport, Ct., U.S., 22nd April, 1866; 5 years.

*Claim.*—1st. In a spring-bending and forming machine, the reciprocating carrier having pivoted thereto two pairs of presser bars, one within the other, each pair adapted to be distended against the action of springs or equivalents by the downward movement of the carrier, substantially as set forth. 2nd. In a spring bending and forming machine, the combination, with the carrier, having pivoted thereto the main presser bars, of intermediate presser bars adjustably pivoted to a cross-piece of said carrier, substantially as shown and described. 3rd. The combination of the presser bars pivoted to the carrier of separate springs, adapted to act independently on each bar, whereby one spring may be removed and the corresponding bar swung out of operative position, substantially as set forth. 4th. In combination with the former bars, the jaws *P* secured to said bars by right and left-handed screw *Q*, and set-screws *R*, substantially as and for the purpose specified. 5th. In a spring-bending and forming machine, the former bars open at the central portion and having downwardly projecting spindles, and coil springs around said spindles, adapted to impart a spring movement to said bars, substantially as set forth. 6th. In a spring-bending and forming machine, spring actuated former bars having contact with each other only at the edges of their faces, substantially as shown and described. 7th. In a spring bending and forming machine, the former bars having openings through their faces, and provided with means for automatically adjusting said bars to the pattern, substantially as specified. 8th. In a spring-bending and forming machine, the combination, with the former bars having open bodies and downwardly projecting spindles, of coil springs arranged around said spindles, whereby a spring movement is imparted to said bars, and an automatic adjustment to the pattern effected, substantially as and for the purpose set forth. 9th. In a spring-bending and forming machine, a flexible strip of metal, or other suitable material, interposed between the forming or bending devices and the spring to be shaped, whereby the said devices have no contact with the spring itself, thereby insuring a perfectly smooth surface to the spring. 10th. In a spring-bending and forming machine, the method of shaping springs by means of one or more pairs of presser bars, adapted to be distended and contracted against the spring, and thereby conform it to the shape desired.

### No. 23,884. Necktie Supporter.

(*Ganne de Cravate.*)

Benjamin B. Scully, Lynn, Mass., U.S., 22nd April, 1866; 5 years.

*Claim.*—1st. In a necktie-supporter, the combination, with body A and the securing loop, of oval eyelet *f* secured in said body, to serve as the opening in which the securing loop rests, substantially as specified. 2nd. In a necktie-supporter, the combination, with body A and securing loop, of oval eyelet *f* secured in said body, to serve as the opening in which the loop is inserted, and eyelet *e* arranged to secure the central portion of the loop to the body, substantially as specified.

### No. 23,885. Farm Gate. (*Barrière d'Enclos.*)

Edwin H. Ponfield, Santa Barbara, Cal., U.S., 22nd April, 1866, 5 years.

*Claim.*—1st. The combination, with the gate A provided with the pin *e*, the latch *J*, and the upright B, to which the gate is hinged, of the head *F* secured upon the end of the said upright, and having the slot *f* to receive the pin *e*, the lever *II*, the cord *c* attached to the lever on the opposite sides of the pivot, and to the head *F* on opposite sides of the upright rod B, and the cord *g* having its ends attached to the said head and latch, substantially as herein shown and described. 2nd. The combination, with the gate A, provided with the pin *e*, the latch *J*, the upright B, and the posts G, L, of the head *F* having the slot *f*, and provided with the eye plates *d* on opposite sides, the lever *II*, the cords *c* attached to the lever and eye-plates, the cord *g* attached to the head *F* and to the latch *J*, and cords *j, j'*, attached to the eye plates of the head, and extending to the post L, substantially as herein described. 3rd. The posts C, C, set diagonally to each other, and having the cross-pieces *h, h* attached to them, in combination with the hinge rod or upright B placed in the cross-pieces *h, h*, the head *F*, gate A, and lever *II*, the latter being connected to the head by cord *e, c*, and the head connected the latch *J* by cord *g*, substantially as and for the purposes set forth. 4th. The hinge rod B, constructed with arms substantially as shown in Fig. 3, as and for the purposes set forth. 5th. The double gate constructed to operate substantially as described. 6th. The combination, with the hinge rod P, of tube N having arms to operate the gate, and to receive the operating cords or wires. 7th. The hinge rod P, formed with the plates *o, o*, for attachment to the gate, as set forth. 8th. The vertical hinge rod B, formed or provided with the means for opening the gate, and formed or provided with the stud *w*, in combination with the cam T, upon which the stud acts for lifting the gate as it is opened, substantially as described.

### No. 23,886. Funnel for Molasses, etc.

(*Entonnoir pour la Mëlasse, etc.*)

Henry Honke, Houston, Texas, N.S., 22nd April, 1866; 5 years.

*Claim.*—1st. The combination, with the funnel D, of the vertical pipe A8, horizontal pipe A7 having the face-plate A6, and chambered casting A having the base-plate A4 integral therewith, the spout C under said base-plate and the forcing-wheel, substantially as and for the purposes described. 2nd. The combination of a forcing-wheel, and chamber provided with a funnel at one end, a base-plate A4, and a spout under the latter, with the hollow plug C2 slotted at C3, and the sleeve C4 provided with a pipe C6, substantially as and for the purpose described.

### No. 23,887. Medical Compound for the Hair. (*Composition pour la Chevelure.*)

Leon P. Federmeier and Alfred Brisbois, Leadville, Col., U.S., 22nd April, 1866; 5 years.

*Claim.*—The composition herein described, consisting of tincture peruvian bark, extract tannin, sulphuret potash, common salt, alcohol, water and a perfume, compounded in or about the proportions described.

### No. 23,888. Time Signal Transmitting System. (*Système de Transmission du Temps par Signaux.*)

John M. Oram, Boston, Mass., U.S., 22nd April, 1866; 5 years.

*Claim.*—1st. The combination, in a time-signal, of a variable signal transmitter permanently geared to a motor, and an electro-magnet for controlling the motor, operated by a clock or time-piece through the medium of an electric circuit. 2nd. In a time-signal, the combination of a variable signal transmitter permanently geared to a suitable motor, a manually-operated locking device for changing the relative position of the design-lines and circuit-breaker, an electro-magnet for controlling the operation of the motor, and a clock or time-piece for governing the operation of the magnet. 3rd. A variable signal transmitter consisting of the combination of two or more drums, having concave surfaces upon which are located one or more design-lines, and a rotating circuit-closer located at the centre of the circle of which the concave surfaces of the drums form arcs. 4th. The combination, in a variable signal transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the centre of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drum. 5th. The combination, in a variable signal transmitter, of two or more drums having concave surfaces upon which are located one or more design-lines, a rotating circuit-closer located at the centre of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drums, and to the rotating circuit-closer. 6th. The combination, in a time-signal transmitter, of two or more drums having concave surfaces, upon which are located one or more design-lines, a rotating circuit-closer located at the centre of the circle of which the concave drum-surfaces form arcs, and a motor geared to the said drums, and to the rotating circuit-closer held in check by the armature of an electro-magnet con-

trolled by a clock or time-piece. 7th. The combination, in a time-signal transmitter, of two or more drums having concave surfaces, upon which are located one or more design-lines, a rotating circuit-closer located at the centre of the circle of which the concave drum-surfaces form arcs, a motor geared to the said drums, and to the rotating circuit-closer held in check by the armature of an electro-magnet controlled by a clock or time-piece, an electro-magnet in a local circuit operated by the said circuit-closer, and a main line operated by the last-named electro-magnet. 8th. The union alarm for a time signal transmitter, consisting of the combination of an electro-magnet operated by a local circuit, having a circuit-closer controlled by the clock, and a circuit-closer controlled by the signal transmitter, the two being so arranged that a failure of union will operate the circuit to sound an alarm. 9th. The heretofore-described means for preventing erroneous signals in a time-signal transmitter, which consists in the combination of a switch or circuit-closer in the main circuit, controlled by an electro-magnet located in a local circuit, containing a circuit-closing point operated by the clock, and a circuit-breaking point operated by the transmitter. 10th. In a time system, an electro-magnetic circuit-closer consisting of the combination of an electro-magnet having, upon the armature bar, a spring at the free extremity of which is located a weighted contact point operating upon a fixed contact point, and a limiting stop in the path of the armature bar, operating to bring the armature to rest before contact is made between the weighted contact and the fixed contact. 11th. The combination, in a variable signal transmitter, of the drums D, D', with the circuit-closer c, et. 12th. In a time-signal, the combination of a motor-driven variable transmitter controlled by an electro-magnet, the arm p attached to the motor-train, the arm z attached to the armature of the electro-magnet, and a clock or time-piece for operating the electro-magnet.

### No. 23,889. Collar and Cuff.

(*Faux-Col et Poignet.*)

Emil Kipper, Adams, Mass., U.S., 22nd April, 1886; 5 years.

*Claim.*—1st. A collar or cuff composed of zylonite or other pyroxyline compound, provided with a cape cemented thereto, substantially as described. 2nd. A collar or cuff composed of zylonite or other pyroxyline compound, provided with a cape secured to the collar or cuff by a strip of a pyroxyline compound cemented to the collar or cuff and the cape, substantially as described. 3rd. A collar, cuff or similar article composed of zylonite or other pyroxyline compound, and provided with a skirt or cape of textile fabric, attached thereto without stitching, a strip of zylonite or similar material being cemented over the point of connection between the article and its skirt or cape, substantially as described. 4th. A collar or cuff made of zylonite or other pyroxyline compound, having a cape of textile material cemented thereto, substantially as described. 5th. A collar or cuff made of zylonite or other pyroxyline compound, having a cape secured thereto at, or adjacent to its center, to admit of the cape being turned to project from either longitudinal edge of the collar or cuff, substantially as described. 6th. A collar or cuff made of zylonite or other pyroxyline compound, having a cape secured at, or adjacent to its center, the attached edge of the cape being covered with a strip of pyroxyline compound, substantially as described. 7th. A collar or cuff made of zylonite or other pyroxyline compound, folded over upon itself at one or more edges, and provided with a cape held between such folded over part and the body of the article, substantially as described. 8th. A collar or cuff made of zylonite or other pyroxyline compound, folded over upon itself and provided with a cape held under such folded over part, and having a sheet of pyroxyline material cemented over one of its entire sides, substantially as described. 9th. A collar or cuff of zylonite or other pyroxyline compound, having a cape extending across its entire width, and provided with a sheet of pyroxyline material cemented over one of its entire sides, substantially as described.

### No. 23,890. Combination and Arrangement of Riddles for Cleaning Grain, etc.

(*Combinaison et Arrangement de Cribles pour Nettoyer les Grains, etc.*)

John Williamson, Whitechurch, Ont., 24th April, 1886; 5 years.

*Claims.*—1st. The combination of the riddles C, D, E, decreasing in width, placed below each other, substantially as and for the purpose hereinbefore set forth. 2nd. The open screen G, placed across the frame between the riddles C, D, E, and the source of the blast, substantially as and for the purpose hereinbefore set forth.

### No. 23,891. Siphon Recorder.

(*Indicateur à Siphon.*)

Charles Cuttriss, New York, U.S., 24th April, 1886; 5 years.

*Claim.*—1st. The combination, substantially as hereinbefore set forth, of an electro-magnet having confronting pole-pieces having an intervening curved space, a coil of insulated wire having one side of its convolutions corresponding to the curved opening, an opening or space formed within one of said pole-pieces through which the other side of said convolutions extends, and means for suspending said coil, substantially as described. 2nd. The combination, substantially as hereinbefore set forth, with the marking-point of a siphon-recording instrument, a coil responding to the currents transmitted upon a main line, and a connection between said coils and marking-point of a rheotome, an electro-magnet included in a circuit controlled by the rheotome, and an armature for said electro-magnet rigidly mounted upon said marking-point. 3rd. The combination, substantially as hereinbefore set forth, with the marking-point of a siphon recorder, and an armature attached thereto, of an electro-magnet applied thereto, and adjustable soft-iron bar, adapted to be placed in proximity to the poles of said electro-magnet. 4th. The combination, substantially as hereinbefore set forth, with the marking-point of a siphon recorder, and an armature connected therewith, of an electro-magnet applied to the armature, a bar of magnetic material placed in proximity to the poles of the magnets, and means

for adjusting the position of said bar vertically and laterally with reference to the poles, substantially as described. 5th. The combination, substantially as hereinbefore set forth, with the marking-point of a siphon recorder, of an electro-magnet and its armature for vibrating the same rigidly attached thereto, and a second electro-magnet applied to said armature and acting counter to the first electro-magnet. 6th. The combination, substantially as hereinbefore set forth, with the marking-point of a recording instrument, of an electro-magnet for securing a rapid vibration of the same, a battery for utilizing said electro-magnet, and a rheotome for controlling the connections of said battery, consisting of a vibrating spring supported at both ends under tension, and means for modifying the tension of said spring.

### No. 23,892. Combined Bag and Twine Holder.

(*Acroche-Sac et Acroche-Ficelle Combinés.*)

Jacob Duls, Charlotte, N.C., U.S., 24th April, 1886; 5 years.

*Claim.*—A combined twine and bag holder, consisting of a rotary bag-holder B having many sides, each side provided with spring catches e and check staples e', the holder B being supported on a rod c from the base A, the base being provided with receptacles a for holding twine, all constructed substantially as and for the purpose described.

### No. 23,893. Piano Cover.

(*Couverture de Piano.*)

Sarah E. Richey, Chicago, Ill., U.S., 24th April, 1886; 5 years.

*Claim.*—1st. The combination of the top B, of such size and shape as to conform to the top of the piano, with a back and sides to secure the whole in place, a rod in the forward edge of the top of the cover, and curtains which move laterally on such rod, and when parted in the middle uncover the front of the instrument. 2nd. A piano cover having a front rod curtains thereon, and a sash which covers the line of meeting of the cover. 3rd. A piano cover, provided with a rod in the forward edge of its top curtains hung thereon, a sash to cover the place of meeting of the curtains, and an apron which covers the front of the instrument under the key-board.

### No. 23,894. Triangle for Pumping Wells.

(*Triangle pour Pomper les Puits.*)

John McKenzie, Petrolia, Ont., 24th April, 1886; 5 years.

*Claim.*—1st. The combination of the post A and the triangle H, and the means whereby the triangle H is hung from the post A by the combination of the box D and its counterpart, the gudgeon G, the clamp I and the bolts J and K, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the post A and the box D and its counterpart, and the slot E, and the slot in such counterpart, and the box L and the slot therein, and the corresponding slot in the horizontal side of the triangle H, substantially as and for the purposes hereinbefore set forth. 3rd. The combination of the box P and the slot therein, and the corresponding slot in the lower end of the perpendicular side of the triangle H, and the clevis R running through the box P, where the rods S are attached, substantially as and for the purposes hereinbefore set forth.

### No. 23,895. Car-Coupling.

(*Attelage de Chars.*)

William H. Adams, James D. Fethoussan and Albert Lawtonslager, Albany, N.Y., U.S., 24th April, 1886; 5 years.

*Claim.*—1st. The combination, with the draw-head formed with the open flaring mouth, the top slot G, the bottom slots I, J, the weight recesses on its inner sides, and the ribs O projecting from said inner sides in front of the said recesses of the weights N in said recesses, the pin F in rear of the recesses, the coupling-hook D having a shank projecting rearward between the ribs O to its pivot pin F, and having the two hooks G, H at its forward end, and the permanent link B, substantially as set forth. 2nd. In a car-coupling, the combination, with the draw-head A having slots C, I, J, and bevelled seats K, L, M, at the forward ends of the said slots, of the double hook D bevelled at the upper part of the forward end, and having a short forward hook G and a longer rear hook H on its lower side, and the fastening pin F, substantially as herein shown and described, whereby the coupling links can be connected independently with the said draw-head, as set forth.

### No. 23,896. Pinion Polishing Machine.

(*Machine à Polir les Pignons.*)

The Elgin National Watch Company, Chicago (Assignees of George Hunter and Frank Loman, Elgin), Ill., U.S., 24th April, 1886; 5 years.

*Claim.*—1st. As an improvement in machines for polishing pinions, the combination, in one organization, of several independently operating polishing mechanisms, each including a polishing and a holding device, means for operating such mechanisms independently, and means for automatically throwing each one of them out of operation, when each leaf of the respective pinion placed in it has been acted upon a pre-determined number of times, substantially as and for the purpose described. 2nd. A machine for polishing pinions, in which is combined the following elements, to wit: means for holding two or more pinions in position to be operated upon a longitudinally reciprocating polisher, arranged to engage with and move lengthwise of one leaf of each pinion mechanism, whereby the leaves of said pinion are automatically and successively brought into contact with said polisher, and mechanism whereby each pinion holder is automatically moved away from its polisher, whenever the pre-determined number of polishing operations have been performed, substantially as and for the purpose shown and described. 3rd. As an improvement in pinion polishing machines, the holder M adapted to receive and support the polisher N, and to engage with, and be detached from the reciprocating head L, substantially as and for the

purpose set forth. 4th. As an improvement in pinion polishing machines, adjustable mechanism, substantially as shown and described, whereby each leaf of a pinion may be automatically presented to the action of the polisher any pre-determined number of times, substantially as and for the purpose specified. 5th. In combination with the bars K, the shaft B provided with the eccentrics D, the strap E having the arm c and longitudinally adjustable rod F, and the bars H pivoted at their lower ends, connected at or near their longitudinal centres with said rod F, and having their upper ends connected with said bars K, substantially as and for the purpose specified. 6th. The lever Q pivoted at its rear end and held upward with a yielding pressure, the head S pivoted within the end of said bar adapted to turn in a horizontal plane, and provided with the pivotal screws *s*, the blocks U suspended from and between said screws, and capable of motion thereon in a vertical plane corresponding to the line of motion of the polisher, and the angle piece V secured to and made adjustable lengthwise of said block, and having each a v-shaped notch for the reception of the pivot of a pinion, substantially as and for the purpose shown and described. 7th. In combination with the pinion holding lever Q, constructed to have its outer end moved automatically downward from, and then upward toward the polisher, and means whereby said lever may be thus operated, the shaft E<sub>1</sub> provided at its front end with the arm *e*<sub>1</sub>, carrying a needle *e*<sub>2</sub>, and having at its rear end the arm *e*<sub>3</sub>, and the bar F<sub>1</sub>, arranged at a right angle to said shaft, connected with the lower end of said arm *e*<sub>3</sub>, and adapted to be moved longitudinally by mechanism, substantially as shown, whereby said needle is automatically moved into engagement with a pinion, as the same is being moved upward into contact with the polisher, and is afterwards returned to its normal position, substantially as set forth. 8th. In combination with the lever Q pivoted at its rear end, and provided at such point with a cam face *o*, arm *o*<sub>2</sub> and notch *o*<sub>1</sub>, the spring R, the shaft Z, having the tappet arms z and z<sub>1</sub>, the cam A<sub>1</sub> provided with the projection a, the pivoted barrel L<sub>1</sub> containing the spring M<sub>1</sub> and having the central hub *t*, ratchet teeth *t*<sub>2</sub> and notch *t*<sub>1</sub>, the pivoted catch *c*<sub>1</sub> having the hooked arm *o*<sub>1</sub> and vertical arm *o*<sub>4</sub>, and the bar P<sub>1</sub> having the arm p and spring pawl p<sub>1</sub>, and adapted to be moved longitudinally within its bearings, substantially as and for the purpose shown and described. 9th. In combination, with the spring barrel L<sub>1</sub>, provided with ratchet teeth *t*<sub>2</sub>, radial arm *l*<sub>1</sub> and notch *l*<sub>1</sub> and with the reciprocating pawl p<sub>1</sub> and spring catch *o*<sub>1</sub>, of the journalled spindle L<sub>1</sub> carrying the collar N<sub>1</sub> and arm n<sub>1</sub>, substantially as and for the purpose specified. 10th. In combination with the spindle H, having the collar N<sub>1</sub>, n<sub>2</sub>, and journalled within the frame A, which is provided with the annular ring of radial teeth *a*, the sleeve K<sub>1</sub> journalled upon said spindle, and having at its rear end an indoxed plate *k*<sub>2</sub> and radial teeth *k*<sub>5</sub>, and means, substantially as shown, whereby said sleeve is adapted to be moved slightly lengthwise of said spindle, and is held with a yielding pressure at the inner limit of its motion with said teeth *k*<sub>5</sub> and *a* in engagement, substantially as and for the purpose set forth. 11th. In combination with the pivoted bar H, provided at its upper end with the head *h*<sub>4</sub> having curved front and rear faces, the bar K, provided with the fixed block *k*<sub>1</sub>, movable block *k*<sub>3</sub> and set screw *k*<sub>2</sub>, substantially as and for the purpose shown.

**No. 23,897. Electric Telephone Transmitter.**  
(*Transmetteur de Telephone Electrique.*)

Silvanus P. Thompson and Philip Jolin, Bristol, Eng., 24th April, 1886; 5 years.

*Claim.*—1st. The hereinbefore described telephonic transmitter, consisting of a pair of electrodes, whose movements relatively to each other are controlled by a valve, substantially as described. 2nd. The combination, substantially as hereinbefore set forth, of a valve, valve-seat and electrodes for varying the strength of an electric current. 3rd. The combination, substantially as hereinbefore set forth, of a speaking tube valve, valve-seat and electrodes for varying the strength of an electric current. 4th. The combination, substantially as hereinbefore set forth, of the speaking tube, valve and valve-seat. 5th. The combination, substantially as hereinbefore set forth, of a spherical valve and a valve-seat formed upon the end of a speaking tube. 6th. The combination, substantially as hereinbefore set forth, of the valve, valve-seat, pins for determining the normal position of said valve relatively to its seat, and electrical conductors, whereby an electric current is made to traverse both said valve and said pins. 7th. The combination, substantially as hereinbefore set forth, of the speaking tube, the spherical valve and the pin or pins bearing against said spherical valve in a plane intersecting the latter below its centre. 8th. A speaking tube, provided at the end opposite its mouth-piece with a valve, capable of increasing and diminishing the opening of said tube, when moved by atmospheric vibrations passing therethrough, in combination with an electric circuit and electrodes interposed in said circuit, movable with reference to each other, and having their relative movements controlled by said valve.

**No. 23,898. Apparatus for Attaching the Reins to the Vehicle or Saddle.**  
(*Appareil pour Accrocher les Rèmes à la Voiture ou à la Sellette.*)

George J. Harcourt, Clifton, and Edward Shaw, Bristol, Eng., 24th April, 1886; 5 years.

*Claim.*—1st. Apparatus for holding and gripping reins, comprising a movable cam, whereby the reins are gripped or pressed when they move or tend to move one way, and are released when they move the reverse way, substantially as described. 2nd. Apparatus for holding and gripping reins, comprising a movable cam, whereby the reins are gripped or pressed when they move, or tend to move, one way, and are released when they move the reverse way, a bracket frame or support, whereby said cam is carried, and means for affixing same to a vehicle or saddle, substantially as described. 3rd. In apparatus for holding and gripping reins, the combination of a bracket *b*, pin *a* and cam *c*, substantially as described. 4th. In apparatus for holding and gripping reins, the combination of a bracket *b*, pin *a*, cam *c* and

tumbler *e*, substantially as described. 5th. In apparatus for holding and gripping reins, the combination of a bracket *b*, pin *a*, cam *c* and pinching or binding screw *d*, as described. 6th. In apparatus for holding and gripping reins, the combination of a bracket *b*, pin *a*, cam *c*, tumbler *e* and pinching or binding screw *d*, as described.

**No. 23,899. Telephone.** (*Telephone.*)

Henry E. Waite, New York, N.Y., U.S., 24th April, 1886; 5 years.

*Claim.*—1st. The combination, in a telephone, of a diaphragm, a tubular magnet, a coil or helix, an armature arranged before the helix, and a bar or rod passing through the magnet and connecting the diaphragm and armature, substantially as described. 2nd. A telephone, consisting of a suitable case containing a hollow bar magnet, having a non-magnetic diaphragm located at or near one end, and a helix upon the other or opposite end, a spring-armature and a bar or rod of non-magnetic material connecting the diaphragm and spring-armature, substantially as described. 3rd. The combination, in a telephone, of a diaphragm, a magnet having a coil or helix upon the end farthest from the diaphragm, an armature adapted to vibrate before the coil or helix and direct connections between the diaphragm and armature, substantially as set forth. 4th. The combination, in a telephone, of a diaphragm magnet, a coil on the magnet, and an armature carrying a projection entering into the coil of the magnet, substantially as described.

**No. 23,900. Billiard Table Leveller.**

(*Appareil pour Nivelier les Tables de Billard.*)

Ernst A. Hoonbostel and Dennis Ragen, Oskaloosa, Iowa, U.S., 24th April, 1886; 5 years.

*Claim.*—1st. In a billiard table leveller, the combination, with a base plate or disk and an upper plate or disk, of an intermediate disk mounted on a central flange or hub, the upper and intermediate disks being provided with correspondingly inclined faces, and an actuating mechanism, whereby the central disk may be turned about its axis, substantially as described. 2nd. In a billiard table leveller, the combination, with a base-plate formed with a flange *b*, of the plate D formed to fit about said flange, and being provided with inclined faces *v*, and a segmental rack E, a plate F formed with inclined faces *v*, *t*, and post K and worm C, all substantially as described. 3rd. In a billiard table leveller, the combination, with a base plate formed with a flange *b* and lugs *c*, of a plate D formed to fit about said flange, said plate being provided with inclined faces *v*, *t*, and segmental rack E, a plate F formed with inclined faces *v*, *t*, and a post K, and a worm C formed with a collar *f* and mounted in bearings carried by lugs *c*, all substantially as described.

**No. 23,901. Helical Spring.** (*Ressort Spiral.*)

George Goewey, Philadelphia, Pa., and Jeremiah E. Shaw, Buddford, Me., U.S., 27th April, 1886; 5 years.

*Claim.*—A helical spring, formed of a seamless metallic tube of any shape in the transverse section, substantially as herein shown and described.

**No. 23,902. Conduit for Electric Wires.**

(*Conduit pour Fils Electriques.*)

James F. Munsie and Horatio N. May, Chicago, Ill., U.S., 27th April, 1886; 5 years.

*Claim.*—1st. A conduit for electric wires or cables, provided with an irregularly shaped longitudinal slot *a*, through which the wires or cables are entered to the interior of said conduit, substantially as shown and described. 2nd. A conduit for electric wires or cables, provided with a longitudinal slot or opening *a*, through which the wires or cables are entered to the interior thereof, and a closing-bar G, substantially as and for the purpose described. 3rd. The combination, with a conduit for electric wires or cables, provided with a longitudinal slot or opening, through which the wires or cables are introduced to the interior thereof, of a casing *g* and a closing-bar G, substantially as described. 4th. The combination, with a conduit for electric wires or cables, provided with a longitudinal slot or opening through which the wires or cables are introduced to the interior thereof, of one or more sections or stations, each provided with an opening F into which said slot is extended and a cap G, provided with devices for securing the same in position, substantially as and for the purpose described. 5th. The combination, with a conduit for electric wires or cables, of the means for securing the sections thereof together, consisting of suitable seats *a* formed on the jointing ends of said sections, and the strap H applied thereto, substantially as and for the purpose described.

**No. 23,903. Return Crate for Fruit, etc.**

(*Manne en Botte pour Fruits, etc.*)

James C. Chapman, New Hope Plantation, (assignee of John Colville, Brunswick,) Ga., U.S., 27th April, 1886; 5 years.

*Claim.*—1st. A crate or box formed with bars *a* and *b* united by rods *k*, the bars *a* being provided with cleats *f* formed with bevelled faces *l*, and the cover and bottom of the crate being provided with bevelled faced cleats *l*, substantially as described and for the purpose specified. 2nd. The box or crate formed of bars *a*, *b*, united by rods *k*, and being provided with bevelled faced cleats *f*, *e*, in combination with covers *n* and *m* provided with bevelled faced cleats *l*, *l*, substantially as described. 3rd. The box or crate formed of outer bars *a* and *b* united by rods *k*, and with inner bars *h* united to the bars *a* by rods *e*, said crate being provided with cleats *l*, in combination with the cover and bottom *m* and *n*, provided with cleats *l* and formed with slot *p* and screws *o*, substantially as described.

**No. 23,904. Watchman's Clock.**

(*Horloge de Gardien.*)

Edward J. Colby, Chicago, Ill., U.S. 27th April, 1886; 5 years.

**Claim.**—1st. The combination, substantially as specified, of the time-piece *f* having the revolving dial, and a recording pencil suspended above said dial, and adapted to be brought in contact with the dial, for the purpose of recording whenever desired with the case *a b c*, lock *L* and hooked latch *e*, for the purpose of simultaneously locking the parts together by engaging the lugs *d, d'*. 2nd. The combination of a watchman's clock, secured as shown, and having an arm *M* to actuate the recording devices, with a lever *N* secured to the door knob or other actuating device, and a wire, as *O*, to connect the lever *N*, and actuating arm *M*, substantially as specified. 3rd. The combination, in a watchman's clock, of the case *A, B*, time-piece *F*, and revolving dial *F<sub>1</sub>*, with the recording devices, consisting of rock-shaft *H* carrying the arms *I, I*, and pencil-carrier *K*. 4th. In a watchman's clock, the combination of a case, a time-piece with a revolving dial, and a recording device consisting of a rock-shaft, a pencil-arm secured thereto, and a spring secured to an arm on the shaft and to the case so that, by turning the shaft and then releasing it, the pencil will make a radial mark on the dial.

**No. 23,905. Machine for Trimming Embroidery.** (*Machine pour Tailler la Broderie.*)

The West and Galland Embroidery Cutting Company, New York, (assignee of Jonathan B. West, Rochester, N.Y., U.S., 27th April, 1886; 5 years)

**Claim.**—1st. In a machine for trimming embroidery, the combination of a cutter, a shear bar through which the cutter passes to cut the material, a gauge for determining the position of the embroidery to be trimmed in relation to the cutter, and a guide for sustaining the embroidery in proper position to move toward and from the cutter, as set forth. 2nd. In a machine for trimming embroidery, the combination, with the cutter, the shear bar and gauge, of a guide standing in an inclined direction, whereby the embroidery is fed to the cutter by its own weight, as set forth. 3rd. In a machine for trimming embroidery, the combination, with the cutter and gauge, of a shear bar and an inclined guide adjustable to different positions relatively to said cutter and gauge, as set forth. 4th. In a machine for trimming embroidery, the combination of a cutter, the teeth of which are adapted to cut away a portion of the material at each cut, a shear bar, a gauge with an opening between itself and the shear bar to receive the blank edge of the embroidery, and mechanism as rollers for drawing the trimmed embroidery from the cutting mechanism, as set forth. 5th. In a machine for trimming embroidery, the combination of a circular toothed cutter, the teeth of which are adapted to cut away a portion of the material at each cut, a shear bar mechanism as rollers for drawing the trimmed embroidery from the cutting mechanism, and a gauge with an opening between itself and the shear bar to receive the blank edge of the embroidery, as set forth.

**No. 23,906. Alarm Signal Box.**

(*Boîte de Signal à Sonnerie*)

Sidney A. Chase and William R. Mapes, Ewart, Mich., U.S., 27th April, 1886; 5 years.

**Claim.**—1st. In a signal-box, the combination of an inner box having a crank at the center of its face operating the signal mechanism, and provided with a series of perforations arranged circularly around the crank-shaft, and having the surrounding portions of one perforation at a lower lever than the others, a plug fitting in the perforations and bearing with its shouldered portion against the surrounding portions, and an outer box or casing having a door at a distance from the surroundings of the lower perforations equal to the length of the shouldered part of the plug, as and for the purpose shown and set forth. 2nd. In a signal-box, the combination of an inner box having a signal operating crank, and provided with a circular series of lugs upon its face arranged around the shaft of the crank, and having perforations, and having one lug shorter than the others, a shouldered plug fitting with its reduced end in the perforations of the lugs, and an outer casing or box having a door at a distance from the end of the lower lug equal to the length of the shouldered portion of the plug, as and for the purpose shown and set forth. 3rd. In a signal-box, the combination of an inner box having its dial provided with figures or characters representing the number of different alarm-boxes, with a crank adapted to be turned to the number desired to be transmitted, as and for the purpose shown and set forth. 4th. In a signal-box, the combination of an inner box having a dial provided with a number of lugs formed with perforations, and having each a number, and having the lug having the number corresponding to the number of the outer box lower than the others, a shouldered plug fitting in the perforations of the lugs, and an outer box, having a door at a distance from the end of the lower lugs equal to the length of the shouldered portion of the plug, as and for the purpose shown and set forth. 5th. As an improvement in automatic fire-alarm signal boxes, the combination, with an inner box cover or dial, and a plug adapted to be adjustably secured to the box, for the purpose of preventing the outer box door from closing while the plug remains from its normal position, as and for the purpose shown and set forth.

**No. 23,907. Grain Binder.** (*Lieuse à Grain.*)

The Milwaukee Harvester Company, Milwaukee, Wis., (assignee of Charles M. Young, Corry, Penn.,) U.S., 27th April, 1886; 6 years.

**Claim.**—1st. In combination with the knottor-frame *E*, the bell-crank lever *F*, the carrier *β* supported in the outer arm *β* of said lever, and having a threaded end and a groove *β<sub>1</sub>*, a set-screw *β<sub>2</sub>* engaging said groove, the adjusting nut *β<sub>3</sub>*, and the spring-pawl *β<sub>4</sub>* pivoted in the bifurcated end of the carrier *β*, substantially as and for the purpose set forth. 2nd. In a grain-binder, the combination of the cam-wheel *E<sub>1</sub>* provided with the cam-groove *c*, the knottor-frame *E* having the curved flange *e<sub>2</sub>*, and the bell-crank lever *F* pivoted to said frame and provided with a hooked flange engaging the curved flange on the frame, and with a roller *β* engaging in said groove *c*, substantially as and for the purpose set forth. 3rd. In a grain-

binder, the knottor-frame *E* having a curved flange *h<sub>3</sub>*, in combination with the cord-guiding arm *G* pivoted to said frame, and provided with a flange *h<sub>2</sub>* adapted to bear against and slide upon said curved flange, substantially as and for the purpose set forth.

**No. 23,908. Covering or Finishing Compound for Boots and Shoes.** (*En-Juit ou Machine de Cordonnier.*)

John Ritchie, Quebec, Que., 27th April, 1886. 5 years.

**Claim.**—1st. The within-described compound or preparation for covering or finishing the bottoms and soles, or surfaces of boots and shoes, consisting of a metallic powder of any desired colour, and of a gummy or other like binder or vehicle for said powder, substantially as specified. 2nd. The within-described compound or preparation for covering or finishing the bottoms and soles, or surfaces of boots and shoes, consisting of a bronze powder of any desired color, and of gum tragacanth as a binder or vehicle for said powder, essentially as specified.

**No. 23,909. Spark-Arrester.**

(*Arrête - Flammeche.*)

William T. Reed, Winnipeg, Man., 27th April, 1886; 5 years.

**Claim.**—1st. A corrugated plate set within the smoke-box immediately in front of the tubes, so as to deflect the sparks escaping from the said tubes. 2nd. The corrugated deflecting plate *F*, in combination with the corrugated base-plate *H*, arranged substantially as and for the purpose specified. 3rd. The corrugated deflecting-plate *F*, in combination with the corrugated base-plate *H*, and corrugated plate *K*, arranged substantially as and for the purpose specified. 4th. The corrugated deflecting-plate *F*, in combination with the corrugated base-plate *H*, corrugated plate *K* and netting *E*, arranged substantially as and for the purpose specified. 5th. The corrugated deflecting-plate *F*, supported on the angle-iron *G* by the studs *a*, substantially as and for the purpose specified.

**No. 23,910. Jar, etc.** (*Jarre, etc.*)

William H. Clarko, Olean, N.Y., U.S., 23th April, 1886; 5 years.

**Claim.**—1st. The combination of the swinging bail, the cam-lever embracing the bail, and provided with two separated cam-bearings, and pivoted to the bail to swing in the longitudinal plane thereof, the cover disconnected from the bail and lever, and the jar or vessel, substantially as described. 2nd. The combination of the swinging bail, the cam lever pivoted to the bail to swing in the longitudinal plane thereof, and having check-pieces to embrace the bail and provided with two separated cam-bearings, the cover and the jar or vessel, substantially as described. 3rd. The combination, with the jar, of the swinging yoke, having its ends pivotally connected with the neck of the jar and bent intermediate its ends into an eye, the lever embracing the bail, and provided with two cam-bearings, and pivotally connected with the yoke eye to swing in the longitudinal plane thereof, and the cover disconnected from the bail and lever, substantially as described. 4th. The combination of the jar, the swinging bail, the lever having two separated cam-bearings, and pivoted to the bail to swing in the longitudinal plane thereof, and the cover having the central lug or rib which is embraced by the cam-bearings of the lever, substantially as described.

**No. 23,911. Horse Shoe Nail Machine.**

(*Machine à Clou à Cheval.*)

Walworth M. Mooney (Co-Inventor with Herbert Estes), Ausable Chasun, N.Y., U.S., 23th April, 1886; 5 years.

**Claim.**—1st. In combination with the cam *b<sub>1</sub>* and the rod *e<sub>2</sub>*, having the arm *e<sub>1</sub>*, provided with stud *e<sub>3</sub>* and extension *e<sub>4</sub>*, the shaft *p*, as described, the construction being such that the rod *e* is held against revolution without interference with its freedom to move in a longitudinal direction. 2nd. In combination with the conductor *e*, and the rod *e<sub>2</sub>*, having the finger *e<sub>1</sub>* and arm *e<sub>3</sub>*, the spring *e<sub>5</sub>* and the cam *d<sub>1</sub>*, as described. 3rd. The conductor *e*, having the groove for the passage of the nail blank, and the narrow slit *e<sub>1</sub>* for the insertion of an implement, as and for the purpose described. 4th. The large roll *F*, having a series of recesses, in combination with the small roll *G* having a single recess, as described. 5th. The roll *F*, consisting of the body part *f*, round plate *f<sub>1</sub>*, die blocks *e<sub>4</sub>* and cover plate *f<sub>2</sub>*, as and for the purpose described. 6th. In combination, with the shaft *h*, having a bearing shoulder, threaded portion and nut, the roll *F* consisting of the body portion *f*, cover plates *f<sub>1</sub>*, *f<sub>2</sub>*, and die blocks *f<sub>3</sub>*, the width of the die block exceeding the width of the body block, as and for the purpose set forth. 7th. The die block *f<sub>4</sub>*, having two recesses *f<sub>5</sub>* arranged in opposite positions, as and for the purpose set forth. 8th. In combination, with the die blocks *f<sub>4</sub>*, having the recesses *f<sub>5</sub>*, the body block *f* having the recesses *f<sub>1</sub>*, *f<sub>2</sub>*, coinciding to form a continuous channel about the roll, as described. 9th. In combination with the bar *i<sub>1</sub>*, the block *β* and the removable face plate *v<sub>1</sub>*, as described. 10th. In combination with the supporting block *I*, having the stud *i<sub>2</sub>*, the bar *i<sub>1</sub>*, having the finger *i<sub>2</sub>* at one end, and the fork at the other, as and for the purposes described. 11th. In combination, with the roll *G*, having the recess *g*, the pivoted bar *i<sub>1</sub>*, with finger *i<sub>2</sub>* and spring *i<sub>3</sub>*, the spring being adapted to cause the finger to bear upon the surface of the roll, as and for the purpose described. 12th. In combination with the forked bar *i<sub>1</sub>*, the set screw *i<sub>5</sub>* for adjusting the same, as described. 13th. In combination with the block *h<sub>1</sub>*, the serrated blade *h<sub>2</sub>*, the block *h<sub>3</sub>* and the spring *h<sub>4</sub>*, as described. 14th. In combination with the block *h*, having the set bolt *h<sub>1</sub>*, the block *h<sub>2</sub>*, the rear wall of which forms the front wall of the conductor, as described. 15th. The combination of the die block *f<sub>4</sub>*, having a recess *f<sub>5</sub>*, with the finger *i<sub>2</sub>* and mechanism for causing the finger to enter the recess and disengage the head of the nail blank, substantially as described. 16th. The combination of the rolls *F* and *G*, bars *i<sub>1</sub>*, *i<sub>2</sub>*, and plates *h<sub>1</sub>* and *h<sub>2</sub>* of a forwarding mechanism, the whole constructed and arranged substantially as described. 17th. In combination with the bars *i<sub>1</sub>*, *i<sub>2</sub>*, the flange *m<sub>2</sub>* and the plates *h<sub>1</sub>*, *h<sub>2</sub>*

of the forwarding ring. 18th. In combination with the bar *ix*, the plates *h*, *h'* and the guide plate *N*. 19th. The combination of the rolls *g* and *g'*, and the disengaging mechanism, as described, base ring *K* having bearing faces *a*, and *a'*, intermittently moving forwarding ring *L*, having plates *h*, and independent blocks *h'*, having plates *h'* and springs *h''*, the whole substantially as described. 20th. The forwarding ring *L*, having the plates *h*, with the independent blocks *h'*, having plates *h'* and the springs *h''*, the whole substantially as described. 21st. In combination with the forwarding ring *L*, having the plate *h*, independent blocks *h'*, having plates *h'* and springs *h''*, with a frictional surface arranged to operate on the plates *h'*, the whole substantially as described. 22nd. In combination with the lever *O*, the pawl bar *o*, with ball and socket joint and spring *o'*. 23rd. In combination with the pawl bar *o*, the lever *o* and the cam *is*, the spring *o'*, as described. 24th. In combination with the projection *k*, the pivoted bar *ks* and the series of pressor bars *kt*, as described. 25th. The combination of the pressor bar *kt*, having bearing face *kt'*, spring *kt''*, bar *ks*, independent blocks *kp*, having plates *kt* and springs *kt''*, the whole substantially as described. 26th. In combination with the pressor bar *kt*, having a bevelled edge plate *kt'*, having a bevelled edge plate *kt'*, having a bevelled edge plate *kt'*, as described. 27th. In combination with the swage block *pa*, the plate *pb*, with open slots, the set screws *pt*, block *ps*, and the swages *pu*, *pv*, as described. 28th. In combination with the swage block *pa*, the adjusting mechanism *pe*, *pf*, *pg*, *ph*, and *pi*, as described. 29th. In combination with the swage block, having the pawl *pi*, the arched spring *po*, as described. 30th. In combination with the swaging mechanism, the spring studs *ki*, *ks*, and for the purpose described. 31st. The spring stud *ki*, having the shank *ki*, collar *ks*, and spring *kt* supported by a plug *kt'*, held in a recess *kt''*, as described. 32nd. The cutters *ri*, *ri'*, held at an angle from the horizontal line, and having inclined ends, as and for the purpose set forth. 33rd. In combination with the cutter block, the connecting frame having the ball and socket joint, as described. 34th. In combination with the cutter block, the connecting frame having journal studs *ri* and the bearing blocks *ri'*, as described. 35th. In combination with the cutters *ri*, for reducing the point of the nail blank to shape, an independent plate *S* for holding the nail as the cutters are withdrawn, and mechanism, substantially as described, for actuating the plate. 36th. In combination with the cutters, the independent plate *S*, and the tumbler *st*, for actuating the plate. 37th. The tumbler *st*, having the shoulder *st'*, in combination with the base block *st*, and cutter block having the stop block *st''*, as described. 38th. In combination with the tumbler *st*, having the shoulder *st'*, the base block *st* and the cutter block having the stop block *st''*, as described. 39th. The combination of the fixed cutter *t*, with the auxiliary plate *t'*, as described. 40th. The combination, with the fixed cutter *t* and auxiliary plate *t'*, the clamping plates and cotter pins, as described. 41st. The combination of the following elements, mechanism, substantially as described, for clamping the nail blank during the action of cutting mechanism, substantially as described, for cutting the blank and mechanism, substantially as described, for holding the nail when the cutters are withdrawn. 42nd. The combination, with the cam *u*, the wedge bar *u'* and the movable block *u''* held upon the base block *u'''*, as described. 43rd. In combination with the auxiliary block *u''*, carrying the swage bar, the adjusting screw *u'''*, as described. 44th. In combination with the supporting block *u'''*, the bolt *u''''* and the clamping plate *u'''''*, as described. 45th. In combination with the long anvil bar *v* of curved form, the long swage bar *v''*, as described. 46th. In combination with the finger *m*, the spring plate *w* having the horizontal portion, as described. 47th. The combination of the bearing face *k*, spring stud *ki* and conductor *e* for conveying the nail blanks from the rolls to the bearing face *k*, substantially as described. 48th. The combination of the plates *h*, *h'*, of the hereinbefore described mechanism, with a lubricating mechanism, consisting of a bath *Z*, rollers *z*, *z'*, constructed and arranged substantially as and for the purpose set forth. 49th. The combination of the block *ya*, constructed and arranged as described, fixed cutter *T*, projection *T'*, plates *h*, *h'*, of the forwarding mechanism described, and the cutters *ri*, the whole substantially as and for the purpose set forth. 50th. The combination of the cutters *ri*, fixed cutter *T*, with the chip discharging mechanism, consisting principally of a spindle *yo*, spring *yo'* and spring plate *yo''*, substantially as and for the purposes set forth. 51st. The combination of the plates *h*, *h'*, spring *h''* of the forwarding mechanism, with the plate *h'*, having projections *h''* and pivoted lever *h'''*, said lever having bearing face *h''''* and actuated by a spring *h'''''*, the whole constructed and arranged substantially as described for the purposes set forth. 52nd. In a machine substantially the described construction, the combination of the following elements, mechanism, substantially as described, for controlling the delivery of the nail blanks to the rolls, mechanism, substantially as described, for lubricating the same, mechanism, substantially as described, for swaging the blanks, mechanism, substantially as described, for cutting the blanks, mechanism, substantially as described, for discharging the clippings, mechanism, substantially as described, for swaging the points of the nails, and mechanism, substantially as described, for discharging the finished nail from the machine.

**No. 23,912. Locomotive Spark Arrester and Consumer.** (*Arrête-Flammèche Foyer pour Locomotives.*)

Charles F Piko (Assignee of George H. Griggs), Providence, R. I., U.S., 23th April, 1886; 5 years.

*Claim.*—1st. The combination, with a locomotive boiler and its steam pipe for conveying steam to the cylinder, of a spark return flue connecting the smoke arch with the fire-box, and one or more steam jets within said return flue, supplied with steam by way of the cylinder steam pipe, substantially as described. 2nd. The combination, with a spark return flue boxing from the smoke arch to the fire box of a locomotive boiler, of two steam jets within said flue, one operating as a driver for forcing the sparks from the smoke arch into and along the flue, and the other inducing a vacuum within the flue between said jet and the fire box, substantially as described. 3rd. The combination, with a spark return flue, and a steam jet pipe within the entrance to said flue, of a water jacket for the tip of said jet pipe, substantially as described. 4th. The combination, with a

locomotive boiler, and a spark return flue below said boiler, and entering the fire box, of a smoke arch, having funnel-shaped sides and bottom and communicating with the return flue by a downwardly and rearwardly-inclined funnel mouth, and the exhaust pipe projecting upwardly through the funnel-shaped bottom of the smoke arch, substantially as described. 5th. The combination, with a locomotive boiler, a spark return flue below said boiler entering the fire box, and a smoke arch having funnel shaped sides and bottom, and communicating with the return flue by a downwardly and rearwardly inclined funnel mouth, of a live steam jet pipe located within said funnel mouth, substantially as described. 6th. The combination, with the boiler and a spark return flue, of a smoke arch having funnel-shaped sides and bottom, and filled in with fire brick, substantially as described, whereby undue radiation and loss of heat from solid matters while in the smoke arch are obviated, and enabling said heat to be utilized in the fire box of the boiler, as set forth. 7th. The combination, with the locomotive boiler spark return flue and blower pipe, of a steam jet pipe within the return flue, and coupled to the blower pipe, substantially as described, whereby the return flue can be made to properly operate, whether the locomotive is at rest or in motion, as set forth. 8th. The combination, with a spark return flue leading from the smoke arch to the fire box, and located below the main portion of the boiler of a locomotive, and provided with an open front end of a damper or gate at its entrance, which is coupled to a rotating or rocking shaft operated by a rod from the cab of the locomotive, substantially as described, whereby admitting atmospheric oxygen to said flue and thence to the fire box, as set forth. 9th. The combination, with a spark return flue located below the main portion of a locomotive boiler, of an agitating rod within said flue coupled to a cylinder rock shaft, substantially as and for the purposes specified. 10th. The combination, with a locomotive boiler, of a spark return flue leading from the smoke arch to the fire box above the grate, and provided with a series of openings at various points in its length, and with movable covers for said openings, substantially as described, whereby the interior of said flue may be readily inspected and clogged solid matter removed therefrom. 11th. The combination of the spark return flue, the steam jet within said flue supplied by steam from the cylinder steam pipe, and provided with a check valve which opens freely to the outward passage of steam and closes under the influence of a vacuum within the steam pipe, substantially as described, whereby the induction of solid abrasive matters to said steam pipe and cylinder is prevented, as set forth.

**No. 23,913. Dust Collector.**

(*Aspirateur de Poussière.*)

The George T. Smith Middlings Purifier Company, Stratford, Ont (Assignee of Noah W. Holt, Jackson, Mich., U.S.), 23th April, 1886; 5 years.

*Claim.*—1st. The combination, with the balloon and its casing of the fans, the fan-casing and the slotted air-tube having its ends projecting into the eyes of the fans, and thence toward and within the peripheries of the fan-casings, the ends of the tube being open to receive the blast from the fans, and the fan-casings being imperforate except at the eyes and mouths, substantially as and for the purposes set forth. 2nd. In a dust collector, the combination, with the balloon having the radially projecting spurs *c*, of the rotating through shaft *L*, the arm *M* adapted to engage with the spurs *c*, the detent arranged between the end of the balloon and the casing, and the lug on the arm *M* adapted to actuate the detent, substantially as set forth. 3rd. In a dust collector, the combination, with the balloon having the radially projecting spurs *c*, the rotating shaft *L*, the arm *M* adapted to engage with the projecting spurs, the rock-shaft, the knocker mounted centrally of the rock-shaft, the arms *O*, *O'* mounted centrally of the rotating shaft, the arms *P*, *P'* and the returning spring *S* also arranged centrally of the rock-shaft, substantially as set forth.

**No. 23,914. Grain Binder Tying Mechanism.**

(*Appareil Nouveau pour Lieuse à Grain.*)

Joseph P Bullock, Milwaukee, Wis., U.S., 23th April, 1886; 6 years.

*Claim.*—1st. The flanged tier wheel, in combination with the knife bar having finger *d* and a guide attached to the breast plate and projecting partly across the needle opening. 2nd. The combination of the tier wheel, its flared flange *B* and the knife bar having finger *d*, with the cord guide *d*, as set forth. 3rd. The combination, with a knife bar adapted to reciprocate across the breast plate, and having a finger for supporting the cord until the loop is made, of a guide adapted to support the cord in position to be taken by the bill, and to guide the cord towards the shaft of the bill and down upon the finger.

**No. 23,915. Cable Coaster.** (*Char à Câble.*)

John D. Morrison, Toronto, Ont., 23th April, 1885; 5 years.

*Claim.*—The combination, as above described, wherein a stretched cable is utilized for giving motion to and carrying a car instead of a solid track, as used for "coasters" heretofore.

**No. 23,916. Sleigh Knee.** (*Courbe de Traineau.*)

Charles E. Belknap, Grand Rapids, Mich., U.S., 23th April, 1886; 5 years.

*Claim.*—1st. In a sleigh, the combination of a runner, a knee attached to the runner, and having a rounded upper surface provided with a recess, a beam adapted to roll upon said rounded surface, and having a projection which is inserted in said recess, and a rave for holding the beam in place, substantially as described. 2nd. In a sleigh, the combination of a runner, a knee having a rounded surface, a beam adapted to roll upon said rounded surface, and having vertical openings, a rave for holding the beam in place, and bolts attached to the runner and rave, and passing through said vertical openings, substantially as described. 3rd. In a sleigh, the combination of a runner, a knee having a rounded upper surface provided with a recess, a beam adapted to roll on said rounded surface, and



having vertical openings, and a projection which is inserted in said recess, a ravo for holding the beam in place, and bolts attached to the runner and ravo, and passing through the vertical opening, substantially as described. 4th. The combination of a runner, a sledge-knee, and a beam resting thereon, the bearing surfaces of said knee and beam being shaped to permit a rocking movement, and engaging with each other on a transverse line, substantially as set forth.

### No. 23,917. Bed Bottom. (Sommier de Lit.)

John Phillips, Brantford, Ont., 23th April, 1886; 5 years.

*Claim.*—1st. In a bed bottom, the combination of web E, formed of steel spring wire, and iron clips G, substantially as and for the purpose hereinbefore set forth. 2nd. In a bed-bottom, the combination of frame C, C, and spring hooks F, with bolts D, substantially as and for the purpose hereinbefore set forth.

### No. 23,018. Bottle Stopper.

(Bouchon de Bouteille.)

William H. Clarke, Olean, N.Y., U.S., 23th April, 1886; 5 years.

*Claim.*—1st. In a bottle-stopper, the combination, with a bail or yoke to which the stopper is movably connected, of a cam-lever pivotally mounted upon said yoke, and having parallel plates which lie upon each side of and are guided by the bail, substantially as described. 2nd. In a bottle-stopper, the combination, with a bail or yoke having a central eye, in which is pivoted a cam-lever having two parallel plates lying upon each side of said bail, and a stopper having perforated lugs or ears which engage with the bail, substantially as described.

### No. 23,919. Sole and Heel Nailing Machine.

(Machine à Cheviller les Chaussures.)

Freeman F. Raymond, 2nd, Newton, Mass., U.S., 23th April, 1886; 5 years.

*Claim.*—1st. In a nailing machine, in combination with the last or work-support, a sole moulding or laying pressure-plate C, having a sole-forming cavity and the holes  $c_1$ , and means for moving the same automatically, horizontally into and out of operative position, all substantially as and for the purpose described. 2nd. The combination of the jack, a work-support or last carried thereby, a sole moulding or laying pressure-plate C, having the sole-shaping cavity  $c_1$ , and the holes  $c_2$ , with the reciprocating block G, adapted to be brought down automatically upon the pressure-plate, and to move the same vertically to mould and compress the sole, and a lock for holding the said plate locked upon the sole, all substantially as and for the purposes described. 3rd. The combination of the last or work-support pressure-plate, and a pressure-block, a gang or group of awls, arranged as described, the said block, awls and drivers being adapted to be brought successively into operative position, and reciprocated substantially as and for the purposes described. 4th. The combination, in a nailing machine, of the last or work-support, the plate C, the nail carrier D, and the gang or group of sole nail drivers, all substantially as and for the purposes described. 5th. The combination, in a nailing machine, of the last or work-support, the plate C having the sole-forming cavity  $c_1$ , the holes  $c_2$ , the sole-nail carrier-plate D and a reciprocating gang or group of drivers of variable lengths, all substantially as and for the purposes described. 6th. The combination, in a nailing machine, of the last or work-support, the sole moulding or laying pressure-plate C, having the sole-shaping cavity  $c_1$ , and the holes  $c_2$  arranged to open into the cavity, and arranged in relation to each other, as specified, the sole nail carrier D, the reciprocating gang or group of sole-nail drivers of variable length, and the sole beating-out form or mould G, all substantially as and for the purposes described. 7th. The combination, in a nailing machine, of the last or work-support, the sole moulding or laying pressure-plate C, having the sole-shaping cavity  $c_1$ , the holes  $c_2$  opening therein and arranged in relation thereto, as specified, means for moving the same into and out of operative position, and a sole-finishing or beating-out device adapted to be brought into operation after the removal of the sole moulding or laying pressure-plate, all substantially as and for the purposes described. 8th. The combination, in a nailing machine, of the plate C, the nail carrier plate D, and the nail holder H, all substantially as and for the purposes described. 9th. The combination, in a nailing machine, of a last or support for the work, the pressure-plate C, the nail-carrier D, the nail-holder H, and devices for automatically feeding nails thereto, all substantially as and for the purposes set forth. 10th. The combination, in a nailing machine, of the last or work support for the boot or shoe, the pressure-plate C, the sole-nail carrier D, the sole-nail holder H, and devices for making nails and feeding them to the holder H, all substantially as and for the purposes described. 11th. The combination of the last or support for the boot or shoe, the pressure-plate G, the lock W, the cam  $u$ , and the lever  $v$ , all substantially as and for the purposes described. 12th. The combination of the last or support for the boot or shoe, the sole moulding or laying pressure-plate C having the sole-holding cavity  $c_1$ , and the holes  $c_2$  horizontally movable, as specified, the sole-nail holder D, also horizontally movable, and the presser block, a gang or group of awls, a gang or group of drivers, and the beating-out form or mould adapted to be reciprocated, and means for bringing them successively into operative position, all substantially as and for the purposes described. 13th. In a sole-nailing machine, the combination of a last or work-support, a sole moulding and clamping plate C, having the holes  $c_2$  through which the unting nails are driven, devices for arranging the gang or group of sole fastenings, and feeding them automatically into position for driving the nail-driving devices, arranged to simultaneously drive all the fastenings used in securing the sole to the insole, and a beating-out mould or device adapted to be brought into operation after the nails have been driven, all substantially as and for the purposes described. 14th. The combination, in a nailing machine, of the last or work-support, the presser-plate C, the sole-nail carrier, and carrier and nail making and feeding devices, and a cam for automatically varying the length of the nails, which are made by the nail-making devices, all substantially as and for the purposes

specified. 15th. The combination of the reciprocating cross-head, with pressure-block G, a gang or group of awls, a gang or group of drivers, and the beating-out form or block G, substantially as and for the purposes described. 16th. The combination of the reciprocating cross-head, with the pressure-block G, a gang or group of awls, a gang or group of drivers, and the beating-out form or block G, with the connecting rods  $p_1$ , the lower cross-head  $P_2$ , and the cam  $P_3$ , all substantially as and for the purpose described. 17th. The combination of the cross-head  $A_1$ , the connecting rods  $p_1$ , the lower cross head  $P_2$ , the pulley-shaft  $o_1$ , the pinions  $p_2$ , the gears  $p_3$ , shaft  $o_2$ , and the cam  $P_2$ , all substantially as and for the purposes described. 18th. The combination of the cross-head  $A_2$ , the lower cross-head  $P_2$ , the arms  $p_5$ , the cam-pins  $p_6$ , all substantially as and for the purposes described. 19th. The combination of the cross head carrying the beating-out block or form, with the driving pulley and connecting devices, whereby the machine is stopped at both its lowest and highest positions, all substantially as and for the purposes described. 20th. The combination of the last or work-support, the sole moulding or laying plate C, the sole-shaping cavity  $c_1$ , and the holes  $c_2$ , substantially as specified, the cross-head supporting the pressure blocks, a gang or group of awls, a gang or group of drivers, and the beating-out block, the sole-nail carrier D, the pulley shaft  $o_1$ , and connecting devices, whereby the machine is stopped after every fourth reciprocation of the cross-head, all substantially as and for the purposes described. 21st. The combination of the reciprocating cross head, with a gang or group of drivers, and the yielding beating-out block or form, all substantially as and for the purposes described. 22nd. The combination of the sole moulding or laying pressure-plate C, having the sole-forming cavity  $c_1$ , arranged to extend crosswise the end of the plate, as described, the holes  $c_2$ , the cross head and the revolving head having the awl-holding block, driver-holding block, and beating-out block carried thereby arranged to extend their length crosswise the shaft, all substantially, as and for the purposes described. 23rd. The combination of the jack or work-support, arranged to present its side to the line, of the horizontal movement of the sole moulding or laying pressure-plate C, with the pressure plate having the sole-holding cavity  $c_1$  arranged crosswise its end, all substantially as and for the purposes described. 24th. The combination of the table  $c$ , with the horizontally-movable sole moulding or laying presser-plate G, having the sole holding and shaping cavity  $c_1$ , arranged crosswise therein, and near the end thereof, all substantially as and for the purposes described. 25th. In a nailing machine, a nail receiving and distributing device, in combination with a nail carrier, substantially as described. 26th. In a nailing machine, a receiving and distributing device, in combination with a nail carrier, and nail-driving devices, substantially as described. 27th. In a nailing machine, a device for making nails and for delivering them to a receiving and distributing mechanism, and receiving and distributing mechanism adapted to receive nails and arrange them in a group for driving and nail-driving devices, substantially as described. 28th. In a nailing machine, the combination of nail-making devices, a nail-distributor and nail-driving devices, and mechanism for automatically starting and stopping the nail making devices, substantially as described.

### No. 23,920. Device for Washing out Locomotive Boilers. (Appareil pour Nettoyer les Chaudières des Locomotives.)

William D. Robb, Belleville, Ont., 23th April, 1886; 5 years.

*Claim.*—1st. An improved apparatus for washing out locomotive boilers, consisting of a tank supplied with water from the ordinary source, and connected to the sand or other heating furnace, in combination with pipes leading from the said tank and provided with connections by which the steam from the locomotive can be blown into the water tank, and the water drawn therefrom for the purpose of washing out the locomotive boiler, substantially as specified. 2nd. The tank A supplied with water through the pipe B, and connected to a coil within the sand furnace C by the pipes D and E, in combination with the pipe J provided with a flexible pipe G to connect it to the locomotive boiler, a pipe N to connect the tank to the steam pump L, and a flexible pipe K to connect the said steam pump with the locomotive boiler, substantially as and for the purpose specified. 3rd. A tank A supplied with water through the pipe B, and connected to a coil within the sand furnace C by the pipes D and E, in combination with the pipe J connecting the tank with the pipe I, a series of pipes H, and flexible pipe or pipes G, the pipe M for connecting the tank A to the pump L, and the flexible pipe K connected to the said steam pump, substantially as and for the purpose specified.

### No. 23,921. Carriage Curtain Fastening.

(Mécanisme de Store de Voiture.)

James M. Baker, Freeport, Ill., U.S., 23th April, 1886; 5 years.

*Claim.*—1st. In a carriage-curtain fastener, the combination of a stud having a head and a neck of less diameter than the head, with a lever pivoted to said stud, and adapted to force the eyelet of the curtain over said head and about said neck, substantially as and for the purpose set forth. 2nd. In a carriage-curtain fastener, the combination of a suitable stud, and a lever consisting of two branches whose ends are turned inward and pivoted in the stud at opposite points in its periphery, substantially as and for the purpose set forth. 3rd. The combination, in a carriage-curtain fastener, of a cone headed stud, and a lever pivoted to said stud and adapted to force the eyelet of a curtain over said stud, substantially as and for the purpose set forth. 4th. In a carriage-curtain fastener, the combination of a conical-headed stud, a double lever pivotally connected therewith, and depressions in the head of said stud, adapted to receive and retain the branches of said lever. 5th. The combination, in a carriage-curtain fastener, of a stud comprising, a head and a neck of less diameter than that of the head, with an elastic consisting of two integrally-formed branches, whose ends turn inward and are pivoted on the neck of said stud, whereby in the rotation of the lever the head forces apart the branches thereof, substantially as and for the purpose set forth. 6th. The combination, in a carriage curtain fastener, of a stud consisting of a conical head and a neck of a less

diameter than that of the head, with an elastic lever consisting of two integrally formed branches whose ends are turned inward and pivoted on the neck of said stud, whereby in the rotation of the lever the branches thereof are separated by the passage of the head between them, substantially as and for the purpose set forth.

### No. 23,922. Roller Skate. (*Patin à Roulettes.*)

Albert Hall, Richmond, Ind., U.S., 25th April, 1856; 5 years.

*Claim.*—1st. The combination of the axle B, the frame C having ears *r*, the brackets M provided with lugs N, the point *o* passing through the ears *r* and lugs N, and the spring H seated between frame C and bracket M, substantially as described. 2nd. The combination of the axle B, having an opening F and provided with ears *r*, the brackets M, having lugs N, and the headed temper screw G tapping vertically through the frame C, substantially as described. 3rd. The combination, with the frame C, having opening F and ears *r*, the pivot *o* and bracket M having lugs N, of the rubber H, plate L, having its inner end *i* turned over to prevent displacement, and headed temper screw G, K, substantially as described.

### No. 23,923. Spiked Skid for Handling Logs, etc. (*Charriot à Crampon pour Manœuvres les Billots, etc.*)

William H. Polleys, Molrose, Wis., U.S., 23th April, 1856, 5 years.

*Claim.*—1st. A skid, provided with teeth *a, a*, substantially as described and for the purpose specified. 2nd. The combination, with a skid, substantially as described, of plates E, formed with teeth *a, a*, substantially as described. 3rd. A skid, provided with pins *b, b*, substantially as described and for the purpose specified. 4th. The combination, with a skid provided with pins *b, b*, of plates E, E, formed with teeth *a, a*, substantially as described.

### No. 23,924. General Blasting.

(*Pétardement en Général.*)

Reuben J. Bolt, Montreal, Que., 23th April, 1856, 5 years.

*Claim.*—1st. In a blasting plug, the sections D, D, D, D, provided with grooves G, substantially as and for the purpose hereinbefore set forth. 2d. In the section of a blasting plug, the concentric circular inside to receive the screw pin E, substantially as and for the purpose hereinbefore set forth. 3rd. In the process of blasting, tamping C over explosive B, allowing a vacuum I, over which is placed a sectional plug D, expanded by screw pin E, worked by key F, the whole substantially as and for the purpose hereinbefore set forth.

### No. 23,925. Heel Nailing Machine.

(*Machine à Clouer les Talons.*)

Freeborn F. Raymond, 2nd, Newton, Mass., U. S., 25th April, 1856; 5 years.

*Claim.*—1st. In a heel-nailing machine, the combination of two or more jacks mounted on a table, two or more templet or pressure plates or blocks carried by a reciprocating plate or ring above the jacks and two or more gangs or groups of nail-drivers attached to a reciprocating head and adapted to be simultaneously operated, whereby two or more heels are simultaneously attached to their respective boots or shoes, all substantially as described. 2nd. In a heel-nailing machine, in combination with two or more nail-drivers, the vertically movable templet or pressure plate D, carrying a templet block for each driving device, and two or more jacks or work supports, all substantially as and for the purposes described. 3rd. The combination of the revolving table G, supporting two or more jacks or work supports, the pressure plate D and two or more driving devices carried by the reciprocating head B, all substantially as and for the purposes described. 4th. In a heel-nailing machine, the combination of the table G, two or more jacks horizontally movable thereon, and means for moving them simultaneously into operative position. 5th. In a heel-nailing machine, the combination of two or more work supports mounted on a bed, with the ring N having eccentric slots and connected with the work supports, substantially as described. 6th. In a heel-nailing machine, the combination of the templet or pressure plate D, the presser ring or foot E, and the reciprocating head B, all substantially as and for the purposes described. 7th. The combination, in a heel-nailing machine, of the presser foot or ring E adapted to be moved vertically, the templet D also vertically movable, and the reciprocating cross-head, all substantially as described. 8th. The combination of the table G, carrying two or more jacks or work supports, with the templet or pressure plate D, coupled or connected together so that the movement of one causes the movement of the other, substantially as described. 9th. In a heel-nailing machine, the combination of the templet or pressure plate carrying a series of templet blocks, a sliding top-lift holder underneath each block, and mechanism for reciprocating the templet plate vertically, substantially as described. 10th. The combination of the templet or pressure-plate D, with the plate or plates *m*, all substantially as and for the purposes described. 11th. The combination of the pressure or templet plate, having two or more templet blocks, a sliding top lift holder underneath each block, and mechanism to move them simultaneously into and out of operative position, all substantially as and for the purposes described. 12th. The combination of the templet or pressure-plate, having the templet block *d*, through which the drivers are reciprocated, and the plate *m* forming a portion of the templet plate and also the top-lift holder, and adapted to be moved horizontally in relation to the block *d*, all substantially as and for the purposes described. 13th. The combination of the templet or pressure-plate D, and the heel-holding device for holding the heel-blanks upon the under surface thereof, all substantially as and for the purposes described. 14th. The combination of the templet-plate, and the yielding eccentric heel-holders H, all substantially as and for the purposes described. 15th. The heel-holders H, having eccentric or cam surfaces and supported upon yielding arms or supports, substantially as and for the purposes described. 16th. The combination of the head B, the presser-foot or ring E, the

rods *e* and the springs *e*, all substantially as and for the purposes described. 17th. The combination of the templet or pressure plate D, the reciprocating rod B, the arms *d*, and suitable operating mechanism, all substantially as and for the purposes described. 18th. The combination of the column A, the head B fitted thereto and vertically movable thereon, the rod B connected with the templet-plate and the crank C, whereby upon the revolution of the crank the head and templet-plate are first moved downward and then upward, all substantially as and for the purposes described. 19th. The combination of the head or column A, the head B, the presser ring or foot E, the presser-plate or templet D, the rod B and the crank *c*, all substantially as and for the purposes described. 20th. The combination of the column A, the reciprocating cross-head, the presser-foot, or ring E, made vertically movable thereon, and the presser, or templet plate D made vertically movable upon said column and also adapted to be revolved thereon, all substantially as and for the purposes described. 21st. The combination of the bed G, having the sleeve *g*<sub>1</sub>, with the templet or presser-plate D having a sleeve *d*<sub>1</sub>, which extends by or overlaps the upper portion of the sleeve *g*<sub>1</sub>, and connecting and operating devices, all substantially as and for the purposes described. 22nd. The combination of the revolving table, supporting two or more jacks or work supports, devices for simultaneously moving the jacks, and a bolt or locking device for automatically locking the table to its bed, all substantially as and for the purposes described. (The letters of reference in the above claims refer to parts shown in Figs. 1 to 5 inclusive, those in the following claims, to and including claim 36, refer to parts shown in Figs. 6 to 11 inclusive.) 23rd. In a heel-nailing or attaching machine, the combination of the revolving table C, having a series of jacks or work supports adapted to be brought successively into position under the templet or pressure-plate E, said templet-plate which is adapted to have a vertical and a revolving movement, and the reciprocating head A carrying heel-attaching devices, all substantially as described. 24th. The combination of the revolving bed C, supporting a series of jacks or work supports, a templet or pressure-plate E, and mechanism to give it a vertical movement, and limited revolving movement, all substantially as and for the purpose described. 25th. The combination of the reciprocating head, a gang or group of awls, a gang or group of drivers carried in a fixed operative position thereon, a jack or work support movable horizontally, and a templet or pressure-plate movable horizontally, whereby the heel is adapted to be first presented to the awls and then transferred with the jack and templet to the nail-drivers, all substantially as described. 26th. The combination of the templet plate E, the column or post A and stops P, all substantially as and for the purposes described. 27th. The combination of the templet-plate E, the column A, the locking pin H and the slots or grooves *h*, all substantially as and for the purposes described. 28th. The combination of the templet-plate E, having the sleeve *g*<sub>1</sub>, provided with holes *g*<sub>2</sub>, and the revolving table having the posts *g*<sub>1</sub>, all substantially as and for the purposes described. 29th. The combination of the templet or pressure-plate E having a sleeve *e*, the ring or support G and the springs *g* and posts, all substantially as and for the purposes described. 30th. The combination of the templet plate E, the treadle M, the connecting rod M<sup>1</sup> and the pin or block *m*<sub>2</sub>, all substantially as and for the purposes described. 31st. The combination of the nail-holder *o*, the revolving nail-carrier *n* and the templet or pressure-block *e*, all substantially as and for the purposes described. 32nd. The combination of the revolving bed C, having the centering or registering posts *g*<sub>1</sub>, the bed or support G and the springs *g* with the templet sleeve or supports *e*, all substantially as and for the purposes described. 33rd. The combination of the templet or pressure-plate E, the nail-carrier plate N and the bar or ring F, all substantially as and for the purposes described. 34th. The combination of the templet or pressure-plate, with the yielding pressure-ring F for moving the same vertically downward, and the yielding pressure ring G and suitable lifting springs for moving it vertically upward, all substantially as and for the purposes described. 35th. The combination of the templet sleeve or support *e*<sub>1</sub>, having a number of holes *a*<sub>2</sub> and adapted to be revolved with the locking posts *e*<sub>1</sub>, the holes and locking posts being arranged, substantially as described, that the same holes will register with two or more sets of posts, all substantially as and for the purposes described. 36th. The combination of the templet sleeve or support *e*<sub>1</sub>, having a circular groove or recess for the reception of the pin *m*<sub>1</sub>, said pin *m*<sub>1</sub>, treadle rod *m* and treadle M, all substantially as and for the purposes described. (The letters of reference used in the following claims refer to parts in Figs. 12 to 15 inclusive.) 37th. The combination of two or more sliding jacks, or heel supports, mounted on a movable table, and adapted to be brought successively into operative position with a guide, substantially as specified, for automatically moving them in succession beneath the heel-attaching devices, all substantially as described. 38th. The combination, in a heel-attaching machine, of a pressure or templet plate, a reciprocating head carrying driving devices, and two or more automatically operated radially-sliding jacks or work supports, adapted to be moved successively beneath the templet and driving devices, substantially as described. 39th. In a heel-nailing machine, a movable table carrying a series of jacks or work supports adapted to be moved automatically into position, and mechanism, substantially as specified, for locking each of said jacks respectively in said position, substantially as described. 40th. In a heel-attaching machine, the guide having a flaring end, in combination with a series of jacks or work supports, each carrying a pin on its end and adapted to be successively moved to said guide, substantially as described. 41st. The combination of the central vertical column A, with the revolving table F, arranged in relation to the column, as shown, and supporting two or more jacks or work supports, the templet or pressure-plate, the reciprocating head B and a single gang or group of drivers carried thereby, all substantially as described.

### No. 23,926. Shoe and Overshoe.

(*Soulier et Pardessus.*)

Orea G. King, Newark, Ohio, U.S., 23th April, 1856, 5 years.

*Claim.*—1st. An overshoe, provided with means attached inside and to the sole, whereby it can be secured upon the boot or shoe of the wearer, without the use of a buckle. 2nd. A shoe, provided with an

elastic strap or band to secure it upon the foot, which strap or band can be so used, or when not in use may remain in the shoe, as may be desired. 3rd. An overshoe, having an elastic strap or band secured by its ends to the sole of the overshoe, or by a continuous band passing above or below the inner sole B, inside the shoe at the shank, and adapted to be brought upon the foot or over the heel, whereby the overshoe can be securely bound to the foot, boot or shoe. 4th. A shoe, having an elastic strap or band, secured at its ends to the insole, or by a continuous band passing above or below the inner sole B, inside the shoe under the instep, and adapted to be brought up over the instep, or back over the heel, in a manner to securely hold the shoe or slipper to the foot. 5th. The overshoe A, provided with the elastic band C secured to the sole B of the overshoe at the shank, and inside the overshoe, substantially as shown and described. 6th. A shoe, having an elastic band secured inside the shoe and adapted to be drawn over the foot, whereby it will secure the said shoe upon the foot, substantially in the manner and for the purposes described.

**No. 23,927. Composition of Matter for the Destruction of Smut in Wheat.**  
(*Composition de Matières pour la Destruction de la Nuelle du Blé*)

Thomas Gull, Mary Sharples, John Sharpley and Alfred Reed, Winnipeg, Man., 23rd April, 1886; 5 years.

*Claim.*—A composition of matter composed of arsenic, copper, sulphate, ammonium, carbonate, sodium, chloride and sulphur, substantially in the proportions and for the purposes set forth.

**No. 23,928. Box for Cartridges, Field Glasses, etc.** (*Boîte à Cartouches, Lunettes de Campagne, etc.*)

George Beacock and Jacob D. Buell, Brockville, Ont., 23rd April, 1886; 5 years.

*Claim.*—1st. As a new article of manufacture, a box consisting of the body A and cover B respectively made of a single piece of rawhide and without seam, as set forth. 2nd. As a new article of manufacture, a box composed of a seamless body A and cover B, respectively made of a single piece of rawhide, and connected by a hinge formed of two pieces of rawhide, doubled and slotted to coincide at the joint, and provided with a pin H, as set forth. 3rd. As an improved article of manufacture, a box consisting of a seamless body A, and cover B of rawhide having the meeting edges rabbitted from the solid to overlap, as set forth. 4th. As an improved article of manufacture, a box consisting of a body A, and cover B, respectively moulded of a single piece of rawhide and hinged together, the cover B provided with a lip integral therewith, and the body and lip indented from the inside to coincide, for the purpose set forth. 5th. The described box consisting of a seamless body A, and cover B of rawhide, provided with rawhide strips G having rectangular loops G', as set forth. 6th. The box herein described, consisting of a seamless body A and cover B of rawhide, having integral a lip D connected by a hinge having rawhide members F<sup>1</sup> and F<sup>2</sup>, strips G provided with loops G', and a button H, as set forth.

**No. 23,929. Car-Coupler.** (*Attelage de Chars.*)

Michael F. Dunn, Woodstock, Ont., 23rd April, 1886; 5 years.

*Claim.*—1st. The combination of the coupling hook E, the chain J, and the horizontal rod C, and handles N, N, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the coupling hook E, the chain I, and spring H, substantially as and for the purpose hereinbefore set forth.

**No. 23,930. Section for Steam Generator.**

(*Section pour Générateur de Vapeur.*)

John Gillies & Co., Carleton Place, Ont., (assignees of Edwin R. Bryant, Rochester, N.Y., U.S., 23rd April, 1886; 5 years.

*Claim.*—1st. A section for a steam generator formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, the cavities of said arms communicating respectively with the interiors of said tube and ring, substantially as shown. 2nd. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, the cavities of said arms communicating respectively with the interiors of said tube and ring, said section being formed in one piece, substantially as shown. 3rd. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, the cavities of said arms communicating respectively with the interiors of said tube and ring, said central ring being formed above the plane of the axial line of said tube or chamber, substantially as described. 4th. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, the cavities of said arms communicating respectively with the interiors of said tube and ring, other openings being formed across the plane of the tube, and communicating with the interior of the same, substantially as shown. 5th. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, other openings being formed across the plane of the tube and communicating with the interior thereof, the axis of said openings being substantially parallel with the axis of said central ring, substantially as shown. 6th. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, other rings being formed across said tube, the interiors of said respective rings communicating with the interior of said tube, the length of said rings crossing said tube, and central ring measured in lines at right angles to the plane of said tube being equal, substantially as and for the purpose set forth. 7th. A section for a steam generator formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, other rings being formed across

said tube at right angles to the plane of the latter, the interiors of said respective rings communicating with the interior of said tube, the axis of said rings or openings being substantially parallel with the axis of said central ring, the plane of the upper surface of said central ring being above the plane of the upper surfaces of said rings crossing the tube, substantially as shown. 8th. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, other rings or openings being formed across said tube at right angles to the plane of the latter, the numbers of said latter rings or openings, and said hollow arms being one odd and the other even, substantially as and for the purpose set forth. 9th. A section for a steam generator, formed with a peripheral tube or chamber, hollow central ring and hollow arms or spokes joining said tube and ring, other rings or openings being formed across said tube at right angles to the plane of the latter, the numbers of said rings or openings and said hollow arms being one odd and the other even, one of said rings or openings being formed to cut across the axis of one of said arms, substantially as shown and described. 10th. A section for a steam generator, formed with a peripheral tube and central ring, with hollow arms or spokes communicating between the respective interiors of said tube and ring, and ring being formed with inwardly projecting flanges, substantially as shown. 11th. A section for a steam generator, formed with a peripheral tube and central ring, with hollow arms or spokes communicating between the respective interiors of said tube and ring, said ring being formed with inward projecting flanges at its respective ends, the lower one of said flanges being formed conical, substantially as and for the purpose set forth.

**No. 23,931. Baby Jumper.** (*Escarpolette.*)

Henry S. Peck and Augustus F. Phelps, Westfield, N.Y., U.S., 29th April, 1886; 5 years

*Claim.*—1st. In a suspended chair, a seat having a pivoted back, in combination with a suspending bail consisting of the cross-bar A, and vertical rods which pass through said seat and back-stays which are pivoted to the back, and in clamps which slide on said vertical rods A, A, substantially as set forth. 2nd. In a suspended chair, the combination, substantially as set forth, of the seat L, with the arms E, the back F with the sides F<sup>1</sup>, pivoted together by the rung H, the suspending-bail A A, the back-stays B, B, and the sliding clamps C, C on the rods A, A, and the foot-piece G connected with the seat by hooks, and provided with hooked supporting-stays G, G, which engage with eyes or staples *et. et.* on the seat arms, substantially as and for the purpose hereinbefore set forth.

**No. 23,932. Dry Earth Closet.**

(*Siège à la Terre Sèche.*)

William S. Hunter, Belleville, Ont., 29th April, 1886; 5 years.

*Claim.*—1st. The combination, in an earth closet, of the fixed hopper A, the oscillating valve B, provided with dumping spout C, and a series of levers operated by the seat and counterbalanced by weight or weights for oscillating the valve, whereby earth or ashes deposited in the hopper will be ejected from its spout, as set forth. 2nd. The combination, with the excrement vessel H, of a frame M, and a urino conductor N, applied as set forth, whereby the urino is caused to pass into a receiver and be removable without disturbing the conductor, as set forth.

**No. 23,933. Combined Enveloping Letter and Bill Sheet.** (*Enveloppe de Lettre et de Facture.*)

Alfred E. Ames, Toronto, Ont., 23rd April, 1886; 5 years.

*Claim.*—As an improvement on a combined letter and bill-head, as patented by Cornell, No. 11,572, the perforations b, c, between the lips B, C and the body of the sheet, which perforation secure the sheet while being opened from mutilation, substantially as shown and for the purpose specified.

**No. 23,934. Testing Station for Conduit Systems of Electric Wires.** (*Station d'Essai pour Systèmes de Conduits des Fils Electriques.*)

James F. Munsie and Horatio N. May, Chicago, Ill., U.S., 29th April, 1886; 5 years.

*Claim.*—1st. In a conduit system of electric wires, a series of stations B forming a part of said conduit, provided with one or more binding-post boards C to which are secured the wires contained within said conduit, substantially as and for the purpose described. 2nd. In a conduit system of electric wires, a station or series of stations B, provided with a series of binding-post boards C unfixedly located within the interior thereof, and securing the wires contained in said conduit, said binding-post boards being provided each with an insulating shield C', all arranged substantially as and for the purpose described. 3rd. A binding-post board C for electric wires, provided with slots or holes *et.* binding-posts or screws *et.* and an insulating shield C', substantially as described.

**No. 23,935. Tanning Apparatus.**

(*Appareil de Tannerie.*)

The Acme Tanning Company, (assignee of John Davis and Lenox Simpson), Pittsburg, Pa., U.S., 23rd April, 1886; 5 years.

*Claim.*—1st. An air tight tanning vat, provided with mechanism for alternately immersing the hides in liquor and raising them out of same into the air, or a vacuum, and means for exhausting the vat of air and for feeding fresh liquor into said vat and removing spent liquor therefrom, substantially as and for the purposes described. 2nd. The combination, with the removable head A, provided with neck C, of the hinged arm H, loosely embracing said neck, substantially as and for the purpose described. 3rd. In tanning vats, the

combination, with a supply tank G and a vat having a hollow neck C, of a feed pipe D, and a flexible pipe d, as and for the purposes described. 4th. The combination, with head A, and pipe D, of the flexible pipe d, substantially as and for the purposes described. 5th. The combination, with the cylinder A, and wheels B, of the angle hoops a, whereby the cylinder is at the same time strengthened and prevented from longitudinal displacement, as set forth. 6th. The combination of the pipe F, having cock e situated beneath the median line of the cylinder, and the exhaust pipe F, as and for the purpose set forth. 7th. The combination, with pipe E having cock e situated beneath the median line of the cylinder, of the pipe F provided with an exhaust gauge, substantially as described. 8th. The combination of the cylinder A, provided with tracks a, and the slide frame L provided with wheels adapted to roll upon said tracks, substantially as described.

### No. 23,936. Harness Shaft Tag. (*Mancelle*.)

Stephen E. Davies, Liverpool, Lancaster, Eng., 29th April, 1886; 5 years.

*Claim*.—1st. The combination, with a metal shaft tug, of a buckle pivoted thereto and having its tongue mounted upon a cross-bar intermediate the ends of the buckle frame, and a loop or bridge H placed at the bottom of the tug through which the back band passes, substantially as described. 2nd. The combination, with a metal shaft tug provided with a buckle pivoted thereto, and having a middle cross-bar to support and carry the buckle tongue, of a hinged piece J opening on the outside of the tug, and securely held when closed by a spring catch or bolt L, whereby the tug is locked against any upward or outward strain of the shaft without any strain coming upon the spring.

### No. 23,937. Vehicle Spring. (*Ressort de Voiture*.)

John E. Simmons, Sherbrooke, Que., 29th April, 1886; 5 years.

*Claim*.—1st. The combination of the single spring d, with the torsion rods a, a, a, substantially as and for the purposes herein set forth. 2nd. The combination, with the spring d and torsion rods a, a, a, of the arms c, c, c, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, with the spring d, torsion rods a, a, a, and arms c, c, c, of the longer arms b, b, b, substantially as and for the purposes hereinbefore set forth.

### No. 23,938. Automatic Car-Coupler.

(*Attelage Automatique de Chars*.)

William H. Burkholder, Theford, Ont., 29th April, 1886; 5 years.

*Claim*.—1st. A draw-head A having a passageway a cut in it to receive the gate B, which is pivoted on the pin b secured to the draw-head and passing through a slot d made in the gate, in combination with the rope C connected to the gate B and passing around the pulley block D, substantially as and for the purpose specified. 2nd. A draw head A, provided with a pivot-pin e on its inner end arranged to fit into the horizontal slot f made in the bracket G, in combination with the forked bar J connected to the draw-head, and provided with a rope J passing over the pulley K on the top of the car E, and connected to the hand-lever L pivoted on the top of the car and arranged to engage with the notched quadrant M, substantially as and for the purpose specified.

### No. 23,939. Brick Hack and Carriage.

(*Charriot de Briqueterie*.)

Malcolm Walker and Ephraim Miner, Yankton, Dak., U. S., 29th April, 1886; 5 years.

*Claim*.—1st. In a brick-carrying device, the combination of the main frame, and the eccentric crank-arm, with the wheels and suitable supports and supporting frame for the hack, as set forth. 2nd. In a brick carrying device, the combination of the main frame, the wheels and crank-arms, with the books b, b at the front end of the frame, and frame F having the hooked ends, as set forth. 3rd. In a brick-carrying device, the frame, the cross-bars a and a, the books b, b on the latter, forward of the axle-supports or eccentric arms, and the hooked rods F, F, with the arms f, as set forth. 4th. In a brick-carrying device, the main frame having side-braces or supports E, E, the latter serving the double purpose of a brace and a supplemental handle, the crank-axles C, the hooks b, b, and the hooked rods F, F, all combined in the manner and for the purposes set forth. 5th. The brick hack G, consisting of the longitudinal boards or pieces g, and pieces c, and cross-pieces g about equi-distant from the centre and having projecting arms, substantially as and for the purposes described. 6th. A brick hack, substantially as described, having a longitudinal floor and supporting end pieces, and provided with side projections, whereby it can be lifted and carried, substantially as described. 7th. The combination of the carriage A, as described, and frame F, with the hack G, substantially in the manner and for the purposes set forth.

### No. 23,940. Heel Nailing Machine.

(*Machine à Clouer les Talons*.)

F. F. Raymond, 2nd, Newton, (Assissee of Henry A. Henderson, Lynn), Mass., U. S., 29th April, 1886; 5 years.

*Claim*.—1st. In a heel-nailing machine, having a table supporting a templet, the post D having the cylindrical section d, and the table E, having the sleeve e to fit the post d, substantially as described. 2nd. The post d, having the hole d, the table E and the spring e, substantially as described. 3rd. The post d, steady pin c, in combination with the table E, having the sleeve e, and extension e, having a hole to receive the steady pin, substantially as described. 4th. The post D, having the cylindrical portion d, the table E having the sleeve e to fit the post, the test or rod c, and

the spring e, substantially as described. 5th. The combination of a gang or group of awls, adapted to be moved into and out of operative position, the sliding templet and sliding nail-carrier, and a stop on the nail-carrier and on the awl-carrier for preventing the movement of the nail-carrier when the awls are in operative position, substantially as described. 6th. The combination of a spanker adapted to be moved into and out of operative position, a sliding nail-carrier, a sliding templet and a stop on the revolving shaft and nail-carrier for preventing the movement of the nail-carrier and templet while the spanker is in operative position, substantially as described. 7th. The combination of the nail-carrier, having the angle piece P, and the arm K having the stop r, substantially as described. 8th. The combination of the nail-carrier, having the angle-piece P, with the revolving shaft K, having the arm K, substantially as described.

### No. 23,941. Fastening and Pulley for Clothes Lines. (*Poulie Accroche-Ligne d'Etendage*.)

John T. Kennedy and John Moore, Montreal, Que., 29th April, 1886; 5 years.

*Claim*.—1st. In combination with a line or cord for suspending or drying clothes, the grip G, pulleys D, E, F and hook C attached to posts B, as shown, for holding supplementary pulley D, in combination with the grip or holder G, all as and for the purposes set forth.

### No. 23,942. Boat. (*Bateau*.)

John Forbes, Jr, and Michael Brophy, Plainwell, Mich., U. S., 29th April, 1886; 5 years.

*Claim*.—1st. A boat made of narrow planks, fastened together edgewise, said planks being convex on one edge and concave upon the other edge in cross-section, substantially as and for the purpose described. 2nd. A boat, made of thin narrow strips, concave upon one edge and convex upon the other, fastened together by nails passing through them edgewise, and in connection therewith a small ridge or ridges, as formed upon one edge of each plank, substantially as described. 3rd. A boat made of thin narrow strips concave at one edge and convex at the other in cross-section, said strips fastened together by nails passed through them edgewise, substantially as described. 4th. A boat made of narrow strips, convex on one edge and concave on the other in cross-section, said strips being punctured or bored at intervals for the passage of nails, and fastened together edgewise by nails passed through said holes, and then driven through one or more adjacent planks, whereby said holes are made to serve as a guide for the nails, substantially as described. 5th. A boat made of narrow strips, concave on one edge and convex on the other in cross-section, and fastened together edgewise by nails passed through two or more adjacent planks in an angular direction, substantially as described. 6th. A boat plank or strake, consisting of a long narrow strip tapered somewhat at its extremities, made concave on one edge and convex on the other in cross-section, substantially as described. 7th. A boat plank or strake, consisting of a long narrow strip convex upon one edge and concave upon the other in cross-section and slightly tapering towards its extremities, said strake or plank being perforated or bored at intervals for the passage of nails, substantially as described. 8th. The combination, with a boat, of the removable keel B provided with dowels p, p engaging with corresponding holes or recesses in the bottom of the boat, and clip p, p connected to the keel and bent up and secured respectively to the stem and stern posts, substantially as described.

### No. 23,943. Combined Door Bell and Burglar Alarm. (*Timbre de Porte et Avertisseur Combinés*.)

Allen W. Thomas and George W. Way, Portland, Me., U. S., 30th April, 1886; 5 years.

*Claim*.—1st. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide plate engaged by said segmental plate, and a cam for disengaging said segmental plate from said slide plate. 2nd. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide plate engaged by said segmental plate, a cam for disengaging said segmental plate from said slide plate, and a spring for holding said segmental plate in contact with said slide plate. 3rd. The combination, substantially as set forth, of a bell, a striking mechanism therefor, a rectilinear reciprocating slide for retracting said mechanism, an oscillatory plate engaging said slide and actuated by the knob-spindle, cams for disengaging said slide from said slide during the turning of the knob and a spring for returning said slide to its normal position after disengagement. 4th. The combination, substantially as set forth of a bell, a pivoted hammer lever, a spring connected to said hammer-lever for actuating it, a reciprocating slide for drawing back said hammer lever against the tension of the actuating spring, an arm connecting said hammer lever with said slide, and an oscillating plate engaging said slide and actuated by the knob-spindle. 5th. The combination, substantially as set forth, of an attaching plate, a slide plate guided thereon and provided with lugs, an oscillatory plate actuated by the knob-spindle and adapted to engage one of said lugs when the knob is turned in either direction, a bell and a striking mechanism therefor connected with said slide. 6th. The combination, substantially as set forth, of a supporting plate provided with bevelled guideways, a slide reciprocating in said guideways, an oscillating plate engaging said slide and actuated by the knob-spindle, a bracket attached to said plate, a bell supported by said bracket and a bell striking mechanism connected with said slide. 7th. The combination substantially as set forth, of the attaching plate 5 and the bracket 10, provided with the ring 12 having a raised rim 16, and a gong bell resting on said raised rim. 8th. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide plate provided with lugs and an adjustable fork carrying cams, the position of which limits the duration of or completely prevents the engagement of said segmental plate with said lugs.

**No. 23,944. Feather Sorter. (Trieur de Plume.)**

Horman Penner, Milwaukee, Wis., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. The combination, in a feather sorter, of the case A provided with an air supply opening C, agitator B, hood D mounted upon and communicating at its base with the interior of said case, and blower E connected with the upper part of said hood, so as to produce an upward draft through the same, substantially as and for the purposes set forth. 2nd. The combination, in a feather sorter, of the case A having an air supply opening C, agitator B, hood D mounted upon and communicating with the interior of said case blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, and screen N interposed between said case and blower, substantially as and for the purposes set forth. 3rd. The combination, with a feather receptacle having opening or openings C and agitator B, of the hood D mounted thereon over an opening therein, screen N, slats c, c, blower E and discharge-pipe or openings, substantially as and for the purpose set forth. 4th. The combination in a feather sorter, of the case A having an air supply opening C, agitator B, hood D mounted upon and communicating with the interior of said case, blower E connected with the upper part of said hood, so as to produce an upward draft through the same, and a regulating slide or shutter L, substantially as and for the purposes set forth. 5th. The combination, with a feather receptacle A, having opening or openings C, of the hood D mounted thereon and communicating therewith, blower E, blast pipe G and leaf H, substantially as and for the purpose set forth. 6th. The combination in a feather sorter, of the case A, groove section S and agitator B, substantially as and for the purposes set forth. 7th. The combination in a feather sorter, of the case A provided with an air supply opening C, agitator B having arms b, b, provided at their ends with diverging fingers b, hood D mounted upon and communicating at its base with the interior of said case, and blower E connected with the upper part of said hood, substantially as and for the purposes set forth.

**No. 23,945. Machine for Separating Seeds from Pulp. (Machine pour Séparer les Graines de la Pulpe des Fruits.)**

Lafayette Ladd, Adrian, Mich., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. A water-tank and crank shaft mounted thereon, in combination with a sieve suspended from said cranks within said tank, whereby said sieve is moved in and out of the water in the tank, and is given a forward movement when above the water-line, and a backward movement when immersed in the water, substantially as set forth. 2nd. A tank B, crank-shafts C, C mounted thereon, and a sieve A suspended from said cranks within said tank, in combination with an apron H attached to the bottom of the sieve and to the discharge end of the tank, substantially as set forth. 3rd. The tank B and the sieve A, in combination with the cylindrical screen J, and the pipe I leading from the tank B into the interior of said screen, and the tube inside of screen J and around pipe I, substantially as set forth.

**No. 23,946. Molasses Faucet.**

(Robinet à Mlasse.)

Hubert R. Ives, Montreal, Que., 30th April, 1886; 5 years.

*Claim.*—A valve plate (adapted to faucets constructed as described in the foregoing specifications) in the form of a box, as described, faced on the inner side with a composition of soft metal or rubber, and produced in the manner and for the purpose, substantially as described and shown.

**No. 23,947. Elastic Spring Packing and outer Connection or Coupling between the Upper and Lower Leaf Springs of Carriages. (Garniture Elastique de Ressort et Joint extérieur entre les Lames Supérieure et Inférieure des Ressorts de Voitures.)**

Frederick O. Rogers, Boston, Mass., U.S., 30th April, 1886; 5 years.

*Claim.*—The packing box F, together with the elastic packings C, D, E, and the metal bearing G, with curves in it and in the springs, and packings to match, all fastened compactly together by the bolts A, A, constructed substantially as shown and described and for the purposes set forth.

**No. 23,948. Hot Air Furnace.**

(Calorifère à Air.)

Thomas G. Wantless, Parkdale, Ont., 30th April, 1886; 5 years.

*Claim.*—1st. In a warm air furnace, constructed as described, a return flue radiator B with inner flue b<sub>1</sub> and outer flue b<sub>2</sub>, and the division plate b<sub>3</sub> which separates the same, substantially as set forth. 2nd. The combination, with the radiator B, the combination dome A, coal chute D, fire-pot C with ribs C<sub>1</sub>, ash pan E, and grate E<sub>1</sub>. 3rd. The combination, with the radiator B, the smoke pipe I, dust pipe F with damper J, the fresh air opening G in casing I, the warm air pipes H and warm air chamber J. 4th. The radiator B constructed when desired without the division plate b<sub>3</sub>, and the smoke pipe I placed in the opposite side of the casing.

**No. 23,949. Compound for Treating Broom Corn. (Composition pour le Traitement de la Houque.)**

John A. Van Winkle, St. Joseph, Mo., U.S., 30th April, 1886; 5 years.

*Claim.*—The herein-described compound for treating broom-corn, consisting of water alum, saltpetre, cider-vinegar and diamond dye (green) in substantially the proportions specified.

**No. 23,950. Musical Instrument String Holder or Peg. (Crochet et Cheville d'Instrument de Musique.)**

Robert A. Macready, New York, N.Y., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. A tail-piece for banjo, guitar or other instrument, having studs with split head in lieu of holes for holding the strings. 2nd. A tail-piece for banjo, guitar or other instrument, having slots cut to connect with holes for holding the strings. 3rd. Cutting slots in banjo or other instrument, pegs to connect with the holes for holding the strings.

**No. 23,951. Lowering Mechanism for Dentists' Chairs. (Mécanisme de Chaise de Dentiste.)**

Lovi Stuck, Hart, Mich., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. The combination, with uprights, of a tapered sliding bar, clamping plates at the sides of the sliding bar, screws acting on the clamping plates, and a lever to which the screws are secured, substantially as herein shown and described. 2nd. The combination, with uprights, of a tapered sliding bar, clamping plates at the sides of the bar, screws acting on the clamping plates, and a lever to which the screws are secured, and an arm on said lever, substantially as herein shown and described. 3rd. The combination, with an upright, of a tapered sliding bar, clamping plates at the side of the same, screws acting on the clamping plates, a lever to which the screws are fastened, and a spring connected with the lever, substantially as herein shown and described. 4th. The combination, with the uprights C, of the ring D on the same, which ring has nuts E, the screws F in the nuts, the lever G to which the screws are secured, the sliding bar A, the clamping plates K at the sides of the same held on the inner ends of the screws, and of the arms H and the screws J, substantially as herein shown and described.

**No. 23,952. Barrel Heater.**

(Etuve de Tonnelier.)

Charles W. Smith, Strathroy, Ont., 30th April, 1886; 5 years.

*Claim.*—1st. In a barrel-heater, a cylinder B, the walls whereof are constructed so as to taper from the bottom upwards, thereby equalizing the heat in the space between the cylinder and the barrel by the graduated thickness of the walls, substantially as shown and specified. 2nd. In a barrel-heater, a cylinder B constructed with thickened walls at the bottom and tapering upwards for a certain distance, and thence continued by sheet iron walls to the enclosed top, so as to retard the heat near the bottom and to allow of its finer radiation above, substantially as shown and specified. 3rd. In combination, with the cylinder B, of a barrel-heater, the concave centre-board or partition C constituting a flue and cutting off only a small portion of the heating space of cylinder while allowing of the free exit of the smoke, substantially as shown and specified.

**No. 23,953. Sash Balance.**

(Contre-poids de Croisée.)

Isidoro Hamel, John Cadioux and Philias Bélanger, New York, N.Y., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. In a window provided with vertically sliding sash, the sash-cord B attached to the sash passing through the jamb C of the window-frame, at a point in said jamb covered by the sash, thence up behind said jamb over the top pulley D and down to the weight E, substantially as herein shown and described. 2nd. The combination of a vertically sliding window sash with the sheaves b and b<sub>1</sub>, placed in the jamb C and arranged to direct the sash cord from the groove a in the sash stile through the jamb C, substantially as and for the purpose specified.

**No. 23,954. Rotary Envelope Machine.**

(Machine Rotatoire à Enveloppes.)

John Macfarlane, Montreal, Que., (assignee of Sidney A. Grant, Springfield, Mass., U.S.) 30th April, 1886; 5 years.

*Claim.*—1st. In a rotary envelope-machine, as means for feeding the blank-table outwardly towards the pickers, and for holding said table and the blanks thereon against the action of the latter, the combination, with the blank table 7, of a post 3 connected by one end to said table, and having its opposite end entering a socket in the frame 4, a spring clamp 11 fixed on the latter and surrounding said post, a sliding bar 12 having an endwise movement on frame 4 against and from one side of said clamp, and a cam-strip on the frame of the machine with which the outer end of said sliding bar engages, substantially as set forth. 2nd. As means for limiting the outward movement from frame 4, of the blank-table and the pile of blanks thereon, a blank retainer 14, and means, substantially as described, for swinging the latter over and off from the pile of blanks while the latter is being rotated opposite the picker devices, combined and operating substantially as set forth. 3rd. In combination, the blank-table 7, having together with the blanks thereon, a free outward movement from frame 4, the crank-shaft 17 having arm 16 thereon, the blank-retainer 14 secured on the latter, and a suitable cam for the engagement therewith, of the crank-arm on said shaft 17, whereby the blank-retainer is given a vibratory motion over the pile of blanks during the rotation of said frame, substantially as set forth. 4th. In combination, the pickers 34, having a rotary motion with frame 5 opposite and in conjunction with the blank-table 7 a spring-arm 23 secured at the edge of the latter and having a curved free end for engagement with said picker, a spring-hook 24 having its free end projecting through said arm, and the spring-hook 22, substantially as set forth. 5th. The rotating frame 5, a picker-box located between suitable supporting posts projecting from the side of said frame, and having a partly covered face and open ends, and having across one end thereof the curved strip 28, the vibratory arm 30

having the curved strip 29 thereon, and means, substantially as described, for swinging the end of said arm against and from the end of said box while the latter with frame 4 is rotated, combined and operating substantially as set forth. 6th. The combination, with the picker-box, of the pickers 31, one on each side of the latter, the bars 35 to which said pickers are attached, the frame 2 having a cam-groove therein with which the ends of said bars engage, whereby the pickers are given a reciprocating motion by the sides of said bar, substantially as set forth. 7th. In combination, the picker-box, the pickers 31 and the lever 37 pivoted on the side of said box, and means, substantially as described, for imparting a vibratory motion to said lever while the frame 5 and the picker box rotate, substantially as set forth. 8th. In combination, the picker-box having the curved strip 29 across one end, the arm 36 having the curved strip 29 thereon, and the creaser shaft 40 having thereon the cresasers 41 to rotate in engagement with said strips 28 and 29, substantially as set forth. 9th. In combination, the rotating frames 5 and 6, the picker-box, the vibratory arm 30, means, substantially as described, for swinging the latter away from the end of said box, and the folding wing 45 swinging into the open end of the latter under the envelope blank thereon and seizing the blank, substantially as set forth. 10th. In combination, the rotating frame 6, the plate 43 supported on the latter, the end-flap folding-wings 45 and 46, the back-flap folding-wing having the adjustable extension 49 thereon, the eccentric seal-flap folding shaft 48 rolling over the edge of said extension, and means, substantially as described, for imparting vibratory motions to said wings, and a reciprocating rotary motion to said shaft, substantially as set forth. 11th. In combination, the rotating frame 6, the plate 43, the end-flap folding-wings 45 and 46, the back-flap folding-wing having the adjustable extension 49 thereon, the eccentric seal-flap folding shaft 48 rolling over the edge of said extension, the pins 53 extending over the shaft of one of the end-flap folding wings, and means, substantially as described, for imparting a reciprocating endwise motion to said pins and vibratory motions to said wings, and a reciprocating rotary motion to said shaft substantially as set forth. 12th. In combination, the back-flap folding-wing 47, having the adjustable extension 49 thereon; and the eccentric seal-flap folding shaft 48, and means, substantially as described, for imparting a vibratory motion to said folding wing and a reciprocating rotary motion to said shaft, substantially as set forth. 13th. In combination, the rotary frame 4, the blank-table 7, the posts 9 standing opposite the edges of said table, and having the spring-actuated guide-strips 10 therein bearing against the edge of said table, substantially as set forth. 14th. In combination, the drying chain 61, the receiving bars 63 the hook-bars 64 engaging with the upper edge of the envelope or said chain, and means, substantially as described, for imparting a reciprocating endwise motion to said hook-bars, substantially as set forth. 15th. In combination, the gum roll 85, the pickers 34, the gumming roll 86 supported on a rock-shaft 90, and means, substantially as described, for imparting a vibratory motion to said gumming shaft between said roll 86 and the pickers, substantially as described.

### No. 23,955. Head Section for Beds, Cots, etc. (*Section de Tête de Lit, Hamac, etc.*)

Henry Miller, (assignee of Hermann Winter,) New York, N.Y., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. The combination, with a supporting-frame, and an adjustable head-rest frame secured to said supporting frame, and provided with grooves or pillow frames, the opposite ends of which rest and slide within said grooves, substantially as set forth. 2nd. The combination, with a supporting-frame provided with ratchets, of a head-rest pivotally secured thereto, the said head-rest having two or more grooves on the inner faces thereof, and pillows adjustably secured therein, and means for securing the head-rest in elevated and lower adjustment. 3rd. The combination, with a supporting-frame provided with ratchets, of a head-rest pivotally secured thereto, the said-rest having two or more grooves on the inner faces thereof, and pillow-frames having springs on the ends thereof adapted to fit in said grooves and pawls secured to said head-rest for adjustably supporting the same, substantially as set forth. 4th. The combination, with a supporting-frame provided with ratchets, of a head-rest secured thereto, said head-rest having two or more grooves in its inner faces, and pillow-frames having semi-elliptical springs secured thereto, substantially as set forth.

### No. 23,956. Stamp Sticking Device.

(*Appareil pour Coller les Timbres.*)

James T. Hyde, New York, N.Y., (assignee of Elbert A. Corbin, Philadelphia, Pa., U.S., 30th April, 1886; 5 years.

*Claim.*—1st. The herein-described stamp-sticking device, comprising a frame, a handle, a stamp receptacle, and a moistening pad, substantially as described. 2nd. The combination of the frame B connected to a handle, and provided with a case or holder for a moistening pad, with a sliding stamp receptacle and plunger, substantially as described. 3rd. The combination, with a frame, and a hopper-shaped receptacle containing absorbent material, of a sliding stamp receptacle, a plunger, and a spring, substantially as described. 4th. The stamp receptacle having corner clips for retaining the stamps in place, substantially as described. 5th. The stamp receptacle comprising the metal sides, the corner clips, and the sliding cover, substantially as described. 6th. The moistening tray E having an opening to receive the pad C, of the stamp-sticking device. 7th. The moistening tray E having a hinged lid and flanged opening, in combination with the stamp-sticking device having moistening pad C, substantially as described.

### No. 23,957. Farm Fence. (*Clôture de Champ.*)

William F. Shedd, Grand Rapids, Mich., 30th April, 1886; 5 years.

*Claim.*—The combination, in a fence, of cross stakes A, A and A, with riders C, C and rails D, D held in creches of same by wire loops a and e, together with horizontal rails E, E and E, and diagonal brace B, the latter having its upper end enclosed in loop b and lower end resting upon the ground between the pairs of cross stakes, together with wire f, said wire being fastened at lower end of brace and upper end fastened at a point above rail D, the lower end of brace being confined between wires f and brace B, said rails being placed upon loops h, A and g, which loops encircle brace and wire between the rails at regular distances and forming rests for the same, the whole being united substantially as and for the purposes heretofore set forth.

### No. 23,958. Combination of a Piano Forte, Harmonium and Parlor Organ. (*Combinaison de Piano Forte, Harmonium et Orgue de Salon.*)

Charles F. Cullum, London, Eng., 30th April, 1886; 5 years.

*Claim.*—1st. The combination, with a piano-forte, of the harmonium reservoir I arranged horizontally within the key frame D, and feeders T supported horizontally immediately below the key-frame D, the feeders operated by pedals K<sub>1</sub> and cords S, and the valve board E and reed-pan F having reeds F<sub>1</sub> arranged horizontally above the key board, and rods U operating the valves by the keys C of the piano-forte, as set forth. 2nd. The combination, with a pianoforte, of the organ exhaust bellows T, and reservoirs S arranged vertically inside the back Z and operated by pedals K<sub>1</sub> and cords G, bellows board O and cavity board P containing reeds P<sub>1</sub>, arranged horizontally within the top of the piano-forte, and rods H operating the valves by the keys C of the pianoforte, as set forth. 3rd. In a combined pianoforte, harmonium and parlor organ, the valve board E, reed pan F having reeds F<sub>1</sub> arranged horizontally above the keys C, of the pianoforte, the reservoir I and feeders S arranged horizontally immediately below the key frame D, the reservoirs S and exhaust bellows T arranged vertically within the back of the pianoforte, and the bellows board O containing the cavity board P, provided with a series of reeds P<sub>1</sub> horizontally below the top of the pianoforte, the keys of the pianoforte common to both organ and harmonium through the intervention of rods G and R, and both instruments having pedals K<sub>1</sub>, K<sub>2</sub>, whereby either or both organ and harmonium may be sounded when the piano is played by working the pedals K<sub>1</sub>, K<sub>2</sub> separately or uniformly together, as set forth.

### No. 23,959. Fire-Extinguishing Apparatus. (*Appareil pour Eteindre les Incendies.*)

Ernst G. Reuss and Roughsedge Wallwork, Manchester, Eng., 30th April, 1886; 5 years.

*Claim.*—1st. A portable fire-extinguishing apparatus attachable to any water supply under pressure, the vessel a of such apparatus having a removable nozzle or jet i, whereby the apparatus can be charged and recharged with dry chemicals, and a supply of water impregnated with carbonic acid gas or stream of chemicalized water instantly produced, substantially as set forth. 2nd. The use and formation of a cylinder a, cast in one piece without joints, and provided with a handle h, as illustrated in the annexed drawing, for the purpose of extinguishing fire. 3rd. The perforated vessel or cage g charged with dry chemicals, in combination with the outer vessel a, substantially as and for the purpose heretofore set forth. 4th. The combination of the perforated plate, gauze r, with the removable nozzle or jet i, substantially as and for the purpose heretofore set forth.

### No. 23,960. Car-Coupling. (*Attelage de Chars.*)

Jeremiah Mullen, Rochester, Ont., 30th April, 1886; 5 years.

*Claim.*—1st. The combination, in the throated draw-bar B, wide mouthed draw-head C, coupling pin D, sliding block F, levers F<sub>1</sub>, frame G, cross-bar H H: A connected with the frame G. 2nd. In a car-coupling, a sliding block F, in combination with levers F<sub>1</sub>, pivoted thereto by a pin f working in a slot of the draw-bar. 3rd. The combination of the cross-bar H, lever arms h and downwardly bent arm H: connected to the coupling pin D, all substantially as shown and described and as and for the purpose set forth.

### No. 23,961. Trunk Strap. (*Courroie de Coffre.*)

William J. Muncey, Cannon, Col., U.S., 30th April, 1886; 5 years.

*Claim.*—The trunk strap described, consisting of the straps C, C<sub>1</sub>, carrying rings at their ends, thongs of flexible leather secured to the rings at one end of the strap, and the guide strap D connecting the said straps C, C<sub>1</sub>, substantially as set forth.

### No. 23,962. Manufacture of Resinous Compounds. (*Fabrication de Compositions Résineuses.*)

Jerome B. Melville, Lowell, Mass., U.S., 30th April, 1886; 5 years.

*Claim.*—The manufacture of resinous compounds by treating rosin or other resinous substances, with oxide of zinc or other metallic oxides, substantially as and for the purpose above set forth.

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

583. W. N. BARRIE and B. D. PRENTICE, 2nd 5 years of No. 12,684, from the 26th day of April, 1886. Improvements on Creamers, 1st April, 1886.
584. T. GRAY, 2nd 5 years of No. 20,324, from the 4th day of April, 1886. Improvements in Spring Tooth Harrow, 3rd April, 1886.
585. C. HEINZERLING, 2nd 5 years of No. 12,629, from the 13th day of April, 1886. Improvements on the Art or Process of Converting Skins or Hides into Leather, 9th April, 1886.
586. A. J. NELLIS, 2nd 5 years of No. 12,626, from the 13th day of April, 1886. Improvements on Spring Teeth for Harrows and Cultivators, 9th April, 1886.
587. A. L. BURKE, 2nd 5 years of No. 13,715, from the 18th day of November, 1886. Improvements on Washing Machines, 10th April, 1886.
588. E. W. JEWETT and E. MICHAEL, 2nd 5 years of No. 14,966, from the 14th day of June, 1887. Improvements on Barrel Staves, 13th April, 1886.
589. W. B. MOORE and T. K. JENKINS, (assignees), 2nd 5 years of No. 12,642, from the 18th day of April, 1886. Improvements on Locomotive Ash Pans, 16th April, 1886.
590. THE EATON, COLE and BURNHAM CO., (assignee) 3rd 5 years of No. 6,046, from the 1st day of May, 1886. Improvements on Hose and Pipe Nozzles for Extinguishing Fires and other Purposes, 16th April, 1886.
591. E. S. PRATT, 2nd 5 years of No. 12,655, from the 20th day of April, 1886. Improvements in the Manufacture of Boots and Shoes, 17th April, 1886.
592. W. H. PARKHAM, 2nd 5 years of No. 12,716, from the 29th day of April, 1886. Improvements on Stove Pipe Drums, 19th April, 1886.
593. J. N. DOUGLAS, 2nd 5 years of No. 12,657, from the 20th day of April, 1886. Improvements in Burners, 20th April 1886.
594. A. W. BURKE, 2nd 5 years of No. 14,369, (reissue of No. 12,623), from the 19th day of May, 1886. Improvements in Washing Machines, 20th April, 1886.
595. H. ARTHUR, 2nd 5 years of No. 23,783, from the 8th day of April, 1886. Improvement in Milk Coolers, 27th April, 1885.
596. J. BEMIS, 2nd 5 years of No. 12,635, from the 26th day of April, 1886. Medical Compound, 21st April, 1886.
597. J. FERGUSON, 2nd 5 years of No. 12,677, from the 23rd day of April, 1886. Improvements on Thrashing Machines, 22nd April, 1886.
598. W. RENNIE, 2nd 5 years of No. 12,776, from the 13th day of May, 1886. Improvements on Ditching Machines, 24th April, 1886.
599. J. SENDALL, J. S. REYNOLDS and J. B. LANG, 2nd 5 years of No. 12,683, from the 26th day of April, 1886. Improvements in Barley Bearders, 24th April, 1886.
600. THE ABINGTON TACK AND MACHINE ASSOCIATION, 2nd 5 years of No. 13,090, from the 12th day of July, 1886. Improvements on the Method of Finishing the Heads of Tacks, Nails and Rivets, 23th April, 1886.
601. C. LOVELL, 2nd 5 years of No. 23,578, from the 9th day of March, 1891. Improvements in Machines for Making Wire Nails, 27th April, 1886.
602. C. LOVELL, 2nd 5 years of No. 23,579, from the 9th day of March, 1891. Improvements in Machines for Making Wire Nails, 27th April, 1886.
603. J. CASTLE, 2nd and 3rd 5 years of No. 22,633, from the 14th day of October, 1890. Combined Bill Distributing and Advertising Machine, 27th April, 1886.
604. W. S. HUNTER and F. FULLER, 2nd 5 years of No. 12,732, from the 3rd day of May, 1886. Improvements on Stock Cars, 28th April, 1886.
605. J. L. CLARK and J. STANFIELD, 2nd 5 years of No. 9,573, from the 23rd day of January, 1886. Improvements on Floating Docks, 23th April 1886.
606. A. B. HARRIS, (assignee) 2nd 5 years of No. 12,722, from the 3rd day of May, 1886. Improvements in Fittings for Combined Sleeping and Drawing Room Cars, 29th April, 1886.
607. THE SAWYER LEATHER MACHINE CO., (assignee) 2nd 5 years of No. 12,927, from the 9th day of June, 1886. Improvements in Measuring Machines, 29th April, 1886.
608. J. A. HOUSE, 2nd and 3rd 5 years of No. 13,011, from the 16th day of June, 1886. Improvements on Molds and Apparatus for Manufacturing Stiffeners for Corsets, etc., 29th April, 1886.
609. I. De V. WARNER and J. C. TALLMAN, 2nd 5 years of No. 13,181, from the 28th day of July, 1886. Improvements in Corsets and Stiffeners therefor, 29th April, 1886.

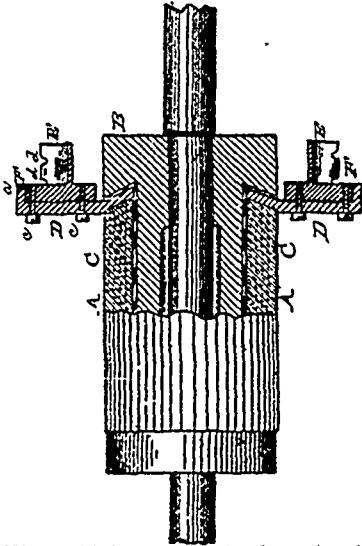
# CANADIAN PATENT OFFICE RECORD.

## ILLUSTRATIONS.

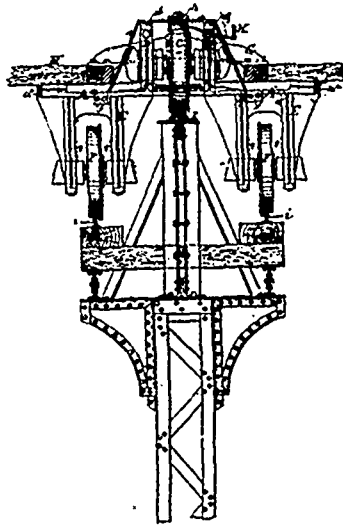
Vol. XIV.

MAY, 1886.

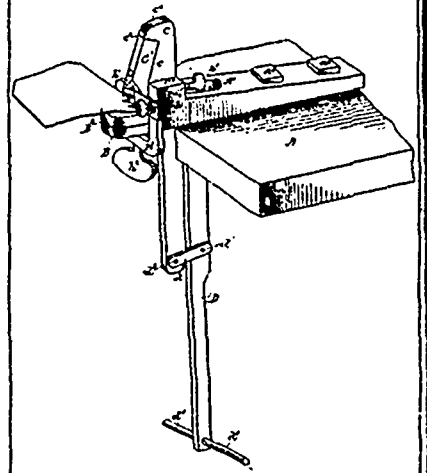
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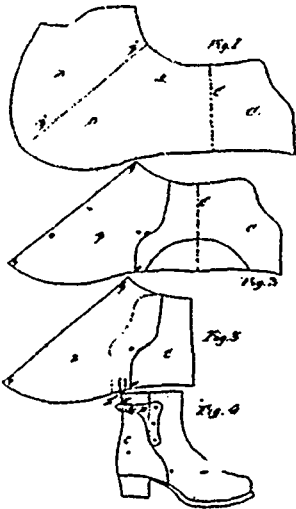
23738 Bachelior's Commutator Connection for Dynamo Electric Machines.



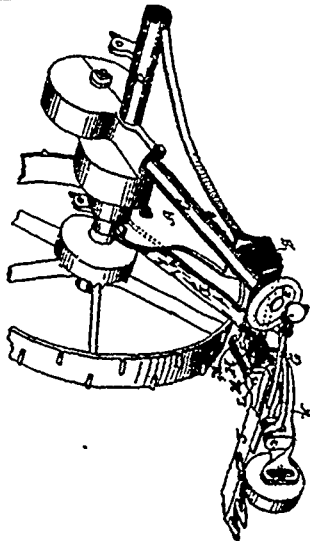
23739 Bartholomew's Truck for Elevated Railways.



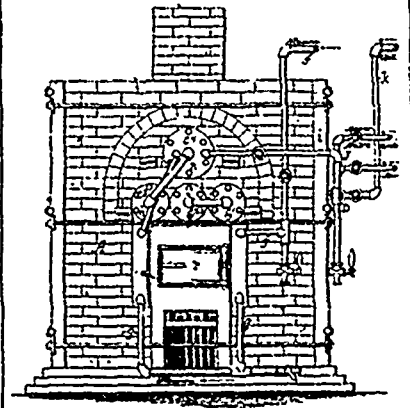
23740 Leyboit's Saw Punching and Setting Machine.



23741 Kelly's Shoe.

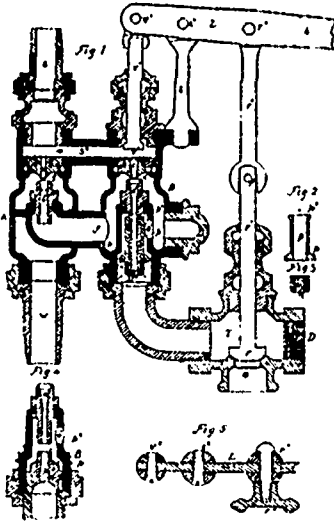


23742 Leonard's Mowing Machine.

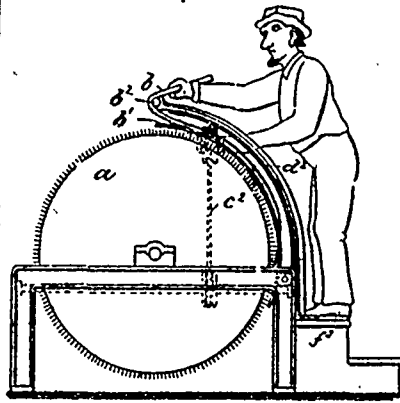


23743 Nowell's Apparatus for Generating Gas

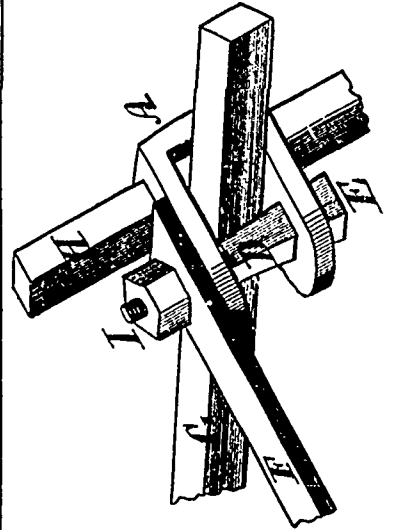




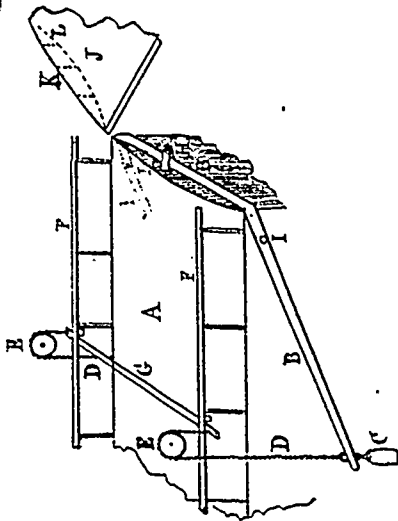
23744 McShane's Injector



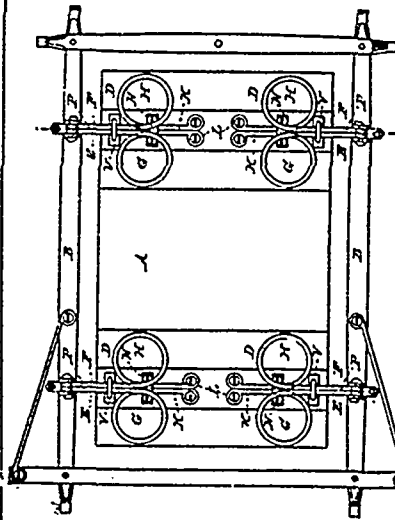
23745 Stephens' Machinery for Cleaning and Separating Pulpy Matters from Leaves, etc.



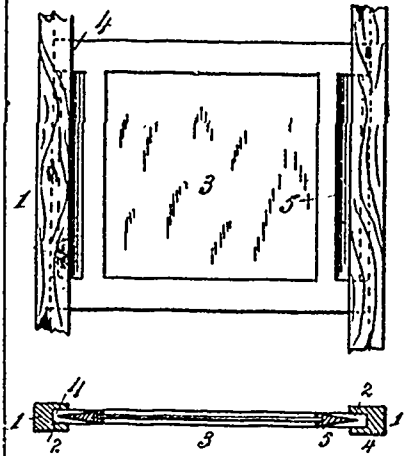
23746 McCreath's Clip for Fastening Teeth on Harrows, etc.



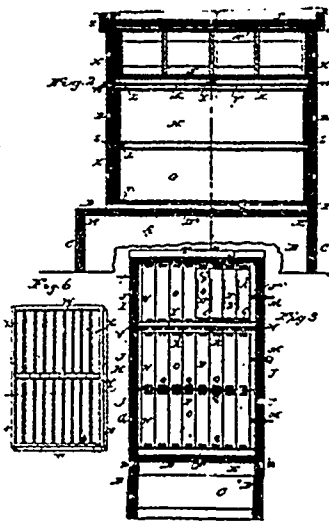
23747 Marcheter's Safety Gate for Swing Bridges.



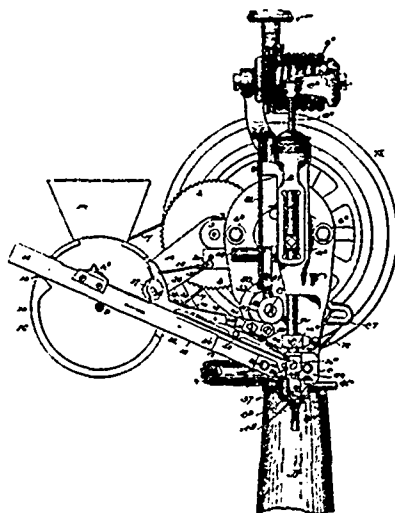
23748 Wagner's Vehicle Spring.



23749 Mann's Construction of State Rooms for Cars, etc.



23751 Heddon's Bee Hive.



23753 Goddu's Nailing Machine.

Fig. 1.

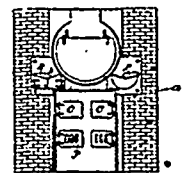
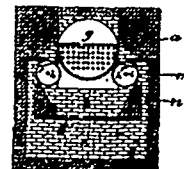
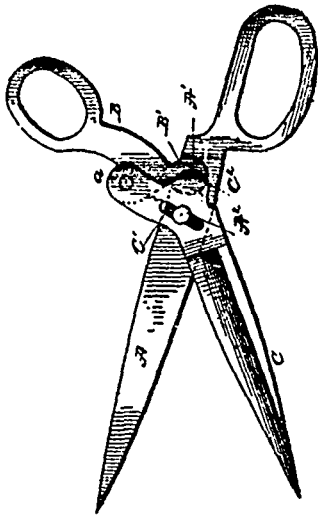


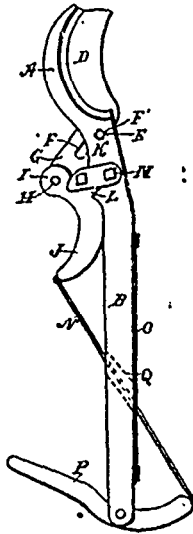
Fig. 2.



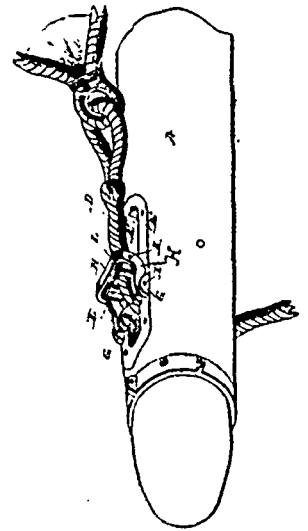
23754 Clark's Furnace.



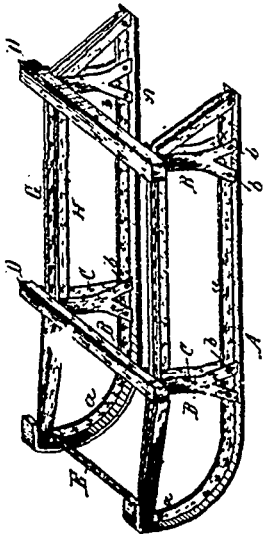
23755 Richard's Shears.



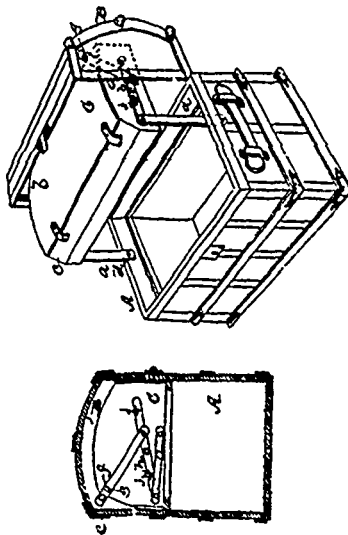
23758 Richard's Pruning Shears.



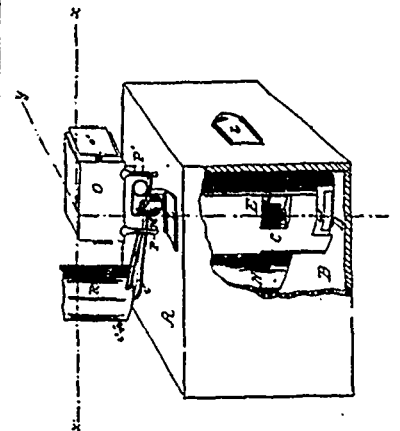
23757 Dyer's Chocks for the Rigging of Vessels.



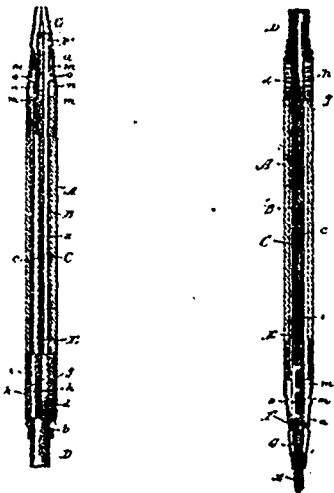
23759 Haslup's Sled.



23760 Frankel's Trunk.



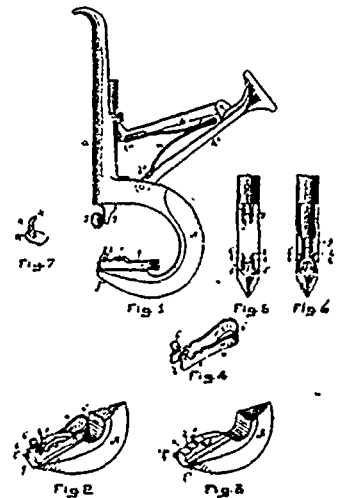
23761 Denslow's Heater.



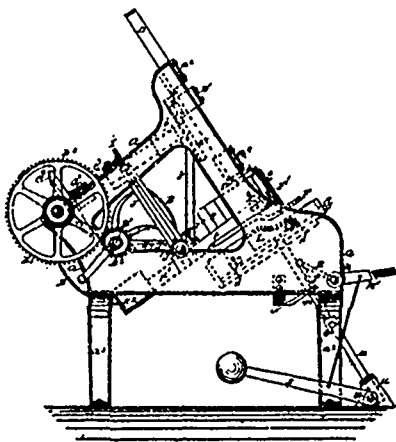
23762 Roman's Lead and Crayon Holder



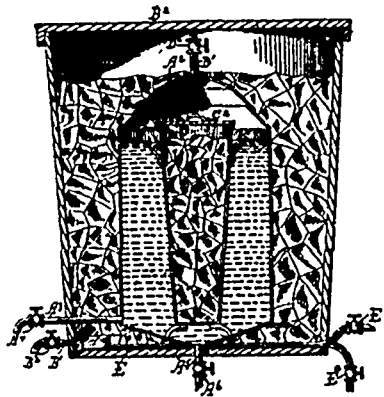
23763 Volght's Device for Projecting Marbles.



23764 English's Button Setting Instrument.



23765 Marshall's Machine for Crimping Leather.



23766 Told's Apparatus for Treating Essential Oils.

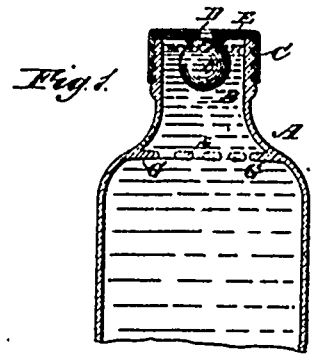
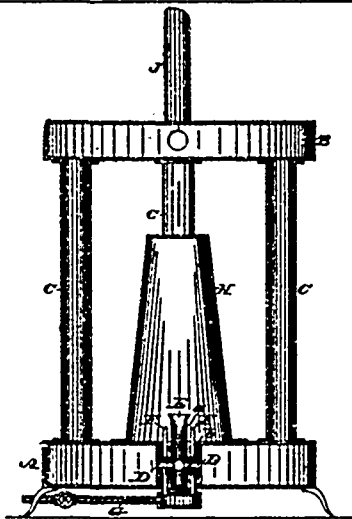


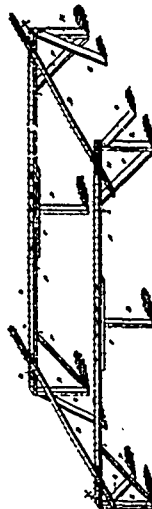
Fig. 2.



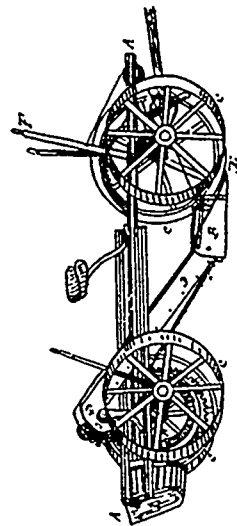
23767 Beardsley's Bottle Stopper.



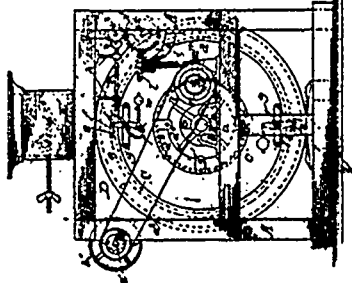
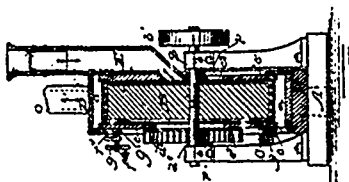
23768 Baker's Gas Stove.



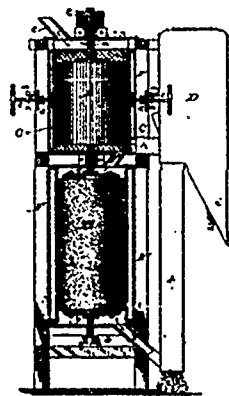
23769 Ptolemy's Drying Frame.



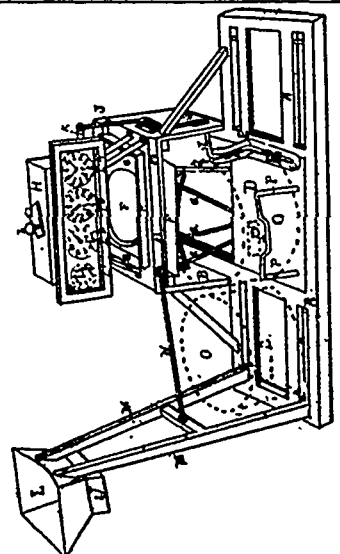
23770 Boyd's Machine for Tilo Ditching.



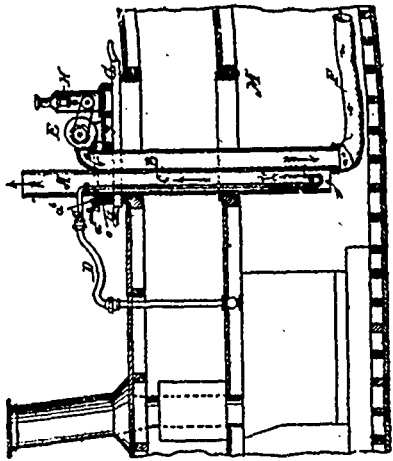
23771 Spitzer's Barley Machine.



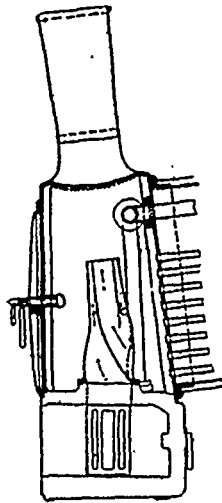
23772 Spitzer's Hulling machine.



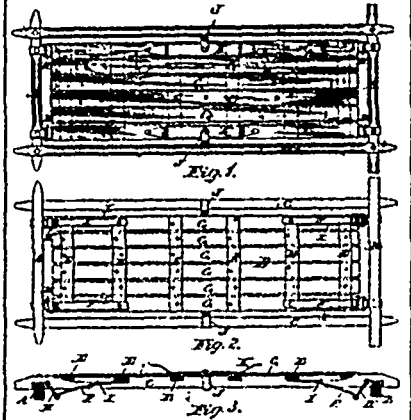
23773 Bollaro's Grain Tally.



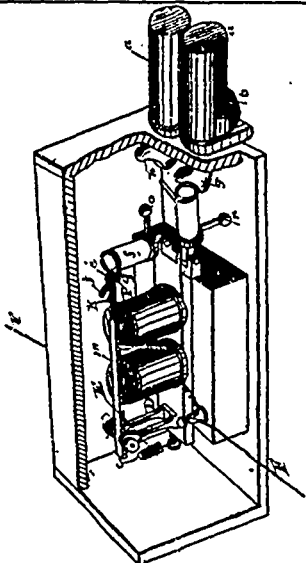
23774 Walsh's Ventilating Apparatus.



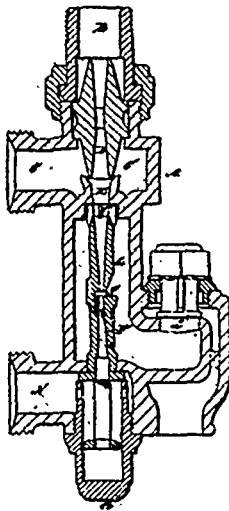
23775 Adam's Blast Pipe for Locomotives, etc.



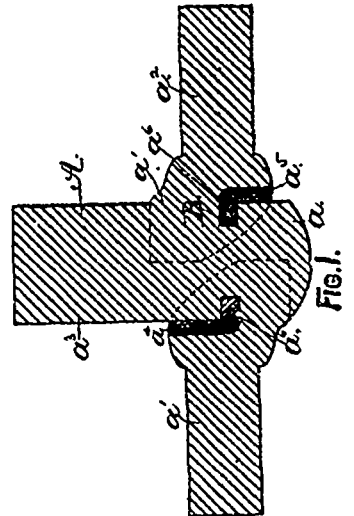
23776 Stone and Rhtcard's Spring Board Waggon.



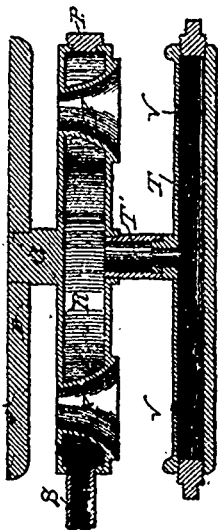
23778 Hand, Wright and Pocock's Electrical Signal Device.



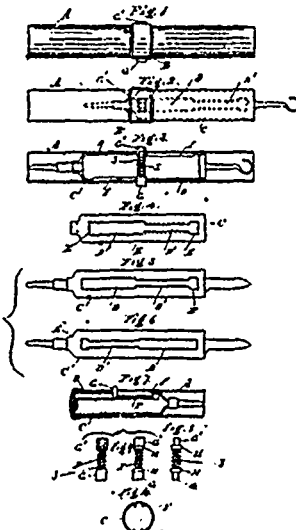
23779 Murdock's Injector.



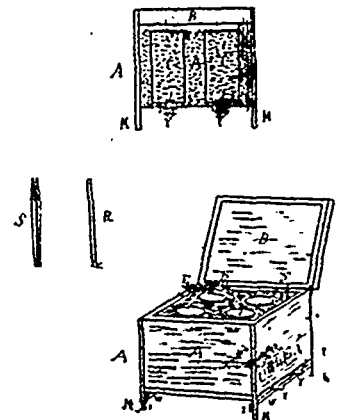
23780 Blessing's Apparatus for Making Dry Sand Corcs.



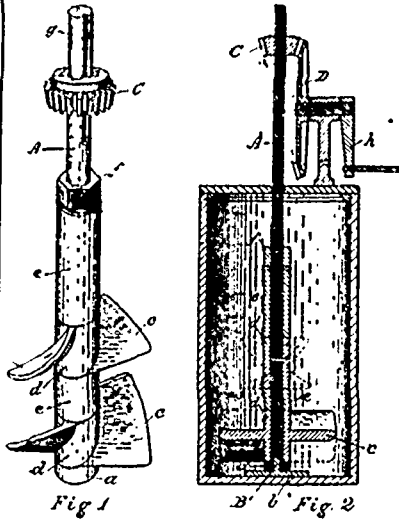
23781 Edwards' Oil Burner.



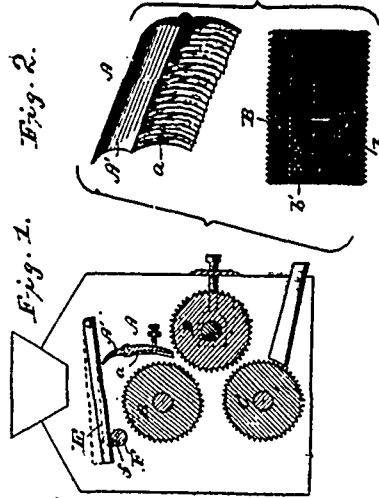
23782 Wood's Pencil and Cool Holder.



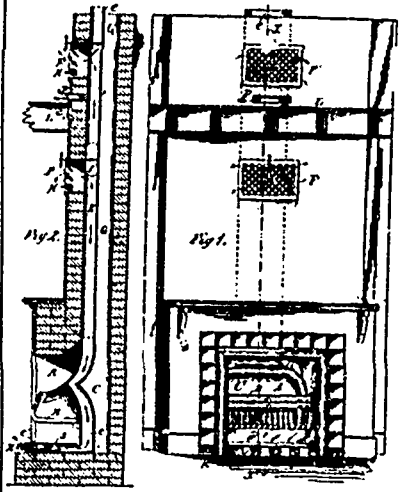
23783 Arthur's Milk Cooler



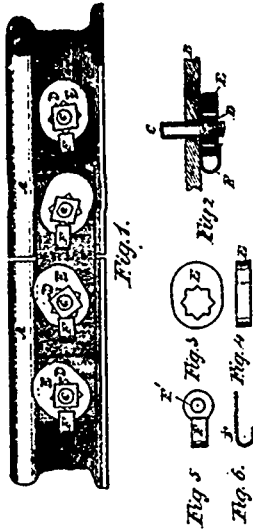
23784 Cassan's Churn.



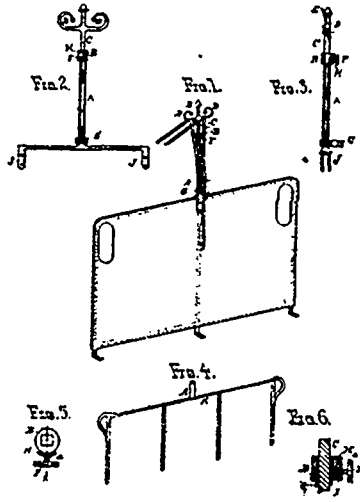
23785 Eynon's Grinding Mill.



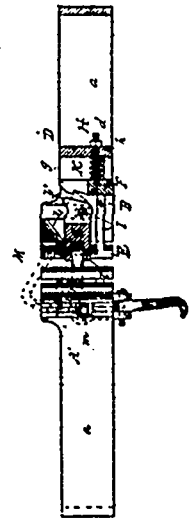
23786 Le Vin's Heating and Ventilating Apparatus.



23787 Webb's Nut Lock.



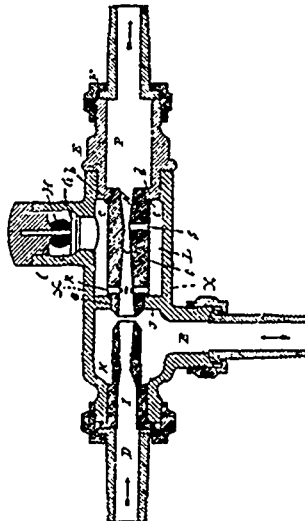
23788 Butler's Rein Holder.



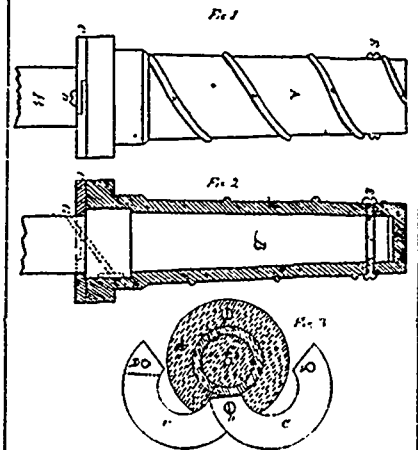
23789 Summers' Car Coupler.



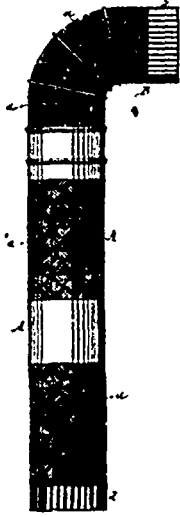
23790 Duern's Brooch and Flower Holder.



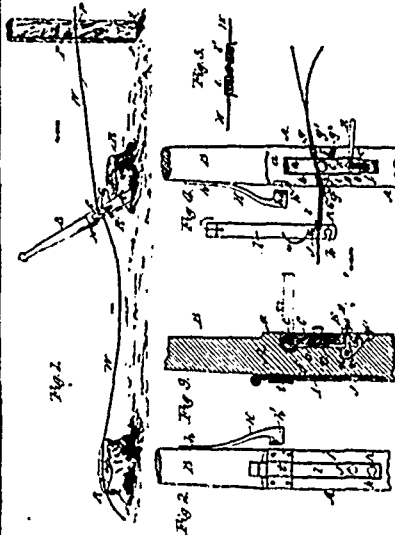
23791 Desmond's Injector.



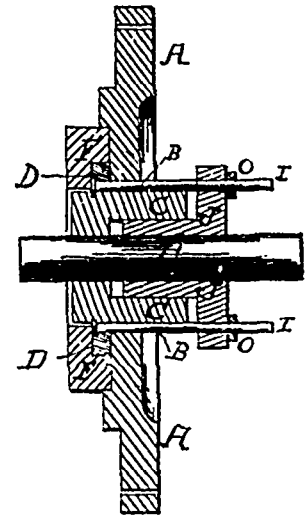
23792 Biats' Lubricator.



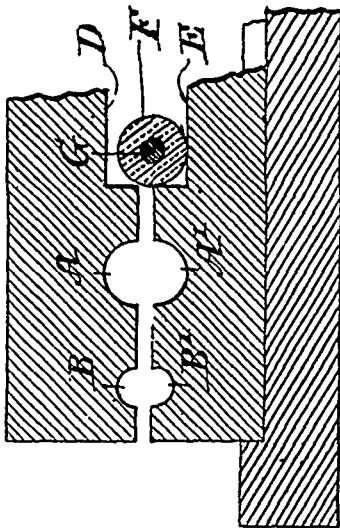
23793 Brooke's Stove Pipe and Elbow.



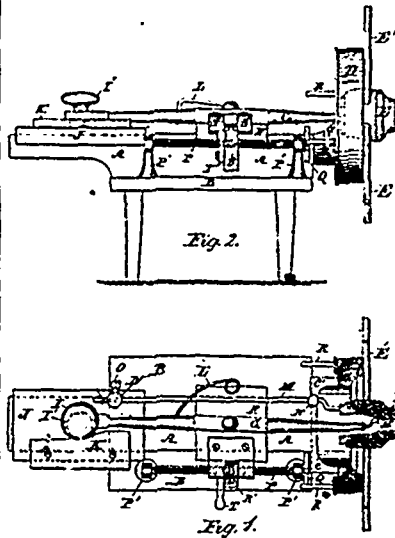
23794 Barron's Wire Fence Tool.



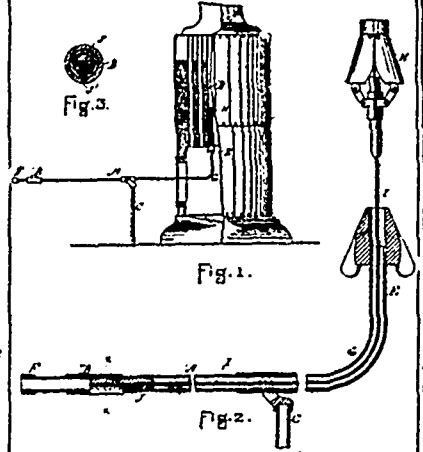
23795 Berry's Stuffing Box for Steam Engines.



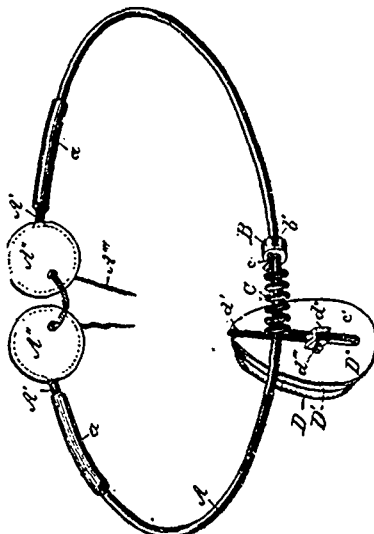
23796 Gillisple's Hollow Axle



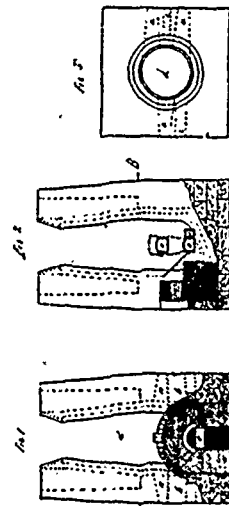
23797 Bechtel's Hub Boring Machine.



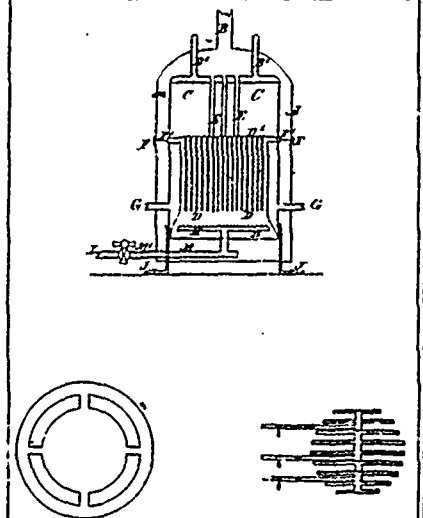
23798 Clark and Low's Boiler Tube Cleaner.



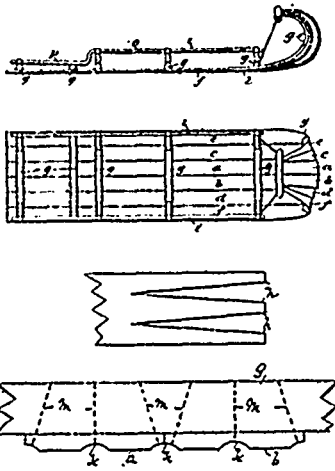
23799 Armstrong's Truss.



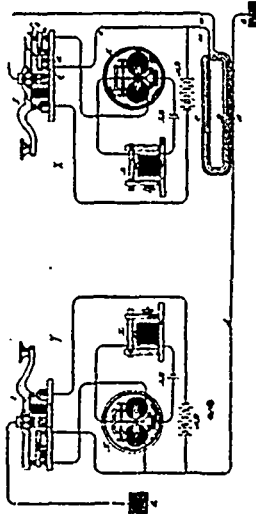
23800 McCulloch's Lime Kiln.



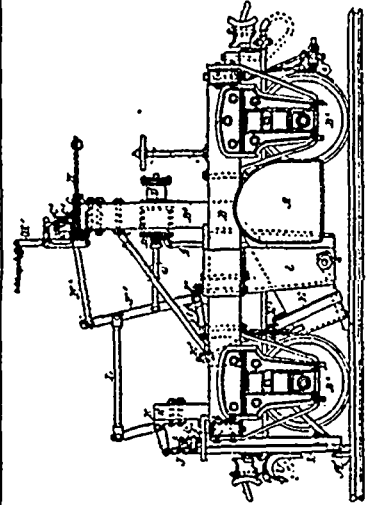
23801 Duquet's System of Heating Buildings by Gas.



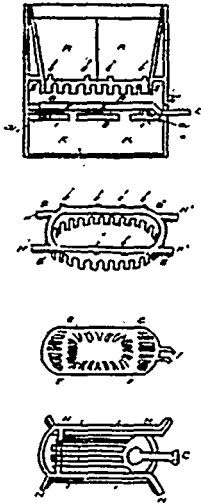
23802 Gontesse' Toboggan.



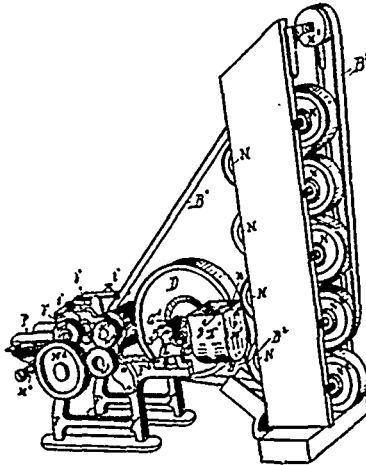
23803 Phelps' Communicating to and from Railway Vehicles by Electricity.



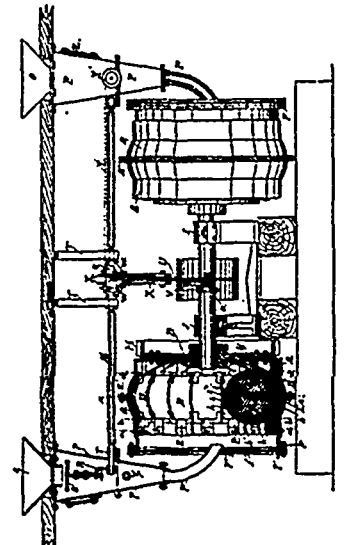
23804 Quinn's Railway Track Clearer.



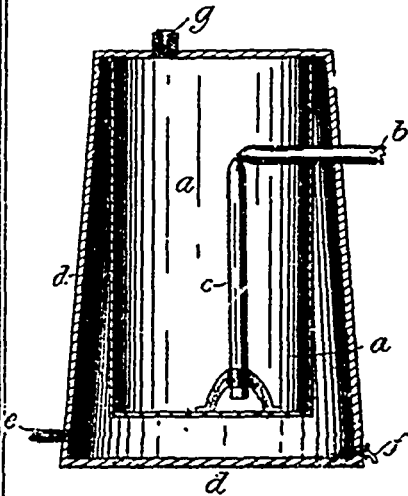
23805 Lark's Cook Stove.



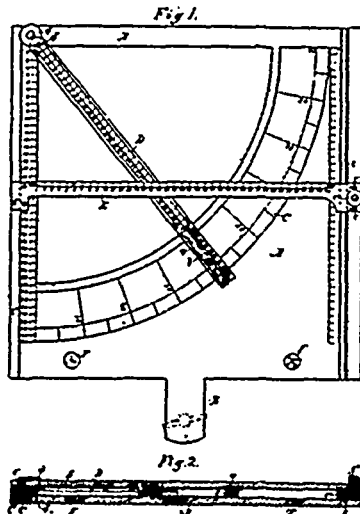
23806 Norris & Hagan's Machine for Making Matches.



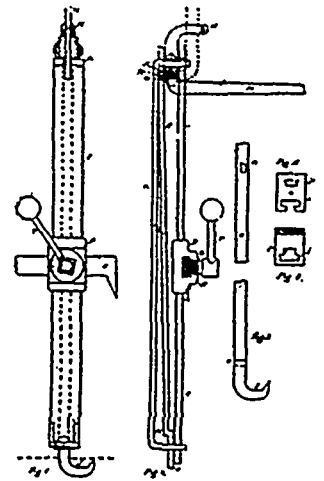
23807 Low's Machine for Crushing Quartz Rock.



23808 Hoard's Process of Oxidizing Linseed Oil, etc.



23809 Patterson's Traverse Table.



23810 Peck's Saw Mill Dog.

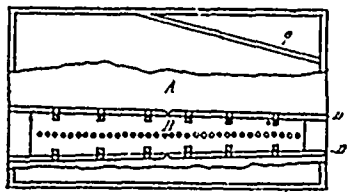


Fig. 3.



Fig. 5.

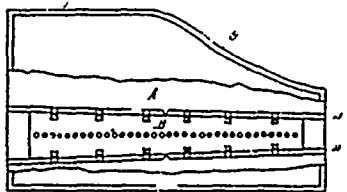
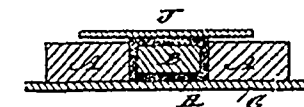
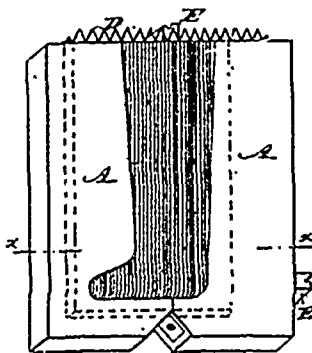
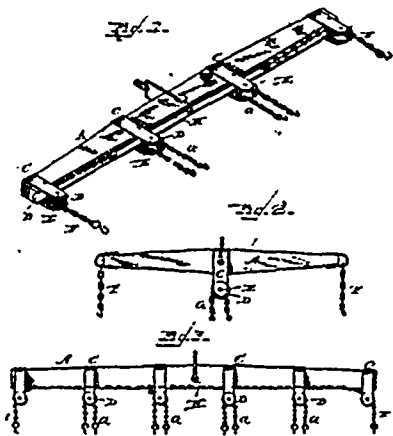


Fig. 4.

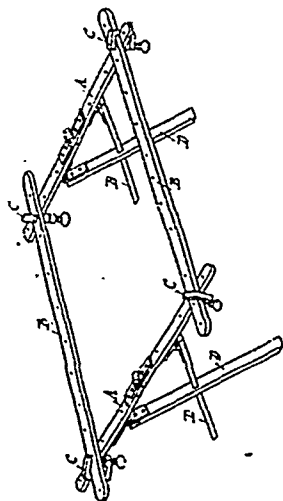
23311 Sicker's Organ Sounding Board.



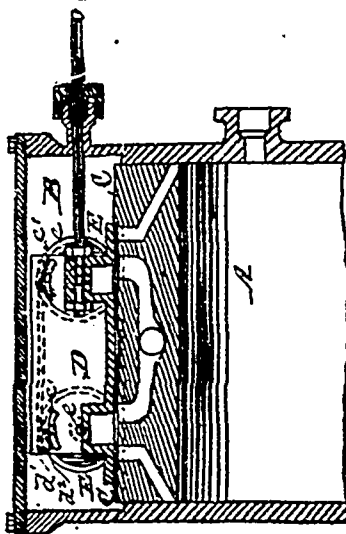
23312 Hyatt's Machine for Hardening Seamless Felt Boots, etc.



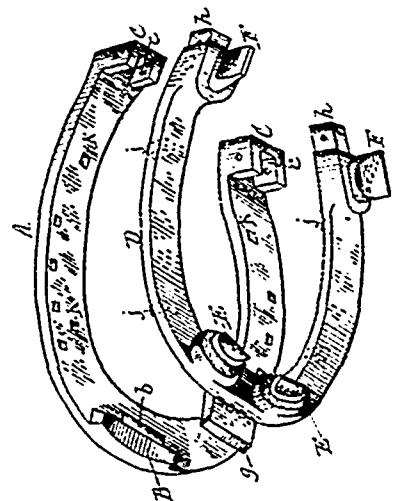
23313 Arnold's Draft Equalizer.



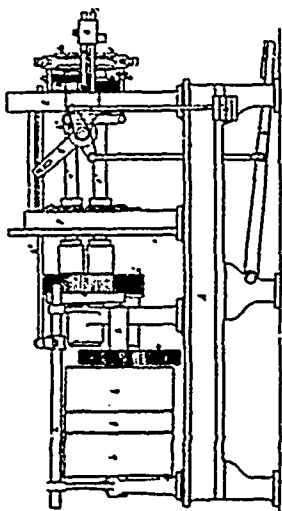
23314 Wilson's Quilting Frame.



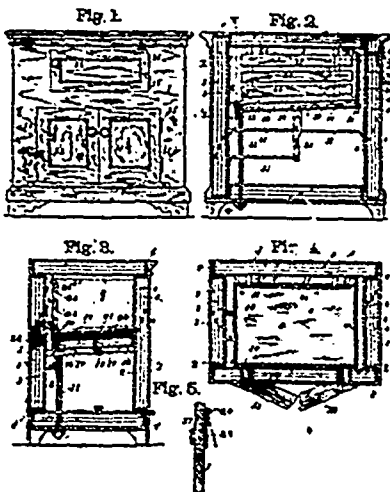
23315 Baker's Steam Engine Slide Valve.



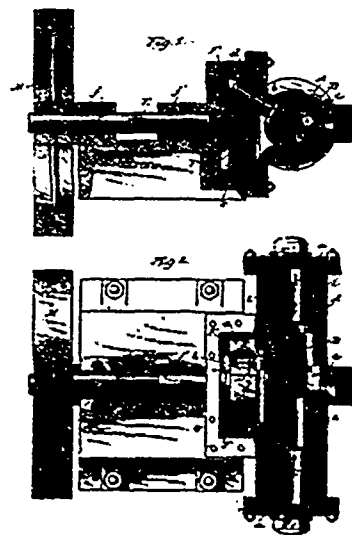
23316 Somerville's Horse Shoe.



23317 Fairbairn's Apparatus for Forging Screws.

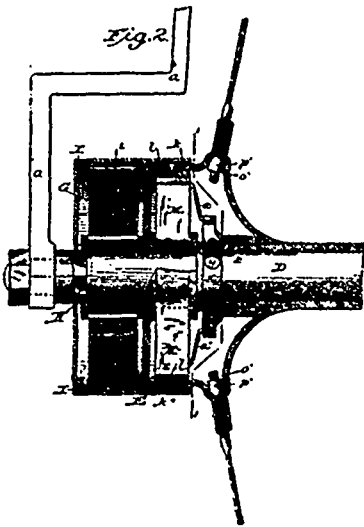


23318 Ross' Refrigerator.

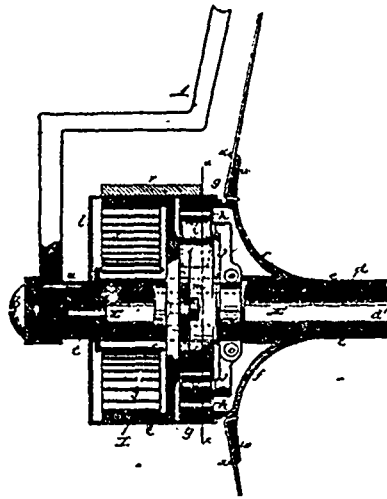


23319 Lane's Steam Engine.

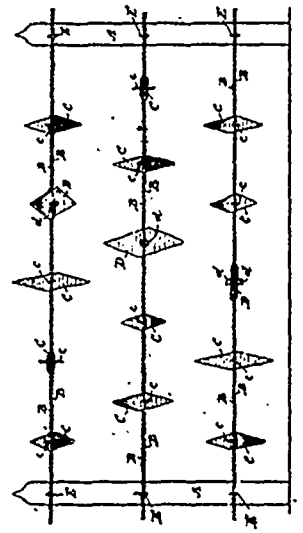




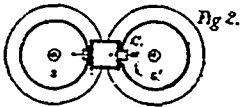
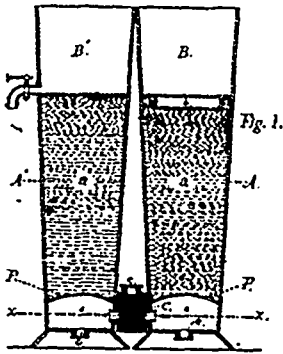
23820 Kelley's Bicycle and Tricycle.



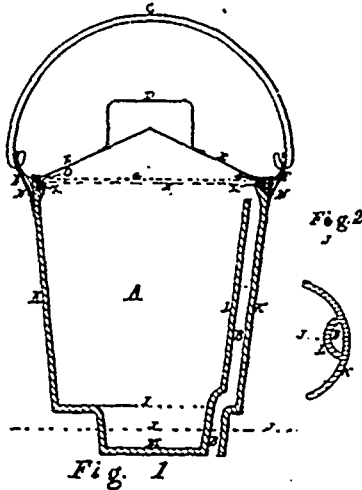
23821 Kelley's Bicycle and Tricycle.



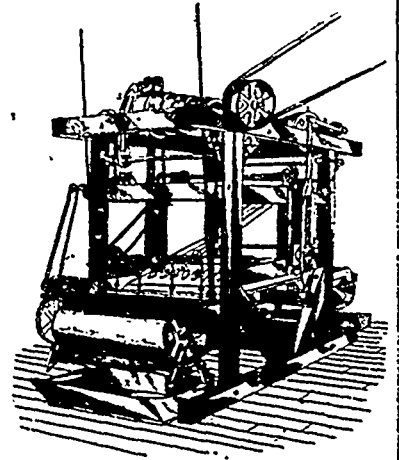
23822 Whelpley's Fence.



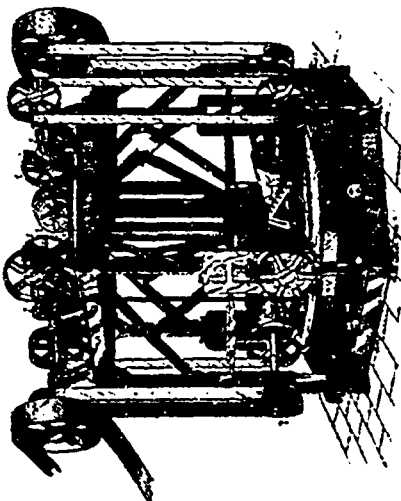
23823 LeBeau's Filter.



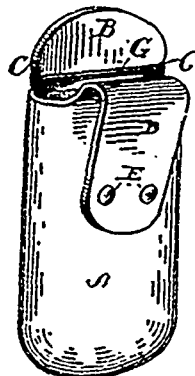
23824 Churchill's Stove Boiler.



23825 Koneman & Scoville's Ore Concentrator.



23826 Koneman & Scoville's Pulverizer.



23927 Cardell's Bouquet Holder.

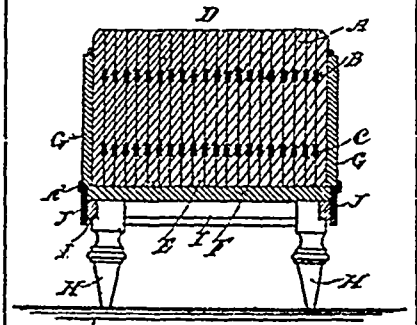


Fig. 2.

23829 Gratton's Butcher's Block.

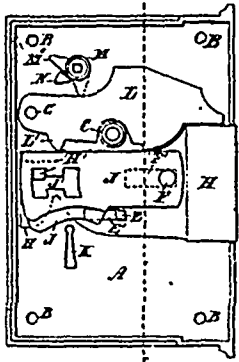


Fig. 1.

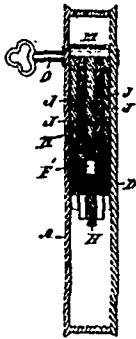
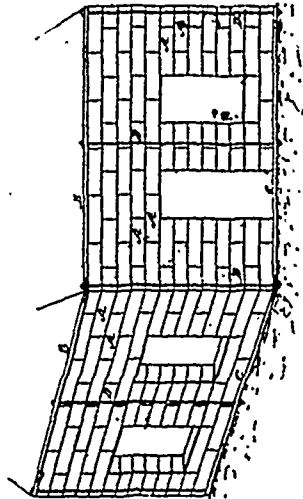
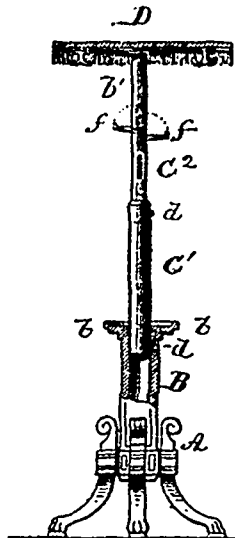


Fig. 2.

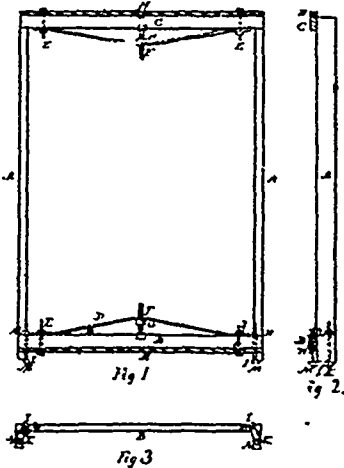
23830 Underwood's Door Lock.



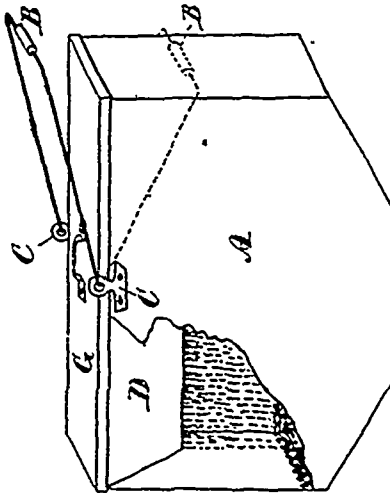
23831 Orr's Method of Constructing the Walls of Buildings, etc.



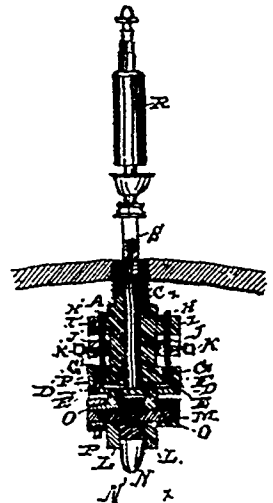
23832 Lochner's Combined Table and Clothes Rack.



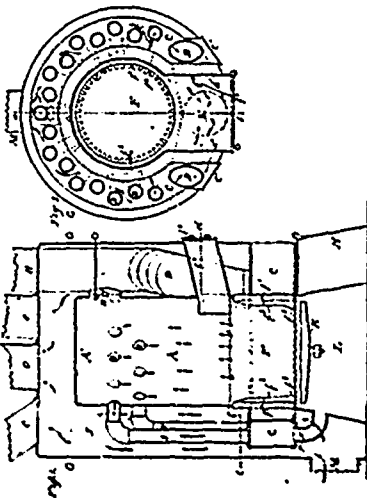
23833 Knowlton's Bed Bottom Frame.



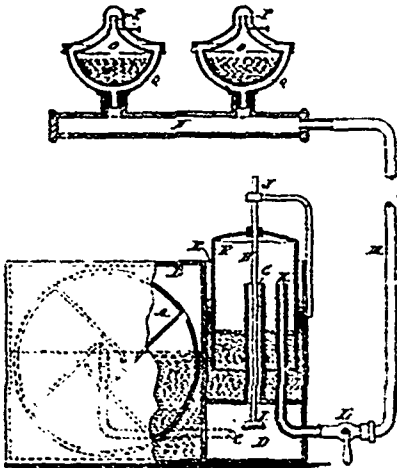
23834 Warmhurton's Cinder Sifter.



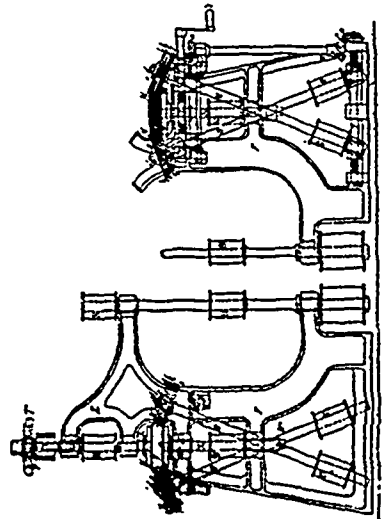
23835 Brown's Steam and Water Indicator.



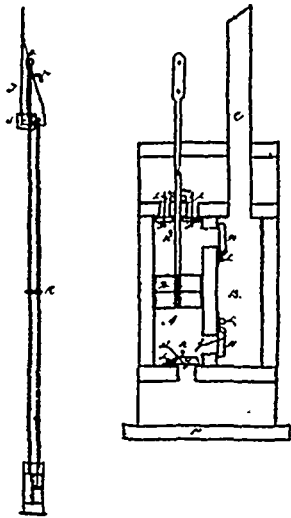
23836 Wanless' Warm Air Furnace.



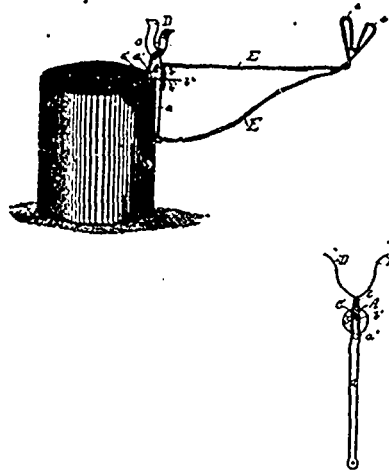
23837 Ross & McVoy's Apparatus for Supplying Air to Oil Lamps.



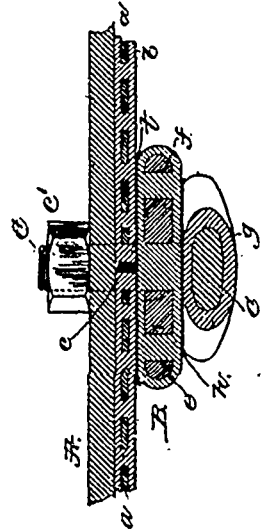
23838 Burris & Lovett's Machine for Dressing Lumber.



23839 Carr's Double Acting Pump.



23840 Campbell's Palette Knife and Brush Support.



23841 Springer's Pulp Digester.



Fig. 1.

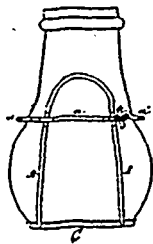
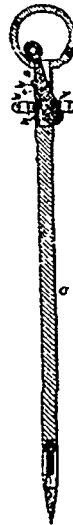
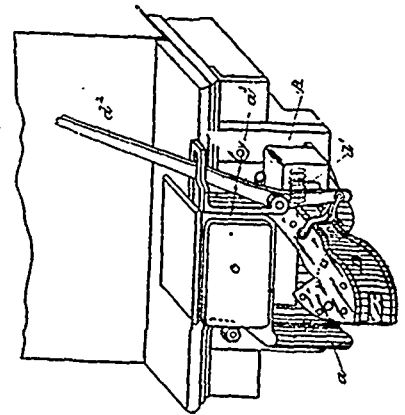


Fig. 2.

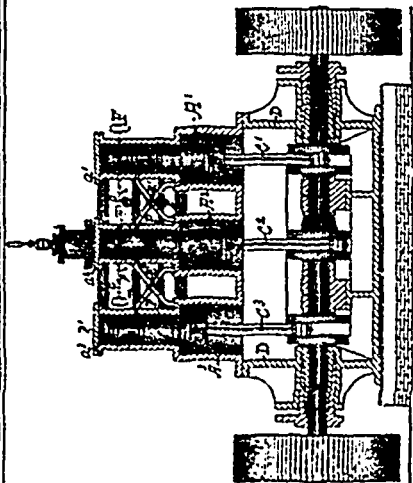
23842 Burn's Globe Guard for Tabular Lanterns.



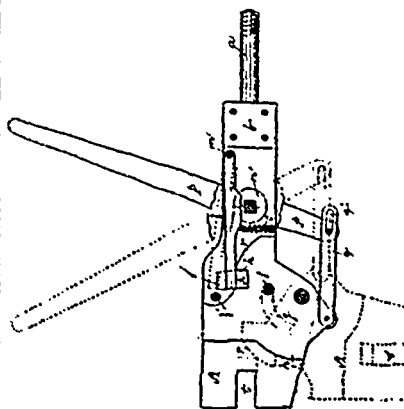
23843 Ney's Hay Fork.



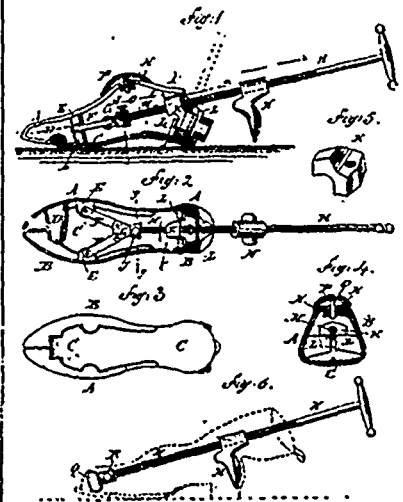
23844 Wilkins' Car-Coupling.



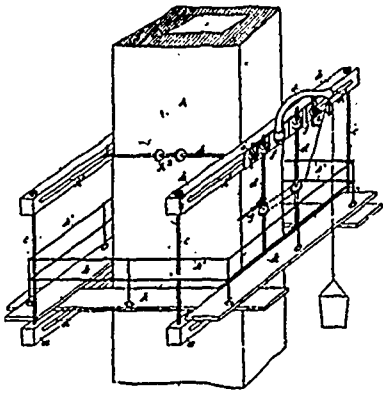
23845 Eickershoff's Steam Engine.



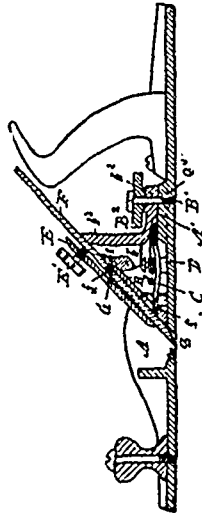
23846 Casey's Car-Coupling.



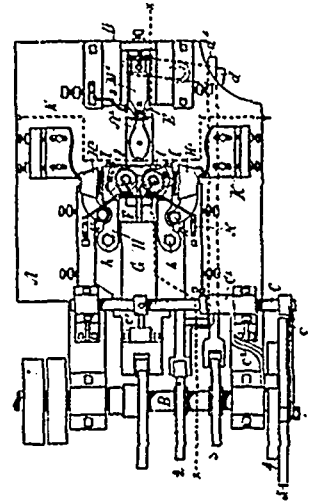
23847 Jones' Boot and Shoe Stretcher.



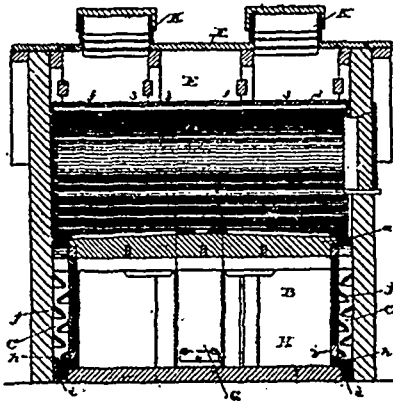
23848 Brown's Apparatus for Climbing Chimneys, etc.



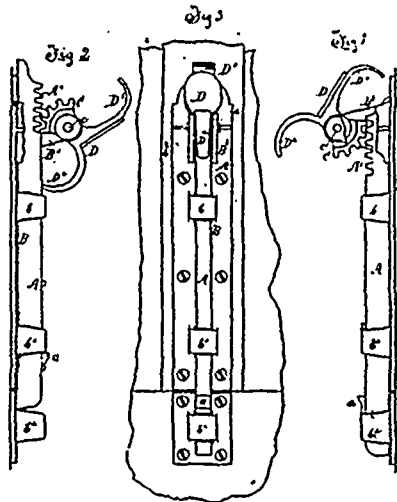
23849 Rodier's Plane.



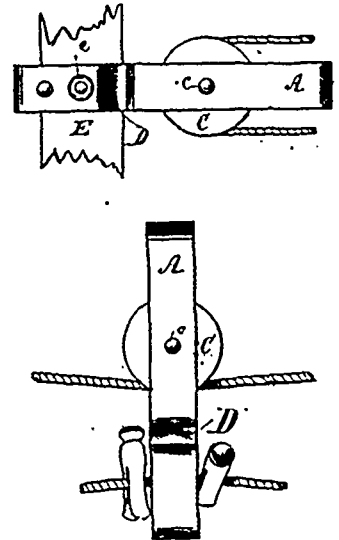
23851 Côté's Machine for Forming Heel Counters.



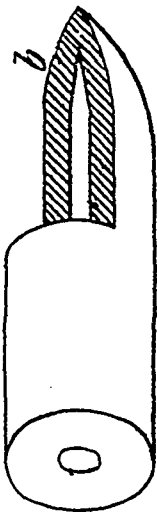
23852 Wilson's Refrigerator House.



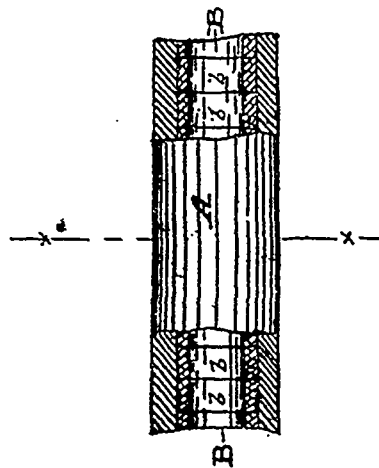
23853 Beaulac's Sash Bolt.



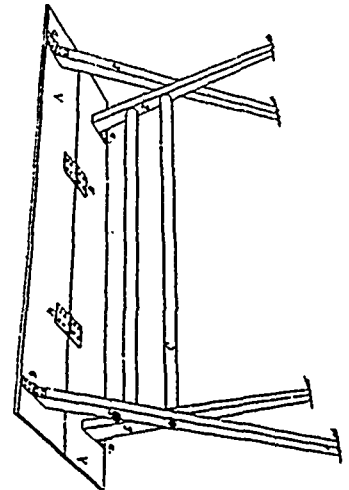
23854 Boyer's Clothes Line Holder.



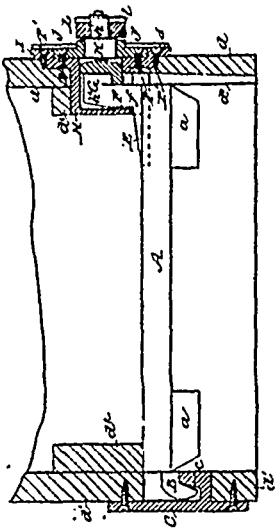
23855 Simond's Apparatus for Manufacturing Rolled Metal Articles.



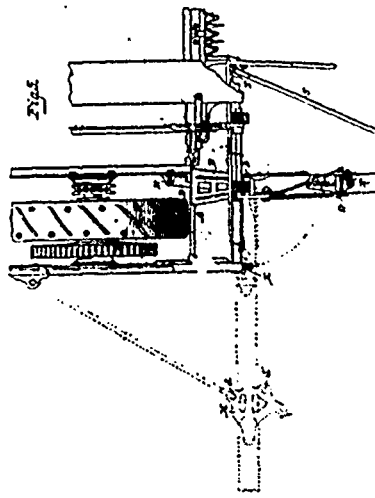
28856 Bliz's Water Pipe.



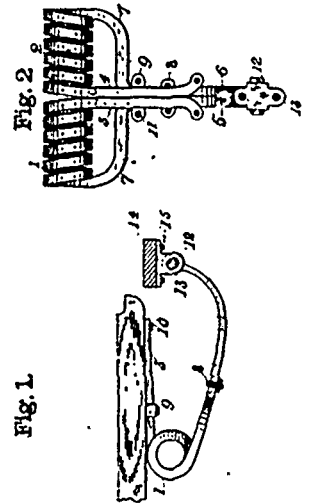
23357 Odell's Folding Table.



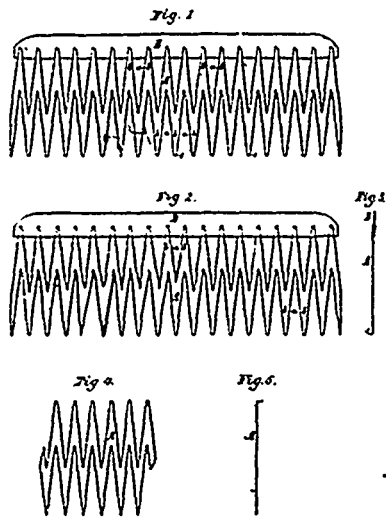
23858 Reams' End Gate Fastening.



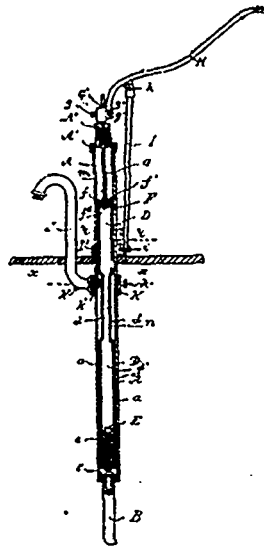
23859 Osburne's Harvester and Bluder.



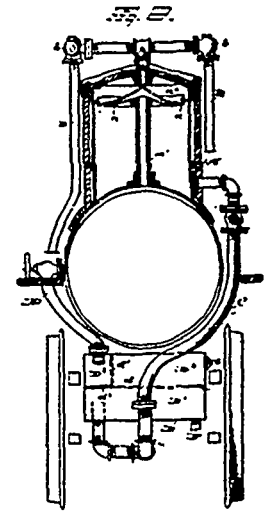
23861 Maguer & Thomas' Vehicle Spring.



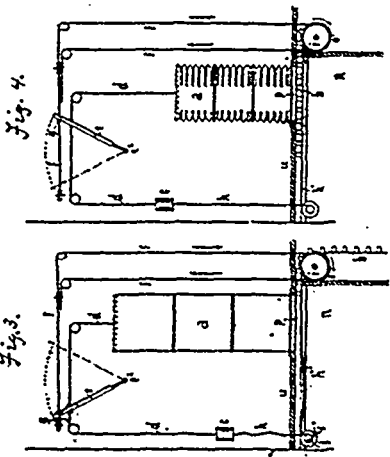
23862 Watson's Boot or Shoe Stiffener.



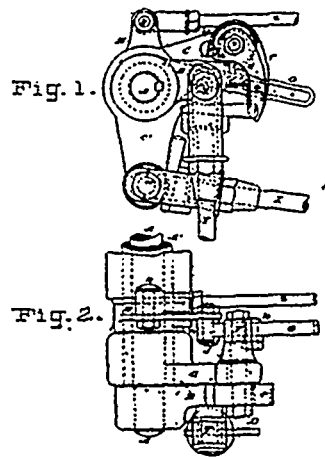
23863 Field's Pump.



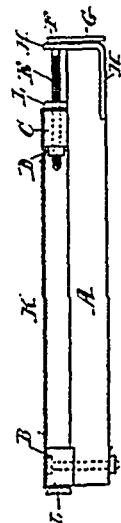
23864 Mead & Thomson's Feed Water Purifier.



23865 Behrns' Filter.



23866 Clit's Cut Off Valve Gear.



23867 Townsend's Apparatus for Tightening Rod Bottoms, etc.

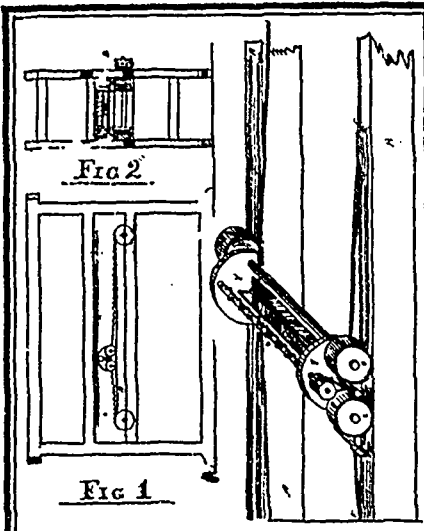
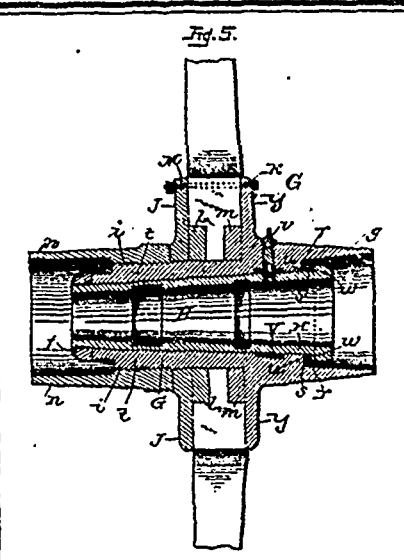
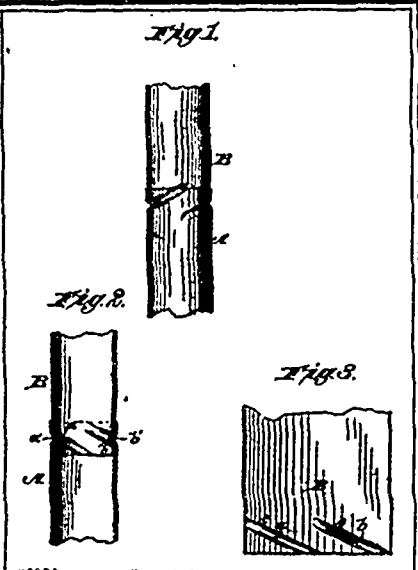


FIG 3

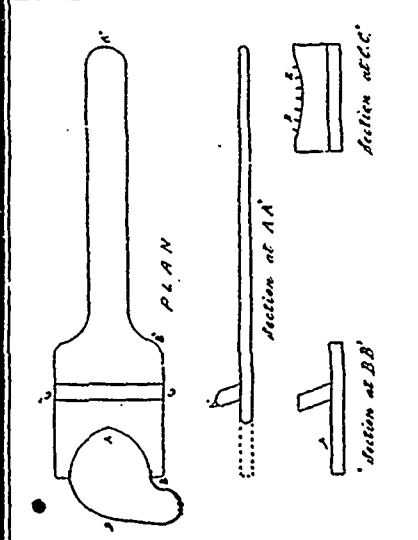
23868 McCallum's Middlings Purifier.



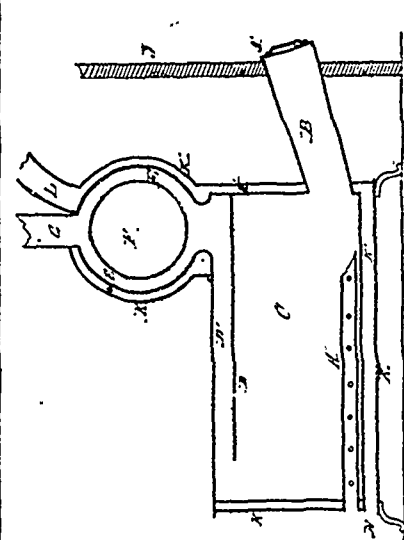
23869 Horrae's Vehicle Spring.



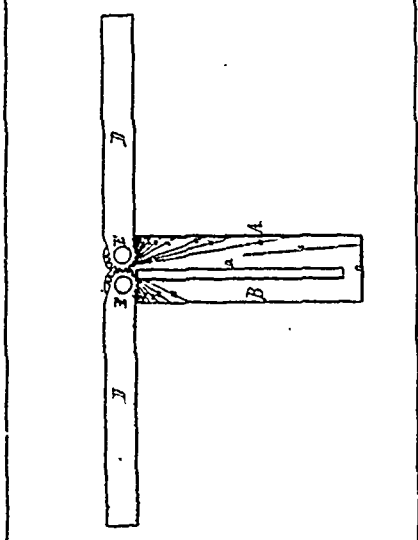
23870 Green's Pipe Joint.



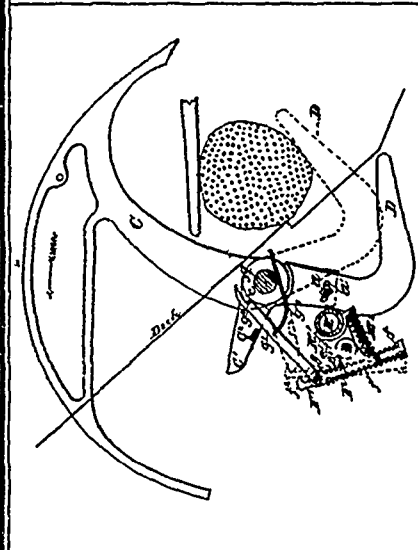
23871 Pearson's Cattle Poke.



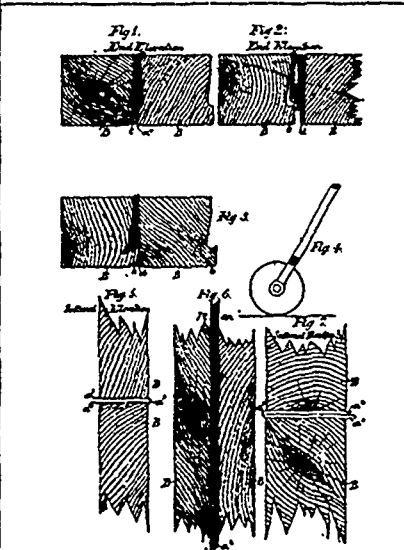
23872 Stephenson's Stove.



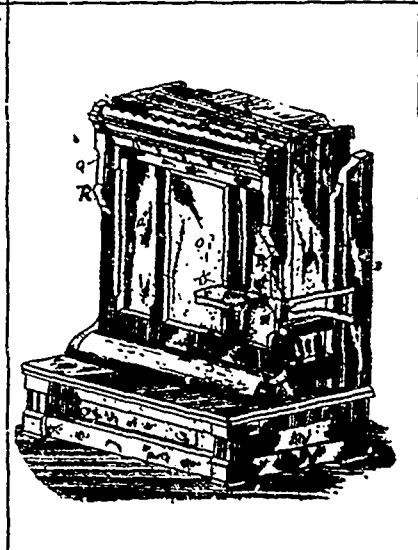
23873 Doubler's Bevel.



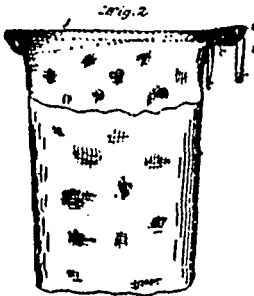
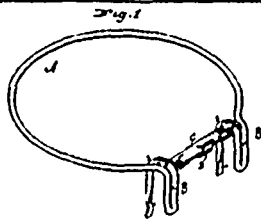
25874 Bullock's Grain Binder.



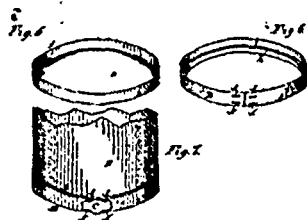
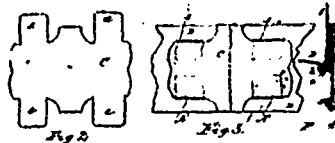
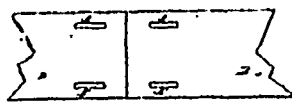
23875 Tagg's Art of Making Joints in Wood Work.



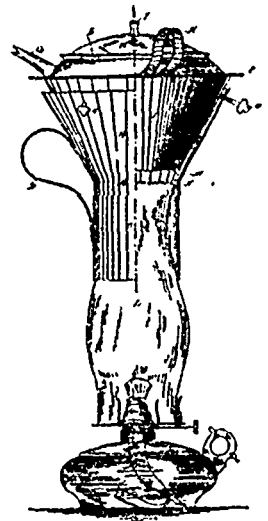
23876 Slater & Eaton's Folding Bed.



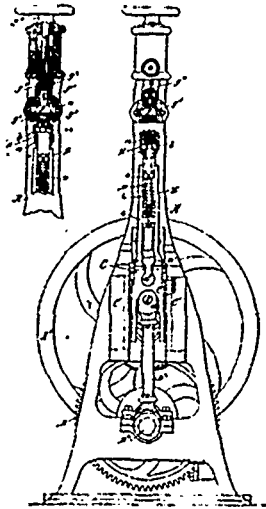
23877 Parker's Bag Holder.



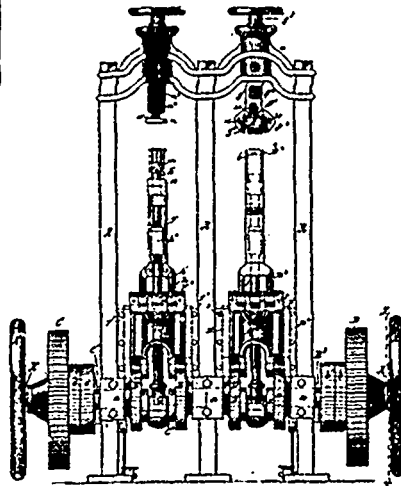
23878 O'Neill's Hoop Fastening.



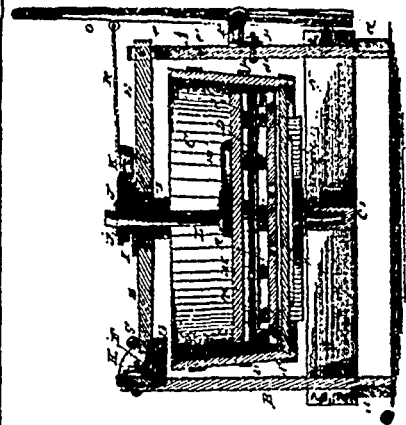
23879 Lahals' Lamp Heated Apparatus.



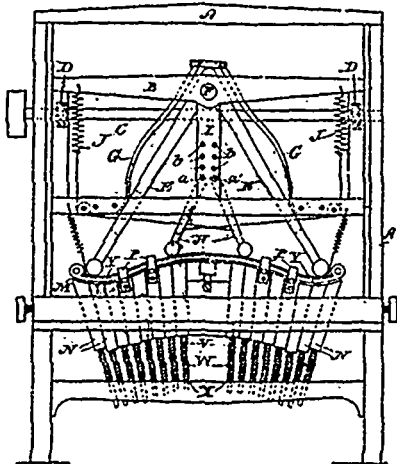
23880 Stone's Heeling Machine.



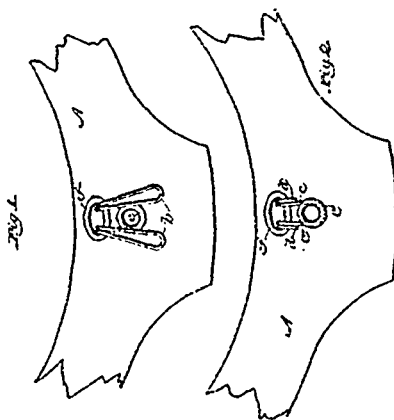
23881 Stone & Ambler's Heeling Machine.



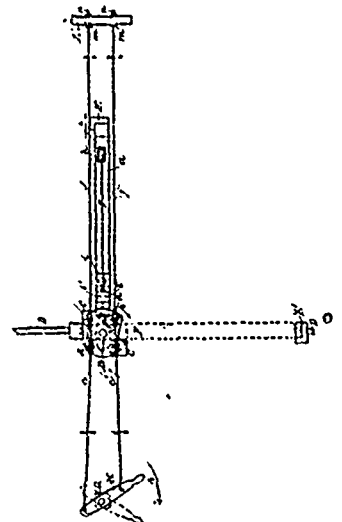
23882 Mitchell's Washing Machine.



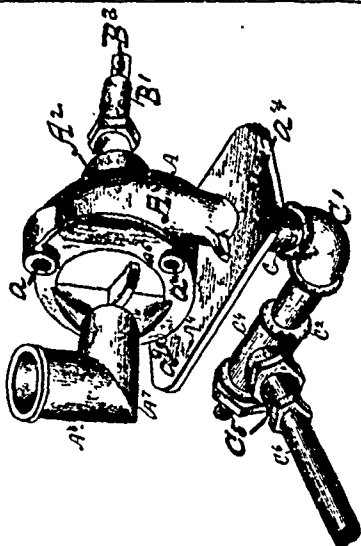
23883 Norwood's Machine for Forming Springs



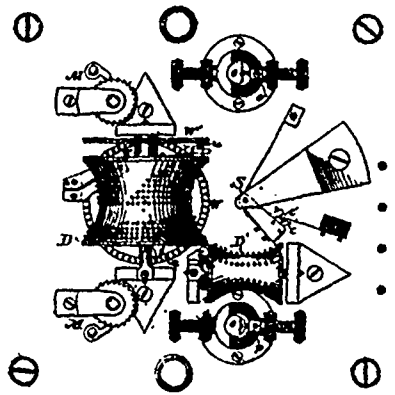
23884 Scully's Necktie Supporter.



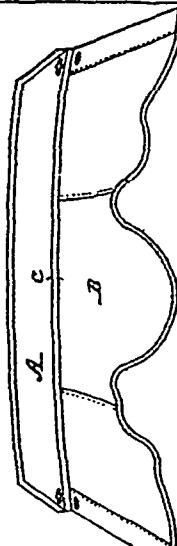
23885 Penfield's Farm Gate.



23886 Henke's Funnel for Forcing Molasses, etc.



23888 Oram's Time Signal Transmitting System.



23889 Ripper's Collar and Cuff.



Fig. 1.

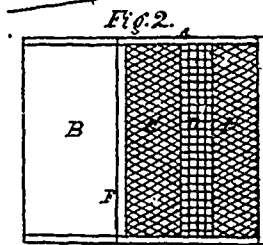


Fig. 2.

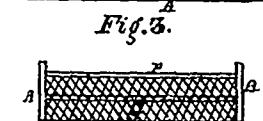
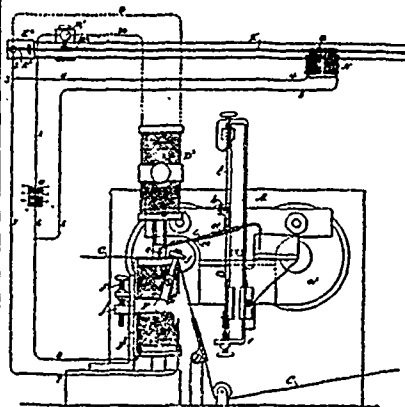
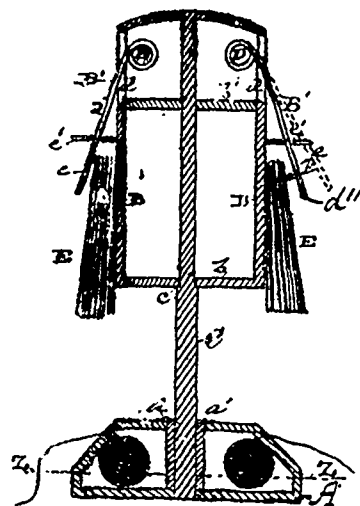


Fig. 3.

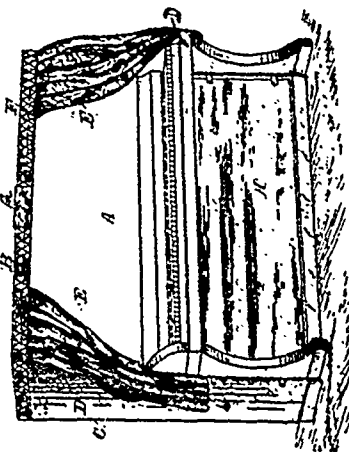
23890 Williamson's Arrangement of Riddles for Cleaning Grain, etc.



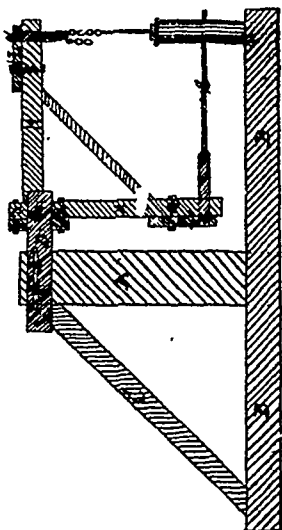
23891 Cuttriss' Siphon Recorder.



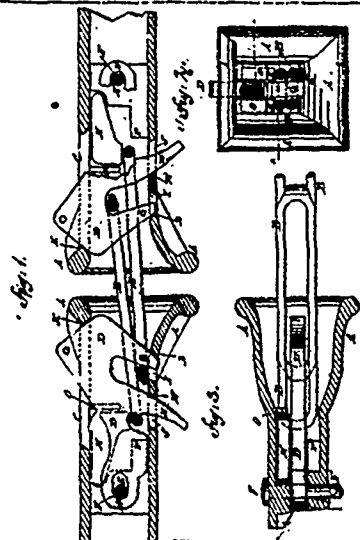
23892 Dul's Combined Bag and Twine Holder.



\*23893 Richey's Plano Cover.

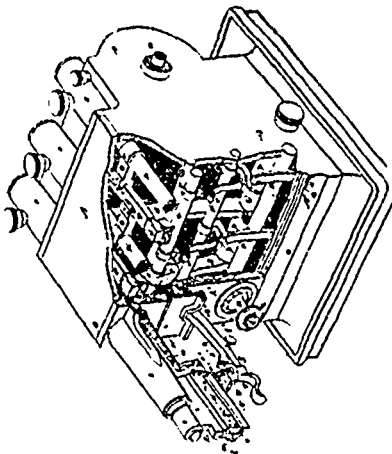


23894 McKenzie's Triangle for Pumping Wells.

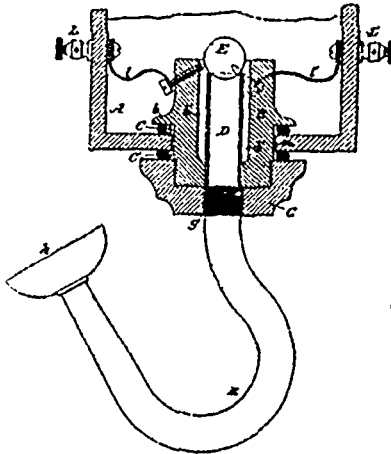


23895 Adams, Fethousen & Lawtenslager's Car-Coupling

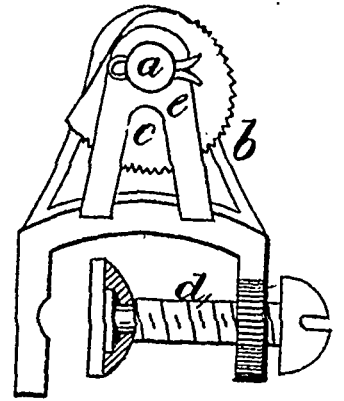




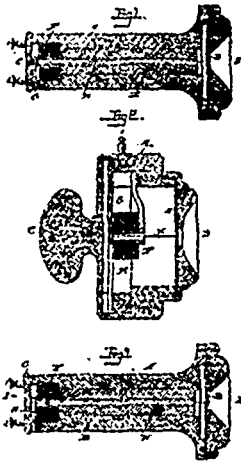
23896 Hunter & Leiman's Finon Polishing Machine.



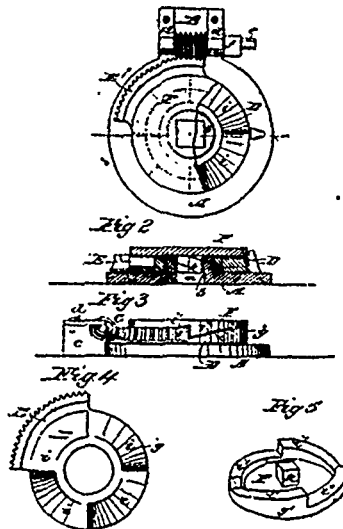
23897 Thomson's Electric Telephone Transmitter.



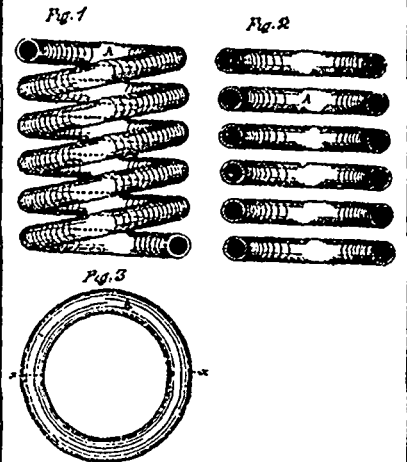
23898 Harcourt & Shaw's Rein Holder.



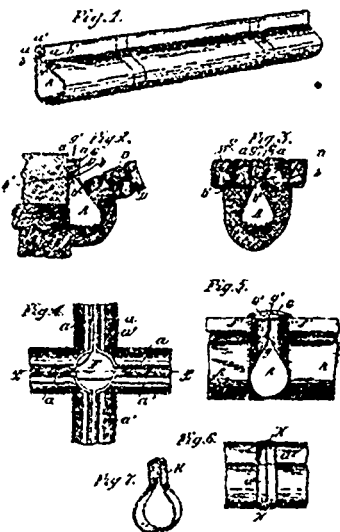
23899 Walle's Telephone.



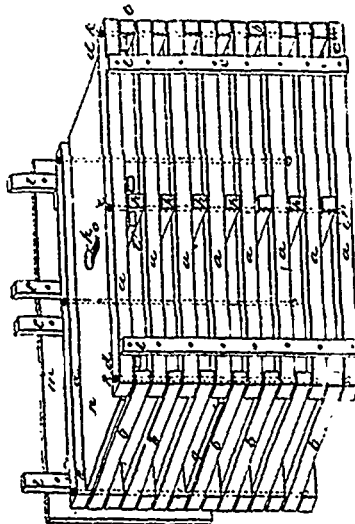
23900 Hornbostel's Billiard Table Leveler.



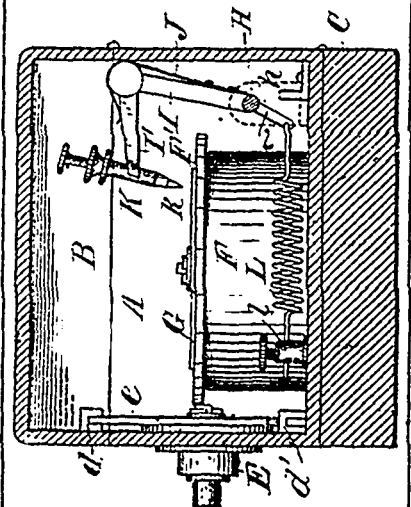
23901 Goewey's Helical Springs.



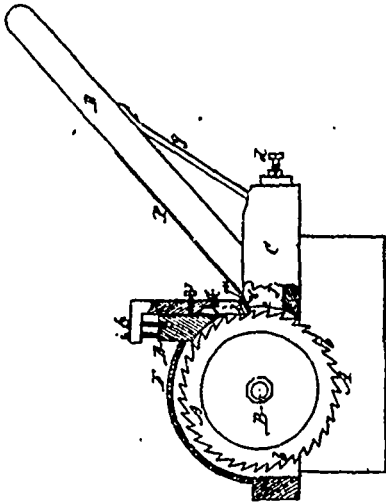
23902 Munslie's Conduit for Electric Wires.



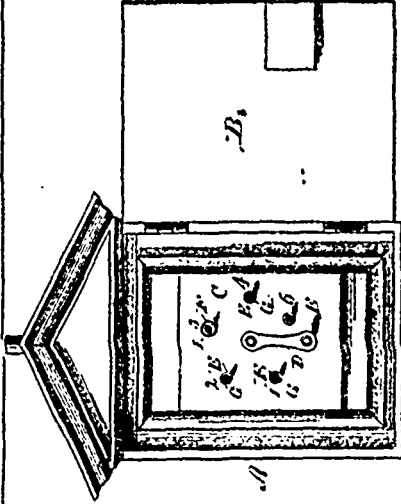
23903 Colville's Return Crate for Fruit.



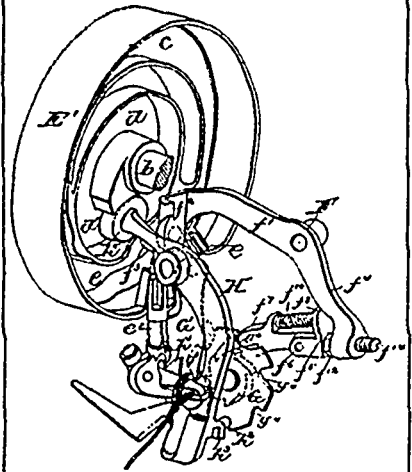
23904 Colby's Watchman's Clock.



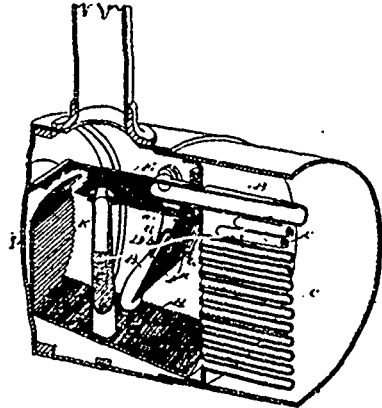
23905 West's Machine for Trimming Embroidery.



23906 Chase's Fire Alarm Signal Box.



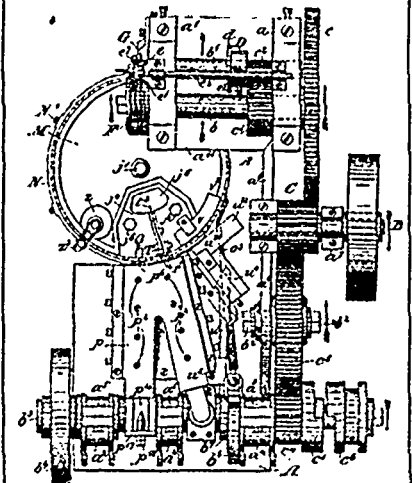
23907 Young's Grain Binder.



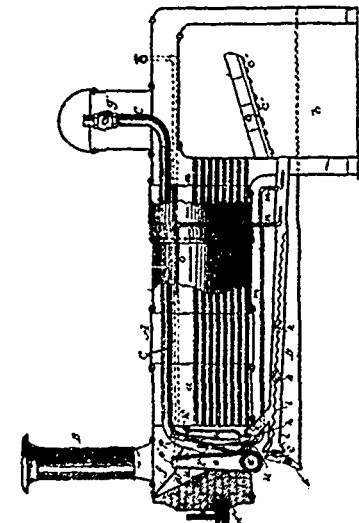
23909 Reed's Spark Arrester



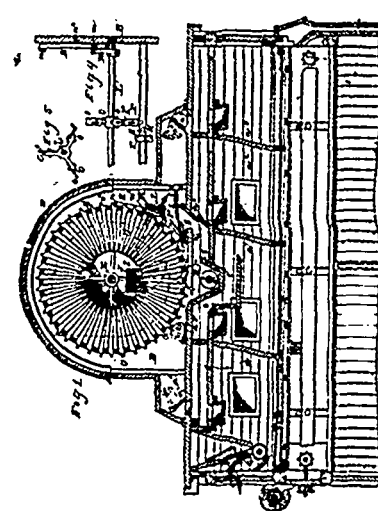
23910 Clarke's Jar and Covered Vessel



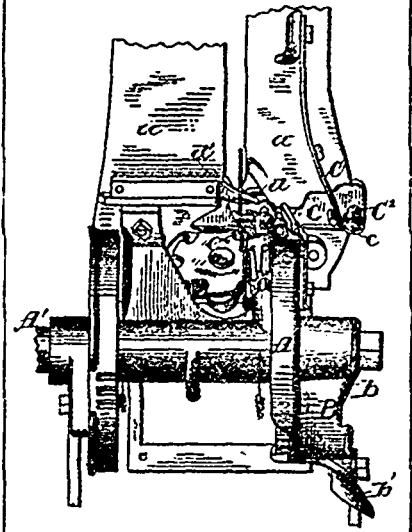
23911 Mooney & Estes' Machine for Manufacturing Horse Shoe Nails



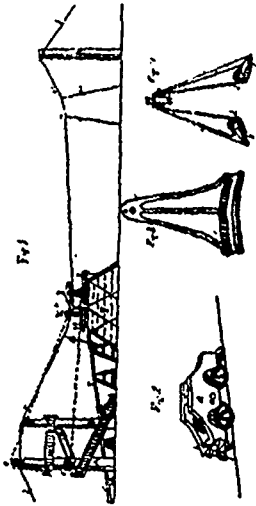
23912 Grigg's Spark Arrester and Consumer.



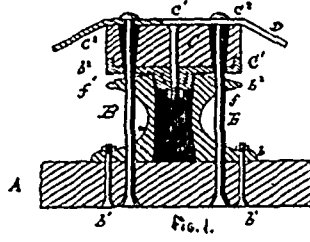
23913 Holt's Dust Collector.



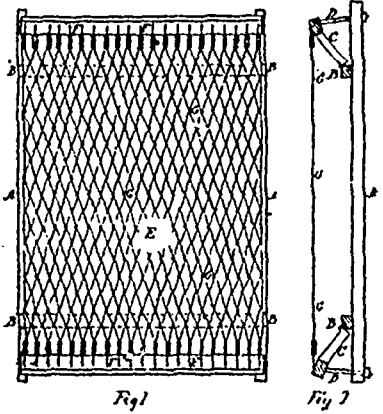
23914 Bullock's Grain Binder Tying Machine.



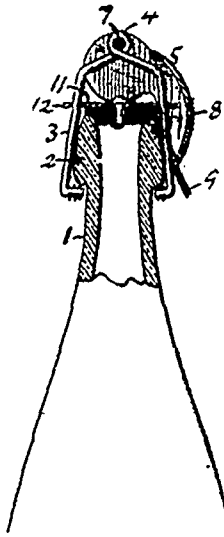
23915 Kerrison's Cable Coaster.



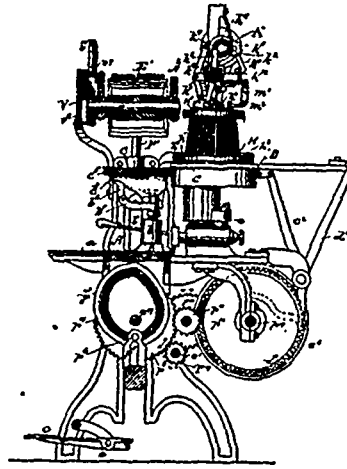
23916 Belknap's Sleigh Knee.



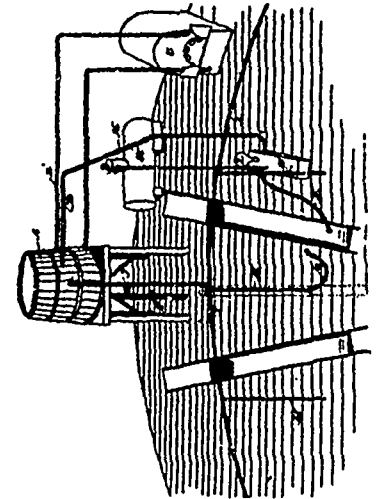
23917 Phillip's Bed Bottom.



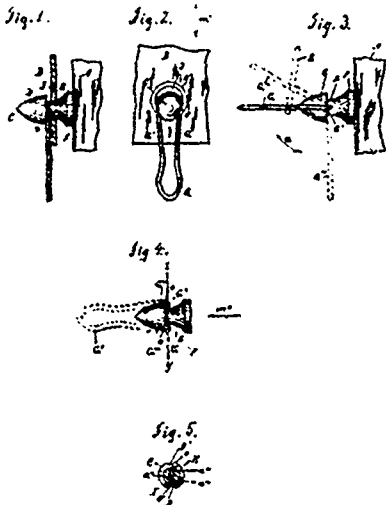
23918 Clarke's Bottle Stopper.



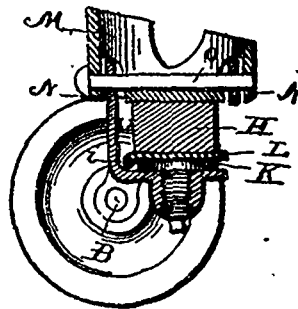
23919 Raymond's Sole and Heel Nailing Machine.



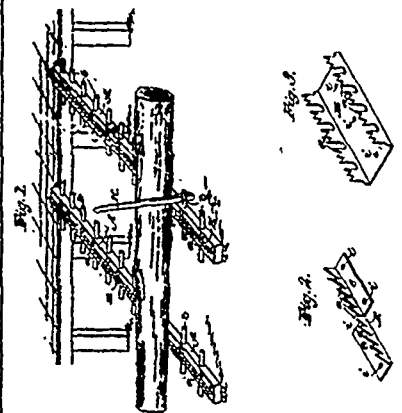
23920 Robb's Device for Washing Out Locomotive Boilers.



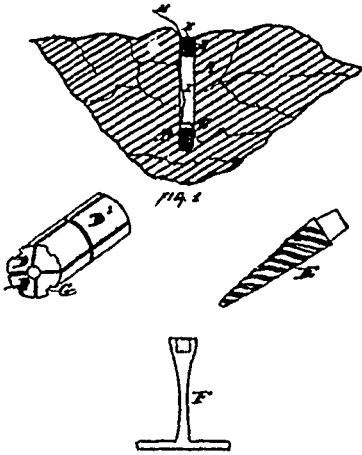
23921 Baker's Carriage Curtain Fastening.



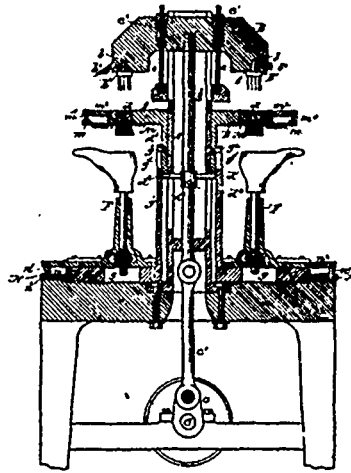
23922 Hall's Roller Skate.



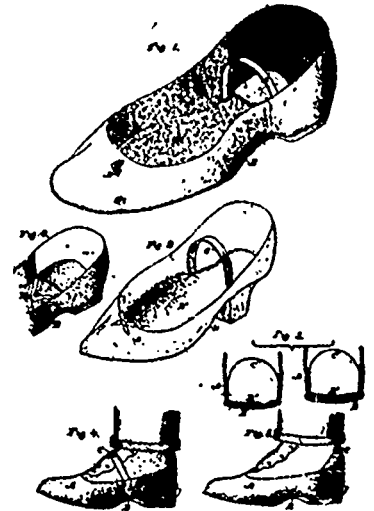
23923 Polloy's Spiked Skid for Heavy Timber.



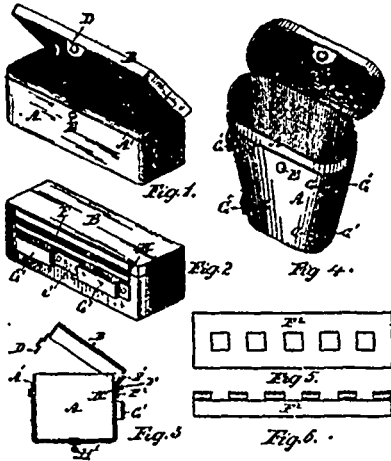
23924 Bol's Method Blasting.



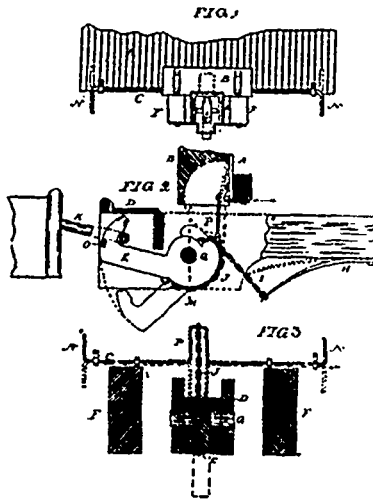
23925 Raymond's Heel Nailing Machine.



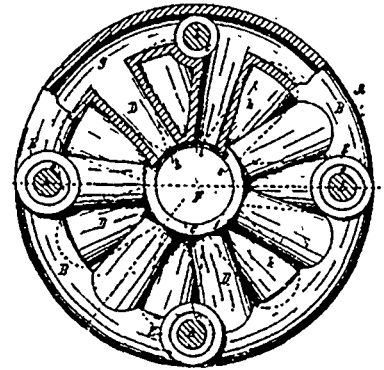
23926 King's Shoe and Overshoe.



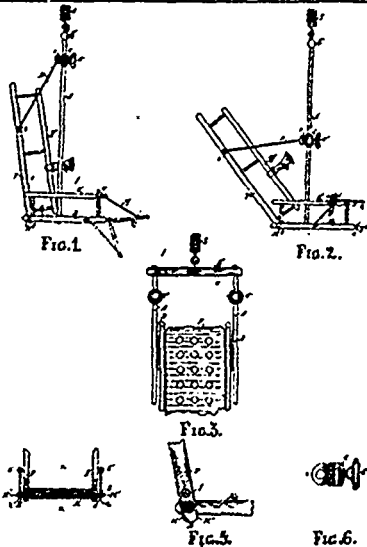
23928 Beacock's Box for Cartridges, Field Glasses, etc.



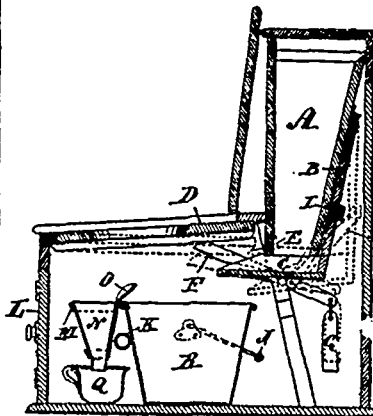
23929 Dunn's Car Coupler.



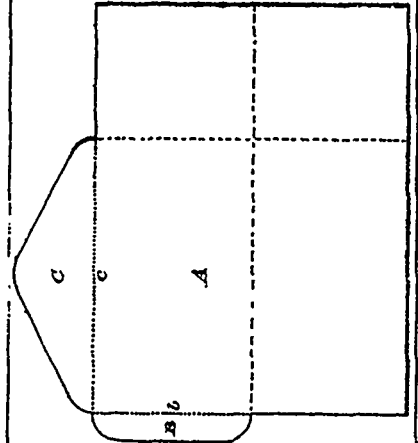
23930 Bryant's Sections for Steam Generators.



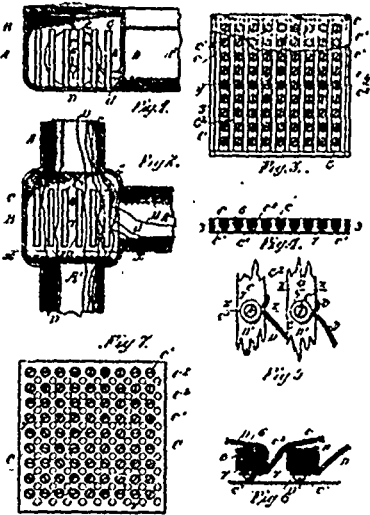
23931 Peck's Baby Jumper.



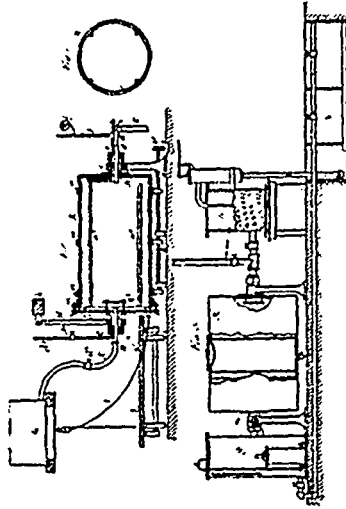
23932 Hunter's Dry Earth Closet.



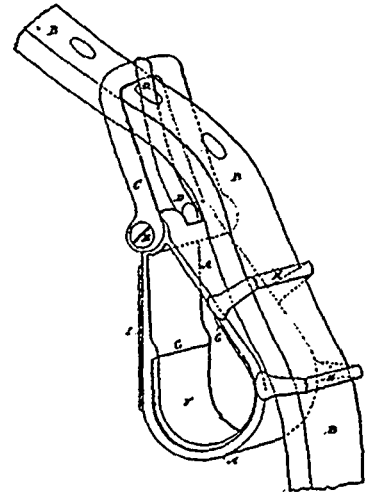
23933 Ames' Enveloping Letter and Bill Sheet.



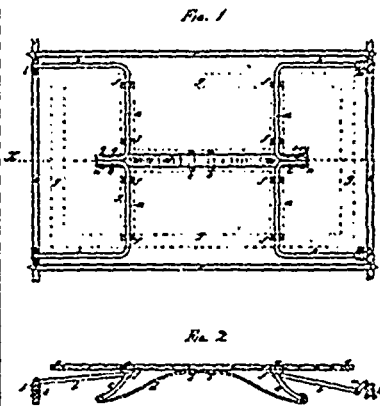
23934 Munster's Testing Station for Conduit Electric Wires.



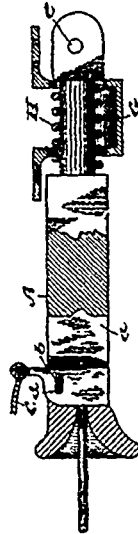
23935 Davis' Apparatus for Tanning.



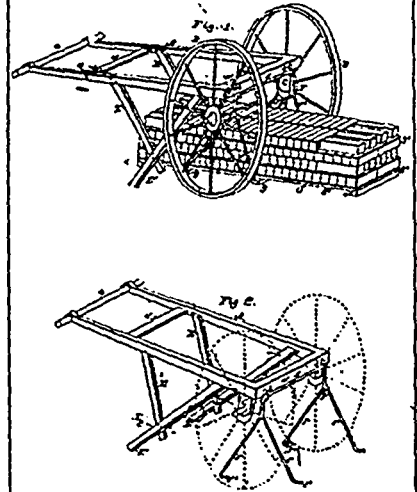
23936 Davies' Harness Shaft Tug.



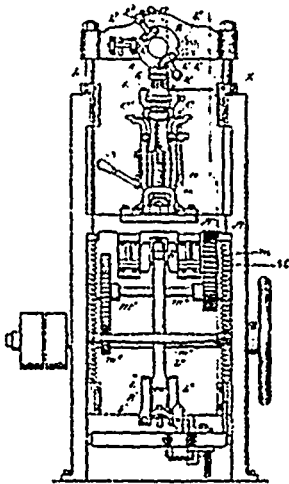
23937 Simmons' Vehicle Spring.



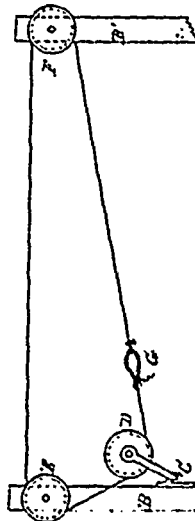
23938 Burkholder's Automatic Car Coupler.



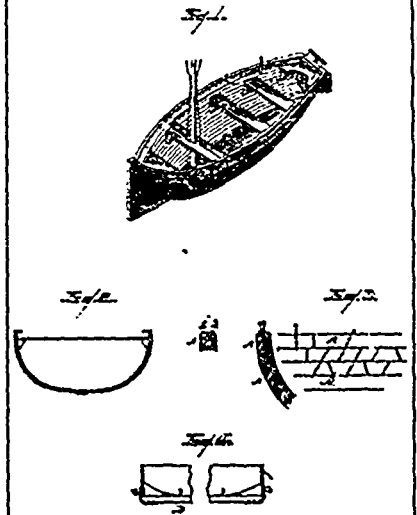
23939 Walker & Miner's Brick Carriage.



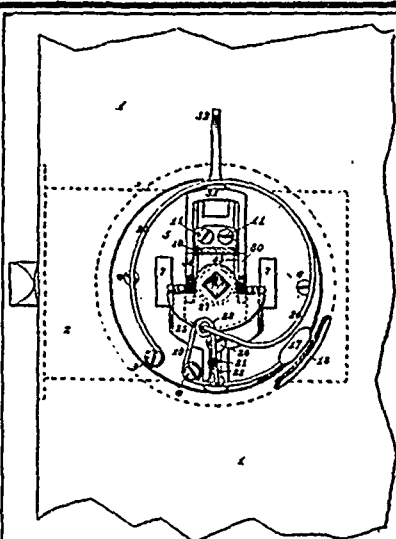
23940 Henderson's Heel Nailing Machine.



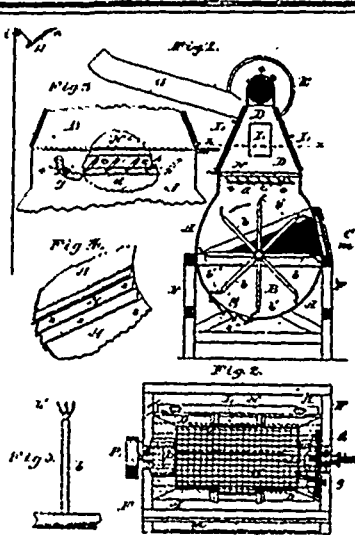
23941 Kennedy's Fastenings and Pulleys for Clothes Lines.



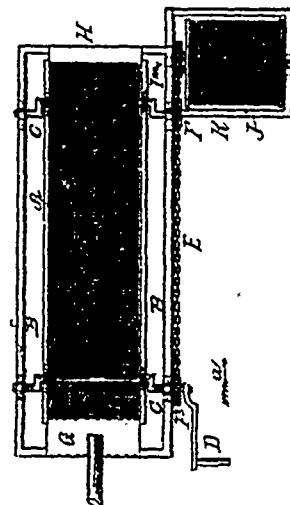
23942 Forbes' Boat.



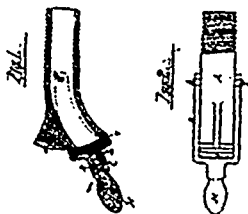
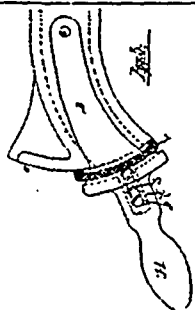
23943 Thomas & Way's Door Bell and Burglar Alarm.



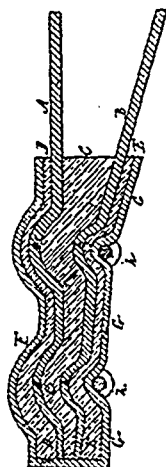
23944 Penner's Feather Sorter.



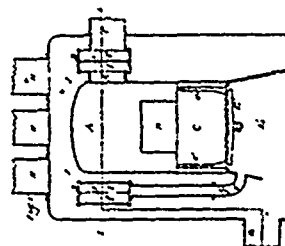
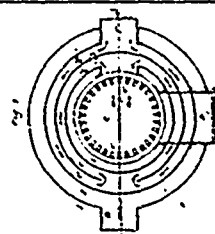
23945 Ladd's Machine for Separating Seeds from Pulp.



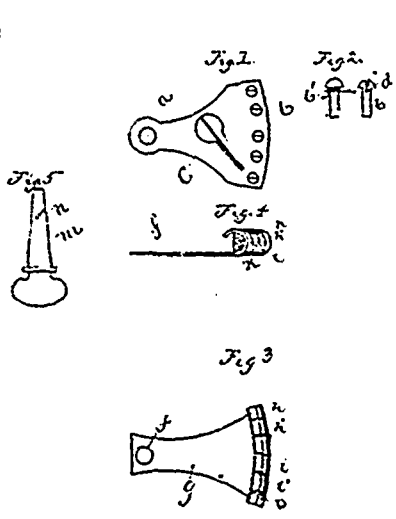
23946 Ives' Molasses Faucet.



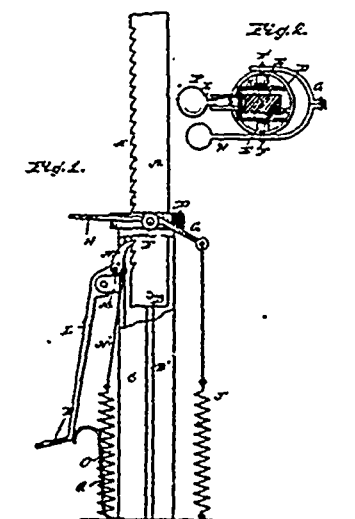
23947 Roger's Elastic Spring Packing.



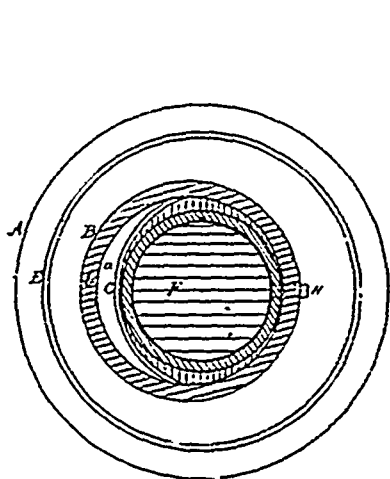
23948 Wantless' Hot Air Furnace.



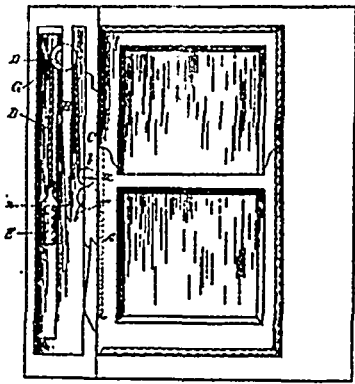
23950 Macready's Musical Instrument String Holder and Peg.



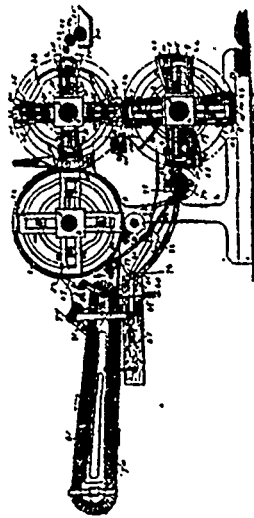
23951 Stuck's Lowering Mechanism for Dentists' Chairs.



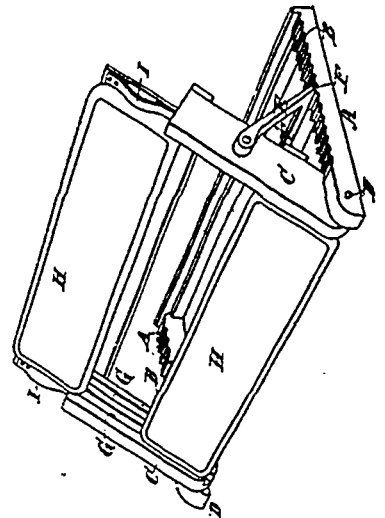
23952 Smith's Barrel Heater.



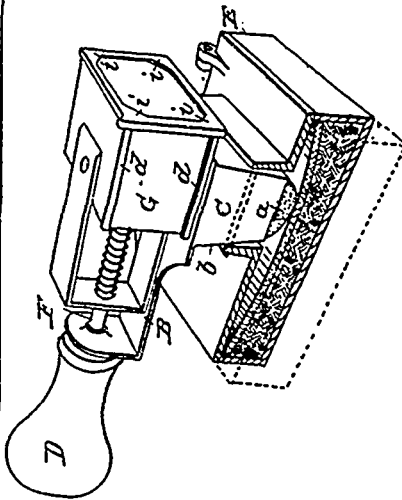
23953 Hamel's Sash Balance.



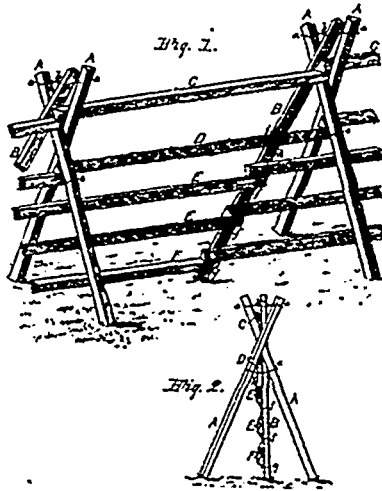
23954 Grant's Rotary Envelope Machine.



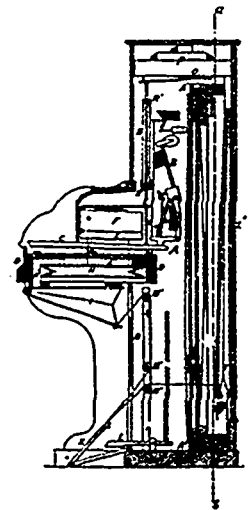
23955 Winter's Head Section for Beds, Cots, etc



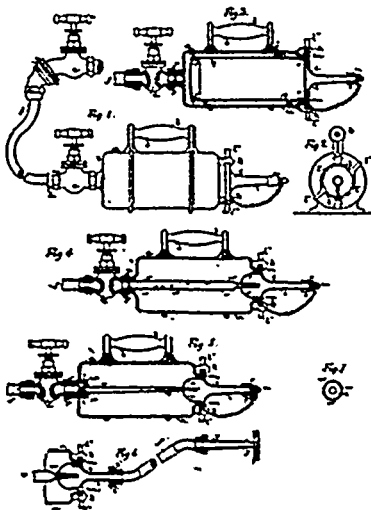
23956 Corbin's Stamp Sticking Device.



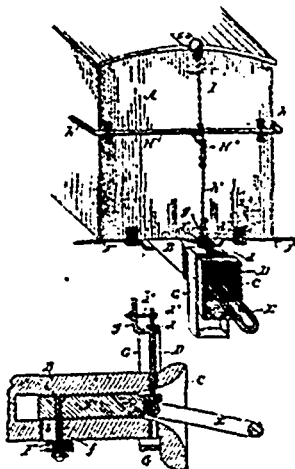
23957 Shedd's Farm Fence.



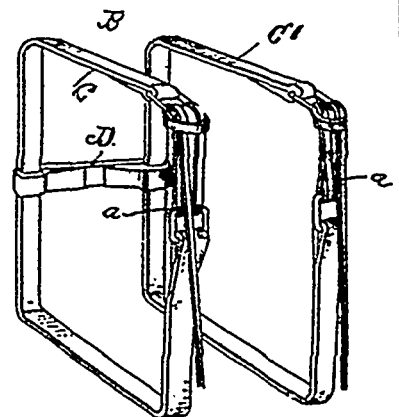
23958 Cullum's Parlor Organ.



23959 Reuss & Wallwork's Fire Extinguisher.



23960 Mullen's Car Coupling.



23961 Mancey's Trunk Strap.