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INVENTIONS PATENTED.

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

No. 25,676. Revolving Cultivator.

(Scarificateur Tournant.)

John P. B. Campbell, Rockville, Ind., U. S., 8th January, 1887; 5 years.

Claim—1st. The combination, in a revolving cultivator, of a fixed frame, a horizontal circular frame pivoted to the said fixed frame, teeth swivelled in the said circular frame, and stop arms and pins, whereby the said circular frame will be made to revolve, causing the part of the said circular frame next the row of plants to move faster than the advance of the cultivator, as set forth. 2nd. In a revolving cultivator, the combination, with the radial arms, of the pivoted circular frame A, B, and the teeth H having rearwardly-projecting blades, of the stop arms J and pins K, substantially as herein shown and described, whereby the blades of the teeth, upon one part of the circular pivoted frame, will engage with the ground, and the blades of the teeth, upon the outer part of the said circular pivoted frame, will swing back and cause very little obstruction of the said frame, as set forth. 3rd. In a revolving cultivator, the teeth H made substantially as herein shown and described, with projecting blades on their lower ends, and with or without spring coils on their shanks, whereby the said teeth, when in one position, will be obstructed by the soil, and when in another position can move through the soil freely, as set forth. 4th. In a revolving cultivator, the combination, with the radial arms A, of the pivoted circular frame and the teeth H, of the stop arms J having eyes, and the stop pins K, substantially as herein shown and described, whereby the said teeth will be turned successively into position to be obstructed by the soil and then allowed to swing back, as set forth 5th. In a revolving cultivator, the combination, with the rear bar D, of the fixed frame and the arm N attached to the said rudder shaft, the bent handle bar P and the spiral spring Q placed upon the said rudder shaft, substantially as herein shown and described, whereby the said revolving cultivator can be readily guided and controlled, as set forth. 6th. In a revolving cultivator, the combination, with the curved and slotted forward end of the front bar E, of the fixed frame of the draw-bar F, having a correspondingly curved rear end, and the bolt S, substantially as herein shown and described, whereby the point of draft attachment can be readily raised or lowered, as set forth.

No. 25,677. Machine for Slitting Metallic Lathing Sheets. (*Machine à Fendre les Feuilles Métalliques à Claire-Voie.*)

Edward Tunstead and Josiah W. Moore, Minneapolis, Minn., U. S., 8th January, 1887; 5 years.

Claim.—1st. In a machine for making metallic lathing material, the combination of a bed-plate having an elongated slot, with a slitting blade pivoted at one end to the bed-plate, said blade being less thick than the width of the slot, and having a doubled bevelled edge, as described, for cutting slots in the sheet of metal and bending the edges of the slits down into the slot. 2nd. A metallic lathing sheet, having a series of closely-arranged indented slots extending across the sheet from points near its edges, and having the indented metal standing out at about right angles to the surface of the sheet.

No. 25,678. Cattle Pen. (*Parc à Betail.*)

Edward T. Holton, Plains, Va., U.S., 8th January, 1887; 5 years.

Claim.—1st. A pen for cattle, consisting of a series of stalls divided by swinging partitions, said partitions provided at their free ends with latches *d*, in combination with a stationary bar E and a horizontally movable bar E1, having pivoted strips F, as and for the purpose intended, substantially as described. 2nd. A cattle pen divided into stalls by swinging partitions D, each partition supplied with a locking device *d*, in combination with a series of strips F pivoted to the stationary bar E, and a horizontally moveable bar E1, said strips being adapted to be engaged with said locking devices when the bar E1 is moved in one direction and released by its movement in a contrary direction, as and for the purpose intended, substantially as described. 3rd. In a cattle pen partition locking and releasing device, the stationary bar E attached to uprights B, having notches b^2, in combination with the horizontally movable bar E1, provided with orifices *c* and a locking device, said bar being connected by a series of pivoted strips F, said strips having upwardly-extending detents f^2, as and for the purpose intended, substantially as described.

No. 25,679. Suspension Device for Match Safes, Card Receivers, etc. (*Appareil de Suspension des Porte-Allumettes, Plateaux, etc.*)

Max L. Mueller, Schandaw, Germany, 8th January, 1887; 5 years.

Claim.—1st. The suspension device for suspending articles on dressing apparel, consisting of a receiver *a*, with plate *b* and slide *c*, substantially as and for the purpose hereinbefore set forth. 2nd. The needles *d* attached to the slide *c*, and raised or lowered by means of it, substantially as and for the purpose hereinbefore set forth. 3rd. The openings *e*, into which the material of the dress is pressed and made fast by the needles, all substantially as and for the purpose hereinbefore set forth.

No. 25,680. Index. (*Index.*)

The Schlicht and Field Company, Toronto, Ont. (assignee of Paul J. Schlicht, Rochester, 1887; 5 years.

Claim.—1st. The herein described indexed name-book, having first, the marginal, alphabetical index of leading names 1, second, the subdivision indexes of surnames 2 on the margin of the pages indicated by index 1, and, third, the page sections or subdivisions 3 containing in alphabetical order the initial letter of given names, or the second name or word of firms, corporations, etc., whereby the searcher is enabled to select, instantly, not only a given surname, but a surname with given initials.

No. 25,681. Dust Guard for Car Axle Box.

(Garde-Poussière pour Boîte à Graisse.)

John A. White (assignee of Abe L. Cushman), Concord, N. H., U.S., 8th January, 1887; 5 years.

Clam.—In a dust-guard, the combination of a casing B, having four receptacles for holding the dust guards *d*, *d*, *d*, *d*, and the guards operated by springs *c*, *c*, *c*, *c*, toward the centre of the axle D, to take up the wear of the guards, as set forth and described.

No. 25,682. Bustle. (*Tournure.*)

The Canfield Rubber Company (assignee of Henry O. Canfield), Bridgeport, Conn., U.S., 8th January, 1887: 15 years.

Claim.—1st. In a bustle, the combination, with a pair of side strips, of a series of springs, bars having their ends laced to the side pieces, substantially as set forth. 2nd. In a bustle, the combination, with a series of horizontal springs, bars loosely secured to side pieces, of a diagonal spring bar loosely secured to the said side pieces, and its bow extending above the upper horizontal bar, substantially as set forth. 3rd. In a bustle, the combination, with a pair of side strips, provided with perforations in their ends and a tape or lacing adapted to secure the ends of the spring bars to the side strips in swinging adjustment, substantially as set forth. 4th. In a bustle, the combination with a set of spring bars secured to side strips in swinging adjustment, of a tape connecting the crowns of the several bars with the top band, a spacing bar connecting the lower horizontal bar with a bar above it, and diagonal springs connecting one of the bars above the lower bar with the lower ends of the side pieces, whereby the

several bars are automatically returned from a collapsed to an extended adjustment, substantially as set forth. 5th. The bustle, consisting essentially of the side strips and their suitable coverings, the series of horizontal spring bars having their ends laced to the side strips, the diagonal spring bar at the top and the spacing bar and springs at the bottom, substantially as set forth.

No. 25,683. Device for Centering Hubs, etc.

(*Centreur pour Moyeux de Roues, etc.*)

Benjamin Wing, Wassalborough, Me., U. S., 8th January, 1887; 5 years.

Claim.—1st. The combination, in a hub block centering-machine, of a jaw A having two sets of oppositely diverging fingers *a*, having spaces or recesses *a*1 between them, arranged so that the fingers of one jaw come opposite and in operation enter the recesses of the other, all substantially as and for the purposes described. 2nd. The combination in a hub block centering machine, of the jaw A having the diverging fingers *a* and the spaces or recesses *a*1 between them and the jaw A1, having the diverging fingers *a* and the spaces or recesses *a*1 between them, the block B1 supporting the jaw A1, and devices for imparting horizontal movements to said blocks toward and from each other, all substantially as and for the purposes described. 3rd. The combination, in a block-centering machine, of the jaws A, A1 having the diverging fingers *a* and spaces or recesses *a*1 shaped and arranged in relation to each other, as specified, the block B having a rack *b*, the pinion *b*1 and the sliding block C, connected with the block D, whereby upon the movement of the pinion *b*1 the blocks B, B1 are moved simultaneously toward or away from each other, substantially as described. 4th. The combination of the jaws A, A1, having recessed diverging centering surfaces of the character specified, their supporting blocks B, B1 having horizontal sliding movements toward any away from each other, and a locking device for locking the two blocks in any desired position, all substantially as and for the purposes described. 5th. The combination of the bed F, having the sliding carriage E and supporting the blocks C, B, B1 and the jaws A, A1 having centering surfaces oppositely arranged to each other and provided with recesses, whereby they may overlap, and a pinion for providing the said jaws through the said blocks C, B, B1, with opening and closing movements in relation to each other upon the carriage E, all substantially as specified.

No. 25,684. Machine for Making and Stuffing Mattresses. (*Machine à Fabriquer les Matelas.*)

Daniel H. McGeough, Peterboro, Ont., 8th January, 1887; 5 years.

Claim.—A machine formed by the combination of the frames A and E, form B, levers C, C and cross-bars D, D, substantially as and for the purpose hereinbefore set forth.

No. 25,685. Spring Car Bumper.

(*Tampon de Choc de Char à Ressort.*)

The Cowell Platform and Coupling Company (assignee of Newell P. Cowell), Cleveland, Ohio, U.S., 8th January, 1887; 5 years.

Claim.—1st. The combination with a spring car-bumper, a follower plate forming the rear seat for the bumper-spring, a knuckle joint arranged to actuate the follower-plate to control the tension of the bumper-spring and the movement of the bumper of a draw-bar incline and suitable connecting mechanism whereby the knuckle-joint is automatically operated by the movement of the draw-bar, substantially as set forth. 2nd. In a spring car-bumper, a knuckle-joint arranged to regulate the tension of the bumper-spring, and a pivoted cam or block arranged between the knuckle-joint and draw-bar, the latter having a suitable projection for automatically actuating the tension mechanism of the movement of the draw-bar, substantially as set forth. 3rd. The combination, with a spring-actuated bumper stem, of a bumper-plate hinged to said stem, and embracing or overlapping the platform sill, substantially as set forth.

No. 25,686. Malt Growing, Germinating and Drying Apparatus and Process Therefor. (*Appareil et Procédé de Production, Germination et Dessication du Malt.*)

John W. Free (co-Inventor with James O. Brown), Boston, Mass., U.S., 8th January, 1887; 5 years.

Claim.—1st. The improved malt-drying apparatus, containing in combination a casing divided into superposed chambers by the perforated floors or diaphragms pierced at the centre, as shown at m_2, and having this central hole surrounded by the wall M, the said diaphragms or floors and their central wall m_3, and the lifting and separating plate N having an edge parallel with each diaphragm or floor, and rising gradually back from the line and then ending abruptly, substantially as described, in each chamber, in combination with an air injection pipe located beneath the said plate, substantially as and for the purposes described. 2nd. The revolving share-shaped blade N, broad at its outer edge and nearly triangular in plan, its forward edge n^1 and upper surface n_2 being in substantially parallel planes, said upper surface being of a substantially rectangular form, and provided with backwardly-projecting teeth n_3, while the forward part of the blade between the upper surface and the front edge is of a slope, lessening in steepness from centre to circumference, whereby the malt is evenly distributed over the floor of the chamber, when said share-shaped blade is revolved therein, and the entanglement of the rootlets broken up, substantially as described. 3rd. The combination with a chamber of the revolving plate N and the revolving perforated pipe within said chamber and beneath the rear part of said plate, substantially as described. 4th. The combination within a casing of a series of superposed chambers formed by diaphragms inclined downward from centre to circumference, and perforated, as described, and each having a central wall around a central hole with a share-shaped blade, as described, and a perforated pipe arranged beneath the rear of said blade in each of said chambers, said blade and pipes being revolved within said casing by a common shaft, substantially as described. 5th. The combination of the elevated soaking vats E with the couching floor F, above which they are elevated, and with the grain bins A, A1, substantially as described. 6th. The combination of the receiving elevator pocket *c*, with the malt-chamber A2 and the grain chambers A, A1, by means of separate shutes to each chamber, substantially as described. 7th. The combination of the elevater pocket c_4 with its two collecting shutes *d*, by which it receives grain from a car, and h_3, by which it receives malt from the chamber H, substantially as described. 8th. The combination of the chamber H, with the couching floor F and with the furnace room G, substantially as described. 9th. The combination of the chamber H, with the ice chamber I and the circulating pipes *i*, *i*1 and J, substantially as described. 10th. The combination of the chamber H with the two sources of heat, one furnishing a moderate and moist heat G, and the other furnishing a higher and drier heat G1, substantially as described. 11th. The combination of the water pipe *w* 1, with the revolving shaft K and chamber H, substantially as described. 12th. The combination, in one apparatus of a single elevator, with two supply shutes h_3, *d*, delivering into one pocket c_4, and with one pocket c_3 delivering into two or more delivery chutes c_1, c_2, c_3, which delivery shutes are on the highest level of the apparatus, with a series of elevated soaking tubs E upon the middle floors of the apparatus, and with the couching floor beneath said elevated soaking tubs E, or other portions of the same, or other floors, and with a sprouting or drying chamber H, having combined therewith appropriate sources of supply for hot and cold air, and proper means for the circulation thereof through the chamber, and with a revolving stirridg blade *k*, substantially as described. 13th. The revolving stirring blade *k* placed upon an incline to the floor of the chamber H, and formed with teeth upon its back and upper edge, which teeth are curved upwards and forwards from the general slope of said blade *k* with the said chamber H, having a perforated floor, substantially as and for the purposes described. 14th. The combination of the elevator C with an exhaust blower for cleansing the malt from rootlets, dust, etc., as it is fed to the chamber A2, substantially as described.

No. 25,687. Snow Plough. (*Chasse-Neige.*)

Eugene Bastian, Clayton, and Charles G. Emery, Brooklyn, N. Y., U.S., 8th January, 1887; 5 years.

Claim.—1st. In a snow plough, the combination, with a hood by which the snow is taken up from the roadway, of a cutter revolving in advance of said hood to break up the impacted drifts, and beaters rotating within the hood to agitate and thoroughly break up the snow, substantially as described. 2nd, In a snow plough, the combination, with a hood having an open throat by which the snow is taken up from the roadway, of a cutter rotating in advance of said hood, beaters rotating within the latter, and a fan located in rear of the open throat of the hood, and creating an air current through the same, substantially as described. 3rd. In a snow plough, having a hood by which the snow is taken up, the combination, with a shaft carrying a cutter revolving in advance of said hood, of beaters revolving within the latter, and a fan revolving in rear of the open throat of the hood, the beaters and fan having movement independent of, and at greater speed than the cutter, substantially as described. 4th. In a snow removing device, the combination, with a hood having a contracted throat, of a fan arranged in a chamber in the rear thereof, whose blades extend transversely beyond the said contracted throat, substantially and for the purposes described. 5th. In a snow plough, the combination, with a hood adapted to take up the snow from the roadway, of extensible wings mounted upon the lateral walls of the hood, and means for advancing said wings beyond the open mouth of the latter, substantially as described. 6th. In a snow plough, the combination, with a hood adapted to take up the snow from the roadway, of extensible wings mounied upon the side walls of said hood, racks attached to said wings, and gears meshing with the said racks and extending above the hood, whereby the wings may be extended and retracted, substantially as described. 7th. In a snow plough, the combination, with a hood adapted to take up the snow from the roadway, of a central longitudinal shaft carrying a cutter having arms, which rotate in advance of the hood and are set at an angle to the plane of rotation, a sleeve mounted upon said shaft, carrying beaters which revolve within the hood, and a fan located in rear of the open throat of the hood and carried by said sleeve, the shaft and sleeve being driven by independent mechanism and at different speeds, substantially as described. 8th. In a snow plough, the combination, with a hood having a central longitudinal shaft carrying a cutter revolving in advance of the open mouth of the hood, of a sleeve arranged upon the shaft, and carrying beaters revolving in the hood, and a fan revolving behind the open throat of the hood, shafts carrying a large and a small gear meshing respectively with a small pinion on the sleeve, and a large pinion on the shaft, and means for giving to each of said shafts independent movements, substantially as described.

No. 25,688. Railway Rail Joint.

(*Joint de Rail de Chemin de Fer.*)

John Siegel, Montreal Que., 11th January, 1887; 5 years.

Claim.—1st. A railway rail joint formed by bevelling the head and web of each rail end, so as to overlap each other laterally, and cutting off a piece of the rail foot squares, so as to undercut the web, the rail end connected by two fish-plates, one having a foot corresponding to and replacing the piece cut from the foot of each rail, said foot extending on the outer side of the plate, and the latter having an extra thickness for a length extending over and beyond said foot, the other fish-plate provided with projections to cover the joints in the rail foot, said fish-plates bolted through the web of the rails in the usual manner, substantially as shown and described. 2nd. The combination of the rail ends R, the bevel joint A extending through head and web of the rails, and causing them to overlap laterally, the square back-set ends A1 of the rails, the fish-plate F, extra thickness *f*, foot f_1, f_{11} and shoulder f_{111}, on said fish-plate,

the fish-plate F1, projections F11 thereon, and the bolts B and B1, substantially as shown and described. 3rd. A railway rail R having the end of its head and web cut bevel or oblique in a lateral direction as on line A, having a portion of the foot severed from the web and cut off square some little distance back of the heel of the bevel end, substantially as set forth. 4th. The combination of a fish-plate F, foot *f1*, *f11*, *f111*, corresponding to the rail foot, and swell *f*, substantially as shown and described 5th. The combination of the fish-plate F11 and the projections F11, substantially as shown and described. 6th. The combination of the fish-plate F1, foot *f1*, rails R, and recesses formed by the shortening of the rail foot, substantially as set forth. 7th. The combination of the rails R, each having its foot shortened square, the fish-plate F1, foot *f1*, *f11*, fish-plate F1, projections F11, and bolts B, B1.

No. 25,689. Electromotor or Dynamo-Electric Machine. (*Electromoteur ou Machine Dynamo-Electrique.*)

William Main, Brooklyn, N.Y., U.S., 11th January, 1887; 5 years.

Claim.—1st. The combination, to form a dynamo-electric machine or electromotor, of a revolving armature consisting of a core having polar projections, stationary pole-pieces arranged on opposite sides of the armature to receive the magnetic reaction of said polar projections, as the latter alternately approach and recede with the rotation of the armature, and a stationary exciting-coil surrounding said core and arranged with its axis coincident with the axis of rotation of said armature, whereby the armature is caused to revolve within its exciting coil, substantially as set forth. 2nd. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil and polar projections outside thereof, stationary pole-pieces arranged on opposite sides of the armature and corresponding in position to the polar projections thereon, whereby, as the armature revolves, its polar projections alternately approach and recede from said pole portions, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions, and cut it out of circuit while they are receding therefrom, substantially as set forth. 3rd. The combination of an exciting-coil, a revolving armature consisting of a core arranged in the axis of said coil, and polar projections outside thereof, a stationary magnet arranged outside of said coil and within the inductive influence thereof, and having pole portions corresponding in position to the polar projections on the armature, and a commutator adapted to shunt said coil into circuit while said polar projections are approaching said pole portions, and cut it out of circuit while they are receding therefrom, substantially as set forth, whereby said pole portions and polar projections mutually attract each other during the approach of the latter, and cease to attract each other during the recession thereof. 4th. The combination of a revolving armature, two or more exciting-coils surrounding said armature and arranged with their axis coincident with its axis of rotation, a stationary magnet arranged outside of said coils and a commutator, substantially as set forth, adapted to cause an alternate or successive excitation of said coils. 5th. The combination of a stationary magnet B having pole portions, a revolving armature A having polar projections corresponding to, and alternating in arrangement with said pole portions, two or more exciting coils C, C. surrounding said armature with their axes coincident with its axis of rotation, and a commutator, substantially as described, adapted to alternately connect each coil in the circuit and cut it out therefrom, and to direct the current alternately or successively through the respective coils, as set forth, whereby each coil receives its current in the same direction relatively to the external circuit. 6th. In an electromotor, the combination of a revolving armature, two or more coils surrounding said armature with their axes coincident with its axis of rotation, and arranged to magnetize each a separate portion of said armature, and a commutator adapted to direct the current successively through said coils in the same direction, substantially as set forth, whereby each coil receives the current during not more than half the time, and during the remainder of the time it is severed from the circuit and receives no current. 7th. The combination of revolving armature A having polar projections, stationary magnet B having corresponding pole portions, and a magnetic inductive connection between said armature and magnet, arranged remote from said polar projections, and pole portions with one or more exciting-coils C inclosing said armature, substantially as set forth. 8th. The combination of stationary magnet B, revolving armature A, coils C, C, and iron disk D, mounted on said armature and revolving therewith, with its periphery in inductive proximity to the magnet B, substantially as set forth. 9th. In an electromotor, the combination of a revolving armature having polar projections, a stationary magnet having corresponding pole portions, exciting-coils inclosing said armature with their axes coincident with its axis of rotation, and the commutator F, constructed substantially as set forth, with the roller or conductor G through which the current enters the commutator, and a controlling-lever G, carrying the conductor *g* and adapted to move the same to different positions around the commutator, and thereby to stop, start, or reverse the motor, as set forth. 10th. The combination of a stationary tubular magnet B, cut away to form pole portions *c*, *c*, revolving armature A arranged concentrically within it, and exciting-coil C inclosing the core of said armature and inclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth. 11th. The combination of a stationary tubular magnet B cut away to form pole portions *c*, *c*, and divided longitudinally between the pole portions, as described, with a revolving armature A arranged concentrically within it, and the exciting-coil C inclosing the core of said armature and enclosed within said tubular magnet, whereby it magnetizes simultaneously said armature and magnet, substantially as set forth. 12th. In an electromotor, the combination, with stationary magnet B having pole portions and exciting-coil C, of revolving armature A, arranged in the axis of said coil and consisting of an iron core *a*, subdivided into distinct longitudinal members for the avoidance of Foucault currents, and pole-pieces *b*, *b*, made up of separated laminæ, substantially as set forth. 13th. In an electromotor, the combination, with stationary magnet B, having pole portions and exciting-coil C, of revolving armature A arranged in the axis of said coil and consisting of a core *a*, constructed of a longitudinally slitted iron tube *l*, and iron wires *m* arranged longitudinally in said tube, and laminated pole-pieces *b*, *b*, substantially as set forth. 14th. The combination, with stationary magnet B, having pole portions and exciting-coil C, of revolving armature A consisting of iron core *a* longituninally subdivided, and the pole-pieces *b*, *b*, each consisting of a series of iron plates separated by intervening layers of non-magnetic material and provided with pole caps *o*, *o*, substantially as set forth. 15th. The combination, with armature A, exciting-coils C, C and tubular magnet B, of disk-shaped end frames E, E and non-magnetic tubular envelope or casing I, substantially as set forth, whereby the magnetic parts are inclosed and protected from dust. 16th. The combination, of revolving armature A, consisting of core *a* and three pole-pieces *b* set at equal angular distances apart, magnet B having pole portions *c*, *c*, corresponding to said pole-pieces, and three exciting-coils C, C, with a commutator F adapted to direct the current into said coils successively, whereby each coil receives the current during its proportionate fraction of the revolution, substantially as set forth. 17th. The combination of revolving armature A, stationary magnet B and two or more coils C, C, with a commutator F having as many members as there are coils, and adapted to direct the current into said coils successively, with roller or conductor *g* by which the current enters the commutator, and another roller or conductor *g1* angularly adjustable relatively to the roller *g*, whereby the duration of the current through each coil may be prolonged, and the current may be admitted to each coil for a longer or shorter interval before being cut off from the preceding coil, substantially as set forth. 18th. The combination, with the coils C, C, of the commutator F having as many members as there are coils, the roller or conductor *g*, the controlling lever G carrying said conductor, the roller or conductor *g*, the lever G, carrying the latter, and the screw H for angularly adjusting said levers G, G1, relatively to each other, substantially as set forth.

No. 25,690. Railway Signal.

(*Signal de Chemin de Fer.*)

John A. Leonard, Glenvale, Ont., 11th January, 1887; 5 years.

Claim—The combination, with the track B, of two or more levers D, F, pivoted endwise together and fulcrumed between their ends, one end of the series of lever provided with a tread E in proximity to the rail, and the opposite end of the series of levers connected to a bell rope or chain K, supported by post M and leading to a bell or gong at the place of danger, whereby the wheels of a passing train will depress the thread and cause an alarm to be sounded, as set forth.

No. 25,691. Water Heater for Locomotive Boilers. (*Réchauffeur d'Eau pour Chaudières de Locomotives.*)

Thomas Clifford, Mount Savage, Md., U. S., 11th January, 1887; 5 years.

Claim.—1st. The combination, with a smoke-box, of an encircling water-jacket provided with inwardly-extending pockets and with longitudinal water tubes extending through the smoke-space, and connecting the inwardly-extending packets, substantially as and for the purposes described. 2nd. A smoke-box which is provided with an exterior longitudinal water chamber, which encircles the sides and partially encloses the ends of such smoke-box, and which has longitudinal water-tubes, which extend across the path of the escaping products of combustion, and which connect the oppositely-placed exclosing end portions of the water-chamber. 3rd. The combination, with a smoke-box, of an encircling water-chamber, which has inwardly-extending oppositely-placed end portions, and water-tubes which connect such end portions, and an end plate or head, which is provided with orifies, which are coincident with the water-tubes, and with screw-nuts for closing such orifies.

No. 25,692. Holder for Photographs, Pictures, etc. (*Porte-Photographie, Image, etc.*)

Edward Pachtmana, Dresden, Germany, 11th January, 1887; 5 years.

Claim.—As a new article of manufacture, a holder for photographs and other similar objects consisting of the frames *b*, attached to the inclined base *c*, by means of loops of a suitable durable fabric, folded in such a manner that the forward edge of the open loop of fabric is attached to the near surface of one of the frame *b*, whereas the rear edge of the said fabric is attached to the forward surface of the next adjoining frame, substantially as and for the purpose hereinbefore set forth.

No. 25,693. Cylindrical Wooden Package.

(*Boîte Cylindrique de Bois.*)

James Tomlinson, Detroit, Mich., U. S., 11th January, 1887; 5 years.

Claim—1st. A cylindrical package, the walls of which are composed of two layers of veneer, or wood sheeting, and a layer of waterproofed fabric interposed between them, as described. 2nd. A cylindrical package, the walls of which are composed of two thicknesses of wood, wound in a continuous coil from one piece and having a water-proofed fabric interposed between them, substantially as described. 3rd. In a veneer package, the combination, with the walls, of a cover having a bevelled edge, for the purpose specified.

No. 25,694. Elastic Pen and Penholder.

(*Plume et Porteplume Elastiques.*)

Ernst Mögel, Dresden, Germany, 11th January, 1887; 5 years.

Claim.—1st. The arrangement and application of a spirally coiled spring *a* to a stem-handle or holder *c*, for rendering the pen or writing instrument flexible in all directions, and the device for rendering the said spring inoperative by screwing the stem or handle *c*, into the

cone *d* of the holder or clamp, for the pen *f*, (Figs. 1, 2, 3,) or by means of the rod or spindle *g* (Fig. 10) of the angularly bent sliding rod *h* Fig. 11), and the cone *g*, substantially as and for the purpose hereinbefore set forth. 2nd. The application and employment of the coiled spring *a*, which is so provided with a rear extension *l* that the same can be used in ordinary holders (Figs 4 and 5), substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the spring *a*, pen *f* and extension *l*, said parts being made from one piece of metal (Figs. 6 and 7), substantially as and for the purpose hereinbefore set forth. 4th. The applicatian of the helical spring *a*, for holding the pen *f* by inserting the same between the alternately depressed coils, and also for receiving the stem handle or holder *c*, substantially as and forthe purpose hereinbefore set forth. 5th. The arrangement of the cylindrical holder or clamp K with long leaf spring *l*, which latter is attached to the holder *c* by means of the springs *r* (Fig. 12), all substantially as and for the purpose hereinbefore set forth.

No. 25,695. Method of and Apparatus for Ventilating Hats, Helmets, etc.

(Mode de Ventilation des Chapeaux, Casques, etc., et appareil pour cet objet.)

Charles Potter, Stockport, Eng., 11th January, 1887; 5 years.

Claim.—1st. In a hat or other head covering, the combination of the fan *a*, with the pendulum *b*, in such a manner that the pendulum *b* is set in motion by the constant movements of the head, and actuates the fan *a* either directly or indirectly, all substantially as set forth and for the purpose specified. 2nd. In a hat or other head covering, the valve *e* or slide *n*, for the purpose of regulating the admittance of air employed inside the frame or casing *c*, or air inlet *h* respectively, in direct combination with the fan and pendulum mechanism *a* and *b*, or air inlet *h* respectively, substantially as set forth.

No. 25,696. Bath Tub. (*Baignoire.*)

Frank B. Day, Jackson, Mich., U.S., 11th January, 1886; 5 years.

Claim.—1st. The combination of the bath tub of ordinary internal construction, of an external shell extending beneath the bottom and up the sides of the tub, of burners arranged at internals at openings in the said external shell, whereby heat is applied directly to the bottom of the bath tub, and pipe connections from said burners to the reservoir for supplying the fuel, all substantially as described. 2nd. The combination of the bath tub of ordinary internal construction, of an external shell extending beneath the bottom and up the sides of the tub, of burners arranged at intervals at openings in the said external shell, whereby heat is applied directly to the bottom of the tub, pipe connections from said burners to the reservoir for supplying the fuel, and an auxiliary tank connection to the bath tub having a pipe connection, the said auxiliary tank having a false bottom, and burner placed in the opening thereof and connected to the reservoir, all substantially as described.

No. 25,697. Index. (*Index.*)

The Schlicht and Field Company, Toronto, Ont., (Assinee of Paul J. Schlicht, Rochester, N.Y., U.S.), 11th January, 1887; 5 years.

Claim.—1st. An index table having a series of columns headed by the first two or more letters of surnames in divisions, in the alphabetical order of succession, a series of intersecting columns headed by the first letters of given names alphabetically arranged, and page indicating numbers at the points of intersection, in combination with a name-book paged to correspond with the index-table, substantially as described and shown, whereby the names bearing like initials are subdivided into smaller groups to the end, that the searcher may instantly select the particular name acquired. 2nd. An index table having columns headed by the first two or more letters of surnames in divisions, in alphabetical order of succession, a series of intersecting columns headed by an indicating letter of given names alphabetically arranged, and page indicating numbers at the points of intersection, in combination with a name-book paged to correspond with the index table and divided into sections, in the manner described and shown, whereby the names bearing like initials are subdivided into the smaller groups to the end, that the searcher may instantly select the particular name required. 3rd. An index table for compound names, that is to say, those composed of christian and surnames having a column containing the first two or more letters of one name, another column containing the first letter of the other name, and page indicator numbers in line with both columns, substantially as described, whereby names of the same initials are subdivided into different groups or classes according to the letters following said initials.

No. 25,698. Electric Conductor.

(Conducteur d'Electricité.)

John J. Williamson, Boston, Mass., U.S., 11th January, 1887; 5 years.

Claim.—1st. A compound ingot having a core of malleable metal of high electric conductivity and comparatively low fusing temperature, such as is herein described, inclosed on its side or sides and ends by a malleable tenacious metal of lower electric conductivity and comparatively high fusing point, substantially as and for the purposes described. 2nd. In the preparation of compound ingots of malleable cast metal exterior and copper centre for the manufacture of electric conductors, the improved method of preparing the interior of the steel envelope for the reception of the core consisting of the removal of sand-scale and the application of a carbonaceous wash or of the equivalent of such manipulations, substantially as described. 3rd. The method of producing electric conducting wires composed of copper and copper alloys, by casting or pouring molten fluid copycr or copper alloys to and around a solid bar, substantially as herein specified, or within a hollow ingot of copper or copper alloys, as herein indicated, and afterwards heating such ingot and reducing such ingot by rolling and drawing to the diameter proper for electrical conductors, all substantially as and for the purposes described. 4th. The electrical conductor consisting of the core of copper and the envelope of iron or steel, when made substantially as specified, and possessing the properties herein set forth. 5th. A compound electric conductor of copper and an alloy of the character herein specified, all substantially as described. 6th. The method of making copper-cored steel or iron-enclosed electric conductors, herein described.

No. 25,699. Air and Gas Engine.

(Machine à Air et à Gaz.)

Stephen Wilcox, Brooklyn, N.Y., U.S., 12th January, 1887; 15 years.

Claim.—1st. The combination, with a gas engine, in which compressed air is admitted to the working cylinder and fired, of a charging device for saturating the air with an inflammable liquid, a variable cut-off valve and an igniter to inflame the charge capable of adjustment, to act coincident with the closing of said cut-off valve. 2nd. In combination with an air or gas engine, in which the combustible gases are fired in the working cylinder, a changing device for injecting an inflammable fluid, operated and adjusted substantially as described, to deliver said inflammable fluid at the latest movement of the induction valve, so that mixture with the admitted air takes place within the cylinder, coincident with, or subsequent to the closing of said valve. 3rd. In combination with an air or gas engine, in which combustible gases are fired in the working cylinder, a charging device for injecting an inflammable fluid operated and adjusted substantially as described, to deliver a small quantity of the same during the opening movement of the induction valve, and to rapidly deliver a greater quantity or full supply during the closing movement of said valve, whereby the greater quantity of inflammable fluid entering the cylinder at the latest movement of the valve, is mixed with the preceding air admitted within the cylinder subsequent to the closing of said valve. 4th. In combination with an air or gas engine, in which combustible gases are fired, two charging pumps operated by a mechanism of differential movement, one of said pumps being adjusted to deliver a small quantity of inflammable fluid during the opening movement of the induction valve, and the other pump adjusted to rapidly deliver a greater or full supply during the closing movement of said valve, whereby the greater quantity of inflammable fluid, entering the cylinder at the latest movement, is mixed with the preceding admitted air after the induction valve closes. 5th. A receiver for air or gas engines, provived with a series of internal tubes connected with the exhaust pipe or passages of the working cylinder, the air space communicating with the delivery of the air compressing pump and directly with the induction passage of the working cylinder, whereby said tubes serve to heat the passing current of compressed air, and as stays to strengthen the construction. 6th, A working cylinder or valve chest head for gas engines, made hollow and fitted with stuffing boxes and hollow piston or valve rods, said hollow head forming a water space or jacket between the cylinder and stuffing box, whereby the packing is kept cool and protected from burning by an escape of the hot gases around said rods. 7th. In combination with an air or gas engine, in which combustible gases are fired in the working cylinder, an induction valve adapted to be disconnected from its opening mechanism at any desired part of the stroke, and sunddenly closed by an independent auxiliary device, and a charging pump for injecting an inflammable fluid operating coincident with the closing movement of said valve. 8th. The combination, with a gas engine, in which compressed combustible gases are fired in the working cylinder, of an induction valve opened by a positive motion and adapted to be closed at any desired point of the stroke by an extraneous force, and an igniter acting coincident with the closing of said induction valve. 9th. A double-seated induction valve, located between the receiver and cylinder, to close the communication and resist the action of a preponderating pressure from either direction. 10th. An induction valve of the type or kind described, having its port extended directly through it, and its circumferential faces fitted to close the communication between both the cylinder and receiver, and to be cooled by exposure to the adjacent water-jacket when in an open position. 11th. The combination, with a gas engine, in which compressed combustible gases are fired in the working cylinder, of independent induction and eduction valves protected by water jackets, the induction valves adapted to resist pressure toward and from the cylinder, and to cut off at variable points of the stroke, and an igniter adapted to inflame the charge coincident with the closing of the cut-off. 12th. The combination, with a gas engine, in which compressed combustible gases are fired in the working cylinder, of a valve gear for positively operating independent induction and eduction valves, the induction valves being adapted to close at variable points of the stroke, and an igniter acting coincident with the closing of the induction valve, as set forth. 13th. The combination, with a gas engine in which compressed combustible gases are fired in the working cylinder, of independent induction and eduction valves protected by water-jackets, the induction valves adapted to resist pressure toward and from the cylinder, and capable of adjustment to cut off at variable points of the stroke, and a reversing gear for running the engine in either direction. 14th. An air or gas engine, having its burner secured between the nozzles or flanges of the working cylinder and valve box, whereby it may be easily removed and replaced without disturbing other parts of the engine. 15th. An air or gas engine provided with a sliding igniter, operated by a motion coincinent with the valve motion, and having its inclosing port between the burner and cylinder, whereby it is sure to encounter and fire the issuing vapor, and made capable of adjustment to act simultaneously with the closing of the cut-off at any desired point of the stroke. 16th. A double-acting air or gas engine, in which atmospheric air and an inflammable fluid are mixed and fired in successive charges, consisting of a working cylinder, an air compressing pump, a reservoir, containing atmospheric air under pressure, arranged between said pump and cylinder, and a charging device for injecting an inflammable fluid, said cylinder being fitted with suitable induction and exhaust valves, combined with a link motion for operating and reversing the same, and also operating said charging device. 17th. A double-acting air or gas engine, in which atmospheric air and an inflammable fluid are mixed and fired in successive charges, consist-

ing of an air compressing pump, a reservoir containing atmospheric air under pressure, arranged between said pump and cylinder, and a charging device for injecting an inflammable fluid, said cylinder being fitted with suitable induction and exhaust valves, combined with a link motion for operating and reversing the same, and the charging device operated by mechanism independent of said link motion. 18th. An engine, in which the agent of force is saturated air fired in successeve charges in the working cylinder, provided with an air compressing pump, a reservoir or receiver for containing air under compression, and a device for saturating the air with an inflammable fluid, the working cylinder of said engine having suitable induction and exhaust valves, the induction valve being adjusted to open to admit air, separately or with an inflammable fluid, in such measured quantity to saturate a portion of the accompanying air to close at a predetermined period of each stroke, and during said closing movement to admit the required remaining portion of air and inflammable fluid, or the entire required supply of inflammable fluid separately, whereby a complete saturation of the air and inflammable fluid is delayed to take place within the working cylinder coincident with, or subsequent to the closing of induction valve. 19th. In combination with an air or gas engine, in which combustibles gases are fired, a moistening receptacle or chamber with interior spraying attachment arranged to saturate the entering air preparatory to compression, for the purposes explained. 20th. In a gas engine, an air pump provided with a valve adjusted to operate coincident with cut-off mechanism, whereby the effective capacity of the air-compression pump is adapted to the point of cut-off to suit the varying load. 21st. In a gas engine, an air supply and an oil feeding device operating coincident with the cut-off mechanism, whereby the quantity of each admitted to the cylinder and the quantity of air delivered by the air pump is controlled correspondingly with the adjustment of said cut-off mechanism. 22nd. In an air pump of a gas engine, an auxiliary air passage communicating with the source of air supply and with the opposite sides of the piston, and the latter with the atmosphere, said passage being fitted with suitable valves, whereby the air pressure upon either side of the piston may be reduced or increased upon the opposite sides of said piston, for the purpose set forth.

No. 25,700. Bottle Stopper Fastening.

(*Ligature de Bouchon de Bouteille.*)

Lewis Kalling, Jr., Baltimore, Md., U. S., 12th January, 1887; 5 years.

Claim.—1st. In combination with a bottle and its stopper, a cap attached to the said stopper, slotted straps extending from the cap trunnions, which project from the neck and through the slotted straps, and a clamp pivoted to the said trunnions and adapted to be forced over the said cap, substantially as specified. 2nd. In combination with a bottle and its stopper, the cap D having the slotted straps *f* arranged diametrically opposite to each other and provided with the stops *h*, the trunnions *a*, which project radially from the neck of the bottle and through the slotted straps, and the swinging clamp E pivoted to the said trunnions and arranged to be moved over the said cap and in contact with the said stops, substantially as specified. 3rd. In combination with a bottle and its stopper, a cap attached to the said stopper, slotted straps extending from the cap, a wire fastened around the neck of the bottle, the cap, a wire fastened around the neck of the bottle, having eyes therein, and a clamp to hold down the cap, having its ends turned in so as to pass through the slotted straps and into the eyes in the neck wire, substantially as specified.

No. 25,701. Turbine Wheel. (*Turbine.*)

Robert Cameron and John C. Lansing, Shelbourne, Ont., 12th January, 1887; 5 years.

Claim—1st. A turbine, having a wheel contained within the casing A, with a series of vertical blades B and a series of curved blades E, the latter blades being a slight distance below the bottom edge of the blades B, in combination with the chutes *a*, designed to direct the water against the surface of the blades B, substantially as and for the purpose specified, 2nd. A turbine, having a wheel contained within the casing A, with a series of vertical blades B and a series of curved blades E, the latter blades being in such positions that lines, drawn from the bottom edge of the blades B to the top edge of the blades E, would be substantially at an angle of forty-five degrees, substantially as and for the purpose specified. 3rd. A turbine, having a wheel contained within the casing A, with a series of vertical blades B and a series of curved blades E, the latter blades being in such positions that lines, drawn from the bottom edge of the blades B to the top edge of the blades E, would be substantially at an angle of forty-five degrees, and the bottom edges of each of the blades E are contracted towards each other, so as to form a series of buckets, which will retain for a limited period the water falling into them from the blades B, substantially as and for the purpose specified. 4th. A turbine, having a plurality of chutes *a*, and provided with gates F, pivoted at *f*, and arranged to operate substantially as and for the purpose specified. 5th. A turbine, having a plurality of chutes *a*, and provided with gates F pivoted at *f*, operated as described, and having wings *h*, substantially as and for the purpose specified.

No. 25,702. Furnace for Treating Refuse.

(*Fourneau de Traitement des Déchets.*)

James Richmond and Thomas Birtwistle, Burnley, Eng., 12th January, 1887; 5 years.

Claim.—1st. Vertical slits and air passages in the side and division walls of combustion chambers, substantially as and for the purposes specified. 2nd. The means, either jointly or separately, for the purification of the gases, leaving the combustion chambers and drying sheds, substantially as specified. 3rd. Arranging the drying shed or sheds, with respect to the combustion chambers that, evolved and emerging therefrom, will pass over the drying hearth or hearths in a transverse direction to the chambers, substantially as specified. 4th, Forming crevices or perforations in the drying hearths for the admission of atmospheric air to the refuse, as hereinbefore described. 5th. Constructing the drying hearth or hearths stepwise to ensure a better circulation of air beneath the refuse.

No. 25,703. Metallic Lathing and Foundation therefor. (*Claire-Voie Métallique et Fondation.*)

James W. Kensett, Newport, R.I., U.S., 12th January, 1887; 5 years.

Claim.—1st. A lathing foundation, having a series of parallel grooves or depressions, provided at intervals with lath-supporting loops or eyes, that are continuous from end to end and extend across said grooves, substantially as described. 2nd. A corrugated metallic lathing foundation, having integral loops or eyes for supporting the laths, substantially as described. 3rd. A metallic lathing foundation formed with a series of parallel grooves or depressions, each provided at intervals with lath supporting loops, the loops in one groove alternating with those in adjacent grooves, substantially as described. 4th. A metallic lathing foundation, having a series of parallel corrugations and intervening grooves or depressions, provided with integral lath supporting loops, that are continuous from end to end and extend across said grooves or depressions, substantially as described. 5th. The combination, with a metallic lathing foundation, having a series of parallel corrugations and intervening grooves provided with integral loops, of metallic laths lving in said grooves and supported by said loops, substantially as described.

No. 25,704. Car-Coupling. (*Attelage de Chars.*)

Charles D. Wooley, Walden, N.Y., U.S., 12th January, 1887; 5 years.

Claim.—1st. In a car-coupling, the combination, with a coupling-pin suspended from a guide-arm pivotally secured to the head of the coupling-pin, and adapted to swing therewith and limit the tilting motion of the pin when engaged by the approaching link, substantially as set forth. 2nd. In a car-coupling, the combination, with a coupling-pin, provided with a shoulder-bearing at the base of its head, of a vibrating guide-arm pivotally secured to the coupling-pin between the said shoulder and point of suspension, and adapted to engage the shoulder and thereby limit the tilting motion of the pin, substantially as set forth. 3rd. In a car-coupling, the combination, with a gravity coupling-pin adapted to retain one end of the link within the draw-head, of a vibrating arm pivotally secured to the head of the coupling-pin, and means for increasing or diminishing the pressure of said arm on the end of the link, and thereby elevating or depressing the free end of the link, substantially as set forth. 4th. In a car-coupling, the combination, with a rock-shaft provided with an arm adapted to operate the coupling-pin, of a handle, arm or lever for rocking the shaft, and a lock for securing the shaft against rotation, and hence the pin from uncoupling, substantially as set forth. 5th. In a car-coupling, the combination, with the draw-head provided with the slots in its upper and under sides, and the coupling-pin with its shoulders, of the guide-arm pivotally secured to the coupling-pin and draw-head, and the rock-shaft with its operating arm, connected with the pin by a link, the whole constructed and operating substantially as set forth.

No. 25,705. Rein Holder. (*Accroche-Rênes.*)

Lucius S. Tambling, San Francisco, Cal., U. S., 12th January, 1887; 5 years.

Claim.—1st. The combination, with the rein-holding block having an opening, of the spring-actuated clamp-block located in said opening and adapted to receive the reins and the rope, for the purpose set forth. 2nd. The combination, with the rein-holding block having an opening, of the clamp block located therein, and the pivoted lever L, as set forth.

No. 25,706. Process and Apparatus for Washing, Condensing and Absorbing Gases and Manufacturing Chemical Products. (*Procédé et Appareil pour Laver, Condenser et Absorber les Gaz et Fabriquer les Produits Chimiques.*)

Eugen B. Ritter and Charles Kellner, Goerz, Austria, 12th January, 1887; 5 years.

Claim.—1st. The herein described method of condensing, absorbing or washing gases consisting in cooling them, and then conducting them continually through a series of closed vessels, through which liquid is conducted in the reverse direction of the gases, substantially as shown and described. 2nd. In an apparatus for condensing, washing and absorbing gases, the combination, with a coolar having pipes through which gases can be conducted, of a series of absorption vessels connected with each other and with the cooling pipes, and of pumps for conveying liquids into the absorption vessels, substantially as shown and described. 3rd. In an apparatus for condensing, washing and absorbing gases, the combination, with a horizontal trough containing the pipes through which liquids can be conducted, of a series of connecting vertical cylindrical vessels connected with each other and with the pipes passing through the trough, substantially as shown and described. 4th. In an apparatus for condensing, washing and absorbing gases, the combination, with a series of vertical cylindrical vessels having swinging outlet pipes at the top, and fixed inlet-pipes at the bottom, of upright pipes extending upward from said fixed outlet-pipes, concentric with the centres of rotation of the upper outlet-pipes of two adjacent cylindrical vessels, substantially as shown and described. 5th. In an apparatus for condensing, washing and absorbing gases, the combination, with a series of vertical cylindrical vessels having gas outlet-pipes at the top, gas inlet-pipes at the bottom, vertical pipes connecting the upper outlet-pipes of one cylinder with the bottom inlet-pipes of the other cylinder, and an inlet-pipe for the liquids at the top of each cylinder, and an outlet-pipe for the liquids at the bottom of each cylinder, sub-

stantially as shown and described. 6th. In an apparatus for washing, condensing and absorbing gases, the combination, with the trough, of gas-cooling pipes in the same, the box E in which the gas-cooling pipes terminate, absorption vessel and pipes extending from the box E to the bottoms of the absorption vessels, substantially as shown and described. 7th. In an apparatus for condensing, washing and absorbing gases, the combination, with a series of vertical cylindrical vessels connected with each other, of spiral pumps mounted on tubular shafts, and tubes connecting the upper ends of the absorption vessels with the tubular shafts of the spiral pumps, substantially as shown and described.

No. 25,707. Brick and Tile Machine.

(*Machine à Brique et Tuiles.*)

James C. Anderson, Highland Park, Ill., U.S., 12th January, 1887; 5 years.

Claim.—1st. In a machine for pressing substances into form, the method herein described of feeding the material into the moulds, which consists in forming a vacuum in the mould box, to draw the material to be compressed into the same through suitable ducts or openings, as set forth. 2nd. In a brick or tile machine, the method herein described of filling the moulds with the material to be compressed, which consists in bringing the upper and lower plungers together within the mould, and then separating them to produce a vacuum within the mould, which action draws the material from the feed spouts uniformly into the mould cavity by the force of suction, as set forth. 3rd. The method herein described of making ornamental brick or tiles of clays of different colours, the same consisting in reducing the clays to finely divided condition and conducting it to the moulds through a plurality of spouts, as set forth. 4th. The method herein described of ornamenting the face of bricks or tiles with clays of different colors, the same consisting in feeding the dry clay powder through a plurality of spouts in the face edge of the mould in connection with the spouts, for filling in the clay forming the main body of the brick or tile. 5th. In a machine for pressing substances into form, the moulds of which are provided with feed ducts or spouts in their sides, as described, whereby the material to be compressed, is fed into the moulds between the plungers while said plungers are within the moulds. 6th. In a machine for pressing substances into form, the double sets of plungers and cams for operating them located on the outside of the frame of the machine, and the pinion wheels and mechanism for operating the cams and plungers located within the sides of the frame of the machine, as set forth. 7th. In a brick and tile machine, the plungers P and R, located on the outside of the machine and adapted to work in a horizontal direction, as described, whereby the clay is fed into the side of the mould box by the combined action of suction and gravity. 8th. In a brick and tile machine of the character described, the plungers of which are moved towards each other to compress the clay by means of eccentric cams, as described, and moved in an opposite direction by means of cam slots or grooves engaging with studs or pins on the plunger frames, as set forth. 9th. In a brick or tile machine of the character described, the cams V adapted to work in the grooves 3, formed in the walls of the open space W of the yoke or cross-head S, in combination with the cam groove discs located outside of the plunger frames and connected thereto by means of a stud working in said cam groove, as set forth. 10th. In a brick and tile machine of the character described, the horizontal mould boxes A^1 connected to, and communicating with the feed spouts above end thereof, whereby the clay is fed into said moulds by gravitation, as set forth. 11th. In a brick and tile machine of the character described, the horizontal mould boxes A connected to, and communicating with the feed spouts at one end thereof, in combination with the horizontal reciprocating plungers operated as described, whereby the supply of clay is fed into the mould box and moved forward to the solid portion of the mould before compression takes place, and an excess of air prevented from entering the moulds, as set forth. 12th. In a brick machine of the character described, the bar O^1 provided with the head I^1 in combination with the pivoted lever M^1 and cam groove R^1, whereby the newly formed bricks are pushed out of the path of the plungers, as set forth, 13th. In a brick machine, of the character described, the pins or plugs G^1 connected to the shaft I^1, as described, said shaft being provided with a bell crank lever L^1, friction stud *e*, *f*, in combination with the discs B^1 provided with the cam slot *g*, whereby the pins or plugs are moved back and forth at the proper time, to allow the compressed air in the moulds to escape, as set forth. 14th. In a brick machine of the character described, cross-head N, carrying the plungers P and R, adapted to travel in guides O, in combination with the portions S provided with the extensions T, adapted to work in the guides V, as set forth. 15th. In a brick machine of the character described, the yokes S provided with the oil-receiving grooves 3, as and for the purpose set forth.

No. 25,708. Base Burning Boiler for Steam Heating. (*Chaudière à Foyer Bas pour Chauffage à Vapeur.*)

William B. Dunning, Geneva, N. Y., U. S., 12th January, 1887; 5 years.

Claim.—In a steam heating apparatus, a set of tubes or flues U leading from and through the crown sheet passing through the water and steam space S, and through the upper head of boiler directly over the smoke tubes or flues T, and provided with plugs or caps for closing the same, all arranged substantially as and for the purpose specified.

No. 25,709. Retort Furnace for Making Wood Creosote. (*Four à Cornue pour Fabriquer le Créosote de Bois.*)

Ludvig Hansen and Andrew Smith, Wilmington, N. C., U. S., 12th January, 1887; 5 years.

Claim.—1st. A furnace A^1, having fire-place provided with arch a^1 and flues a^2 at opposite sides, through the inner end of said arch, and a retort or cylinder B, set in the said furnace above said arch and surrounded by an air-space *b*, in combination with transverse partitions b^1, b^2, dividing alternately the lower and the upper half of the said space *b*, for circulating the heat round the said retort, in the manner hereinbefore set forth. 2nd. The combination of the double furnace A, provided with the arches a^1 and flues a^2, with the retort B, and the air-space *b* surrounding the said retort and divided by alternate transverse partitions b^1, b^2. 3rd. The combination of the double furnace A, provided with the arches a^1 and flues a^2, with the retort B, and the air-space *b* surrounding the said retort and divided by alternate transverse partitions b^1, b^2, and having ventilating end doors D. 4th. The combination of the double furnace A, provided with the arches a^1 and flues a^2, with the retort B, having end-doors D provided with latches *c*, and the air-space *b* surrounding the said retort and divided by alternate transverse partitions b^1, b^2, and having ventilating end-doors G. 5th. The combination, with a retort furnace A, B, having openings *g* leading to its flues, of a fan or blower H connected to said openings to force a current of air through said flues for the rapid cooling of the retort. 6th. The combination of the retort double furnace A having around its retort air spaces or flues *b* provided with ventilating end-doors G, with the fan blower H connected to force a current of air through the said flues, at opposite sides of the partition *a* dividing the said furnace.

No. 25,710. Bullet Mould. (*Moule à Balles.*)

Amory Jewett, Somerville, Mass., U.S., 12th January, 1887; 5 years.

Claim—1st, The expansive moulds B, B, pivoted together and being connected to their rear ends, the plate A having the core or projection *a* on its inside for the purpose of forming a cavity or recess in the base of the bullet, as set forth. 2nd. The expansive moulds B, B and screws or pins *e*, *e*, in combination with the plate A having slots *a*, *a* and interior core or projection a^1, with centering shoulder a^{11}, as and for the purpose set forth. 3rd. The expansive bullet moulds B, B, having mould cavities *b*, *b* and semicircular ribs b^1, b^1, b^1, as described, in combination with the self-centering back plate A having core or projection a^1, for the formation of the rear cavity in the base of the bullet, as set forth.

No. 25,711. Mailing Case. (*Valise de Poste*)

Joseph Davis, New York, N. Y., and Norman W. Stearns, Boston, Mass., U. S., 12th January, 1887; 5 years

Claim.—1st. A mailing case consisting of an outer shell or casing, an inner shell and a cap applicable to the top of both shells. 2nd. A mailing case of wood, metal, papier-maché, or other suitable material, having its interior provided with an impervious or water-proof lining of cement, paraffine, wax, tar, or other liquid repellent. 3rd. A mailing case for bottles, etc., consisting of a shell or casing, in combination with a cushion of soft elastic absorbent material interposed between the interior of the shell and frangible object to be protected thereby, substantially as set forth. 4th. A mailing case consisting of an outer shell or casing, an inner metallic shell and a screw-cap for closing the mouth of the chamber therein, substantially as described. 5th. A mailing case having a receiving chamber and provided on its outside with a coating, covering or shell impervious to liquids, in combination with a cushion of soft elastic and absorbent material, and a cap for closing the mouth of the chamber, as specified. 6th. In combination with a shell or casing and a screw-cap for closing the chamber therein, an elastic washer for sealing the joint between them and for locking the screw-cap to the casing, as specified. 7th. In combination, an outer shell or casing, an inner impervious lining of metal, cement, paraffine, tar, etc., a screw-cap for closing the mouth of the chamber therein, and an elastic washer which serves both the function of sealing the joint between, and a device for locking the cap to the casing, as shown and described. 8th. A mailing case consisting of an outer shell or casing, an inner tightly fitting shell, movable metallic shell, a soft elastic and absorbent cushion interposed between the metal shell and the bottle or other frangible object, and a cap for closing the chamber within the case, as set forth. 9th. A screw-cap having a milled edge in combination with a shell or casing, and an elastic washer for sealing the joint between them, and for locking them together, as described.

No. 25,712. Flat Wire Nail.

(*Clou de Fil de Fer plat.*)

Charles W. Dean and Albert G. Godfrey, Taunton, Mass., U.S., 12th January, 1887; 5 years.

Claim.—1st. A nail blank having a sharp pointed stem and a flat head, whose parallel inner and outer edges or faces, respectively, form right angles with the corresponding edges of the stem, and which head terminates in a bevelled and hook-like point, as described. 2nd. A nail cut from bar metal with a stem and a head, substantially at right angles to each other, formed by the cut that severs said nail from the bar and having a short point projecting from said head parallel with the stem, substantially as described.

No. 25,713. Car Brake. (*Frein de Char.*)

The Masterman Automatic Brake Equalizer Company, San Francisco, (assignee of William H. Masterman, Alameda), Cal., U. S,, 13th January, 1887; 5 years.

Claim.—1st. The brake-lever and the rod through which power is applied thereto, in combination with an interposed weighted lever, and an arm connected therewith having a locking device to bind when the weight is raised, substantially as herein described. 2nd. The weight upon the bell-crank lever through which power is applied to the brake-lever, and having shoulders O formed upon each side, in combination with the lever pivoted to the weight and its supporting-arm, and provided with a locking device at its upper end to slide upon the fixed rod or bar when the weight is down, and to bind upon said rod when the weight is raised, substantially as herein described.

No. 25,714. Slide Valve Mechanism for Steam Engines. (*Mecanisme de Tiroir de Vapeur.*)

Charles Schmid and George Farnsworth, Chicago, Ill., U. S., 13th January, 1887; 5 years.

Claim.—1st. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, and a supplemental valve for opening and closing said escape-ports, of suitable mechanism extending between said supplemental valve and some relatively-fixed part of the structure, and adapted to shift the said supplemental valve as the main slide-valve is operated, substantially as described 2nd. In slide valve mechanism, the combination, with the main slide-valve having suitable escape-ports therein, and a supplemental valve for opening and closing said escape-ports, of mechanism for shifting said supplemental valve, comprising a crank-arm suitably connected with the supplemental valve and adapted to be operated from some relatively-fixed part of the engine structure, substantially as described. 3rd. In slide-valve mechanism, the combination, with the main chambered slide-valve having escape-ports therein, of a supplemental valve for said ports having apertures therein adapted to be brought coincident with the ports of the main slide-valve, and suitable mechanism for controlling the movement of said supplemental valve, substantially as described. 4th. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of a supplemental disk-valve for said ports, and suitable mechanism for controlling the movement of said supplemental valve, substantially as described. 5th. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of a supplemental rotating valve within said main valve, an arbor leading from said supplemental valve, a crank connected to said arbor and a rod connecting said crank to the steam-chest, substantially as described. 6th. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of a supplemental rotating or disk-valve, a guard-ring for said valve, and a suitable arbor and controlling mechanism for said valve, substantially as described. 7th. In slide-valve mechanism, the combination, with the main slide-valve having escape-ports therein, of a supplemental rotating or disk-valve for said ports having its arbor formed intergral therewith, and suitable mechanism for turning said arbor, substantially as described. 8th. In slide-valve mechanism, the combination, of the main chambered slide-valve having suitable escape-ports therein, of a supplemental disk-valve located within said main slide-valve and adapted to control the escape-ports thereof, the escape-ports of said main valve and the apertures of said disk-valve being relatively arranged, substantially as described. 9th. In slide-valve mechanism, the combination, with the hollow main slide-valve having escape-ports therein, and a supplemental valve within said slide-valve, of the spring for holding said supplemental valve to its seat, substantially as described. 10th. In slide-valve mechanism, the combination, with the main slide-valve having suitable escape-ports therein, of a supplemental rotating or disk-valve journalled with said main valve, and a coiled spring on the arbor of said supplemental valve for pressing it against its seat, substantially as described. 11th. In slide-valve mechanism, the combination of the chambered slide-valve having the cover D_4, the central portion D_2, and port-plate D_1, and having the ports d_2, d^3, d_5, d^6, spaces d_4 and end ports d_7, the supplemental valve E_1 having apertures e_1 and e_2 therein, the arbor E_2, the crank K and rod L, substantially as described.

No. 25,715. Fanning Mill. (*Tarare Cribleur.*)

Duncan C. McCaig, Joseph Martin and Smith Curtis, Portage la Prairie, Man., 13th January, 1887; 5 years.

Claim.—1st. The combination of the box Z with its slide G, with the fanning mill at O, T, and with the cups A on belt B, driven on the rollers C and D by chain or belt F, which is driven by wheel E, which is driven by drive wheel R, as and for the purpose hereinbefore set forth. 2nd. The combination of the frame M with the box Z, and with the springs I, and with the spring N, and also with the slide P, as and for the purpose hereinbefore set forth. 3rd. The combination of the weights H, H, with the fans *h*, *h*, as and for the purpose hereinbefore set forth.

No. 25,716. Box Nailing Machine. (*Machine à Clouer les Boîtes.*)

William S. Doig, (assignee of Thomas L. Smith and William S. Doig,) Brooklyn, N.Y., U.S., 13th January, 1887; 5 years.

Claim.—1st. In a box-nailing machine, the combination of a nail box and punch-operating mechanism, with one or more graduated intermittently-revolving cams, substantially as and for the purpose stated. 2nd. In a box-nailing machine, the combination of the frames or mechanism supporting the nail boxes and punches, with a cam or cams arranged on a shaft operated intermittently by a ratchet motion connected to the cross-head, nail box and punch-holding mechanism and operated by it in its vertical movements, substantially as shown and described. 3rd. In a box-nailing machine, the combination, with a nail box and punch and its operating mechanism, with a cam or cams fixed on a shaft supported and controlled in position by pivoted adjustable levers, substantially as shown and described. 4th. In a box-nailing machine, the combination of a nail-controlling and driving mechanism, with one or more box end guide stops controlled into and out of position, for the proper insertion of the nails and the regulation of the position of the parts to be nailed, by means of intermittently-rotating cams and springs, substantially as shown and described. 5th. The combination of the nail-controlling and driving mechanism with the lever k_4, ratchet device k_2 k_1, cams K, shaft K_1, adjustable pivoted rods L, L and a rod guide or guides l^3, substantially as shown and described. 6th. The combination of the nail box frame of a box-nailing machine, of one or more independently adjustable and removable nail boxes N_1, supported and controlled in position, substantially as shown and described. 7th. In a box-nailing machine, the combination of a nail box frame provided with a slotted extension H_2, with the independently-adjusted nail boxes H_1, bolts h_4 and a check nut or check nuts h_5, substantially as shown and described. 8th. In a box-nailing machine, the combination of the punch-holding frame with an independently-detachable punch or punches, controlled in position by a removable locking plate or plates *j*, substantially as shown and described. 9th. In a box-nailing machine, the combination of a punch-holding frame formed with a slotted or grooved extension, with one or more punches *l*, with corresponding hook-shaped heads *i* and a removable locking plate or plates *j*, substantially as shown and described. 10th. In a box-nailing machine, the combination of the shaft B and a clutch, for connecting and disconnecting the said shaft and the driving means, and a series of levers operated by a treadle adapted to throw the clutch into connection with the driving means, and also a revolving surface adapted to automitically throw the clutch out of connection with the driving means, substantially as and for the purpose described. 11th. The combination of a box-holding table or support of a box-nailing machine, with the adjustable screw-support N_2, chain wheels N^6, N^8, chain I and hand wheel N_9, the whole being arranged and constructed to operate substantially as shown and described. 12th. In a box-nailing machine, the combination of the cam-operating shaft k_1 and a cam or cams *k*, of an index wheel M, substantially as and for the purposes described. 13th. In a box-nailing machine, the combination of the cam-operating shaft k_1 and a cam or cams *k*, with an index wheel M provided with removable indicating plates *m*, substantially as and for the purpose described. 14th. In a box-nailing machine, the combination of the framing A, the punch and the nail-controlling mechanism with a stop or stops *x*, adapted to regulate the extent of the backward movement of the said mechanism, substantially as and for the purpose described. 15th. The combination, with the nail-feeding mechanism of a box-nailing machine, of a nail feeder pan supported, in connection with the nail-feeding mechanism, by pivots and bearings capable of allowing of the automatic vertical adjustment of the front of the nail feeder pan in relation to the rear of the nail-feeding mechanism, substantially as and for the purpose shown and described. 16th. The combination, with the nail-feeding mechanism of a box-nailing machine, of a nail-feeder pan having plates forming railways extending over the plates, forming the nail ways of the nail-feeding mechanism, substantially as shown and described. 17th. The combination, with the nail-feeding mechanism of a box-nailing machine, of a nail-feeder pan supported by pivots and bearings capable of allowing of automatic vertical adjustment of the said pan in relation to the feeding mechanism, and provided with a series of plates forming nail ways, extending over the ends of the plates forming the nail ways of the feeding mechanism, substantially as shown and described. 18th. In a box-nailing machine, the combination, with a nail-feeder pan provided with plates in its bottom forming ways for the reception and guidance of the nails, of a pivoted way clearing bar, substantially as and for the purpose described. 19th. The combination, with the nail-feeder pan of a box-nailing machine, of the laterally adjustable way-plates o^3, substantially as and for the purpose described. 20th. The combination, with the nail-feeder pan of a box-nailing machine, of the laterally adjustable way-plates o^3, and removable curved extensions o^6, substantially as shown and described. 21st. In the nail-feeding mechanism of a box-nailing machine, a series of pairs of way-plates having one of each pair of plates correspondingly carried by a separate frame or support, one of said frames or supports being adjustable latterally in relation to the other, substantially as and for the purpose stated. 22nd. In combination with the nail-feeding mechanism of a box-nailing machine, of a pair of laterally adjustable way plate-supporting frames, controlled in in position in relation to each other by adjusting-screws, substantially as shown and described. 23rd. In a box-nailing machine, the combination, with the nailways of the feeding mechanism, of a series of nailway stops supported on a bar capable of a compound horizontal and vertical motion, substantially as and for the purpose described. 24th. In a box-nailing machine, the combination, with the nailways of the nail-feeding mechanism, of a series of nailway stops supported by bars capable of independent or collective action, substantially as and for the purpose stated. 25th. In a box-nailing machine, the combination, with the nailways of the feeding mechanism, of a series of nailway stops mounted on blocks or carriers capable of interchangeable attachment to one or other of a pair of supporting and operating bars capable of independent or collective action, substantially as and for the purpose described. 26th. In a box-nailing machine, the combination with the nailways of the nail-feeding mechanism, of a series of pivoted and tilting nailway stops, supported and controlled in position by a bar having a horizontal and vertical motion, substantially as and for the purposes described. 27th. In a box-nailing machine, the combination, with the nailways of the feeding mechanism, of a series of pivoted and tilting nailways stops provided with hooks or projections at their lower ends, and supported and controlled in position by a pair of bars having a horizontal and vertical motion, the nailways stops being capable of attachment to the said bars in any desired manner, substantially as and for the purpose described. 28th. In a box-nailing machine, the combination, with the nailways of the nail-feeding mechanism, of a series of pivoted and tilting nailway stops, suppported and controlled in position by bars controlled in position laterally by a cam or cams, substantially as shown and described. 29th. In a box nailing machine, the combination, with a nailway of a box nail-feeding mechanism, of a pivoted stop S formed with a hook s^{20} at its lower end, a stop s^{18} and retaining spring s^{16}, substantially as and for the purpose described. 30th. In a box-nailing machine, the combination, with a pair of nailway stop-supporting bars, of a cam adapted to impart lateral motion to one or both of the said bars, and a cam surface adapted, either intermittently or at will, to arrest the motion of one of the said bars, substantially as and for the purpose stated. 31st. In a box-nailing machine, the combination, with a pair of nailway stop-supporting bars, of a series of stop-holding blocks and nailway stops, and a series of removable pins or screws adapted to engage by change of position, any or all of the series of stop-holding blocks with either of the said supporting bars, substantially as and for the purpose described. 32nd. In a box-nailing machine, the combination, with a series of nail-guiding ways and a series of nailway stops controlled in position by a bar or bars, of a series of painters, a series of pointer-operating cams mounted on a common shaft, and a bar-

operating cam mounted on the pointer-operating cam shaft adapted to operate the stop-operating bar or bars at times, in accordance with the action of the pointer-operating cams and pointers, so as to to insure the correct delivery of the individual nails, substantially as shown and described. 33rd. In a box-nailing machine, the combination, with she bars s^2, s^4, of the springs s^{12}, s^{13} and cams U5 and X, arranged and adapted to operate substantially as shown and described. 34th. In combination with the nail-feeding mechanism of a box-nailing machine, of a series of pivoted stops S, each provided with a nail-tilting hook or projection s^{19}, substantially as and for the purpose described. 35th. In combination with the nail-feeding and delivering mechanism, of a box-nailing machine, of a series of nail-receivers supported on an adjustable bar or carrier capable of adjustment vertically, so as to adjust the position of the mouths of the receivers in relation to the nail mechanism, substantially as and for the purpose described. 36th. In combination with the nail-feeding and delivery mechanism of a box-nailing machine, of the nail-receivers F constructed and adapted to conduct nails to the nail-driving mechanism, substantially as shown and described. 37th. The combination, with a nail box of a box-nailing machine, of a compound nail clamp, constructed and adapted to operate substantially as shown and described. 38th. The combination, with the nail box of a box-nailing machine, of a sectional nail clamp, adapted to act successively on the shanks and heads of the nails inserted thereby, substantially as and for the purpose described. 39th. The combination, with the nail box of a box-nailing machine, of a sectional nail clamp, each section of which is formed of a series of plates pivoted together and controlled in position by springs, one set of plates being arranged to act first on the shank, and the second to retain the nail in position by its head, substantially as shown and described. 40th. In a box-nailing machine, the combination, with a nail box, of a nail clamp formed with a receiving cavity, and a series of extending plates adapted to act successively on the shanks and heads of nails inserted, substantially as shown and described. 41st. In a box-nailing machine, the combination, with a nail box, of a clamp H^6 formed of sections constructed of a series of pivoted plates, and a double pair or series of springs adapted to operate on the sectional plates of the clamp, substantially as and for the purposes described. 42nd. The combination, of the nailways of the nail-feeding mechanism, of the adjustable pointer-holding means Z, and nailway stops S, substantially as and for the purpose described. 43rd. In a box-nailing machine, a nail-feeding pan O and a nail-feeding mechanism P, having a simultaneous vertically-reciprocating motion, substantially as shown and described. 44th. In a box-nailing machine, a nail-feeding mechanism P, having a series of nailways formed of plates supported at an angle with capability of a reciprocating or rocking motion, substantially as shown and described. 45th, In a box-nailing machine, a nail-feeding mechanism P, supported adjustably at an angle with capability of a regulated reciprocating rocking motion at each stroke, or operation, of the cross-head of the machine, substantially as and for the purpose described. 46th. The combination, with the nail box, frame and punch-holding frame of a box-nailing machine, of a series of nail boxes and punches formed with extensions of varying lengths, adapted to hold the nail boxes and punches in position to insert nails in rows, substantially as shown and described.

No. 25,717. Permutation Lock.

(*Serrure à Combinaison.*)

John M. Grau and Frederick Stall, Fort Leavenworth, Ks., U. S., 13th January, 1887; 5 years.

Claim.—In a combination lock, a metal casing L, having a back plate made in two sections L^1 and 5, the former serving as a bearing for the end of the bolt spindle, and the latter as a bearing for the pin carrying, a number of tumblers, and provided with a slot h^4, whereby the position of the tumblers may be determined from the back of the lock, substantially as shown and described.

No. 25,718. Shutter Operating and Fastening Device. (*Fermeture de Contrevent.*)

Arthur M. Burnham and Charles Gifford, Gardiner, Me., U. S., 13th January, 1887; 5 years.

Claim.—1st. The combination, with a blind or shutter and a slotted strap or plate fixed thereto, of an operating rod bearing in the window frame in inclined position, having rectangular arm lying in a plane outside of that of the operating rod, substantially as and for the purpose set forth. 2nd. The combination, with a blind or shutter and a slotted strap or plate fixed thereto, of an operating rod bearing in the window frame having a rectangular arm secured adjustably thereto, and lying in a plane outside of that of the operating rod, substantially as and for the purpose set forth. 3rd. In combination with a blind or shutter operating rod, having inclined bearing in the window-frame, and arm on its outer end, the slotted strap or plate fixed to said blind or shutter, and notched at opposite points for locking said arm in its extreme position, for the purpose set forth. 4th. A blind or shutter operating rod bearing in the window-frame, having enlargement or ball on its inner end occupying a socket or recess in the window-frame, substantially as set forth. 5th. In combination with a blind or shutter operating rod, having inclined bearing in the window-frame, and an arm on its outer end, the slotted strap or guide fixed to said blind or shutter, and having a series of notches or projections for engaging said arm, and thereby locking the shutter at any desired position, substantially as set forth. 6th. In combination with a blind or shutter operating rod, having inclined bearing in the window-frame, and an arm on its outer end, the slotted strap or guide fixed to said blind or shutter, and having on its outer side a series of notches, substantially as and for the purpose set forth. 7th. The combination, with a blind or shutter operating rod having inclined bearing in the window-frame, and an arm on its outer end, of the slotted strap or guide fixed to said shutter, and having, on its inner side a single notch or projection located above the bottom portion of the guide, substantially as and for the purpose set forth.

No. 25,719. Implement for Weeding and Cultivating Land. (*Scarificateur d'Agriculture.*)

Samuel H. Mitchell, St. Mary, Ont., 13th January, 1887; 5 years.

Claim—1st. The combination of bars *a* and *a*, with construction of the frame of cultivator, substantially as and for the purposes hereinbefore set forth. 2nd. The cembination of both K and *l* with the frame *m*, as and for the purposes hereinbefore set forth. 3rd. The combination of the knife or hoe *f*, *g*, and *g*, with the frame *p*, substantially as and for the purposes hereinbefore set forth. 4th. The combination of the teeth K and *l* with the knife or hoe, aforesaid *f*, *g* and *g*, with the cultivator frame aforesaid *a* and *a*, substantially as and for the purposes hereinbefore set forth.

No. 25,720. Door Lock. (*Serrure de Porte.*)

Thomas E. Rogers, Jackson, Mich.. U. S., 13th January, 1887; 5 years.

Claim.—1st The combination of the latch spindle 1, the circular disk 2, provided with the notch 8 and the latch 6, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the latch spindle 1, the circular disk 2 provided with the notch 8, the latch 6 and the rosette 4, substantially as and for the purpose hereinbefore set forth.

No. 25,721. Holder for Tickets, etc.

(*Serre-Billet, etc·*)

Ernst Mogel, Dresden, Germany, 13th January, 1887; 5 years.

Claim.—1st. My ticket-holder composed of two plates, which are connected by a spring joint, and held together by a catch device composed of the rod *b*, nose *n*, spring *g* and knob *d*, Figs. 5, 6, 7, 8, substantially as and for the purpose hereinbefore set forth. 2nd. The plate *f*, enclosed or inserted in the object in question, and which can be raised by the knob *c*, or by the plate *e*, and the cam or trappet *d*, the ticket being inserted in the slot *b*, Figs. 1 and 2, substantially as and for the purpose hereinbefore set forth. 3rd. The piu or pegs, which simultaneously serves to perforate the ticket or other similar objects, and to firmly hold the same by means of the flexible nose *f*, which catches in a recess of the said pin or pegs, substantially as described. 4th. The arrangement of the pin or stem *b* on the handle of the stick or umbrella, which is held in position by the rod *a*, with nose *n* and spring *g*, and slot *c* for the reception of the ticket, substantially as described. 5th. The plate p_1, which is held by means of a hollow rod, in which the guide pin *c*, spring *g* and the stop motion for the loose plate *p*, composed of the rod *a* with nose *n*, are arranged all substantially as and for the purpose hereinbefore set forth.

No. 25,722. Lock for Reverse and Throttle Levers. (*Arrêt pour Leviers de Changement de Marche.*)

George P. Whittlesey and Daniel P. Wright, Washington, D. C. (assignee of Charles May, Sunbury, Penn.), U. S., 13th January, 1887; 5 years.

Claim.—1st. The combination, with a lever and its quadrant, of a main locking mechanism and an auxiliary locking mechanism, operated by the same handle that controls the main locking mechanism, substantially as and for the purpose described, 2nd. The combination, with a lever and its notched quadrants, of a latch to lock the lever in a position corresponding to any one of said notches, and an auxiliary locking device to lock the lever in intermediate positions, said auxiliary locking device being operated by the same handle that controls the latch, substantially as and for the purpose set forth. 3rd. The combination, with a lever and its notched quadrant, of a main latch and one or more auxiliary latches, all operated by the same handle, substantially as and for the purpose described. 4th. The combination, with a lever and its notched quadrant, of two or more latches, all operated by the same handle, the notches and latches being so arranged that only one latch is in engagement with the quadrant at the same time, substantially as and for the purpose set forth. 5th. The combination, with lever A and quadrant B, having notches *b*, *b*, of handle D, links E, E, pin F and latches H, I, having slots *a*, *q*, said slots being equal in length to the depth of a notch plus diameter of pin F, substantially as and for the purpose set forth. 6th. The combination of lever A, quadrant B, having notches *b*, *b*, handle D, links E, E, pin F, bolt G, main latch H having slots *a*, *h* and lug *e*, and auxiliary latch I having lugs *f*, *f*, and slots *c*, *d* and *g*, substantially as and for the purpose set forth. 7th. The combination of lever A, having lug M, quadrant B having notches *b*, *b*, handle D, links E, E, pin F, bolt G, latches H and I, rods K, K^1 and springs L, L_1, substantially as and for the purpose set forth.

No. 25,723. Machine for Making Staples.

(*Machine pour Fabriquer les Crampes.*)

The Peninsular Novelty Co., Grand Rapids, Mich. (assignee of John H, Winton, Boston, Mass.), U.S., 13th January, 1877; 5 years.

Claim—1st. In a machine for making staples, a former over which the wire is bent, and a vertically reciprocating die to cut off the wire and bend it over the former, combined with hammers to strike and broaden the ends of the wire, and means, substantially as described. to operate the said hammers, as set forth. 2nd. In a machine for making staples, the former and die, and means, substantially as described, for operating said die, combined with a pair of presser-levers, means, substantially as described, for operating them, and the adjusting screws f_5, f_5, and the hammers *m*, m_1, as set forth. 3rd. In a machine for making staples, the former and die, combined with the ejector moving upon the former to free the latter of staples, and means, substantially as described, for moving said ejector positively in both directions, as set forth. 4th. In a machine for making staples,

the former and vertically-reciprocating die c, combined with the presser levers f, f, and hammers m, m^1, substantially as described. 5th. In a machine for making staples, the former and vertically-reciprocating die c, combined with the presser levers f, f, and chambers m, m^1, and an automatically-operated ejector moving upon the former, substantially as described. 6th. The die c, having a dovetail head e^4, combined with the plunger, a head-block correspondingly recessed to receive the die-head and fitted to the plunger side bars c^5, c^6, clamping blocks and adjusting and fastening means, substantially as described. 7th. The former and die combined with the spring-controlled clearer wedge block c^4, its side pieces c^7, c^8, plate c^2 and its side pieces c^5, c^6, all substantially as described.

No. 25,724. Hot Air Distributor and Fuel-Saving Device. (*Calorifère à Air Economisant le Combustible.*)

Thomas Boggess, Hamillon, Ont., 13th January, 1887; 5 years.

Claim.—1st. In a stove for distributing hot air, the combination of a stove A with its two fuel-admitting doors H, the two ash-pan doors I, one on each side, the movable grate rest D on bricks or metal, and an aperture in the stove, at any point below the grate, for the purpose of admitting the air-pipe B, substantially as and for the purpose hereinbefore set forth. 2nd. In a stove for distributing hot air, the combination of a stove A with its connections, as described and claimed, and the peculiar construction of the grate C made in halves having bars, and, when together, forming an aperture in the centre, for the purpose of admitting the air conducting pipe B through the same, substantially as and for the purpose hereinbefore set forth.

No. 25,725. Incidence Window for Lighting Basements, Vaults, etc. (*Fenètre d'Incidence pour Eclairer les Soubassements, les Voutes, etc.*)

The American Crystal Light Company, Boston, Mass. (assignee of Isidore Schoenberg, Baltimore, Md.), U.S., 13th January, 1887; 5 years.

Claim.—1st. An incidence window, composed of a frame, with a parallel series of glass blocks of right-angled triangular shape, having their long sides or hypothenuse in the plane of the frame, with the blocks prolecting upwardly so as to expose their two sides, substantially as and for the purpose described. 2nd An incidence window composed of a frame having parallel grooved rails, with a parallel series of blocks slid between the rails, with their acute angles in the grooves and the long side in the plane of the frame, substantially as and for the purpose described. 3rd. An incidence window, composed of an inclined frane for its upper end most remote from the building, and having triangular prismatic blocks with one face in the plane of the frame, and with the block itself projecting upwardly, substantially as shown and described.

No. 25,726. Power Press. (*Découpoir.*)

James L. Board, (assignee of James H. Clapp), Chicago, Ill., U.S., 13th January, 1887; 5 years.

Claim.—1st. In a power-press, the combination, with an eccentric shaft and a cross-head having suitable impression dies, of the split pitman E, screw-threaded link C, connected with the cross-head by means of a ball and socket joint, and means for compressing the split portion of the pitman shank, substantially as described and for the purposes specified. 2nd. The combination, with the reciprocating cross-head, of the blocks B, B, slotted and grooved as described, and means as the set-screws a^1, for adjusting the same laterally, substantially as and for the purposes set forth. 3rd. The combination, with a reciprocating cross-head, of a die-box, a counterpart adjusted to engage the same when depressed, and means for imparting a yielding counter-pressure to said counterpart and for limiting its upward movement, substantially as described. 4th. The combination of the adjustable cross-bar L with the tang j^4, die J and die box H, substantially as and for the purpose specified. 5th. The combination of the dies J, H and their counterparts, of the reciprocating cross-head C and means for imparting thereto a lateral and longitudinal adjustment, substantially as and for the purposes set forth.

No. 25,727. Mechanical Movement. (*Roue à Palette.*)

Mark B. True and Albert P. Sawyer, Newburyport, Mass., U. S., 13th January, 1887; 5 years.

Claim.—1st. The combination, with the rotatable disk plate or wheel A and the spindles or axles C, C carried by it, of the circular rod or ring E arranged to occupy an eccentric position in relation with the disk A, by means of the inner rollers G, G and the outer rollers G^1, G^1, and the cranks D, D, connecting said ring and disk, substantially as and for the purpose herein set forth. 2nd. The combination of the inner rollers G, G and the outer rollers G^1, G^1, with the eccentrically arranged ring E, the cranks D, D, the spindles or axles C, C and the rotatable disk A, essentially as and for the purposes herein described.

No. 25,728. Latch. (*Loquet.*)

William W. Dey and William I. Marshall, Altona, Penn., U.S., 13th January, 1887; 5 years.

Claim.—In a latch, the combination of a keeper having the shoulders e^1 on its rear edge, a swinging locking plate pivoted to the keeper at an intermediate point of its length, and having a flange or rib at its rear end, which projects therefrom into the path of the shoulders e^1, and is adapted to come in contact with the said shoulders, to limit the movement of the plate, and the door plate having the projecting lug adapted to ride upon a bevelled shoulder at the front end of the locking plate, substantially as described and for the purpose set forth.

No. 25,729. Balance Valve for Locomotives. (*Soupape Equilibrée pour Locomotives.*)

Arlington Foster, David W. Thompson, Abraham F. Walter and Samuel J. Burnison, (assignees of Lewes Kneedler), Caledonia, Iowa, U. S., 13th January, 1887; 5 years.

Claim.—1st. The combination, with the valve having the column C provided with the studs E, of the yoke K adapted to fit on the column, and having the opening k for clearing the studs, substantially as described. 2nd, The combination of the slide-valve, having the column C and the spring pressed-plate O, to bear against the top of the steam-chest, the yoke on the column, and the valve-rod attached to the said yoke, substantially as described. 3rd. The combination of the slide-valve having the column C, the expansible ring L on the said column, said ring being divided and having its ends connected together by the tongue or link M, the springs bearing under the ring, and the plate O on the upper side of the ring, substantially as described.

No. 25,730. Soap Press. (*Presse à Savon.*)

James L. Board, (assignee of James H. Clapp), Chicago, Ill., U. S., 13th January, 1887; 5 years.

Claim.—1st. The combination, with a soap-press having a loose matrix inclosed within a box, the counterpart of which matrix is attached to a reciprocating cross-head, of a bar arranged to move longitudinally in bearings, and provided with arms at or near its respective ends, which are in turn connected with said cross-head and loose matrix, substantially in the manner and for the purposes specified. 2nd. In a soap-press, a rigid bar loosely supported in bearings, in which it is fitted to slide and provided with rigid arms at or near its ends, one of which is connected with the cross-head, and the other by an intermediate pin G or equivalent means, with the lower section of the die, whereby the latter may be positively raised to the surface of the box upon the return stroke of the cross-head, substantially as described. 3rd. The combination, with a soap-press, the wale-die of which is attached to a reciprocating cross-head operated by a lever and counterpoise weight, of the reciprocating bar E provided with arms F, F^1, the former of which is connected with the cross-head, and the latter with a loose vertical pin in contact with the movable matrix d, substantially as and for the purposes set forth. 4th. The combination, with a soap-press, the wale-die of which is attached to a reciprocating cross-head operated by a lever and counterpoise weight, of the reciprocating bar E provided with adjustable arms F, F1, the former of which is connected with the cross-head, and the latter with a loose vertical pin in contact with the movable matrix d, substantially as described and for the purposes specified. 5th. The combination, with a soap-press, the wale-die of which is attached to a reciprocating cross-head operated by a lever and counterpoise weight, of the reciprocating bar E provided with arms F, F^1, the former of which is connected with the cross-head, and the latter with a loose vertical pin beneath and in contact with the movable matrix d, and the spring e for initiating a backward stroke of the cross-head, substantially as described. 6th. In a soap-press, the reciprocating bar E having adjustable arms F, F^1 connected with the respective dies thereof, substantially as and for the purposes set forth. 7th. In combination with the dies and die-box of a soap-press, the adjustable device J, whereby said dies may be adjusted to form cakes of varying thickness, substantially as specified. 8th. In combination with the dies and die-box of soap-press, the adjustable die-support J and means, as a jam-nut, for locking the same in position when adjusted, substantially in the manner and for the purposes described.

No. 25,731. Magneto-Electric Signalling Apparatus. (*Appareil Magneto-Electrique à Signaux.*)

The Bell Telephone Company, (assignee of Charles W. Brown), Montreal, Que., 13th January, 1887; 5 years.

Claim.—1st. In a magneto-electric signalling apparatus, the combination, with the Siemens armature A and ringing mechanism, of the gears C, C^1, and automatic cut-out composed of main cut-out shaft M, sleeves N and P, collar n, clutch ring O and spring Q, all constructed and operating substantially as herein set forth. 2nd. The combination, with the armature A, ringing mechanism, gears C, C^1, and the automatic cut-out herein described, of the switch-lever H with knife-edge H^1, retractile spring I and clip springs K, all as and for the purposes described. 3rd. The combination, with the armature A, ringing mechanism, gears C, C^1, automatic cut-out, as herein described, and switch-lever H, of a strong current protector L placed in the line circuit, substantially as and for the purposes set forth.

No. 25,732. Combination Music Porte-folio and Music Leaf Turner. (*Porte-feuille et Tourne-feuille de Musique Combinés.*)

James R. Sage, George A. Knodell and Richard Rodgers, St. John, N.B., 13th January, 1887; 5 years.

Claim.—1st. As a new article of manufacture, a combination music portfolio consisting of the connected foldable leaves, a rigid strip carried by one of the leaves, a laterally movable strip arranged parallel with the rigid strip, the bracket secured to the rigid strip for guiding the movable strip, and the springs interposed between lips of the brackets and the movable strip, to force the latter toward the rigid strip, substantially as described for the purpose set forth. 2nd. In a music portfolio, the foldable leaves having a rigid strip provided with guide grooves, in combination with a laterally movable strip, the brackets carried by the movable strip and having the studs and coiled springs encircling the studs, substantially as described. 3rd. In a music leaf turner, the combination of a series of pivoted swinging arms, each having a right-angled lip arranged alongside of and out of contact with each other, when the device is in use, a spring connected to each arm and an independent clamp for each arm arranged in line therewith, to engage the end R and out of the path of

the adjoining arms, substantially as described for the purpose set forth. 4th. The combination of a series of independent swinging arms, each having a grooved hub at one end, and a right-angled lip K at its opposite end, a common shaft passing through all the hubs of the arms, the coiled retractile springs, the cords intermediate of the springs and hubs of the arms for actuating the latter, and an independent clamp for each arm arranged in line therewith, to engage the lip K thereof and out of the path of the adjoining arms, substantially as described for the purpose set forth. 5th. A swinging carrying arm fer leaf-turning devices having a bent end or lip K formed into a loop K^1, and a binding arm K^2, arranged transversely and to one side of the loop to clamp the leaf between the loop and arm, substantially as described for the purpose set forth.

No. 25,733. Clothes Reel. (*Séchoir.*)

Stephen Tillson, Tilsonburg, Ont., 14th January, 1887; 5 years.

Claim.—1st. In a clothes reel, the combination of the clamps C, C with the hollow body A, substantially as and for the purpose set forth. 2nd. In a clothes reel, the combination of the cap H, with the hollow body A and adjustable standard B, substantially as and for the purpose set forth. 3rd. In a clothes reel, the combination of the cap H^1 formed with an annular flange S, with a head M formed with an annular groove *o*, substantially as and for the purpose set forth. 4th. In a clothes reel, the cap H formed with a guard H^2, in combination with the hollow body A and adjustable standard B, substantially as and for the purposes specified. 5th. The combination of the hollow body A, cap H, base G, clamps C, C, shaft D, crank F and toothed pinion E, with the dog J pivoted on a plate K^2 or its equivalent, toothed rack I and adjustable standard B, substantially as and for the purpose set forth. 6th. The combination of the adjustable standard B formed with an aperture R, plug P and the cap H^1 formed with an annular flange S, with the head M formed with an annular groove *o*, shank N, and extension supports L^1, and arms L, substantially as and for the purpose set forth. 7th. The combination of the body A, base G, cap H and clamps C, C, with the shaft D, crank F, toothed pinion E, dog J, toothed rack I, adjustable standard B, cap H^1, head M formed with shank N, and arms L, L, substantially as shown and described and for the purpose specified.

No. 25,734. Fire Kindler. (*Allumoir.*)

Harry D. Henderson, Detroit, Mich., U. S., 14th January, 1887; 5 years.

Claim.—1st. The improved fire-kindler consisting of the imperforate concave oil receptacle A, the perforated concavo-convex cover C, the broad handle *h*, for supporting the said receptacle in a horizontal position composed of a single piece of wire bent at its centre and having its end portions diverging from each other, and passing through two holes in the margins of the disk and its cover, and rivetted thereon, and an asbestos filling between the receptacle and its cover, substantially as described and shown. 2nd. The combination of the imperforate concave oil-receptacle A, the perforated concavo-convex cover C, secured to said receptacle with the concavities facing each other, a sheet *a* of asbestos applied to the concave side of the receptacle A, and loose asbestos fibres between the sheet *a* and cover C, substantially as described and shown.

No. 25,735. Flue Cap. (*Dé de Tuyau.*)

Frederick E. Heinig, Louisbourg, Ky., U. S., 14th January, 1887; 5 years.

Claim.—1st. In a flue cap, the combination, with a frame, of pivoted doors and a bail pivoted to said frame, substantially as set forth. 2nd. In a flue cap, the combination, with the frame, of the cover, the bail having projections, and the doors, substantially as set forth. 3rd. The combination, in a flue cap, of the frame B, cover C and bail E, with doors D, D, one of which has a projection D^1, the other a lap D^2, substantially as and for the purpose set forth.

No. 25,736. Loader for Loading Hay and Grain. (*Monte-Foin et Monte-Grain.*)

Thomas I. Dixon, Hamilton, Ont., 14th January, 1887; 5 years.

Claim.—1st. A movable or automatic wind brake, for hay or grain loaders, that will adjust itself to the quantity of hay or grain passing up the elevator, as described. 2nd. The side board by which the elevator is prevented from leaving the pulley, and by which it is made to support and stiffen the extension bar I, as described. 3rd. The slotted casting D, by which the combination is effected without interfering with the adjustability of the extension bars. 4th. The shield or sleeve E, by which the hay is prevented from winding round the pulley H. 5th. A movable leg, in combination with the tongue of or hay a grain loader, all for the purposes hereinbefore set forth.

No. 25,737. Heating Stove. (*Calorifère.*)

Robert Horning, South Grimsby, Ont., 14th January, 1887; 5 years.

Claim.—1st. In a stove A, the hot air pipe C inside of the stove pipe B, in connection with the outside portion of said pipe C, with the bell mouth D, the exit ports E and dampers *f*, as described. 2nd. In a stove A, the hot air pipe C, extending from the inside of the stove pipe B down through the stove, in connection with the bell mouth D^1 underneath the stove, as described, all operating substantially as and for the purpose of a heat economizer, as herein set forth.

No. 25,738. Bag Tie. (*Ligature de Sac.*)

John Reggin, Toronto, Ont., 14th January, 1887; 5 years.

Claim.—1st. A bag-tie constructed of any suitable material, provided with a head-piece with thumb-screw, said thumb-screw having a loose washer on its end, so that the screw will turn without turning the washer, a body-piece or saddle made in one piece with the aforesaid head-piece, in which saddle the neck of the bag is partially embraced, and its mouth securely closed bp a cord or strap attached to the saddle and held tight by the thumb-screw, substantially as shown and described. 2nd. A bag-tie A, with screw B in head-piece C, and loose washer b^1 on the end of screw B, the combination of the saddle D, with hollow face d^1 and sides d^2, d^2 and strap or cord E, the whole constructed and arranged and operating as set forth.

No. 25,739. Car Coupling. (*Attelage de Char.*)

Charlie E. Mark, Flint, Mich., U.S., 14th January, 1887; 5 years.

Claim.—In combination with a car-coupling which is operated by means of a crank and connecting levers, through the medium of a cam shaft carrying a cam from the side of the car, a stop projecting from the side of the car, substantially as and for the purposes described.

No. 25,740. Hoisting Device. (*Mouflette.*)

Lorenzo D. Spragg, Marion, Ohio, U.S., 14th January, 1887; 5 years.

Claim.—1st. In a hoisting device, the combination of a pulley or sheave, a loose pulley-block, a clamping-lever having its end bearing towards the upper edge of the pulley, and a hoisting-rope passing over the sheave and over the loose block and secured by one end to that end of the clamping-lever nearest to said sheave, as and for the purpose shown and set forth. 2nd. In a hoisting device, the combination of a frame having means for suspending it, and having two pulleys or sheaves journalled in its ends, a loose pulley block, a lever pivoted in the frame and having its ends recessed and projecting toward the upper and inner portion of one of the sheaves in the frame, and provided with a pending eyed rod, and a hoisting-rope secured to the pending eyed rod and passed under one sheave of the loose block and over one sheave of the frame, and again under a sheave of the block and over the other sheave of the frame having the end of the lever bearing against its, as and for the purpose shown and set forth. 3rd. In a hoisting apparatus, the combination of a frame having means for suspending it, and having two pulleys or sheaves journalled in its ends, a loose pulley-block, a lever pivoted in the frame and having its inner end recessed and projecting toward the upper and inner portion of one of the sheaves, and provided with a pending eyed rod, and having a rope attached to its outer end, and a hoisting-rope secured to the eyed rod and recessed over the sheaves in the frame and under the sheaves in the block, and having the inner end of the lever bearing against it, as and for the purpose shown and set forth.

No. 25,741. Radiator for Warming Buildings. (*Serpentin de Calorifère.*)

John R. Reed, Westfield, Mass., U.S., 14th January, 1887; 10 years.

Claim.—1st. In an upright sectional radiator, in combination with the sections composing the same, having openings therein for communications between the sections, of the separate and detachable cap E for closing said openings, as described and shown for the purposes specified. 2nd. The combination, in an upright sectional radiator, with the section composing the same, each of which is formed at its top and bottom with tapered openings for communication between said sections, of the separate and detachable threadlessp niplies D, having tapered ends *d* and detachable cap E, substantially as described and shown for the purposes specified. 3rd. The combination, in an upright sectional pipe radiator, of the section composing the same, each formed of a group of three pipes each, the central pipe of which is of larger diameter than the outside ones, and having an oval shaped fluted surface, and having tapering openings therein at top and bottom, the separate nipples tapered at each end, and separate cap E, all constructed and arranged substantially as and for the purposes described and shown.

No. 25,742. Filtering Water Wells and Reservoirs. (*Filtration des Puits et Réservoirs d'Eau.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. A well, built of porous terra-cotta, as distinguished from ordinary terra-cotta, for filtering the water passing into the same, substantially as described. 2nd. A well, the walls and bottom of which are built of porous terra-cotta, as distinguished from ordinary terra-cotta, said porous walls and bottom serving to filter the water passing from the surrounding ground through the same into the well, substantially as described. 3rd. A well, built of pieces of porous terra-cotta, as distinguished from ordinary terra-cotta, said pieces being united by asphaltum joints, so as to prevent the water from passing from the surrounding earth into the well, except through the porous material of which it is built, substantially as described.

No. 25,743. Fire-Proof Safe, Vault and Storage Receptacle. (*Coffre, Voute et Magasin Réfractaires.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. A fire-proof safe, vault, or similar receptacle, provided with a lining consisting of a porous burned brick material, substantially as described. 2nd. A fire-proof safe, vault, or similar receptacle, provided with a lining formed of slabs of a porous burned brick material, fastened together, substantially as described.

No. 25,744. Air Compressor and Attachment for Locomotives. (*Machine de Compression et Appareil pour Locomotives.*)

Thomas P. Sweeney, Sacramento, Cal., U. S., 15th January, 1887; 5 years.

Claim.—1st. The cylinders and valve-motion of a locomotive engine, as an air-compressor, substantially as herein described. 2nd. A pipe, having one end connected with the cylinders or steam chest

of a locomotive engine, and the other with the air-reservoir or pipes by which the train brakes may be operated, substantially as herein described. 3rd. A pipe, having one end connected with the steam chest or cylinder of a locomotive engine, and the other with the train-brake mechanism, in combination with a hood or cap which may be used substantially as herein described. 4th. A means for supplying air to the air reservoir or train brake mechanism, consisting of a pipe or pipes connecting with the steam-chest or cylinders or exhaust passages in a locomotive engine, whereby the pistons and valve-gear may be employed to pump air, substantially as herein described.

No. 25,745. Method of Casting Car Wheels.

(*Mode de Coulage des Roues de Chars.*)

William Wilmington, Toledo, Ohio, U. S., 15th January, 1887; 5 years.

Claim.—The method, herein described, of casing chilled thread cast iron car wheels, which consists in pouring molten cast-iron from two ladles, one containining suitable molten chill-hardening cast-iron in its normal plate, the other containing suitable molten cast-iron, having mixed in a molten homogeneous state a quantity of ferro-manganese, or its described equivalent, the same being powdered or reduced to a degree of fineness that permits it to be melted by the inherent heat in the molten iron in the ladle, and to become homogeneous with the molten iron in the ladle, the pouring being conducted in the following manner, to wit: filling the basin of the mold with the molten iron in its normal state, the same being poured continuously until the mold is filled, and after the basin is properly filled, and while the first-named metal is running, pouring the metal from the ladle holding the alloyed molten iron gradually into the flowing stream of iron, in its normal state, or into the basin of the mold, and gradually increasing the flow of the alloyed iron until the car-wheel is cast, substantially as described. and for the purpose set forth.

No. 25,746. Radiator for Steam Heating.

(*Serpentin de Calorifère.*)

Joseph Askins, Lima, Ohio, U.S., 15th January, 1887; 5 years.

Claim.—1st. In a radiator, the combination, with a base having a steam chamber and an air chamber, of air pipes or tubes secured to the floor of the steam chamber and communicating with the air-chamber, a steam pipe surrounding each air-pipe and secured to the roof or upper plate of the steam chamber and communicating with said chamber, diaphragms located within the spaces between the steam and air-pipes, and extending from near the top of said pipes to the bottom of the steam chamber, and ribs or walls located within the steam chamber, the said ribs or walls and the diaphragms dividing the steam chamber into a series of compartments, substantially as set forth. 2nd. In a radiator, the combination, with the base provided with a steam chamber and an air chamber, the floor of which is detachable and provided with air-ducts and a valve, as described, of the air-tubes, the steam tubes, the diaphragm and the ribs or walls a^{II}, a^{III}, all of the above parts arranged as described.

No. 25,747. Combined Rake and Hoe.

(*Râteau-Houe.*)

John S. Seatter, Visalia, Col., U.S., 15th January, 1887; 5 years.

Claim.—1st. The improved rake and hoe herein described, consisting of the rake head A, having teeth, shank and braces, combined with the hoe blade B, having a right angle bend or flange, and riveted longitudinally to the rake head, substantially as set forth.

No. 25,748. Animal Trap. (*Ratière.*)

Edward S. Hotchkiss, Bridgeport, Conn., U.S., 15th January, 1887; 5 years.

Claim.—1st. In an animal trap, the two sections hinged together by a pintle, in combination with the coil springs surrounding said pintle, and extending forward in the shape of a bow, and the bait trigger loosely pivoted to one of the section, substantially as set forth. 2nd. In an animal trap, the combination, with the two sections hinged together by a pintle, and the bow terminating at its inner ends in coil springs arranged around said pintle, with their free extremities bearing against one of the sections, of the bait trigger pivoted to the upright section and adapted, when the sections are folded together, to engage with the bow and secure the same automatically, whereby the trap is set, substantially as shown and described. 3rd. In an animal trap of the character described, a bait trigger pivoted to the upright section and having at its upper extremity a hook, adapted when the sections are folded to automatically engage with the bow and hold the same against its spring action, substantially as set forth. 4th. In an animal trap, the two sections hinged together by a pintle, in combination with a coil spring around said pintle, and having formed integral thevewith an outwardly-projecting bow, said bow and the free ends of the spring bearing against the horizontal and upright sections respectively, and the bait trigger pivoted between ears projecting from the upright section, and having its upper extremity formed into a hook, said hook and the further extremity of the bow being both equi-distant from the pintle, whereby when the sections are folded said hook and bow will engage, substantially as shown and specified.

No. 25,749. Turbine Wheel, (*Turbine.*)

Ashley D. Cole, Toronto, Ont., 15th January, 1887: 5 years.

Claim.—1st. The buckets A, curved as specified, and arranged around the centre B, each bucket being on a tangent from the centre of the wheel, substantially as and for the purpose specified. 2nd. The socket bracket C arranged to support the step D, and having a flange *b* in combination with the screw-bolts F, arranged substantially as and for the purpose specified.

No. 25,750. Adjustable Support for Vice Jaws, etc. (*Support Mobile pour Mâchoires d'Etau, etc.*)

Edgar Shaw, Lynn, Mass., U.S., 15th January, 1887; 5 years.

Claim.—1st. An adjustable support, composed of two pivotally-connected, and independently rotatable wedge-shaped sections in contact with each other, as set forth. 2nd. An adjustable support, composed of an inner wedge-shaped section, having means, substantially as described, for attachment to a vise jaw or other support, and an outer wedge-shaped section pivoted to and bearing upon the inner, as set forth. 3rd. The combination of the wedge-shaped sections, pivotally connected and in contact with each other, and a spring whereby one section is pressed against the other, as set forth. 4th. The combination, with the jaws, of a vise or clamp, of the two independently rotatable wedge-shaped sections *a*, *b*, as set forth.

No. 25,751. Fastening for the Covers of Tubs, Pails, etc. (*Fermeture pour Couvercles de Tinettes, Seaux, etc.*

Frank E. Keyes, Peterborough, N. H., U. S., 15th January, 1887; 5 years.

Claim.—1st. The combination of the tub, provided with the groove arranged on and around it, as set forth, and with the cover applied to the mouth of such tub, of the clasps bent and formed with projections, as explained, and fastened to the cover, and of the wire extending through the groove and clasps, all being substantially as represented. 2nd. The elastic clasp, essentially as described, consisting of the strip of plate metal bent at an angle, and having one part of it bent to form it with a projection, as and for use as set forth. 3rd. The cover B and its spring clasps C, having the projections *d*, in combination with the tub A, having the groove *g* and the wire *h*, the projections resting in the groove and the wire extending around the said groove and in the said projections, as set forth.

No. 25,752. Music Leaf Turner.

(*Tourne-Feuille de Musique.*)

William H. Fesler, Columbiana, Ohio, U. S., 15th January, 1887; 5 years.

Claim.—1st. In a music leaf turner, the combination, with the base piece having a chamber, a vertical rock-shaft projecting through the top of the base, a pinion on said shaft within the chamber, and a pivoted finger-piece having a toothed segment on its inner end, engaging the said pinion of the removable socket on the outer end of the rock-shaft, and parallel angle wires on said socket, substantially as set forth. 2nd. A music leaf turner and holder, comprising a vertical rock-shaft and its operating finger-piece, the removable socket on the upper end of the said shaft, the angle-wires projecting from said socket, the posts, the vertical removable socket thereon, the transverse bar at the upper end thereof, and holding arms at opposite ends of said bars, substantially as set forth. 3rd. In a music leaf turner, the combination of the base-piece A, provided with the chamber c, the rock-shaft D, the pinion *e* carried thereby, the socket D^{I} fitted to the rock-shaft, and parallel angled wires *h*, h^{I} carried thereby, the key-lever E provided with the toothed sector *f* and finger-piece *g*, and the sheet music holder formed of the socket B^{I}, the cross-bar C and wire-forks *d*, substantially as shown and described.

No. 25,753. Filtering Cistern or Vat.

(*Filtration Citerne ou Cuve.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. A filtering cistern or receptacle, provided with a false bottom of porous terra-cotta, acting as a filtering means, as described, and with loose filtering material resting on and supported by said bottom, substantially as described. 2nd. A filtering cistern or receptacle, provided with a false bottom of porous terra-cotta, acting as a filtering means, as described, and with layers of gravel and sand, supported by said bottom, substantially as described.

No. 25,754. Filtering Material.

(*Matière Filtrante.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. A filtering material, consisting of porous terra-cotta, combined with charcoal, substantially as described. 2nd. A filtering material, consisting of porous terra cotta, having comminuted charcoal imbedded therein, substantially as described. 3rd. A filtering material consisting of porous terra cotta, a portion or section of which is combined with charcoal, substantially as described. 4th. A filtering material, consisting of porous terra-cotta, the inner or intermediate portion or section of which is combined with charcoal, substantially as described.

No. 25,755. Fire-Proof Safe and Vault.

(*Coffre et Voute Réfractaire.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. A fire-proof safe, vault, or similar receptacle, embracing in its construction a porous fire-proof material, charged with a liquescent salt, substantially as described. 2nd. A fire-proof safe or vault, provided with a lining consisting of a porous burned brick material, saturated with alum, substantially as described. 3rd. A fire-proof safe or vault, provided with a lining, consisting of slabs of porous burned brick material, saturated with alum, the said slabs being rabbeted and fitted together, so as to remain in place, substantially as described. 4th, A fire-proof safe or vault, provided with a lining, consisting of slabs of porous burned brick material, saturgted with alum, the said slabs being rabbeted and fitted together and prevented from sliding forward by stops, substantially as described.

No. 25,756. Art of Making Porous Earthenware from Mixtures of Earthy and Vegetable Matters. (*Art de Fabriquer la Poterie Poreuse au Moyen de Matières Terreuses et Végétales.*)

Charles C. Gilman, Eldora, Iowa, U.S., 15th January, 1887; 5 years.

Claim.—1st. That improvement in the art of making porous earthenware, which consists in making clay sawdust and straw, in expressing the mixture through a press, and in burning the same in a kiln, substantially in the proportions described. 2nd. The improvement in the art of making porous earthenware, which consists in expressing a mixture of clay sawdust and straw through a press, in contra-distinction to compressing the same, whereby the pieces of straw are caused to arrange themselves parallel with each other and with the axis of the press, substantially as described. 3rd. That step in the process of making porous earthenware, herein described, which consists in mixing with the clay and sawdust sufficient quantity of straw, or equivalent material, cut in short pieces to prevent the cracking and shrinking apart in drying of large blocks of the mixture, substantially as described. 4th. A porous earthenware product in large blocks, made by mixing clay, sawdust and straw, and subsequently expressing the mixture, as hereinbefore described, substantially as described.

No. 25,757. Preparation of Material Suitable for being made into Paper, etc., and Apparatus therefor. (*Préparation de Matières propres à faire le Papier, etc., et Appareil pour cet objet.*)

John C. W. Stanley, London, Eng., 15th January, 1887: 5 years.

Claim.—1st. The manufacture of pulp or fibrous materials, suitable respectively for the purposes of paper makers or upholsterers, by the processes of drying, breaking up, crushing, sifting and carding) substantially as herein described. 2nd. In the preparation from refuse, such as is herein described, of material suitable for being made into paper, or for other purposes, the employment of a drying stove, substantially such as specified and shown in Figs. 1 and 2 of the accompaning drawings, and consisting essentially of a heated chamber containing rocking sieves, provided with means for introducing and removing the material, and carrying off the stench or gases emitted, 3rd. In the preparation from the refuse herein described, of material suitable for being made into paper, the employment of the crushing and sifting apparatus, substantially as specified and shown in Figs. 5, 6, 7 and 8 of the accompanying drawings, and consisting essentially of a series of pairs of rollers, such as H, H1, in combination with jogging riddles, such as I, the whole so constructed and operating that the materials after passing between the first pair of rolls pass onto the appropriate riddle, from which such portion as does not pass through the riddle is delivered to the next pair of rollers, and so on through the entire series.

No. 25,758. Shoulder Pad for Horses. (*Collier de Cheval.*)

Sponagle Nichols, Berwick, N.S., 16th January, 1887; 5 years.

Claim.—1st. In a collar for horses, the pads A provided with tugs D, and shoulder straps F, as shown and described. 2nd. In a collar for horses, the pads A connected by adjustable connecting bars B, as shown and described.

No. 25,759. Harvester. (*Moissonneuse.*)

The Massey Manufacturing Company, (assignee of William J. Clokey and William Johnston), Toronto, Ont., 17th January, 1887; 5 years.

Claim.—1st. A harvester frame, in which the outer bar C is horizontal, and its front end *d* is set so as to reach the level of the cutter bar E, which is braced by the inside bar D, extending at an angle from the cutter bar to the rear end of the frame, substantially as and for the purpose specified. 2nd. A harvester frame, in which the outer bar C is horizontal, and its front end *p* is set so as to reach the level of the cutter bar E, which is braced by the inside bar D, extending at an angle from the cutter bar to the rear end of the frame, in combination with the bracket I forming a pivot point for the tongue G, and braced by the stay rod I, substantially as and for the purpose specified. 3rd. A harvester frame composed of a continuous steel piece, the bar on the outside of the driving wheel being substantially horizontal and level with the rear portion of the frame, while that portion in front of the drive-wheel is set so as to bring it to a level with the cutter bar, and the outer portion of the frame supporting the grain table is curved and bent down at an angle, so that its front end shall reach the level of the cutter bar, substantially as and for the purpose specified.

No. 25,760. Attachment to Shoes. (*Agrafe de Soulier.*)

Charles A. Sullivan and John D. Sullivan, Windsor, Ont., 17th January, 1887; 5 years.

Claim.—As an improved article of manufacture, the fastener described, consisting of a metal plate A, comprising in a single element, the prongs *a*, and the arm *b* bent in the same general direction as said prongs, and provided with concavity *c*, substantially as described and for the purpose specified.

No. 25,761. Tire Fastener. (*Lien de Jante.*)

Lowell Locke, Capac, Mich., U. S., David Wees, Sarnia, Ont., and John Ard, Capac, Mich., U.S., 17th January, 1887; 5 years.

Claim.—1st. The jaws or clamps D, D, for attachment to the spoke under the felley by bolts and nuts F, and expanding screw H resting under the felley at one side of the spoke, and screwing in a lug G to force the felley outwardly for insertion of a washer between the shoulder of the spoke and felley, for tightening the tire on the wheel, as set forth. 2nd. The tire-tightener device consisting of the jaws D, D, having lugs E, E and G, G, clamping screws F, F and expanding screw H with bearing block L, as set forth.

No. 25,762. Fender for Vehicle Bodies. (*Défense de Voiture.*)

Charles D. Bailey, Plainfield, N.H., U.S., 17th January, 1887; 5 years.

Claim.—In a fender for waggons or other vehicles, the plates B, B diminishing in thickness from D to E, and provided with shoulders or flanges C, arm F and sockets *a*, the said sockets adapted to receive the spindle *b* of the roller G, for the purpose herein shown and described.

No. 25,763. Sheet Metal Can. (*Boîte Métallique.*)

James A. McGolphin, Toronto, Ont., 17th January, 1887; 5 years.

Claim.—A sheet metal can, constructed with its upper edge formed as a ring or tube, and located on the inner edge thereof, and a cover furnished with a handle, having two or more projecting ends, which pass down between the checks of two or more corresponding gaps formed in the aforesaid ring or tube, and which ends when the cover is turned in either direction will pass underneath the said ring or tube, and will thoroughly secure or lock the cover to the can thereby, substantially as specified and described.

No. 25,764. Fastening For Whiffletree. (*Ferrure de Palonnier.*)

David A. Reed, Shelby, Mich., U.S., 17th January, 1887; 5 years.

Claim.—In combination with a whiffletree, and that part of a vehicle to which is is attached, the plates B, B1 secured to the whiffletree and that part on which the whiffletree bears, and having plane wearing surfaces, the said plates being provided with holes and countersinks, as described, and the pin *b* having its ends rivetted and extended only to the outer face of the plates, substantially as and for the purposes described.

No. 25,765. Stock Car. (*Char à Bastiaux.*)

Harrison Arms, Toledo, Ohio, U.S., 17th January, 1887; 5 years.

Claim.—1st. In a stock car, the hinged shutters A, A1, combined with the brace C, and its securing devices, substantially as set forth. 2nd. In a stock car, the combination of the shutters A, A1, brace C and its securing devices, and the hanger F, substantially as set forth. 3rd. In a stock car, the combination of the ventilating slats I, with inside storm and winter shutters and securing devices, substantially as set forth.

No. 25,766. Apparatus for Localizing and Extinguishing Fires. (*Appareil pour Circonscrire et Eteindre les Incendies.*)

Peter L. Palmer, White Cloud, Ks., U.S., 17th January, 1887; 5 years.

Claim.—1st. In an apparatus to extinguish fires on steam vessels built in compartments, the combination, with the boiler of the engine, a steam drum or receiver communicating with the boiler by a pipe controlled by a throttle valve, and steam-delivering pipes running from the receiver to the compartment, each pipe being provided with a throttle valve or a cock near the receiver, having a separate number marked on it near said cock, and opening into a separate compartment, of fire-indicating tubes, each running from a compartment to above the upper deck, and having on its ends above the upper deck a removable cap, marked with a number corresponding with the number of the steam pipe communicating with the compartment to which the indicating tube that it covers runs, substantially as specified. 2nd. In an apparatus to extinguish fires in steam vessels built in compartments, the combination, with the boiler D, the receiver E communicating with the boiler by the pipe F controlled by the valves *f*, and the pipes G and H controlled by the valves *g*, and each marked with a separate number near said valves, and opening into a separate compartment, of the fire-indicating pipes I, the transverse perforated pipes J and the the screw-caps *i*, each marked on top with a number corresponding to the number on the steam pipe opening into the compartment from which its pipe I ascends, substantially as described. 3rd. The herein described apparatus for extinguishing fire in vessels, consisting of the steam receiver E fed from the boiler, the steam pipes G and H, each running from the said receiver to a compartment of the vessel marked with a number and commanded by a throttle valve *g*, and the fire-indicating pipes I, each running from a compartment to a suitable point above the upper deck, and marked with the same number above decks that is marked on the steam pipe communicating with the same compartment. 4th. In an apparatus to extinguish fires in a vessel built in compartments, the combination, with the steam receiver E fed from the boiler, and the steam tubes G and H of unequal length, and each marked with a number and communicating with a compartment of the vessel, of the fire-indicating tubes I of unequal length, and each marked with a number and communicating with a compartment, and the removable caps *i*, each fitted on the upper end of an indicating tube, substantially as specified.

No. 25,767. Piston Metre for Fluids. (*Hydromètre à Piston.*)

Henry M. Bartlett and George D. Bartlett, Somerville, Mass., U. S., 17th January, 1887; 5 years.

Claim.—1st. The combination of the piston-reversing valve having the large central opening, and the inlet and outlet ports arranged in

pairs at opposite sides of said opening, the casing having the induction and piston chambers, the fixed projection and its ports located in the central opening of the valve, and ports arranged substantially as described, whereby water may be conducted to either piston chamber from the inlet, and from the other piston chamber to the outlet, the D valve arranged on the fixed projection, and the pistons arranged to reciprocate said valve, as set forth. 2nd. The combination of the casing having the induction chamber and the piston chambers, the ports d, d^1 communicating with the outer ends of the pisten chambers, the eduction ports q, q^1 in the lower portion of the casing, the fixed projection having the ports l, l^1 communicating with the ends of the casing, and the port p communicating with the outlet, the D-valve resting on said projection, the connected pistons aaranged to reciprocate said valve, and the piston-reversing valve having a central opening for the projection p and the ports g, h, g^1, h^1 at opposite sides of said central opening, as set forth.

No. 25,768. Cutter Head for Wood Planing Machines. (*Porte-Dame pour Machines à Raboter le Bois.*)

Ira Robbins, (assignee of Benjamin R. Hand), Camden, N. J., U. S., 17th January, 1887; 5 years.

Claim.—As an improved article of manufacture, a cutter-head consisting of the cutter-head A having the rabbets a, a^1, the shoulders B and the removable caps E provided with the dowel-pins b, the said caps projecting over the edge of the cutter-head, as set forth.

No. 25,769. Frame for Grain-Binding and Harvesting Machines. (*Bâti de Moissonneuse-Engerbeuse.*)

Andrew C. Miller, William Butterfield and D. M. Osborne & Co., Auburn, N.Y., U.S., 17th January, 1887; 5 years.

Claim.—1st. In a metal frame for a harvesting machine, the combination of the two truss-frames, substantially as described, each having a plate or casting at the two ends, between its upper and lower members, the transverse connecting bars bolted to said plates, and the front and rear sills extending rigidly from and forming a continuation of the cross-bars to sustain the front and rear ends of the platform. 2nd. In a harvester frame, the combination of the two metallic truss-frames, each consisting of the upper and lower members, and the intermediate blocks bolted between said members at the end, transverse metallic connections bolted to said blocks and extended inward beyond the inner truss, whereby they are adapted to sustain the platform frame. 3rd. A truss-frame for harvesters, consisting of upper and lower bars of angular form in cross-section, and separated at the middle a greater distance than at the ends, and the blocks or castings inserted between and bolted to said parts, as described. 4th. In a metal frame for a harvester and in combination with connecting bars at their front and rear ends, two truss frames, each consisting of upper and lower bars of angular form, in cross-section, bolten at their ends to bearing plates, and a vertically-slotted axle plate bolted to the upper and lower members of the truss, whereby they are caused to assist in maintaining said members in position. 5th. In a metal frame for a harvester, the combination of the two metal truss frames, substantially as described, and the connecting bars bolted to their two ends, said bars continued to the grain side of the machine, substantially as described, whereby they are adapted to serve as sills for the support of the platform. 6th, In a metallic harvester frame, the combination of the front and rear platform sills, extended past the wheel in front and rear, as at B, C, in combination with the members a and b, of the timbers of the truss frames, and the intermediate corner blocks bolted to said sill-extensions and to said members forming rigid connections between them. 7th. In a metallic harvester frame, the end bar F, the front casting M and the overlying brace a^4, in combination with the wheel-carrying arm O pivoted to the casting M, and the locking devices for said arm connected to the bar F and the brace, substantially as shown. 8th. In a metallic harvester frame, the combination of the wheel-frame, the binder supporting standards rising therefrom, and the diagonal braces connecting the upper ends of said standards with the outer side of the wheel-frame. 9th. In combination with the two truss frames having the upper and lower members a, b, of angular section, the intermediate blocks or castings having both vertical and horizontal faces seated against said members, and connecting bolts passed both vertically and horizontally through said parts, as described and shown. 10th. In combination with the wheel-frame, and the rear sill at a lower level, the rear connecting brace, substantially as described. 11th. In combination with the wheel-frame and the elevator-frame, the binder-supporting rod f^1 and a support at each end of said rod, bolted at one end to the wheel-frame and at the opposite end to the elevator frame. 12th. In a metallic harvester frame, the combination of the wheel-frame, the elevator frame and the two binder supports, extending from the outer side of the wheel-frame at front and rear respectively upward to the respective sides of the elevator frame and bolted to said parts, substantially as described. 13th. In a harvester frame, the combination of the wheel frame, the elevator frame and two metallic binder supports bolted to opposite ends of the elevator frame, and extending therefrom horizontally toward the stubble side, and thence downward to the outer side of the wheel-frame, and secured to the latter, substantially as described. 14th. In combination with the metallic wheel-frame and the elevator frame, the metallic binder supports bolted to and rising from the outer side of the wheel-frame, and extended thence inward, across and beyond the elevator frame and bolted to said frame, whereby they are adapted to support the seat plank. 15th. In a metallic harvester frame, the combination of the two truss frames, their connecting bars B, C, and the metallic sills E, F, forming rigid continuations of said bars, the rear sill F being carved and extended forward and connected to the grain end of the front sill, substantially as described. 16th. In a metallic harvester frame, the combination of the angular front sill, or finger bar, the angular side bar F^1, and the casting M bolted to said bars, and connected by a horizontal pivot to the arm carrying the grain wheel. 17th. In combination with the angular bar F, the casting M bolted thereto, and formed, substantially as described, to receive and support the divider. 18th. In a harvester, the combination of the metallic end bar F^1, the angular front sill or finger-bar, the casting M at the forward corner, and the overlying brace-bar a^4 extending from the block M to the rear portion of the bar F. 19th. In combination with the wheel-frame and the elevator frame, the binder support consisting of the upright bar e^1 and e^2, the horizontal bars b^1, and b^2, their angular connecting plates d^1 and d^2, and the binder-supporting bar f^1, seated in and secured to said angular plates, substantially as described. 20th. The combination, with the wheel-frame, the elevator frame and the rigid bar f^1 supported therefrom, the binder frame having the horizontal rod k^1 arranged to slide at one end in the stationary support on the frame, and provided at the opposite end with an arm or plate sliding on the bar f^1. 21st. A harvesting machine, provided with a rod or bar extending from front te rear, and with a stationary bearing near one end thereof, in combination with a movable binder provided with a horizontal bar, and a plate or arm, the bar of the binder being arranged to slide in the stationary bearing, and the bearing of the binder arranged to slide in the stationary bar.

No. 25,770. Process of Treating Raw Hides. (*Procédé de Traitement des Peaux Vertes.*)

Frederick Latulip and Thomas W. Meachem, Syracuse, N.Y., U.S., 17th January, 1887; 5 years.

Claim.—1st. The within-described process of preparing hides, consisting in treating fulled skins by expressing the moisture therefrom, then soaking them in a solution of potash, then washing the skins in clear water, then again expressing the moisture therefrom, and finally treating the skin with a solution of ammonia and alcohol, substantially as set forth. 2nd. The process of mannfacturing rawhide chair seats and backs, consisting in subjecting fulled skin to compression to expel the moisture, then treating said skin with a solution of potash, then washing it and again expressing the moisture, then treating it with a solution of ammonia and alcohol, then cutting it into strips of the required width, and then running said strips between heated rolls, substantially as specified. 3rd. The improved process for the manufacture of rawhide chair seat or back, consisting in treating fulled skin by rolling between flat tools to express moisture, then treating it with acidulated water, next with solution of potash, then washing, and again expressing moisture by rolls, next treating with solution of ammonia and alcohol, then with a suitable straining liquid, next cutting into strips the width of the finished article, then running said strips between hollow steam-heated impression rolls, and finally cutting into proper length, substantially as set forth.

No. 25,771. Wood Planer. (*Raboteuse à Bois.*)

D. W. Thompson & Co. (assignees of Thomas Allen and Edward Smedley), Toronto, Ont., 17th January, 1887; 5 years.

Claim.—1st. The combination, with the planing knives B, of a roller A made of rubber or other plastic material, and located substantially over the centre of the said knives B, substantially as and for the purpose specified. 2nd. The roller A, made of rubber or other plastic material suitably journalled in boxes held between the jaws C, substantially over the centre of the planing knives B, in combination wiih a pressure plate D resting on the boxes of the roller, and acted upon by the spring E, which is adjusted by the screw F, substantially as and for the purpose specified.

No. 25,772. Harvesting Machine. (*Moissonneuse.*)

Calvin Young and D. M. Osborne & Co., Auburn, N. Y., U. S., 17th January, 1887; 5 years.

Claim.—1st. In a harvester, the combination of the front and rear platform sills, the wheel frame and the intermediate splicing plates constructed and secured firmly in place, substantially as described. 2nd. In a metal harvester frame, the wheel frame provided with the arms of bars projecting at its inner sides, in combination with the platform sills lying thereunder, and the intermediate splicing plates, applied substantially as described.

No. 25,773. Metal Drive Chain. (*Chaîne sans fin.*)

The Massey Manufacturing Company, Toronto, Ont. (assignee of William N. Whiteley, Springfield, Ohio. U. S.), 17th January, 1887: 5 years.

Claim.—1st. A chain link, constructed with a spur g projecting from its coupler end, thinner than the main body of the hook, and with its inner surface in continuation of the cylindrical curve of the inner surface of the hook, whereby said hook and spur may both be cast upon the same cylindrical chill and without angle or seam across the wearing surface. 2nd. A chain link, provided at one end with a coupler-hook i, and a spur g thinner than said hook i, and joined to the side thereof back of its point, whereby it will be detained and free to be raised or depressed without changing the form of said hook.

No. 25,774. Drive Chain. (*Chaîne sans fin.*)

The Massey Manufacturing Company, Toronto, Ont. (assignee of William N. Whiteley, Springfield, Ohio, N. S.) 17th January, 1887; 5 years.

Claim.—A chain constructed of alternate links and couplers, the couplers having open slots at the points of the hooks to admit the end bars b of the links A, and each hook having a spur h projecting partly over said open slot, capable of being closed down without bending the hook out of circular form to prevent disengagement, the coupler having also a central portion i projecting upward between the hooks to retain the end bars b in their proper working position and to sup-

port the chair on the sprocket-wheel, substantially as and for the purpose set forth.

No. 25,775. Knotting Device for Grain Binders. (*Appareil à Nouer pour Engerbeuses.*)

The Massey Manufacturing Company, Toronto, Ont. (assignee of William N. Whiteley, William Bayley and Samuel Dyer, Springfield, Ohio, U.S), 17th January, 1887 ; 5 years.

Claim.—1st. The stripper J. made in two parts, capable of adjustment as to each other, whereby the position of the free or stripping end of said lever may be adjusted, substantially as set forth. 2nd. The stripper J made in two parts, both pivoted upon the bolt *e*, and provided with intersecting slots *f*, *h*, *d*, and the connecting bolt *i*. 3rd The combination of the pivoted lever E, carrying the pawl D, whereby the disc is actuated, connected with the sleeve *l* by a slot *k* in its end, said sleeve *l* fitted upon the plunger rod F, having a screw thread thereon, and provided with a nick *m* at its outer end, whereby a tool may be applied to revolve said rod and thereby change the position thereon of the sleeve *l*, for the purpose set forth. 4th. The lever E pivoted at *k* to the frame, and jointed at its front end to the pawl D, and provided at its rear end with a sliding pivotal connection with the sleeve *l*, combined with said sleeve, provided with the set-screws *q*, and the screw-threaded plunger-bolt provided with the groove *p* to receive the set-screw *q*, as set forth, whereby the lever E may be adjusted by rotating the plunger-rod, and the correct position for pause determined, as set forth. 5th. The disc B, with the notches *b*, combined with an elastic U-shaped holder C, which incloses the edge of said disc, as and for the purpose set forth. 6th. The folded U-shaped holder C, constructed from a single piece of sheet metal, as and for the purpose set forth. 7th. The elastic U-shaped holder C, constructed from a single piece of sheet metal, pivoted to the frame by pin *r*, combined wtth the spring *t* and the notched disc B. 8th. The revolving knotting-hook G, and its hinged jaw *d*, provided with the roller U, combined with an arm I pivoted at its lower end to the frame, and at its upper end fashioned to act as a closing cam for the jaw *d* and the adjustable tension spring, substantially as set forth.

No. 25,776. Button Fastener Setting Instrument. (*Machine à Poser les Boutons.*)

The American Button Fastener Company, New Britain, Conn., (assignee of Francis H. Richards, Springfield, Mass.), U. S., 17th January, 1887 ; 5 years.

Claim.—1st. In a button-fastener setting instrument, the combination, with a member provided with a prong bending die, and with a member which carries a presser slide, and has a fixed driver next to said slide, of a guide plate in front of said driver and slide, and adapted to be moved with said slide, said members being arranged to be moved toward and from each other, and said plate having an opening through which to put fasteners above the driver, all arranged substantially as set forth. 2nd. In a button-fastener setting instrument, the combination, with a member having a driver fixed thereon, of slide F, and a guide plate elastically held to said slide, substantially as described, said plate having an opening through which to put fasteners above the driver, and at its upper end a prong-guiding notch, substantially as set forth. 3rd. The combination of slide F, driver G, plate H having opening J, notch 18, and lips 19, 20, and means substantially as described, for operating said slide, substantially as set forth. 4th. The combination of jaw C having a space for the reception of spring 3, slide F, driver G having wings 7 and 8, springs 3, and a screw 9 arranged to hold in place both the driver and spring, substantially as set forth. 5th. The combination of slide F, driver G and plate H, secured at its lower end to said slide, and having on its upper end the side guides 24, 26, substantially as set forth and for the purpose specified.

No. 25,777. Wire Coiling Machine.

(*Machine à Rouer le Fil de Fer.*)

D. W. Thompson & Co., (assignees of Thomas Allen), Toronto, Ont,, 17th January, 1887 ; 5 years.

Claim.—A spindle A having a helical coil *a* cut about two times around it, the said spindle A being rigidly held within and to the sleeve B and bracket C, in combination with the feed rollers D, substantially as and for the purpose specified.

No. 25,778. Hydro-Carbon Safety Lamp and Lantern. (*Lampe et Lanterne de Sûreté à Hydro-Carbures.*)

Stefan Siemang, Vienna, Austria, 17th January, 1887 ; 5 years.

Claim.—1st. The application of an armature E, with canal suited to the shape of the wick R and reaching nearly to the bottom of the bowl, where it is somewhat bent around Fig. I, II, III, substantially as and for the purpose set forth. 2nd. The contrivance of a bowl cap K closing up the bowl-opening O, with a tube deposit R enclosing the wick-capsule of the burner, and a bayonet-joint for the fixation of the burner Fig. I, substantially as and for the purpose set forth. 3rd. The enclosing of the lamp-vessel, with a sort of basket for guarding against breaking to pieces in case of falling, substantially as and for the purpose set forth. 4th. The application of a pneumatic apparatus in the foot of the lamp for the fixation of the same on its resting place, substantially as and for the purpose set forth. 5th. The use of a capsule *h* surrounding the wick, the former being introduced into the armature tubes R, substantially as and for the purpose set forth. 6th. The arrangement of a spring, which in a position of quiet is in a state of tension, while in case of shaking of the lamp is released and in case of falling of the lamp drags with it the wick-capsule so that the lamp is extinguished, substantially as and for the purpose set forth.

No. 25,779. Switch Lamp. (*Lampe d'Aiguillère.*)

Henry A. Black and A. Henry Milliken, Chicago, Ill., (assignees of Oswald F. Jordan, St. Thomas, Ont., and Lewis M. Curry, Chicago, Ill., U.S.), 17th January, 1887 ; 5 years.

Claim.—1st. A switch-lamp case having guards A5, provided with flanges a^2 and lugs a^3, substantially as and for the purposes described. 2nd. The combination, with a switch-lamp case having guards A, of lenses seated in said guards, and springs to hold the lenses firmly to their seats, said guards being provided with lugs te engage the springs, substantially as described. 3rd. The combination, with a switch-lamp case having guards A1, of lenses seated in said guards, and springs of greater circumference than the inner periphery of the guards to hold the lenses firmly to their seats, said guards being provided with lugs to engage the springs, and said lenses being slotted so as to be securely seated in said guards, substantially as described. 4th. The combination, with a switch-lamp case and its chimney, of a chimney-cap removably connected therewith, said cap being provided with arms by which the soot may be removed from the interior of the chimney, substantially as described. 5th. The combination, with a switch-lamp case and its chimney, of a chimney-cap removably connected therwith, and provided with arms by which the soot may be removed and also with a ventilation-shield, substantially as described. 6th. A switch-lamp case, provided with flanges *a*, substantially as and for the purpose described. 7th. The combination with a hanger a^5 switch-lamp case removably connected therewith, said case being provided with flanges a_5 to prevent the wrong sooting of the case in the hanger, substantially as described.

No. 25,780. Coin or Ticket Receiving Turn Stile. (*Tour pour la Monnaie ou les Billets.*)

Walter Peake, New York. N. Y., U. S., 17th January, 1887 ; 5 years.

Claim.—1st. The combination, with a turn stile or device for closing a passage or doorway, of a device for locking the turn stile, constructed to be released by the insertion of a coin, ticket, check or other device, substantially as described. 2nd. The turn stile post provided with a cam and locking plate, in combination with a locking dog and two pistons, one connected to the dog the other acted upon directly by the cam, substantially as described. 3rd. The casing F, provided with two opposite pistons G, Q, the former connected to a locking device, the latter acted upon by a cam, substantially as described. 4th. The casing F, provided with the piston G, in combination with the piston F, a clearance *i* being left between the pistons, substantially as described. 5th. The casing F formed with a slot *a* arranged in line with the clearance *i* between the pistons G, Q, substantially as described.

No. 25,781. Grain Binding Machine.

(*Machine à Engerber les Grains.*)

William Butterfield. Auburn, N. Y., U. S., 17th January, 1887 ; 5 years.

Claim—1st. In an automatic grain binder, the binder-driving shaft E and its actuating clutch provided with an incline F or spiral surface, in combination with the rock-shaft S mounted in fixed bearings, and the trip-arm R projecting into the path of the grain and clutch driving-arm T, both secured to said rock-shaft. 2nd. In an automatic binder, the divided shaft E having one end geared to the binder, and the opposite end provided with packing devices, in combination with the clutch connecting the two parts, the trip-arm actuated by the grain, and the arm T connected rigidly with the trip-arm shaft, and arranged to act directly upon the clutch, whereby the binder is automatically throw into and out of action by the accumulation and discharge of the gavel. 3rd. In an automatic binder, the divided driving shaft E having one end cranked, and provided with packer-arms and arranged to revolve continuously, and the opposite end geared to the binding mechanism, in combination with the clutch connecting the two parts of said shaft, and the rock-shaft, the trip-arm secured rigidly to said shaft and adapted to be operated by the grain, the arm secured rigidly to said shaft and arranged to directly engage the clutch, and a spring to cause the re-engagement of the clutch, said parts organized for joint operation, substantially as described, whereby the cranked portion of the shaft is permitted to revolve continuously, and the motion of the binder-driving mechanism controlled by the accumulation and discharge of the gavel. 4th. In combination with the binder-driving clutch, the arm T, its rock-shaft and the trip-arm to engage the gavel, the rod U and spring P and the spring adjusting devices. 5th. The packer shaft connected with the binding mechanism by the clutch, in combination with the trip-arm, and the arm connected therewith for disengaging the clutch, the needle and the heel projection on the needle to hold the clutch-disengaging arm out of engagement, whereby the clutch is permitied to remain in engagement after the action of the bundle on the trip-arm has ceased. 6th. The needle having the heel projection or cam, and the trip-arm having a heel projection to co-operate with the cam, in combination with binder-driving mechanism connected with and controlled by the trip-arm, substantially as described and shown. 7th. In combination with the needle or cord-carrier, the elastic tucker consisting of a U-shaped wire or rod placed astride of and secured to the needle, as described and shown. 8th. In combination with the tyer-spindle, its pinion and the L-shaped pivoted knife extending past the edge of the wheel, the wheel Y provided with teeth and delay-surfaces to actuate the pinion, and with the cam to operate directly upon the knife. 9th. The wheel Y provided with the cam or incline on its outer side face, in combination with the pivoted angular knife, one arm thereof extending past the edge to the outer side of the wheel, and the other arm with its cutter extending to the opposite side thereof. 10th. The actuating wheel provided with the cam or incline, the angular knife extending across the edge of the wheel, and the spring acting on the heel of the knife, combined substantially as described and shown 11th. In a grain binder, the combination, with a movable compressor and its rock-shaft, of the arms r^1, s^1 with lateral extensions, the spindle x^1, and the spring y^1. 12th. In combination, with the swinging com-

pressor, the actuating cam n_1, the intermediate arms or links r_1, s_1, and the spring tending to hold said arms out of line, as described and shown. 13. The compressor F_1, in combination with the swinging support k pivoted to its lower forward end, and the link o attached to the compressor at or about the same point as the support k, and extending thence to the heel of the needle, or equivalent projection on the needle-shaft, whereby the compressor is permitted to tip backward and downward around the point of connection with the link and support. 14th. In combination, with the needle, the compressor, the rock-shaft l and its arm m, the links k and n to sustain the compressor, and the link o to effect the movement of the compressor toward tne needle. 15th. In combination, with the compressor, the link k having a swinging action, and the link n having both a swinging and a longitudinal motion. 16th. In combination with the vibratory needle, the compressor F_1, its supports k and n, and the connecting link o. 17th. In combination with a needle or cord-carrier, the fixed cord-guides, and the swinging guide having two arms. 18th. In combination with the fixed cord-guides, the swinging guide provided with a long arm, and a short arm, as described. 19th. In combination with a rotary tyer bill having a movable jaw, a spring acting to close said jaw and adapted to rise independently thereof, and a cam, substantially as described, acting to lift the spring out of operation, whereby the jaw may be relieved from the pressure of the spring without being opened, 20th. In combination with the rotary tyer bill having the movable jaw, the sliding rod to close the jaw, the independent spring acting on said rod, and the revolving wheel provided with the cam a^3, as described and shown.

No. 25,782. Railway Gate Operative Mechanism. (*Mécanisme de Barrière de Chemin de Fer.*)

John Ewart, Lawrence, Mass., U.S., 18th January, 1887; 5 years.

Claim.—1st. The combination, substantially as described, for actuating a railway road-crossing lever gate A, such combination consisting of the gear a, its rocks b, b_1 and pistons c, c_1 and their barrels d, d_1, the barrels C, C_1, connection pipes m, m_1, and pistons D, D_1 having mechanism for reciprocating them, the said pistons alternately in such barrels C, C_1, all being substantially as set forth. 2nd. The combination, substantially as described, for actuating a pair of lever gates A and A_1, of the road-crossing, of a rail-way, such combination consisting of the gears a fixed to such gates, the racks b, b_1 of each of such gears, the four pistons and cylinders or barrels of such racks, the pipes connecting the two pairs of barrels, the barrels C, C_1 and the pipes connecting them with one pair of the barrels d, d_1, and the pistons of such barrels C, C_1 having mechanism for alternately reciprocating them, the said piston, in their barrels, as set forth. 3rd. The combination, with the gate operative mechanism, substantially as described, of the apparatus, essentially as explained, for compensating for leakage, or expansion of the fluid used in snch gate operative mechanism. 4th. The gate, substantially as described, composed of the four curved rods, their central connection, the junction pieces, and their connecting bow, all being arranged essentially as represented. 5th. The combination, with the gate composed of rods, and a medium connection piece, as described, of the signal or sheet of woven wire suspending from and extending down within the said gate, as specified.

No. 25,783. Railway Crossing.

(*Passage de Chemin de Fer.*)

Eugene Fontaine, Wagon Works, Ohio, U. S., 18th January, 1887; 5 years.

Claim.—1st. In a railway-crossing having rotatable posts at the intersections, a continuous rail-support in the form of a four-sided curb, with circular enlargements at the corners, substantially as described. 2nd. In a railway-crossing having rotatable posts at the intersections, the combination, with a continuous supporting girder forming circular wells at the corners, of top and bottom plates inclosing said circular wells, substantially as described. 3rd. In a railway-crossing having rotatable posts at the intersections, a continuous rail-support in the form of a four-sided curb, with circular enlargements at the corners, the same consisting of the channel bars a, and the angle-bars b, connected as described, to form openings from the central well into the corner wells, substantially as specified. 4th. In a railway-crossing having rotatable posts at the intersections, the combination of the continuous rail-support C having circular enlargements at the corners, the top and bottom plate enclosing said circular enlargements, and the corrugated plates r intermediate between the corners, substantially as described. 5th. In a railway-crossing having rotatable posts at the intersections, interconnected wito each other by cranks and connecting rods, the combination, with a main connecting rod diagonally connecting two posts, of two connecting rods connecting each of the posts thus connected with one of the remaining two posts respectively, substantially as described. 6th. In a railway-crossing having rotatable posts at the intersections, interconnected with each other by cranks and connecting rods, the combination, with a continuous rail-support forming a central well with circular enlargements at the corners communicating therewith, and wherein the posts are pivotally secured, of a main connecting rod diagonally connecting two of the posts, and of sub-connecting rods conntcting each of the posts thus connected with the two remaining posts respectively, all arranged substantially as described.

No. 25,784. Sliding Jaw Chuck.

(*Mandrin à Mâchoires Coulantes.*)

Samuel O. White, Windsor Locks, Conn., U. S., 18th January, 1887; 5 years.

Claim.—The combination, with the sliding jaws of a chuck, substantially as described, of the screw-clamps 6 having the annular corrugations 7 on one end passing through each of said jaws, and adjustable in the latter in the direction of the movement of said jaws, substantially as set forth.

No. 25,785. Window Sash Balance.

(*Contre-Poids de Croisée.*)

John Cooney, Toronto, Ont., 18th January, 1887; 5 years.

Claim.—The pulley brackets A inserted into recesses made in the top sill B, and designed to support the ropes C, in combination with the said ropes C, one of which are respectively connected at one end to the sash D, and at the other end to the sash E by means of the dog F and notched G, substantially as and for the purpose specified.

No. 25,786. Snow Plough. (*Charrue à Neige.*)

Peter Stauffer, Lima, Ind., U.S., 18th January, 1887; 5 years.

Claim.—1st. The combination, with the plough-beam and plough-shovel secured to the front end of the beam, of a guide attached to the rear of the beam, and means for attaching the draft horse or horses to the plough-beam, whereby they are allowed to travel in the rear of the plough shovel, substantially as set forth. 2nd. The combination, with the plough-beam extending rearwardly from the plough, the plough-shovel supporting frame secured to the front end, and the draft attachments secured near the rear end of the runners for supporting the front end, and the pivoted guide-runner for supporting the rear end, substantially as set forth. 3rd. In a snow-plough, the combination, with the front supports or runners, of a beam secured to the said supports or runner in vertical adjustment, a single ground support or runner supporting the rear end of said beam, a lever for turning said single ground support, and a plough-shovel secured to the front end of the beam, substantially as set forth. 4th. In a snow-plough, the combination, with the front runners or supports, a beam and a plough-shovel consisting essentially of the lower rearwardly-slanting flaring section, and the upper vertical-faced wedge-shaped section, of means for attaching the draft horse or horses to the beam behind the snow-shovel, substantially as set forth. 5th. The combination, with the plough-beam having a plough-shovel supporting frame secured to its front end, and a driver's platform and supporting-standard secured near its rear end, of a pair of runners for supporting the front end of the beam, a guide-runner for supporting the rear end of the beam, and means for attaching the draft horse or horses in the rear of the plough-shovel, substantially as set forth. 6th. The combination, with a beam, a snow-plough attached to the front end thereof, and a single ground-support pivoted to the rear end of said beam, of devices located between the single ground-support and the plough for the attachment of the beam or other power, substantially as set forth. 7th. The combination, with a snow-plough supported on runners or wheels, of forwardly-extending wings attached to the runners for steadying the plough, substantially as set forth. 8th. In a snow-plough, the combination, with the front runners or supporters, a beam secured thereto and a guide attached to the rear end of the beam, of the of the snow-shovel secured to the front end of the beam, and consisting essentially of a lower rearwardly-slanting flaring section and an upper vertical-faced wedge-shaped section, the ends of the latter projecting beyond the ends of the lower section, substantially as set forth. 9th. A snow-plough adapted to be steered by a single ground-support pivotally secured at the rear end of the beam, and operated by a lever, the latter being forked or bifurcated at its front end, substantially as set forth. 10th. In a snow-plough the combination, with supports, a plough-beam mounted thereon and a plough secured to said beam, of a platform secured to the beam and the standard O located in front of the platform, substantially as set forth. 11th. The combination, with a beam and a snow-plough secured thereto, of a single ground-support pivotally secured to the rear end of the plough-beam, a lever for operating said support, and the standard O, substantially as set forth.

No. 25,787. Railway Tie.

(*Traverse de Chemin de Fer.*)

Eben N. Higley, Somersworth, N. H., U. S., 18th January, 1886; 5 years.

Claim.—In a metallic railway-tie, the combination, with a vertical flange having a notch or aperture for the reception of the rail, of a reversible clamping plate D bolted to one side of said flange, and provided with projections n, p at its opposite ends, adapted by changing the position of the said clamping-plate to bear upon the base flange of the rail when raised at different heights above the surface of the tie, substantially as described.

No. 25,788. Door Roller. (*Roulette de Porte.*)

Henry F. Sawtelle, Leominster, Mass., U. S., 18th January, 1886; 5 years.

Claim.—An improved door-roller comprising the axle e having the annular groove e_{11}, and the diverging spokes b_1 connecting said axle with the periphery of the rollers, in combination with the frame a having a flattened top, whereby it is secured directly under the lower frame of the door, and riding rails c having re-enforcements e_1, c_1 on their lower edges, and engaging the grooves in the axles, substantially as and for the purpose set forth.

No. 25,789. Process and Apparatus for Manufacturing Concentrated Extract of Cod Liver. (*Procédé et Appareil de Préparation de l'Extrait Concentré de Foie de Morue.*)

James W. Stairs and John Craig, Halifax, N. S., 18th January, 1887; 5 years.

Claim.—1st. In apparatus for preparing concentrated extract of cod livers, the combination of a vat A, provided with a steam jacketed bottom B, of the central telescopic tube for the discharge of the upper stratum of the contents of the vat, the discharge pipe a, filter bag E, the evaporating pan F provided with a steam jacketed bot-

tom, the discharge pipe c and the cooling vat I, substantially as herein shown and described. 2nd. The process of preparing the concentrated extract of cod livers, which consists in rendering the livers by heat, withdrawing the oil from the top or the mass rendered, discharging the liquid from the bottom of the mass rendered, filtering in and concentrating it by heat, substantially as herein shown and described. 3rd. The process of preparing concentrated extract of cod livers, which consists in heating the livers until they are reduced to a pulpy mass, withdrawing the oil from the watery and solid portions of the mass, afterward removing the aqueous extract of the livers and concentrating it by heat in an evaporating pan, finally discharging it from the evaporating pan into a cooling vat, substantially as herein shown and described, 4th. The process of preparing concentrated extract of cod livers, which consists in heating the livers until they are reduced to a pulpy mass, withdrawing the oil from the watery and solid portions of the mass, afterward removing the aqueous extract of the livers, and concentrating it by heat in an evaporoting pan, finally discharging it from the evaporating pan into a cooling vat, returning the contents to the filter bag and evaporating pan and reconcentrating tne liquid, substantially as herein shown and described.

No. 25,790. Sulky Plough. (*Charrue à Siège.*)

John H. Grout, Grimsby, Ont., 18th January, 1887 ; 5 years.

Claim.—1st. In a sulky plough, the double crank A, A1, in combination with the small wheel B, disk-wheel C, connecting rod I and lever H, or the equivalent thereof, substantially as and for the purpose specified. 2nd. In a sulky plough, the incline lever E made to operate the wheel C, and constructed with slots a_1, b_1 and handle d, substantially as and for the purpose specified. 3rd. In a sulky plough, the combination of the incline lever E, standard F, crank A, A1, wheel C, spring F, all arranged and constructed to operate substantially as and for the purpose specified. 4th. In a sulky plough, the combination of the double crank A, A1, incline lever E, spring G, wheels C, B, hanger K, connecting rod T, lever H and ratchet and pawl J, substantially as and for the purpose specified.

No. 25,791. Machinery for Skiving or Bevelling Leather. (*Machine à Amincir les Bords du Cuir.*)

James D. Humphrey, Towanda, Penn., U. S., 18th January, 1887 ; 5 years.

Claim.—1st. The curved hood of metal, or the sufficiently rigid substance of the form, substantially as shown, with the collar, substantially as shown, for attaching it to the shaft, together with the slot and flattened portion of the hood, by the form of which the adjustment of the ejector is affected, substantially as shown. 2nd. The improvement in a leather skiving machine, consisting of a collar a, and the hood b adapted to be adjusted to the shaft knife and hanger, substantially as shown.

No. 25,792. Loom. (*Métier.*)

Louis E. Dubois, Toronto, Ont., 18th January, 1887 ; 5 years.

Claim.—1st. A loom in which supplemental warp threads e are operated by independent healds C, and are carried in an independent roller G, held by friction, substantially as and for the purpose specified. 2nd. A loom, having two sets of warp threads d and e, carried respectively in the rollers E and G, the latter being held by friction, in combination with the heald frames B, C, and D, arranged to operate substantially as and for the purpose specified. 3rd. In a loom, the heald-frame B and D, connected together by the chains or cords H passing over pulleys in the blocks I, in combination with the pivoted levers K and M, connected respectively by the chain or cord O and levers Q to the treadles R and T, substantially as and for the purpose specified. 4th. In a loom, the heald frame C and open frame J, connected together by the chains or cords H passing over pulleys in the blocks I, in combination with the pivoted levers L and N, connected respectively by the chain or cord O and levers Q to the treadles S and U, substantially as and for the purpose specified. 5th. A treadle pivoted to a fixed point at one end, and connected at its other end by means of a pin and slot to a lever pivoted at its other end to a fixed point, in combination with a lever set at right angles to the treadle, and pivoted at one end to a fixed point, and connected at its other end to the frame it is intended to operate, substantially as and for the purpose specified. 6th. As a new article of manufacture, small pieces of fur or feathers woven upon the main warp threads by independent warp threads, substantially as specified.

No. 25,793. Mouse Trap. (*Souricière.*)

Edward S. Hotchkiss, Bridgeport, Conn., U.S., 18th January, 1887 ; 5 years.

Claim.—In an animal trap, the sides and top formed integral from a single blank of sheet metal, said sides having openings cut therein, and the top having a central depression, the trap entirely devoid of interior portions, substantially as shown and described.

No. 25,794. Sash or Door Lock and Burglar Alarm. (*Fermeture de Croisée et de Porte et Avertisseur.*)

Simon D. Lauffer, Irwin, Penn., U.S., 18th January, 1887 ; 5 years.

Claim—1st. In a sash or door lock and burglar alarm, the box A provided with suitable means for a permanent or a temporary attachment, combined with the bolt B fastened to the upper end of the rod B1 and the spring S, as described. 2nd. In a sash or door lock and burglar alarm, the box A, in combination with a bolt B attached to a feathered rod B1, which bolt may be solid to explode detonating matter placed under it, or may be vertically pierced for the reception of a blank cartridge that explodes when the bolt, becoming disengaged, strikes the top of the box and locks the door or sash, arranged as described.

No. 25,795. Binding of Corsets. (*Bordure des Corsets.*)

George R. Holden, St. Thomas, Ont., 18th January, 1887 ; 5 years.

Claim.—The binding over the featherbone, or other cords for the protection of the wearer, and the improvements of the corsets, substantially as and for the purpose hereinbefore set forth.

No. 25,796. Centrifugal Separator. (*Séparateur Centrifuge.*)

Charles R. Mellor, Philadelphia, Penn,, U. S., 18th January, 1887 ; 5 years.

Claim.—1st. The combination of the cylinder, of a centrifugal separator having an inner and outer discharge, with partition plate secured to and rotating with the said cylinder, and extending inward to or beyond the limit of the inner discharge, whereby all portions of the liquid contents of the cylinder are prevented from whirling, when the cylinder is rotated. 2nd. The combination of the rotating cylinder of a centrifugal separator, a discharge pipe which does not partake of the rotary motion of the cylinder, and partition plate secured to and rotating with the cylinder, and having notches at the upper inner corners for the reception of said pipe, as set forth. 3rd. The combination of the cylinder of a centrifugal separator, having inner and outer discharge, the supply pipe and partition plates secured to and rotating with the cylinder, and projecting inward to or beyond the limit of the inner discharge, but notched so as to terminate before reaching this limit, at the point where the incoming stream joins the volume rotating with the cylinder, as set forth. 4th. The combination of the cylinder of a centrifugal separator, and its inner discharge, with the inner casing secured to and rotating with the cylinder, and occupying a position within the line of discharge, whereby churning action of the air on the inner surface of the liquid contents of the cylinder is prevented, as set forth. 5th. The combination of the cylinder, the partition plates secured to and revolving with the cylinder, and the internal casing connected to said plates, and having an opening below for the passage of liquid, as set forth. 6th. The combination of the cylinder, the outer casing, the discharge pipe, a bracket carrying the said pipe and having a longitudinal slot and a transverse slot, and securing bolts adapted to said slots, as set forth.

No. 25,797. Station and Street Indicator. (*Indicateur de Station et de Rue.*)

Frederick H. Cheyne, Brampton, Ont., 18th January, 1887 ; 5 years.

Claim.—1st. As an improved station or street indicator, a series of drums carrying a roll of paper, or other material, having printed on its surface the names of the stations or street, in combination with mechanism connected to the axle of the car and designed to operate the drums at stated intervals, substantially as and for the purpose specified. 2nd. The wheel I, having a groove or grooves p made in its surface, and holes g made in the grooves p, in combination with a worm formed on the end of the spindle h and designed to engage with the wheel I, the spindle h being driven by a bevel pinion at the opposite end, which bevel pinion is connected by the bevel-pinion g, gear wheels H and G to the spindle F, the whole being driven by the bevelled pinion E, which is connected, as indicated, to the axle of the car, substantially as and for the purpose specified. 3rd. The spindle F, driven as specified, and having a friction disc d held on it, and kept in contact with the friction disc f by the spring e, in combination with the friction disc f having a bevelled pinion i formed on it, which is designed to engage with the bevelled pinion J on the shaft K, and operate the bevelled pinions L, which engage with the bevelled pinions located in the shafts M and N, substantially as and for the purpose specified. 4th. The spindle F, driven as specified, and having a frictisn disc d held on it, and kept in contact with the friction disc f by the spring e, in combination with the friction disc f having a bevelled pinion i formed on it, which is designed to engage with the bevelled pinion J on the shaft K, and cause the gear pinion W to revolve against the end v of the pivoted spring hammer w, substantially as and for the purpose specified. 5th. Tne shaft K, having the bevelled pinion l situated at each end, in combination with the bevelled pinions situated on the shafts of the drums M and N, substantially as and for the purpose specified. 6th. The system of bevelled gearing i, J, L, and pinion on the shaft of the drum M, in combination with the gear wheels T and S located on the drum M and roller O respectively, substantially as and for the purpose specified. 7th. The spring dog R, held on the toothed disc S, in combination with the jaws or pins m, held in the adjustable bar U, substantially as and for the purpose specified. 8th. The adjustable bar U, having the jaws or pins m, arranged to engage with the spring dog R, in combination with the pin n held in the adjustable sleeve b of the leg of the bar U, and designed to drop into one of the holes q of the groove p, substantially as and for the purpose specified. 9th. The pin n, held in the sleeve v, and designed to drop into one of the holes q, of the groove p, in combination with the pins s, designed to drop simultaneously into the slot t in the gear wheel H, substantially as and for the purpose specified. 10th. The sleeve v, held on the leg of the adjustable bar U, in combination with the pivoted lever V for the adjusting of the sleeve v, substantially as and for the purpose specified. 11th. The disc Q, having ratchets secured on each disc, the teeth of which run in opposite direction, in combination with the pawls pivoted in the drums M and N, substantially as and for the purpose specified. 12th. The disc Q, connected to the drums M and N, in combination with the collar j held against the disc Q by the spring k, substantially as and for the purpose specified.

No. 25,798. Machine for Polishing Boot and Shoe Sole Edges. (*Machine à Polir la Coupe des Semelles de Chaussures.*)

Joseph Hudson, Quebec, Que., 18th January, 1887 ; 5 years.

Réclame.—1o. La combinaison du bras mobile A, et de l'arbre D, avec la manivelle I, et tel que décrit. 2o. La combinaison de l'outil J, avec le bras A, tel que ci-dessus décrit et pour les fins indiquées.

No. 25,799. Attachment to Boxes for the Reception of Tickets, Fares, etc. (*Disposition aux Boîtes à Recevoir les Billets, etc.*)

John R. Wherry, Herbert H. Rottaken and Edward A Wiegel, Little Rock, Ark , U S., 18th January, 1887 ; 5 years.

Claim.—1st. A box for the reception of fares, etc., having a discharge orifice closed by a valve, with a locking device operated by a valve lock upon a removable receptacle, when the latter is in position for receiving the fare from the box, substantially as set forth. 2nd, The combination, with a box for the reception of fares, etc., of a removable receptacle constructed for application to the bottom of the box, a mouth on the receptacle fitting to the discharge orifice of the box and mouth of the removable receptacle, a lock to the valve of the discharge orifice, and a lock to the valve of the mouth of the removable receptacle, operated by a key irremovable from the box, and device upon the lock of the receptacle valve, engaging with the lock of the valve of the discharge orifice of the box constructed to unlock the lock of the last-mentioned valve, substantially as set forth. 3rd. The combination, with a box for the reception of fares, etc., of a removable receptacle for tickets, money, etc., having a lock valve to its mouth, and a key irremovably connected to the fare-box, and constructed to unlock the valve, and simultaneously lock the valve shut aud unlock the receptacle from the box, substantially as and for the purpose set forth. 4th. The combination of a box for the reception of fares, etc., having a discharge opening, a valve or cover G to close said opening, a key irremovable from the box, a removable receptacle, with a mouth constructed to fit the discharge opening of the box, a lock-valve N on the receptacle, and a lock with a tooth Q acting to lock the valve N shut, or to lock the valves G and N together in the respective portions of the tooth, substantially as and for the purpose set forth. 5th. The combination, with a box for the reception of fares, etc., having a discharge orifice, of a lock valve closing such orifice, a removable receptacle having a valve closing such orifice, a removable receptacle having a valve closing its mooth, having a lock attached to it, with a device for operating the lock of the former valve, an irremovable key with eccentric U upon it, a spring-catch S released by the eccentric, and a catch T upon the removable receptacle, all constructed to operate substantially as set forth.

No. 25,800. Substitute for India Rubber, Caoutchouc, etc. (*Substitut pour la Gomme Elastique, le Caoutchouc, etc.*)

Henry W. Peabody, Salem, Mass., U. S. (assignee of Albert Kissel, Frankfort-on-the-Main, Germany), 19th January, 1887 ; 5 years.

Claim.—1st. As an improved article of maufacture, a substitute for caoutchouc, gutta-percha, etc., consisting of hardened resin and balsams of the class referred to, and oil and sulphur compounded together, substantially as described. 2nd. The art or method of combining hardened resin and balsams of the class referred to, with oil and sulphur, whereby a substitute for caoutchouc, gutta-percha and similar substances is formed, substantially as described. 3rd. The art or method of manufacturing a substitute for caoutchouc, gutta-percha and similar substances, which consists in dissolving in oil hardened resins and balsams of the class referred to, second, adding to the solution so formed a second solution, composed of sulphur and oil, and, lastly, heating the mixed solutions, as and for the purpose set forth. 4th. The art or method of manufacturing a substitute for caoutchouc, gutta-percha and similar substances, which consists in dissolving in oil hardened resins and balsams of the class referred to, second, adding to the solution so formed a second solution, composed of sulphur and oil, third, adding sulphur to the mixed solutions, and, lastly, heating the entire mass, as and for the purpose set forth. 5th. The art or method of manufacturing a substitute for caoutchouc, gutta-percha and similar substances, which consists in hardening resins and balsams of the class referred to, by means of caustic lime or other caustic alkaline earth, second, dissolving the said hardened resin or balsam in oil, third, adding to the solution so formed a second solution, composed of sulphur and oil, and thereafter heating the combined solutions, substantially as described. 6th. The art or method of manufacturing a substitute for caoutchouc, gutta-percha, and similar substances, which consists in hardening resins and balsams of the class referred to by means of caustic lime, or other caustic alkaline earth, second, dissolving the said hardened resin or balsam in oil, third, adding to the solution so formed a second solution, composed of sulphur and oil, fourth, adding sulphur to the mixed solutions, and, lastly, heating the entire mass, as and for the purpose set forth.

No. 25,801. Car Brake. (*Frein de Char.*)

William O. Cooke, New York, N. Y., U. S., 19th January, 1887 ; 5 years.

Claim.—1st. The combination, with a yielding draw-bar and the brake-beams, of two vertical levers severally pivoted to said brake beams, a connecting rod joining the lower ends of said levers, means detachably connecting the upper end of one of said levers with the draw-bar, a hand-brake device connected with the upper end of the other of said levers, and a sliding or loose connection between the upper end of one of said levers and the car or truck frame, constructed to allow an inward movement of the upper end of said lever while operating, to limit the outward movement of said upper end of the lever, whereby forming a fulcrum for said lever, when pressure for actuating the brakes is applied to the lever at the opposite end of the truck, substantially as described. 2nd. The combination, with a yielding draw-bar and the brake beams, of two vertical levers severally pivoted to said brake-beams, a connecting rod joining the lower ends of said levers, means detachably connecting the upper end of one of said levers with the draw-bar, a hand-brake device connected with the other of said levers, and loose or sliding connections joining the upper parts of both of said levers with the car or truck frame whereby the automatic and hand-brake devices are adapted for independent operation, substantially as described. 3rd. The combination, with a yielding draw-bar and brake-beams, a vertical lever G pivoted to one of said beams, a rod joining the lower end of said lever, with the other of said beams, a bar pivoted to the draw-bar and provided at its free end with a hook adapted for engagement with the said lever G, a horizontal lever N, pivoted at one end to the car-frame, and engaging the free end of said hooked bar, and a movable supporting device connected with the said lever N and extending to a point on the car convenient for the operator, substantially as described.

No. 25,802. Flour Bolt. (*Blutoir.*)

August Heine, Silver Creek, N.Y , U.S., 19th January, 1887 ; 5 years.

Claim.—1st. In a rotary flour bolt, the combination, with the bolting surface H, of the elevating ribs I, separated by spaces *i* from the bolting surface, and deflecting plates K arranged opposite the inner edges of the ribs I separated therefrom by spaces *k*, and constructed with an obstructed outer face opposite the elevating rib, whereby the material is enabled to pass freely from an elevating rib to its deflecting plate, and from the latter to the elevating rib below, substantially as set forth. 2nd. In a rotary flour bolt, the combination, with the bolting surface H, of the elevating ribs I, provided on their inner edges with studs *t*, and separate deflecting plates K secured to said studs, whereby spaces are formed between the plates K, and the elevating ribs as well as between the several deflecting plates K, substantially as set forth. 3rd. In a rotary flour bolt, the combination, with the bolting surface H, of the elevating ribs T provided on their outer edges with studs *j*, upon which the bolting surface is supported, and on their inner edges with studs *l*, separate deflecting plate K applied to the studs *l*, and fastening bolts *m* passing through the ribs T, studs *j* and *l* and deflecting plates K, substantially as set forth. 4th. The combination, with a rotary flour bolt, of short fan blades inclined sharply to the axis of rotation secured within the bolt and rotating therewith, whereby an air current is caused to flow lengthwise through the bolt, substantially as set forth. 5th. The combination, with a rotary flour bolt, provided with longitudinal elevating ribs I and deflecting plates K, of inclined fan blades secured within the bolt, substantially as set forth. 6th. The combination, with a rotary flour bolt, composed of a shaft *b*, heads C, E, elevating ribs T, deflecting plates K and a bolting cloth H, of fan blades N secured to the shaft *b*, between the heads C and E, substantially as set forth. 7th. The combination, with a rib I, of the studs *j* and *l* applied respectively to the outer and inner edges of said ribs, a ring *j*3 resting on the outer stud *j*, a deflecting plate K resting against the inner stud *l*, and a fastening bolt *m* passing through the ring *j*3, studs *j*, ribs T, stud *l* and plate K, substantially as set forth. 8th. The combination, with the end heads C and E, and the central rings J, provided with two peripheral rows *o*, *o*, of sharp pins, of two sections of bolting cloth *h*, *h*1, having their inner edges re-enforced and attached to the pins *o*, *o*, and their outer edges tacked to the heads C and E, substantially as set forth.

No. 25,803. Safety Attachment for Locomotive Tenders. (*Appareil de Sûreté pour Tenders de Locomotives.*)

Charles W. Dikeman, Racine, Wis., U. S., 19th January, 1887 ; 5 years.

Claim.—1st. The combination, with a locomotive tender, of an arm journalled at one end to the side of the tender, and thus adapted to swing horizontally, and a device attached to the free end of said arm and adapted to serve as a support to enable persons to pass from the tender to the ground, substantially as described. 2nd. The combination, with a tender, of a swinging arm journalled to the side thereof, and the hanging step E, F attached to the free end of said arm, substantially as set forth. 3rd. The combination, with a locomotive tender, of a swinging arm journalled to the side thereof, the hanging steps E, F attached to the free end of said arm, and an escape rope supported by said arm and pendent therefrom, substantially as described. 4th. The combination of the shaft journalled to the side of the tender, near one end thereof, the swinging arm secured at one end to the said shaft, the inclined brace connecting the arm and the shaft, the folding brace, arranged as described, the hanger secured to the free end of the swinging arm and having the step at its lower end, and the catch secured to the side of the tender, substantially as set forth. 5th. The combination with a swinging arm hinged at one end to the side of a tender, and adapted to be swung outward, when in use, by the momentum of the train, of an escape rope supported by the said arm, and mechanism, substantially as described, for regulating automatically the speed with which the said rope unwinds. 6th. The combination, with the swinging arm arranged as described, of the casing supported on the said arm and containing the rear shaft having the friction wheel and pinion, the coiled tension spring secured at its inner end to the said rear shaft, and secured at its outer end to a transverse rod, the upper shaft having the intermediate tension wheel, and the grooved drum and the forward shaft having the tension and gear wheels, and having its ends turning in the oblong bearing-apertures, the escape-rope having its inner end secured to the said drum, and its inner portion coiled around the same and thence passing around the grooved portions of the other shafts over the drum, as described, and through guide-rings to the free end of the swinging arm, and having the large ring secured to its outer free end, all constructed and arranged to operate in the manner and for the purpose herein shown and described,

No. 25,804. Hand Fire Extinguisher. (*Extincteur d'Incendie à Main.*)

William M. Harrison, Baltimore, Md., U. S., 19th January, 1887 ; 5 years.

Claim.—1st. A syringe fire extinguisher, provided with an opening in its rear end conforming in outline to a nut attached to the piston head, whereby the nut, when the piston-head is at the rear end of the stroke, will be securely held for the insertion of the detachable handle. 2nd. In combination, the piston-head, consisting of the outer

and inner rigid disks, and inclosed flexible disk, the screw passing through said perforations, the nut on the opposite side thereof to receive said screw, and the body of the syringe having a perforation in its rear end to receive and securely hold the nut therein, as set forth. 3rd. In combination, the piston-head having a nut secured at its rear side, the rear end of the syringe having a central perforation to receive the nut, and a seam of solder or other proper sealing material to secure the nut therein, as set forth. 4th. In combination, the piston head having a nut, the rear end of the syringe having a perforation corresponding in size and shape to said nut for receiving and holding it against turning, and a cap soldered to said end piece, and having a central perforation to receive and guide the piston rod handle, as set forth.

No. 25,805. Apparatus for Drying Bone Black. (*Appareil pour Sécher le Noir d'Os.*)

Samuel M. Lillie, Philadelphia, Penn., U. S., 19th January, 1887; 5 years.

Claim.—1st. A drier located above a bone-black revivifying kiln and consisting of the following elements, viz.: horizontal flue B, surface heater with vertical tubes above the flue B, horizontal flue I above surface-heater, vertical chamber G, chambers *c*, *c*1 on each side of the surface-heater, hollow walls D having perforated sides and opening above into the hopper E, and below into boxes F, lower set of hoods J and upper set of hoods J1, covering air-tight the outer face of each wall, and exhausting apparatus connected by mains P and *p* with the upper series of hoods J1, the various parts connected together and operating in conjunction, substantially as and for the purpose specified. 2nd. In a char-drier, the hollow walls D for containing the char to be dried, and having perforated side chamber or chambers *c*, covering one face of each hollow wall end having connections for bringing heated gases to them, chamber or chambers J covering the other and opposite faces of the walls, and exhausting apparatus connected by suitable mains with the chamber or chambers J, and operating to draw air or gases from the chamber or chambers *c*, through the hollow walls and the moist black contained therein. 3rd. The combination, with a char-drier in which the products of combustion from the kiln, in connection with which the drier is used, are employed in a surface-heater in heating air to be drawn through the black in the drier for the drying of the same, of exhausting apparatus communicating with the flue or chamber such as I, into which the cooled products of combustion flow from the surface-heater, and operating to effect a draft for the kiln fire independently of the temperature of its products of combustion. 4th. In a char-drier, the combination of a central surface-heater having vertical flue tubes with air chambers, char channels and exhaust chambers arranged symmetrically on each side of the surface-heater in the order specified, all connected and working in combination. 5th. The combination, with a bone-black revivifying kiln and superimposed drier operating on the principle described, of the floor *e* or its equivalent for retaining the heated air which rises from around the various parts of the kiln, conduits leading from the space beneath the floor *e* to the air channels of the drier, and exhausting apparatus operating to draw the heated air from below the floor through the said conduits and through the channels and black in the drier. 6th. In a surface-heater, tubes which break spaces with each other in the direction along which the matters to be heated flow through the heater, in combination with ribs *r* parallel to the tubes and projecting from the side walls of the heater among the tubes, the effect of the combination being to leave no free channel which the matters to be heated might flow, and so avoid contact with the surfaces of the heating tubes. 7th. In the surface-heater of a char-drier, the combination, with the tubes in the chamber through which the air and gases to be heated flow, of partial partitions *v*, which are parallel to the tubes plates and which form the interior of the heater into a zig-zag channel, through which the air or gases to be heated are led back and forth among the tubes, entering the heater chamber through a port at one end of the zigzag channel and leaving it through one at the other end. 8th. With the tube *o* of the surface-heaters, the combination of a perforated diaphragm *a* in the chamber B, from which the gaseous products of combustion flow into the tubes of the heater, the diaphragm operating to distribute the gases more evenly among the heater tubes. 9th. The combination, with the tubes of the surface-heater of a char-drier, of perforated caps *w* closing the ends of the tubes, and operating to cause a more even distribution of the products of the combustion among the tubes. 10th. The combination, with the vertical flues *o* of a surface-heater, of the perforated caps *w*, rods *u* suspended in the interior of the tubes from the caps *w*, and star or other shaped pieces of heat-absorbing substances strung on the rod in each tube, the pieces acting as heat arresters to absorb heat by contact from the hot gases and to radiate it upon the walls of the tubes. 11th. In a char-drier constructed substantially as shown and specified, the vertical divisional plates N, dividing the hollow side walls through which the black flows into two or more separate or distinct channels D, hoods J one covering the outer face of each channel opposite the lower air channel *c*, hoods J1 covering respectively the outer faces of the channels opposite the upper air channels *c*1, the hoods J1 communicating through the mains M and branches *m* with the surface-heater of the drier, and the hoods J1 through the branches *p* and mains P, S, with an exhausting apparatus. 12th. In a char-drier constructed substantially as described, gates *g*1 or equivalent devices located in the mains or branches leading from the exhaust chambers of the drier to the exhausting apparatus, by means of which gates the flow of air or gases through the black back of said exhaust chambers may be regulated as desired. 13th. In a char-drier operating substantially as described, char channels such as D formed with perforated sides or walls, air chamber or chambers *c* on the one side of the channels, hood or hoods J covering air-tight the other face of each channel, the hoods of each channel being independent of those of the other channels, exhausting apparatus connected with several hoods by suitably connecting mains, and gates *g*1 or equivalents in the connecting mains by which the draft of air or gases through the several channels and consequently the desiccation of the black in each may be regulated. 14th. In a char-drier located above a revivifying kiln and delivering char to the retorts of the same, in which drier the desiccation of the char is effected by passing heated air or gases through it as it flows downward through the char passages of the drier, char passages divided into a number of vertical sections, each section delivering char to a certain number of the retorts below, and the combination with each vertical section, of means such for example as the separate exhaust pipes and gates *g*1 in the drawings, by which the draft of air or gases through the black in each section may be regulated independently of the other sections, the object of the arrangement being to permit the regulating the degree of desiccation of the black delivered to the different retorts of the kiln, and so to compensate for differences in the efficiency of the latter. 15th. The combination, in the construction of the hollow side walls or char passages D of a char-drier, (in which drier the char is desiccated by passing currents of air or currents of air or gases through it), of the vertical divisional plates N and end plates E, R, horizontal members *t*, *t*1, *t*2 and *l*, *l*1, *l*2, extending between the vertical plates and dividing the two walls of the char passages into panels, and perforated plates *e*1 filling the said panels. 16th, In a char-drier, operating substantially as described, char passages with walls constructed in panels, as set forth, and hoods J, one covering each panel of the outer walls of the char passages, each hood communicating with exhausting apparatus through intermediate connecting mains or apparatus. 17th. The combination, with the retorts of a char-revivifying kiln, of plates *d*1 covering the mouths of the retorts and having funnels *o*1 projecting one into each retort, nipples *r*1 and manifolds W with sockets *s*2, the combination affording means for collecting and conducting away from the retorts of the vapors formed in the same. 18th. The combination, with the retorts of a char-revivifying kiln, of a condenser, conduits connecting the retorts with the condenser, and means for drawing the vapours formed in the retorts through the conduits to the condenser. 19th. In a char-drier in which the products of combustion from the kiln-fire are used in a surface-heater, for heating the air to be drawn through the char in the drier, the combination, with the flue, such as I, into which cooled products of combustion pass from the surface-heater, of two flues or conduits, such as *f* and G, one of which leads directly into a flue or main, such as S, leading to draft-producing apparatus, while the other leads to the rear or induction side of the channels, with perforated sides in which the black to be dried is contained, and of a suitable damper, such as *n*1 or its equivalent, which may be operated to either send the cooled product of combustion through one of the two conduits to the draft main, or through the other conduit to the rear of the char channels, thence to be drawn through the char. 20th. The combination of a bone-black kiln and drier, two condensers, one connected with the drier by suitable mains, and the other with the retorts of the kiln by other suitable mains, and proper exhausting apparatus or equivalent means for drawing the water vapours evolved in the drier through its condenser, and the vapours generated in the retorts through their condenser, the object of the combination and of separate condensers for the drier and for the retorts. 21st. In a surface-heater, in which hot gases such as products of combustion are used for heating other substances, the combination, with the flues or heating-surfaces of "heat arresters" formed of metal, earthenware, or other material, arranged in the flues or passages through which the hot gases flow, and operating to absorb the heat by contact from the passing gases, and to radiate the same upon the heating surfaces by them to be absorbed and conducted to the matters to be heated, substantially as specified. 22nd. In a surface-heater in which air or other gases are heated, the arrangement, as specified, in the channels in the heater through which the said air or gases to be heated flow, of heat-arresters formed of solid heat-absorbent substances, the heat-arresters operating to absorb the heat radiating from the heating surfaces to transfer it through contact to the air or gases to be heated. 23rd. The construction of the inclined plates *o*, *o*1 of the hopper E as hinged doors or wings which, when thrown back or open, give access to the interior of the drier, substantially as specified.

No. 25,806. Apparatus for Amalgamating Gold, etc. (*Appareil pour Amalgamer l'Or, etc.*)

Bernard C. Molloy, London, Eng., 19th January, 1886; 5 years.

Claim.—1st. In amalgamating apparatus, the combination of a disc having a central hopper with means for revolving the same, a mercury-containing vessel having a porous diaphragm separating the mercury which constitutes the cathode, from a carbon or other anode in an aqueous electrolyte, and suitable electrical connections, as and for the purposes described. 2nd. In amalgamating apparatus, the combination of a mercury-containing vessel, a disc carrying a central shallow hopper bevelled at its lower edge, with means for revolving the same, a porous diaphragm separating the mercury of the vessel which constitutes the cathode, from a carbon or other anode in an aqueous electrolyte, and suitable electrical connections, as and for the purpose described. 3rd. In amalgamating apparatus, the combination of a mercury-containing vessel, a disc having stirrers an its periphery and carrying a central shallow hopper fitted with stirrers, with means for revolving the same, a porous diaphragm separating the mercury of the vessel which constitutes the cathode, from a carbon or other anode in an aqueous electrolyte, and suitable electrical connections, as and for the purpose described. 4th. In amalgamating apparatus, the combination, with a mercury-containing vessel, of a disc fitted with a shallow hopper having its lower edge bevelled, the disc floating upon the mercury and supported by it alone, with means for rotating the disc which is fitted with stirrers, and a porous diaphragm separating the (cathode) mercury of the vessel from a carbon or other anode in an aqueous electrolyte, and suitable electrical connections, as and for the purposes herein described. 5th. In amalgamating apparatus, the combination, of a mercury-containing vessel, a disc fitted with a central hopper bevelled at its lower edge, the disc floating upon, and supported by the mercury alone, and fitted with stirrers, and means for rotating the disc, as and for the purpose herein described. 6th. In amalgamating apparatus, the combination of an anode in an aqueous electrolyte, separated by a porous diaphragm from the (cathode) mercury of the apparatus, with suitable electrical connections, as and for the purpose described.

No. 25,807. Manufacture of Boots and Shoes. (*Fabrication des Chaussures.*)

Susan Damer and William A. Damer, (assignees of William Damer), Toronto, Ont., 19th January, 1887; 5 years.

Claim.—1st. A boot or shoe having its vamp and quarter in one whole piece, with gusset inserted on both sides to form the top and facings, said gusset or facing placed underneath vamp through or over slit from H to F, coming on top of quarter from F to D, making an outside facing from H to K, and placed under the quarter at seam from D to F, getting the spring from B to C by drawing the vamp at H as far up the facing toward I as may be necessary, as shown and described. 2nd. A boot or shoe having its vamp and quarter in one whole piece, with gusset inserted on both sides to form the top and facings, said gusset or facing placed underneath vamp through or over slit H to F, coming on top of quarter from F to D, making an outside facing from H to K on both sides, having inserted on each side of quarter an elastic gusset, getting the spring from B to C by drawing the vamp at H as far up the facing towards I as may be necessary, as shown and described.

No. 25,808. Tipping Billiard Cues.

(*Procédé de Queue de Billard.*)

James S. Burroughs, (assignee of George R. Holding, London, Eng., 19th January, 1887: 5 years.

Claim.—1st. The manufacture and use of tops or tips for billiard cues having the shank or projection *c* formed in one solid piece therewith, substantially as hereinbefore described and shown on the drawings. 2nd. The method of attaching tops or tips to billiard cues by means of solid shanks *c*, and either with or without glue or cement, and also with or without the washer *d*, substantially as hereinbefore described, and shown on the drawings. 3rd. The combination of the several and respective parts *b* and *c*, or *b*, *c* and *d*, with the *a*, together forming my improvements in tipping billiard cues, substantially as hereinbefore described and shown on the drawings.

No. 25,809. Potato Digger.

(*Scarificateur à Patates.*)

Findlay A. McCrea, (assignee of Alexander Cameron), Montreal, Que., 19th January, 1887: 5 years.

Claim.—1st. The combination of a potato-digging implement, with the adjustable cutting device shown and described, consisting of the arm I, wheel J, pinion K, wrist pin c_1, knife bar L, cap piece M and knife N, substantially as shown and for the purpose set forth. 2nd. In a potato-digging implement, the combination of the guy rod O and axle H, with the cutting device above described. 3rd. The mould-board G1 curved both longitudinally and transversely, as shown, having a raised central ridge from front to rear, substantially as and for the purpose set forth. 4th. The combination, in a potato-digging machine, of the guy rod O with the axle H, as shown and described. 5th. The bolt holes *g* in the base of the standard extending to its outer edge, substantially as herein shown and for the purpose set forth.

No. 25,810. Steam Boiler Cleaner.

(*Nettoyeur de Chaudière à Vapeur.*)

Henry B Baker, Nelsonville, Ohio, and Robert Denton, Parkersburgh, W.V., U.S., 19th January, 1887; 5 years.

Claim.—1st. The combination, with the steam boiler having the blow-ff pipe D and the short pipe *m*, of the horizontal pipe B with the curved pipes *k*, the sectional pipe H, the three-way pipe F, cap nut C, conductor pipe S, cheek valve P and the pipe connecting with the pump or inspirator, substantially as specified. 2nd. The combination, with the boiler and the horizontal pipe B, with downwardly curved jet pipes *k*, of the sectional pipe H, the three-way pipe F and the conductor pipe S, the short pipe *m* and the stop cock or valves n_1, n_2, substantially as specified. 3rd. The combination, with the boiler having the blow-off pipe D with cock or valve D1, and the horizontal pipe B with curved pipes K, and stop cock or valve V, of the three-way pipes T, the sectional pipe H connecting the boiler with the three-way pipe, the conductor pipe S, the cheek valve and the supply pipe, substantially as specified.

No. 25,811. Manufacture of Material for Extinguishing Fires and Packing Case for the same. (*Fabrication de Matières pour Eteindre les Incendies et Boîte d'Empaquetage pour ces Matières.*)

Francis Bolton, Westminster, Eng., 19th January, 1887; 5 years.

Claim.—1st. A new manufacture of material for extinguishing fires consisting of bars, balls or rods of chloride of calcium, or magnesium, or compounds thereof, produced by casting hot concentrated solutions thereof into moulds, such material being afterwards introduced into holes containing water so as to form a solution that will extinguish fire, substantially as herein described. 2nd. A new manufacture of material for extinguishing fire consisting of chloride of calcium, or magnesium, or mixtures thereof, enclosed in thin glass tubes which, when inserted into a bottle with water and shaken, will break and allow the said substances to become dissolved in the water, substantially as herein described. 3rd. A packing for materials for extinguishing fires, referred to in the preceding claims, consisting of two tumbler or cup-shaped receptacles having their open ends placed together with the said material within them, the said receptacles being secured together by means of a piece of waterproof material cemented round their meeting ends, as shown in the accompanying drawing.

No. 25,812. Ventilating Urinal. (*Aérage d'Urinal.*)

Benjamin Holbrook and Henry N. Mann, Chicago, Ill., U. S., 19th January, 1887; 5 years.

Claim.—In ventilating urinals, the urinal trough or bowl A formed narrow in cross section at its lower end B, and divided by a plate M extending into said narrow part, and extending up to form a conduit for the gases from the urinal to pass by means of suitable pipes to the heated chamber G, as and for the purpose specified.

No. 25,813. Detonator or Cap to be used with Dynamite, etc. (*Percuteur ou Capsule pour être employé avec la Dynamite, etc.*)

George Smith, Glasgow, Scotland, 19th January, 1887; 10 years.

Claim.—1st. Detonator tubes made with corrugations, substantially in the manner and for the purpose hereinbefore described. 2nd. Detonator tubes made of thin steel with or without corrugations, and lacquered or unlacquered, substantially in the manner and for the purposes hereinbefore described.

No. 25,814. Combined Pick and Shovel.

(*Pique et Pelle Combinés.*)

Albert H. Storey, London, Eng., 19th January, t1887; 5 years.

Claim—1st. Providing the end of the handle shaft with cap B having the projections C and E, and the shoulders D and F, substantially as described and shown. 2nd. In combination with the cap B, as described, the eye socket or head G of the combined pick and shovel, and the catch H, substantially as and for the purpose described and declared. 3rd. The combination of the flange K with the catch H, substantially as and for the purpose specified. 4th. The socket or head G of a combined pick and shovel, and cap B and handle shaft, for the purpose described and shown.

No. 25,815. Gas Trap Cover.

(*Couvercle de Trappe à Gaz-*)

Nathan Schwab, New York, N.Y., U.S., 19th January, 1886; 15 years.

Claim.—1st. The combination, with a gas-trap cover provided with means, through the centre of the cover, for operating an angle lever arm on the under side, to expand an adjustable band on the outside of the rim, of an elastic gasket or packing, to prevent the escape of gas through the cover, as and for the purpose set forth. 2nd. A gas-trap cover provided with a piston rod in a tube in the cover, in combination with an angle lever arm having a stud in its short arm working in a slot in a sleeve, in the lower end of the rod, and its long arm pivoted to a brace secured to an adjusting rod adapted to expand a band outside the rim, and a gasket or packing to prevent the escape of gas through the cover, as and for the purpose set forth. 3rd. The combination, with a gas-trap cover having mechanism for expanding an adjustable band on the outer side of a rim on its index side, of a gasket around the odjustable band and extending over the entire under side of the cover, as and for the purpose set forth. 4th. In combination with a gas-trap cover for wash-basins and other vessels having a slotted rim on its under side, and an adjustable band outside the rim provided with a gasket, of a cam on its upper side depressing a piston rod acting upon a lever arm, forcing the adjustable band outward against the sides of the basin, as and for the purpose set forth. 5th. In combination with a gas-trap cover having a conical projection on its upper side with a tube therein, of a piston rod within the tube having a forked head carrying a cam, to move the rod up and down, to operate an angle arm pivoted to the lower end of the rod, and connected with means for forcing an adjustable band outward against the sides of a basin, as and for the purpose set forth. 6th. In combination with a gas-trap cover having a piston rod therein operating on a lever arm to expand an adjustable band, of a cam lever recessed in its sides with rollers on the head of the rod working within the recesses, and upon the rim of the cam in moving the rod up and down, as and for the purpose set forth. 7th. In combination with a conical cover having a tube in the cone provided with openings in its front and rear portions, and a cam lever recessed in its sides pivoted in the upper end of the tube, of a piston rod having a forked head within a roller journalled in its lower part, and rollers at the top and on the inner sides of the forked head adapted to work in the recess on each side of the cam to move the rod up and down, as set forth. 8th. In a gas-trap cover having a conical top, an angle arm pivoted in the cone with a stud in the end of its short arm working in a slot in a sleeve, on the end of a piston rod, and its long arm pivoted to a brace attached to an adjusting rod provided at one end with a double head carrying pivoted arms that extend through the slots in the rim and are pivoted to the adjustable band outside thereof, as set forth. 9th. In combination with a gas-trap cover having an adjustable band outside the rim, of an adjusting rod having arms pivoted in its end and passing through slots in the rim and pivoted to the band at near its end, and spreaders pivoted between said arms to a post on the side of the rim and to the arms at about midway their length, as set forth. 10th. In combination with a gas-trap cover having an adjustable band outside the rim, and an adjusting rod working through a slot in a stud depending from the cone at one end and having spreader arms pivoted to the other end, of a spring secured to the stud with curved arms working through slots in angle arms on the adjustable band which exteuds through slots in the rim, as set forth.

No. 25,816. Buttered Flour. (*Farine au Beurre.*)

Hugh Brodie and Robert Harvie, Montreal, Que., 19th January, 1887; 5 years.

Claim.—1st. The compositian of matter formed of concentrated milk, as described, and farinaceous substance formed into a dry powder in the proportions substantially as described. 2nd. The combination of " milk powder " formed as herein described, with flour, butter, phosphatic acid and super carbonate of soda, in the proportions substantially as described.

No. 25,817. Candy and Process for Making the same. (*Candi et Procédé de Fabrication du Candé.*)

Thomas Kane and George D. Moffat, Chicago, Ill., U.S., 20th January, 1887; 5 years.

Claim—1st. The improved method of manufacturing candy consisting in cooking a compound of cane sugar and glucose in vacuo, until it acquires a consistency appropriate for the production of the candy demanded. 2nd. The improved method of manufacturing candy consisting in cooking cane sugar and glucose in vacuo, until it arrives at a "hard crack" or stick candy consistency. 3rd. The new product, the candy produced by boiling cane sugar and glucose together in vacuo.

No. 25,818. Hot Water Radiator.

(*Serpentin de Calorifère à Eau.*)

Archibald Brake and John T. Dowell, Toronto, Ont., 20th January, 1887; 5 years.

Claim.—1st. A radiator composed of a series of tubes A, having elbows formed on them through which they are connected together, substantially as specified. 2nd. A radiator composed of a series of horizontal tubes A, arranged above each other and connected together at alternate ends, in combination with the legs or end supports C and blocks E, arranged substantially as and for the purpose specified.

No. 25,819. Roller Mill Feeder.

(*Trémie de Moulin à Rouleau.*)

Anthony Marshall and Martin N. Todd, Galt, Ont., 20th January 1887; 5 years.

Claim.—1st. The combination, with the casing A and rollers B, B, of the hopper D and shaker C, having one or more steps F attached along its discharge, to temporarily lodge the grain and cause even distribution in the drop to the rollers, as set forth. 2nd. In a roller mill, one or more reciprocating steps F arranged below the shaker C, to temporarily lodge the grain and distribute it over the horizontal surface of the steps prior to being fed to the rollers, for the purpose set forth.

No. 25,820. Lime Kiln. (*Four à Chaux.*)

Clark D. Page, Rochester, N.Y., U.S., 20th January, 1887; 5 years.

Claim.—1st. The combination, with the cupola, of the three furnaces D, D, D and the three-part division-walls F, F, F, extending radially across the cupola opposite the furnaces, substantially as described. 2nd. The combination, with the cupola, of the three-part division-walls F, F, F and the radial openings G in the same line with the walls, substantially as described. 3rd. The combination, with the cupola, of the three-part divison-walls F, F, F consisting of the copying-blocks I, I_1, I_2, centre block J, arch-blocks L, L_1, L_2 and key O, substantially as described. 4th. The combination, with the cupola, of the three-part division-walls F, F, F, consisting of the copying-blocks I, I_1, I_2, centre block J, arch-blocks L, L^1, L_2, key O and interposed brick-work K, substantially as described. 5th. The combination, with a cupola, of a three-part division-wall having its upper portion composed of the copy-blocks I, I_1, I_2 and centre block J, substantially as described. 6th. The combination, with the cupola, of a three-part division-wall supported on the arch-blocks L, L^1, L_2 having key O, substantially as described. 7th. The combination, with the cupola, provided with the three-part division-walls F, F, F, of the three furnaces D, D, D, enlarged toward their inner ends so as to permit the detachment of the lime from any part of the division-walls, substantially as and for the purpose set forth.

No. 25,821. Wood Pulp Machine.

(*Machine à Pulpe de Bois.*)

Warren Curtis, Corinth, N.Y., U.S., 20th January, 1887; 5 years.

Claim.—1st. A wood-pulp machine having block-pressers held on a semicircular casing hinged at one end, substantially as herein shown and described. 2nd. A wood-pulp machine constructed with a semicircular casing over the stone on which block-pressers are held, the casing being hinged at one end and provided with doors in its side, through which the blocks of wood can be placed under the block-pressers, substantially as herein shown and described. 3rd. In a wood-pulp machine, the combination, with a semicircular casing over the stone on which block-pressers are held, and which casing has doors in its sides for introducing the blocks, of a gutter below said doors for catching the drip and waste pulp on the outside of the casing, substantially as herein shown and described. 4th. In a wood-pulp machine, the combination, with a hinged casing over the stone, of a series of block-pressers on the rim of the casing, pipes curved over the rim of the casing connected with the several block-pressers and adapted to be raised with said casing, and pipes connecting said curved with the main supply and discharge pipes, substantially as shown and described. 5th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the same, three semicircular pipes extending over the rim of the casing, of which pipes two are connected with the valve-boxes of each presser and the third is connected with pipes passing down to the stone between each two adjacent pressers, substantially as herein shown and described. 6th. In a wood-pulp machine, the combination, with a semicircular casing over the stone of block-pressers on the rim of the same, and of wedge-shaped boxes within the casing between two adjacent block-pressers, substantially as herein shown and described. 7th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the same, wedge-shaped boxes within the casing between each two adjacent pressers, and pipes for conducting the water to apertures in the bottoms of the wedge-shaped boxes, substantially as herein shown and described. 8th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the same, triangular boxes within the casing and between adjacent pressers, and mechanism for adjusting the boxes a greater or less or less distance from the stone, substantially as herein shown and described. 9th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the same, wedge-shaped boxes within the casing and between the pressers and screws passed through lugs on the boxes, and lugs on the rim of the casing, whereby said boxes can be adjusted a greater or less distance from the stone, substantially as herein shown and described. 10th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the same, and of wedge-shaped boxes within the casing and between adjacent block-pressers, each of said boxes being provided in its lower end with a groove parallel with the axis of the stone, substantially as shown and described 11th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the casing, wedge-shaped boxes within the casing and between adjacent block-pressers, each of said boxes being provided in its lower end with a groove parallel with the axis of the stone, and with apertures extending from the interior of the box to the groove, substantially as herein shown and described. 12th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the rim of the casing, and wedge-shaped boxes within the casing and between the adjacent block-pressers, each of said boxes being provided on its inner end with a groove, and with a series of tubes projecting from the grooved bottom of the box up into the hollow of said box, substantially as herein shown and described. 13th. In a wood-pulp machine, the combination, with a casing over the stone, of a series of block-pressers on the rim of the casing, wedge-shaped boxes within the casing between the adjacent block-pressers, which wedge-shaped boxes have longitudinal grooves in their ends and cleats on the sides of the casing passing into said grooves, said grooves being parallel to the working side of the box, and the cleats being parallel to a radius of the machine, substantially as herein shown and described. 14th. In a wood-pulp machine, the combination, with a casing over the stone, of block-pressers on the casing, wedge-shaped boxes between the block-pressers and within the casing, each box being provided with guide-grooves in one side and presser-plates or followers between each two boxes, which presser-plates or followers have lugs passing into the guide-grooves in said boxes, substantially as herein shown and described. 15th. In a wood-pulp machine, the combination, with a casing over the stone, of a series of block-pressers on the casing, presser-plates or followers operated by the block-pressing devices, wedge-shaped boxes within the cases and between two adjacent followers, and adjusting screws held on the followers to project beyond one edge of the same, substantially as herein shown and described. 16th. The combination, with a press, of a pipe for conducting water under pressure to the same, and of an air-tank connected with the said pipe, substantially as herein shown and described. 17th. The combination, with a press, of a pump *m* for forcing water into the said press, a suction-tube connected with the said pump, and of an air-cock on the suction-pipe, substantially as herein shown and described. 18th. The combination, with a press, of pipes for conducting water to the same, and of an air-cock on one of said pipes, for the purpose of drawing air into the said pipes and mixing it with the water in the pipes, substantially as herein shown and described. 19th. The combination, with a series of wood-pulp machines, of presses on the same, pipes for conducting water or air and water under pressure into the said presses, and of air-tanks connected with the said pipes, substantially as herein shown and described. 20th. The combination, with a wood-pulp machine, provided with presses for pressing the wood blocks on the stone, of a pipe for conducting water, or air and water under pressure to the said presses, and of a relief-valve in the said pipe, substantially as herein shown and described. 21st. The combination, with a wood-pulp machine provided with presses for pressing the wood blocks on the stone, of a pipe for conducting water, or air and water under pressure to the said presses, and of a pressure-regulating valve in said pipe, substantially as herein shown and described. 22nd. The combination, with a pulp machine having cylinder and piston presses, of devices for conducting air and water under pressure into said presses, substantially as herein shown and described. 23rd. The combination, with a series of wood-pulp machines provided with presses for pressing the wood blocks on stones, of the pipe H^4 for conducting water under pressure, the pipes H_3 connected with the pipe H^4 and conducting the water to the series of machines, a relief-valve in the pipe H^4, and a pressure-regulating valve in each pipe H_3, substantially as herein shown and described. 24th. The combination, with a number of groups of wood-pulp machines, of the water-conducting pipes H_3 and J_3, the pipe H^4 connected with the pipes H_3, and the pipe J^4 connected with the pipes J_3, and a pump or other water-forcing device connected with the pipe H^4, substantially as herein shown and described.

No. 25,822. Mechanical Telephone.

(*Téléphone.*)

George W. Lord, Boston, Mass., U S., 20th January, 1887; 5 years.

Claim.—1st. The combination, with the conducting wire of a mechanical telephone, of a tubular case supported substantially as described, and two or more supports secured within such case and placed at an angle to each other through which the conductor passes, whereby a sharp angle in the conductor is avoided, substantially as and for the purpose set forth. 2nd. The combination, with the conducting wire of a mechanical telephone, of the tubular case D, conforming to the direction of the wire, and the opened supports E extending within the case and supporting the wire, substantially as and for the purpose set forth. 3rd. A supporting tube or tubular case consisting of two parts, one sliding within the other, in combination with the conducting wire and supports extending within the case. 4th. The combination, with tubular case D made in two parts and provided with the conducting wire supports E extending within the case of the central hinge *a*, substantially as and for the purpose set forth. 5th. The combination of the tubular case D, the flanges *c*, *c*, rings *b*, *b*, loops E formed as described, conducting wire A supported on said loops, and braces *e*, *e*, substantially as and for the

purpose set forth. 6th. The combination substantially as and for the purpose set forth, with the conducting wire of a mechanical telephone line of the tube D made in two sections at right angles to each other connected by a shorter section, perforation in each of the longer sections arranged as described, near the short section, a wire covered with an insulating material, as described, passing through their perforations and having its ends connected as described passing on the outside of the tube, and covered loops E formed by the wire for supportingthe conducting wire within the tube. 7th. A mechanical telephone attached to the outside of the wall of a building by flexible connections as described, and connected to the interior of the building by a tube, substantially as and for the purpose set forth. 8th. A mechanical telephone supported by the conducting wire, and by flexible connections, substantially as and for the purpose set forth. 9th. The combination, substantially as and for the purpose set forth, of the case B, the diaphragm G within said case, the conducting wire A attached thereto, and the flexible connections *s* attached to each side of the case. 10th. The combination, substantially as and for the purpose set forth, of the hollow case B made in two parts a^1, a^1, connected together, the diaphragm G secured between the two parts, and the wire K attached to the diaphragm and passing through the parts a^1. 11th. The combination, substantially as and for the purpose set forth, of the case B made in two parts a^1, a^{11}, and a band of non-resonant material attached, and surrounding the outside of the case, as described. 12th. The combination, substantially as and for the purpose set forth, of the case B, and band of lead H. 13th. The combination, substantially as and for the purpose set forth, of the plug L, and conducting wire K passing through a perforation in the plug. 14th. The combination, substantially as and for the purpose set forth, of the hollow case B, the diaphragm G and the bell-shaped cavities in the case on opposite sides of the diaphragm. 15th. The combination, substantially as and for the purpose set forth, of the hollow case B, the diaphragm G and the mouth piece M in the side of the section a^1, at right angles to the plane of the diaphragm. 16th. The combination, substantially as and for the purpose set forth, with the section a^{11} of the hollow case B, of the car tube N and extension P within the case. 17th. The combination, substantially a and for the purpose set forth, of the section a^1 of the hollow case B, the diaphragm G, and the bevelled ring. 18th. The combination, substantially as and for the purpose set forth, of the conducting wire K, the section a^{11} of the hollow case B, the plate *m*, arm *n* and weighted arm *o* provided with a knob *p*, opposite the end of the conducting wire or button *h*. 29th. A mechanical telephone in which the diaphragm is insulated from the enclosing case by means of some material, which is a non-conductor of sound waves, substantially as and for the purpose set forth. 20th. The combination of the case B, the diaphragm G, the ring I and the insulating material *r*, substantially as and for the purpose set forth. 21st. A mechanical telephone line in which the conducting wire is maintained at a constant tension of the weight of the telephone. 22nd. In a mechanical telephone line, the combination, substantially as and for the purpose set forth, of a conducting wire extending vertically to a telephone from a suitable support, and a weighted telephone suspended from said wire, substantially as and for the purpose set forth. 23rd. In a mechanical telephone line, the combination, substantially as and for the purpose set forth, of the angle hanger C, as described, the conducting wire A extending vertically from the same, and the weighted telephone. 24th. The combination, substantially as and for the purpose set forth, of the conducting wire of a mechanical telephone line arranged within the walls and floors of a building, and devices C, as described, for supporting the conducting wire at angles. 25th. The combination, substantially as and for the purpose set forth, of the tube *v*, conducting wire C, and supports S^1 within the tube. 26th. The Combination, substantially as and for the purpose set forth, of the conducting wire K having a screw-thread upon the same, the diaphragm G, knob *h*, and nut *i*.

No. 25,823. Door and Window Fastening.

(*Fermeture de Porte et de Croisée.*)

Joseph G. Rollason, Birmingham, Eng., and Henry F Coombs, St. John, N.B., 20th January, 1887; 5 years.

Claim.—The horn or quadrant-shaped lever, etc., Fig. 3, for the purposes set forth and described, the combination of the bracket Fig. 2, with the knuckle-joint or hinge B and a wedge-shaped baseplate, as shown in Fig. 1, combined with the quadrant-shaped lever Fig. 3, all for the purposes set forth and described.

No. 25,824. Damper Regulator.

(*Régulateur de Tirage.*)

Nathaniel C. Locke and Alpheus C. Locke, Salem, Mass., U. S., 20th January, 1887; 5 years.

Claim.—1st. The combination, in a draft-regulating mechanism, consisting of a damper and a motor for operating the same, and having a valve for controlling said motor, of the supplemental motor R attached to said valve, having pipes G and K, and pipe H and reservoir F, all substantaillyas shown and described and for the purpose specified. 2nd. The combination, with a damper and a motor for operating the same, of a supplemental motor having chamber *d* loaded pistons d^1 and valve B when said valve is connected for operation outside and beyond the centre of said piston d^1, as herein shown and described. 3rd. Damper motor M, constructed as herein shown, having cylinder m^1, piston P, with rod *m* extending above, and having weight T, substantially as set forth, in combination with supplementary motor R, constructed substantially as herein shown and described. 4th. In an automatic damper regulator, having a boiler furnace and damper, also a damper-moter and a steam-weighing device, of a balanced cylindrical piston valve that will offer the least possible resistance to the working of the steam-weigher. 5th. In an automatic damper regulator, a damper-motor connected with said damper to actuate and control the same, a source of water-supply under pressure, and a pipe connecting said supply with said motor, in combination with a valve in said supply-pipe, for controlling said damper-motor by controlling the water when being used as a motive power by being admitted to said motor under pressure and allowed to escape therefrom, said valve being connected with a steam motor, whereby it is operated in accordance with the variations of boiler-pressure, substantially as shown and described. 6th. The combination of a boiler furnace and damper, with a cylinder and piston, and a valve for governing the flow of fluid to and from said cylinder, said valve connected to and operated by a steam-weighing device, substantially as and for the purpose specified. 7th. In an automatic damper-regulator, in combination, a source of fluid supply independent of the steam generator, a damper motor actuated by fluid under pressure drawn from said source, a regulating valve to control said supply, and a motor connected with said generator and sensitive to variations of pressure therein, and with said valve to control the same by said steam-motor, whereby said motors are actuated by powers independent in source and pressure, but controlled in correspondence with fluctuations in the boiler pressure, as set forth. 8th. Valve B, constructed substantially as herein set forth, having a casing inclosing high-pressure chamber *i* and central chamber i^1, with exhaust chamber h^1, and chamber g^{11}, with diaphragm *g* separating it from high-pressure chamber *i*, and having ports *f* and f^1 and having escape passage g^{111}, with inlet pipe H, outlet pipe G and exhaust pipe I, and cylindrical piston g^1 with a portion removed, all as shown and for the purpose specified. 9th. In an automatic damper-regulator, a source of fluid supply, and a damper motor connected with the damper and with a source of fluid supply, said damper-motor having a cylinder and a piston of considerable range of motion, combined with a regulating valve, said valve connected to and operated by a steam motor, whereby said fluid is admitted to actuate said damper-motor in one direction, and a weight to actuate said motor in an opposite direction when said fluid is exhausted, substantially as described. 10th. The combination, with a damper and a motor for controlling the same, and having a valve for operating said motor, of a supplemental motor having its movable piston resting upon a flexible diaphragm, having the moulded portion between said piston and the inside of chamber *d* extend upward from the bottom of said piston and return to be clasped between flanges, substantially as set forth. 11th. In an automatic damper-regulator, having a damper and a damper-motor for controlling said damper, and a valve for controlling said motor, chamber U^{11} located in a line of pipe between said motor and said valve, substantially as shown and described and for the purpose specified. 12th. The combination, with a damper and a motor for operating the same, of a supplemental motor constructed in the following manner: having chamber *d*, loaded piston d^1, and lever L adapted to resist the force of steam-pressure acting upon piston d^1, said lever L having a suitable valve-rod connecting lever L with pipe H and its valve, said valve-rod being connected with lever L at some distance from the point where piston d^1 connects with lever L, substantially as shown and for the purpose set forth in the accompanying specification. 13th. The combination, with a damper and a motor for operating the same, provided with a valve for controlling its operation, of a supplemental motor for operating said valve when said valve and its motor are connected by a suitable pipe, with a source of water-supply, substantially as shown and described. 14th. In a damper regulating device, the combination of three sub-combinations, the first of which is a steam-pressure motor of small range of motion, in combination with a device for multiplying the motion of the steam-motor, and with a valve actuated by the multiplied motion of the steam-motor, the second of which is the valve before referred to, serving to connect a water-way leading to a water-motor, with either a source of supply under pressure, or with an exhaust water-way according to the position of the valve, and the said water-way's source of supply under pressure and water-motor, and the third of which is the combination of the water-motor by suitable connections with the damper, all substantially as described.

No. 25,825. Railway Rail Joint.

(*Joint de Rail de Chemin de Fer.*)

John Siegel, Montreal, Que., 20th January, 1887; 5 years.

Claim.—A railroad rail joint, in which the ends of the rails are bevelled horizontally, or cut at an angle, substantially as shown and described as and for the purpose set forth..

No. 25,826. Furniture Caster.

(*Roulette de Meuble.*)

Rachel S. Thompson, Hamilton, Ohio, U. S., 24th January, 1887; 5 years.

Claim.—1st. In a caster, the combination of an axle, two floor wheels upon the same, a stem and a plate-like hanger connected with the stem, and having a hole loosely engaging the axle between the two floor wheels, and adapted for oscillation upon the axle, substantially as and for the purpose set forth. 2nd. In a caster, the combination of an axle, two floor wheels upon the same, a cross-bar disposed between the floor wheels and engaging over the axle, a stem adapted for attachment to furniture or the like, and a plate-like hanger connected with the stem and projecting between the two floor wheels, and engaging the axle and the cross-bar, substantially as and for the purpose set forth. 3rd. In a caster, the combination of a stem adapted for attachment to furniture, a hanger fitted to swivel thereon, and having at its base a hole for the axle of the floor wheels, and also horizontal journals of oscillation, a housing having bearings for the hanger journals and bearings for the axle of the floor wheels, two floor-wheels and a floor-wheel axle engaging the housing, the wheels and the hanger, substantially as and for the purpose set forth. 4th. In a furniture caster, the combination of a wheel-housing provided with downwardly open notches, a wheel axle seated upwardly within said notches, and a retaining part encircling the axle between the floor wheels and engaging the top of the housing and serving to prevent the axle leaving said notches, substantially as and for the purposes set forth. 5th. In a furniture caster, the combination of a housing provided with bearings of oscillation, two floor-wheels, and an axle secured in the housing, a stem adapted for attachment to furniture, and bearing at its foot in the housing formed of the wheel axle, and a hanger fitted to swivel upon the stem, and journalled at its foot in the bearings of oscillation of

the housing, substantially as and for the purposes set forth, 6th. In a furniture caster, the combination of a stem adapted for attachment to furniture, and provided with an upwardly facing shoulder, a housing, provided with an axle for two floor wheels, and with a projection forward of the wheels encircling the stem above the shoulder, and a hanger encircling the stem and engaging the housing by bearings of oscillation, substantially as and for the purpose set forth.

No. 25,827. Process and Apparatus for Producing Gas. (*Procédé et Appareil de Fabrication du Gaz.*)

Erazm J. Jerzmanowski, New York, N.Y., U.S., 24th January, 1887; 15 years.

Claim.—1st. The process of producing illuminating gas, which consists in externally heating a body of lime to about a cherry-red, injecting steam and such a surplus of liquid hydro-carbon into the lime as will primarily produce hydrogen and carbonic acid, and then carburet the same and convert it into a permanent illuminating-gas in one operation, substantially as described, 2nd. The process of continuously producing illuminating-gas at one operation, which consists in heating a body of lime to about cherry-red, by continuously applied external heat, injecting steam and a surplus of liquid hydro-carbon into the bottom of the body of lime, and thereby primarily producing hydrogen and carbonic acid, and then fixing the same and producing a permanent gas by combining the surplus hydro-carbon nascent hydrogen and carbonic acid in the upper part of the body of heated lime, substantially as described. 3rd. The mode of continuously producing a combustible gas, by passing steam and hydro-carbon through a body of lime, maintained in a heated condition by external heat, substantially as set forth. 4th The gas generator herein described, which consists of an L-shaped lime chamber provided with a grate to support the lime, and a perforated injection pipe beneath the lime support, in combination with an external furnace, or other suitable contrivance for continuously heating the same, substantially as described.

No. 25,828. Mangle. (*Calendre.*)

Charles J. Shirreff, Brockville, Ont., 24th January, 1887; 5 years.

Claim.—1st. The combination, in a mangle or rollers, composed of a cylindrical wooden body A, seamless metal casing B and shaft D, having journals D_1, as set forth. 2nd. A roller for mangles, composed of a wooden body A, seamless metal casing B and journals D_1 at the ends, as set forth.

No. 25,829. Sleigh. (*Traîneau.*)

Thomas Scott, St. Paul, Minn., U.S., 24th January, 1887; 5 years.

Claim.—1st. The combination of a tubular axle D_3, having collars D_1, D_2 connected thereto, and adapted to be attached to the body of a vehicle, raves B_1, B_2, provided with bearings a_1, a_2, and adapted to receive said collars, collars E_1, E_2, turning on said tubular axle, runners A_1, A_2, having thereon oppositely bent or curved braces C_1, C_2, braces F_1, F_2 extending from said collars E_1, E_2 to the forward ends of said runners, and braces G^1, G_2 extending from the said collars E_1, E^2 to the braces C_1, C_2, substantially as set forth. 2nd. The combination of axle H_2, having plate H_1 attached thereto, block H_3 pivoted to said plate, rave B_1 having plate H_4 attached thereto and pivoted to said block H_3, runner A_1, having braces C_1, C_2, braces F_1 G^1, and collar H^5 and ring H^6, substantially as set forth.

No. 25,830. Coal Elevator. (*Monte-Charbon.*)

Walter Lawton, Winthrop, Mass., U.S., 24th January, 1887; 5 years.

Claim.—1st. An endless series of elevator buckets, combined with a supporting and guiding frame, formed to conduct the ascending or loaded buckets vertically and laterally from the space over the receptacle from which material is taken by the buckets, and to continuously support said loaded buckets, as set forth. 2nd. The endless series of elevator buckets, combined with a supporting and guiding frame, composed of the curved section 3 attached to a support, and the section 2 pivoted to the lower end of the curved section, as set forth. 3rd. The combination of the vertically-movable frame or elevator, the guiding-frame 2, 3, attached thereto, and the endless series of elevator buckets supported and guided by said frame, as set forth. 4th. The curved guiding frame, combined with the endless series of elevator buckets, and the intermediate pans, as set forth. 5th. The curved guiding frame, having parallel rails *c*, *c*, combined with the endless series of buckets, having rollers *d*, *d*, as set forth. 6th. The vertically movable elevator supporting the series of buckets and their guiding frame, and provided with a motor which moves with the elevator whereby said buckets are impelled, as set forth. 7th. The elevator, supporting the bucket guiding frame 2, 3, and having wheels *q*, combined with the recess *p* adapted to receive the elevator, as set forth. 8th. The sections 2, 3, having the guide-rails *c*, *c*, and rollers *a1*, *a1* between the proximate ends of the rails, combined with the endless series of buckets having rollers *d*, as set forth. 9th. The vertically movable elevator supporting the series of buckets and their guiding-frame, and provided with antifriction rolls *b1*, combined with vertical guides on which said rolls bear, as set forth.

No. 25,831. Washing Machine and Wringer Combined. (*Laveuse-Essoreuse Mécanique.*)

Robert H. Cornett, Livingston, Ks., U. S., 24th January, 1887; 5 years.

Claim.—1st. A washing and wringing machine combined, comprising a frame A adapted to support a clothes-holding tub, as at B, and having posts *a*, *a*, a frame, as at D, pivoted in posts *a*, *a*, a washer, as at G, attached to the lower end of the frame D, and adapted to be supported thereby, in the tub B, and a wringer J, comprising rollers J, J_1 and springs L, and one of said rollers fixed to the pivot shaft of the frame D, substantially as described for the purposes set forth. 2nd. A washing and wringing machine combined, comprising a frame A, having posts *a*, *a*, a frame D pivoted to said posts, a washer C held to the lower end of frame D, brackets I, I, fixed to the posts *a*, *a*, a wringer J supported in brackets I, I, and comprising rollers J, J_1, and springs drawing one roller toward the other, and the shaft d^1 of one roller being also the pivot-shaft of the frame D, substantially as described for the purposes set forth. 3rd. In a washing and wringing machine, the combination, with the washer base-piece *c*, of adjustable clamp-plates E, F held thereto, and a right and left screw G, engaging nuts fixed to said clamp-plates, substantially as herein set forth.

No. 25,832. Washing Machine. (*Laveuse Mécanique.*)

Samuel W. Parsons, Ypsilanti, Mich., U. S., 24th January, 1887; 5 years.

Claim.—The combination, with the frame C, as shown, having the perforated lug H, of the oscillating hollow shaft G journalled in the lower part of said lug, and supported by the part I, and having rectangular socket, the link K fitted loosely in the rubber-board, and having a rigid rod O which passes up through the lug H, and the spring J housed in the hollow shaft G, all arranged for joint operation, as set forth.

No. 25,833. Hame Fastener. (*Courroie d'Attelles.*)

Robert C. Necke and Charles W. Necke, Seymour, Wis., U. S., 24th January, 1887; 5 years.

Claim.—In a hame fastener, the combination of the bar A provided with the hook at one end, and the bifurcated head H at the other, which head is provided with a recess I, the pivot G, the coupling link C, provided with cross-bars, and the lever B provided with the elongated slot L, the recess N and the shoulder P, substantially as shown and described.

No. 25,834. Bed Bottom. (*Sommier Elastique.*)

Joseph E. Townshend, Montreal, Que., 24th January, 1887; 5 years.

Claim.—The combination of the rails A, B, and C, cam-webbing D and springs E, the whole constructed and arranged substantially as described.

No. 25,835. Machine for Balance Valves. (*Mécanisme de Soupape Equilibrée.*)

Edwin B. Sintzenich, Rochester, N. Y., U. S., 24th January, 1887; 5 years.

Claim.—The combination, with a steam cylinder and piston, of the slide valve C, slotted plate G and balance plate L attached to the slide valve by a connection passing through the slot in the plate, and provided with a spring to compensate for expansion, substantially as and for the purposes set forth.

No. 25,836. Subterranean Water Collecting Dam. (*Digue Souterraine.*)

David H. Valentine, Brooklyn, N. Y., U. S., 24th January, 1887; 5 years.

Claim.—1st. The herein described means of procuring fresh water from the earth, which consists of a subterranean dam combined with a conduit upon the source side of said dam, the dam and conduit being built from a central point or reservoir in a valley up an elevation or hillside, the dam serving to intercept the earth flow of spring water and cause its collection in the conduit, substantially as described. 2nd. The subterranean conduit composed of the dam B and bottom C, and the arch-wall joining the bottom and dam, substantially as described. 3rd. The reservoir A, built in a valley and covered, combined with the subterranean conduit having connections or extensions E, that dip into the reservoir A, substantially as described. 4th. The subterranean dam B, and bottom C made watertight, combined with the percolating lean-to wall D, substantially as described. 5th. The subterranean dam B and bottom C made watertight, combined with the lean-to wall D made of arch-brick having grooves *d* formed in them, substantially as described.

No. 25,837. Process of Producing Gas. (*Procédé de Production du Gaz.*)

Erazon J. Jerzmanowski, New York, N.Y., U.S., 24th January, 1887; 15 years.

Claim.—1st. The process herein described of making a combustible gas, which consists in first making water-gas by injecting steam through an incandescent body of carbon, in then adding to said water-gas, steam and hydrocarbon, and in passing the combined water-gas, steam, and hydrocarbon through a converting body of heated lime, substantially as described. 2nd. The process herein described of making a combustible gas, which consists in first making water-gas by injecting steam through an incandescent body of carbon, in then adding to said water-gas, steam, and hydrocarbon, and in passing the combined water-gas, steam, and hydrocarbon through a converting body of heated lime, and alternately heating the lime by the by the products of combustion of the carbon used in making the water-gas, substantially as described. 3rd. The mode of producing a combustible gas consisting in combining hydrocarbon and steam, with a water-gas, and then subjecting the said gas, steam, and hydrocarbon to the action of heated lime, substantially as described,

No. 25,838. Combination Lock. (*Serrure à Combinaison.*)

William A. Lawrence, Sheridan, Ont., 24th January, 1887; 5 years.

Claim.—1st. A combination lock composed of the following parts: an axle A having one of four (or more) disks secured thereon, the

other disks being loose, and when the axle with lowest disk is turned in either direction the loose disks are carried round until each of them in its turn is stopped by its nib coming in contact with the cylinder F, each of the disks having an unbroken notch *f* running from its circumference inwardly, and each of the nibs *e* being proportionately distant from the notch *f* as the combination numbers are distant from the zero point O on the dial, substantially as shown and described. 2nd. The cylinder F, constructed with notches in its periphery to allow the nibs *e* to pass through, and with four cogs in the lower end of the same by which it is moved, and receives its several positions when arranging the notches *f* in a line for opening the lock, substantially as described. 3rd. An arm G located in the recess *gi* in the lower face of disk *d* and journalled in said recess, said arm having a positive action when turned to the left and a negative action when turned to the right, by which the several positions of the cylinder are controlled, substantially as described. 4th. A three-armed pivoted bracket E having three prongs on its inner arm, which prongs drop into the arranged notches *f* in the disks, thereby liberating the staple D and opening the lock, substantially as described. 5th. A crescent lever H pivoted near to the cylinder F, the lower end of which is acted upon by the arm G and turns the upper end inwardly to act upon the projections *l*, and turns the cylinder a little backwards to secure the first position of the cylinder as for closing the lock, substantially as described.

No. 25,839 Electric Motor and Dynamo-Electric Machine. (*Moteur Electrique et Machine Dynamo-Electrique.*)

Charles G. Curtis, Francis B. Crocker and Schuyler S. Wheeler, New York, N.Y., U.S., 24th January, 1887; 5 years.

Claim.—1st. In an armature for dynamo-electric machines or electric motors, the combination of a winding consisting of a continuous unbroken wire or conductor, wound continuously with respect to two or more sections, and commutator strips or sections having extensions connected directly with certain turns or convulutions of said winding, whereby the said winding is electrically divided into the desired sections. 2nd. In a ring armature for dynamo-electric machines or electric motors, the combination, with the core having a winding consisting of a continuous unbroken wire or conductor, of a ring-mounting consisting of a drum or block fitted into the space between said ring and the shaft, and rigidly attached to both, and commutator strips or segments attached to, or mounted on the end or face of the said drum and having extensions connected directly with certain points of the winding. 3rd. In a dynamo-electric machine or electric motor, an armature winding consisting of a wire or conductor wound in two or more layers, the wire being brought back at each layer so that all the layers are helices of the same kind (*i. e*, dextrorsal or sinistrorsal, as the case may be), and the convulutions of one layer fit into the interstices of the one beneath. 4th. In a dynamo-electric machine or electric motor, the combination, with a commutator having a flat face, or face practically at right angle to the axis of commutator brushes, which bear upon the commutator at their edges or points, and are set so that their edges or lines of contact are oblique to the cracks or spaces between the commutator strips, so as to bridge over these spaces and allow the armature to be turned in either direction without injury to the brushes. 5th. The herein-described armature having two or more of its sections wound with a continuous wire or conductor, one of the convolutions of each section or the convolution at the junction of each two sections being formed so as to project beyond the adjoining convolutions and being connected with the corresponding commutator strips. 6th. The herein-described armature having a winding formed of a continuous flat wire ribbon or conductor on edge, the winding being divided intersections by convolutions which project beyond the others and are connected with the corresponding commutator strips. 7th. The combination, with an armature winding formed with certain raised or projecting convolutions to which the commutator strips are connected, of commutator strips formed with extensions which rest in contact with, and are soldered to the sides of the projecting convolutions. 8th. The combination, with an armature-winding formed with certain raised or projecting convolutions to which the commutator strips are connected, of commutator strips formed with split or forked extensions which straddle or rest against the raised convolutions on each side thereof and are soldered thereto, substantially as descrsbed. 9th. The herein-described commutator strip formed with the diverging projections *m*, *m*, adapted to be drawn together so that the armature connection or winding can be inserted and the inserted and the projections then forced or drawn together so as to grasp the armature-winding, substantially as described. 10th. The herein-described commutator strip formed with the sector-shaped portion H and the diverging fingers or projections *m*, *m*, substantially as described. 11th. The herein described process of connecting the commutator of an armature consisting in forming the commutator, so that each commutator strip is provided with a forked extension or portion formed with an opening to receive the armature connection or winding, these openings being larger than the winding or wire which enters them, applying the commutators so formed to the wound armature and then forcing or drawing together the forked extensions or openings so as to grasp the wire or winding substantially as described. 12th. The combination, with the commutator strips M, of a drum or mounting therefor which is stamped or formed with recesses or depressions in which the strips fit, substantially as described. 13th. The combination, in a gramine ring armature with the iron ring or core, of a winding formed of a wire or conductor having a trapezoidal or sector-shaped cross-section and wound upon the core so that its thicker edge or side is nearest the core, whereby the conductivity of the winding is increased and the flat side of each wire is parallel with the side of the adjacent wire on the inside of the ring, substantially as described. 14th. The herein-described process of winding or forming armatures for dynamo-electric machines or electric motors, consisting in winding two or more armature sections continuously upon a suitable form of mandrel, and then removing the winding so formed and transferring it to the armature-core. 15th. The herein-described process of winding or forming armatures for dynamo-electric machines or electric motors, consisting in winding or forming the complete armature, winding upon a suitable form or mandrel and then removing the winding so formed from the mandrel and transferring it to the armature-core. 16th. The herein-described process of winding or forming armatures for dynamo-electric machines or electric motors, consisting in winding a wire or conductor upon a straight form or mandrel, so as to form a flexible or bendible winding conformable to the shape of the armature-core, and then removing the winding so formed from the mandrel and transferring it the armature-core. 17th. The herein-described process of winding or forming armatures for dynamo-electric machines, or electric motors consisting in winding a continuous wire or conductor in a single layer equal in length to the complete armature, winding upon a straight form or mandrel and then removing the winding so formed from the mandrel and transferring it to the armature-core. 18th. The herein-described process of winding or forming armature for dynamo-electric machines or electric motors, consisting in winding a flat wire ribbon or conductor on edge upon a suitable form or mandrel, and then removing the winding so formed from the mandrel and transferring it to the armature-core. 19th. The herein-described process of winding or forming armatures for dynamo-electric machines, or electric machines, or electric motors, consisting in winding two or more armature sections continuously upon a suitable form or mandrel, in such a way that one of the turns or convolutions of each section projects beyond, or is wound differently from the other convolutions so as to enable the commutator strips to be easily connected with the winding at these points, and then removing the winding from the mandrel and transferring it to the armature-core. 20th. The herein-described process of winding or forming armatures for dynamo-electric machines or electric motors, consisting in winding two or more sections continuously upon a suitable form or mandrel, one of the convolutions of each section, or the convolutions separating each two sections being wound over raised portion of said mandrel, so as to project beyond the other convolutions and enable the commutator strips to be easily connected thereto, and then removing the winding so formed from the mandrel and transferring it to the armature-core. 21st. The combination, with the revolving flat mandrel P, of the arm Q, which bears upon the outside of the wire and bends it to conform to the shape of the mandrel, substantially as described. 22nd. The combination, with the revolving mandrel P, of the arm or stationary guide Q, formed with a slot or groove, in which the wire is bent to conform to the mandrel, and the same time supported on both sides so as to keep it upright, substantially as described. 23rd. The combination of the revolving mandrel Q and means for winding the wire or conductor therein, of the finger *s* adapted to be introduced under the wire as it winds upon the mandrel, substantially as described. 24th. The combination, with the revolving mandrel P and means for winding the wire or conductor thereon, of the sleeve *s* sliding upon mandrel, and the finger *s* attached to the sleeve, substantially as described. 25th. The combination of the revolving mandrel P, of the travelling carriage R and the arm Q pivoted to the carriage, which bears upon the outside of the wire and bends it to conform to the shape of the mandrel, substantially as described. 26th. The combination, with the revolving mandrel P, of the travelling carriage R, the arm Q pivoted thereon and formed with a groove or slot in its surface where it bears upon the mandrel, substantially as described. 27th. The combination, with the pole-pieces of a dynamo-electric machine or electric motor, of a cap or shield covering the end of the armature space and enclosing the end of the armature and also the commutator and brushes, substantially as described. 28th. The combination, with the pole-pieces of a dynamo-electric machine, or electric motor, and an armature provided with a flat or disc commutator, of a cap or shield covering the end of the armature space and inclosing the end of the armature and also the commutator and brushes, substantially as described. 29th. The combination, with the pole-pieces of a dynamo-electric machine or electric motor, of an end plate or cap attached to the pole-pieces, which act as, or supports a bearing for the armature shaft and forms a shield or cover, which encloses and protects the armature, and also the commutator and brushes, substantially as described. 30th. The combination, with the pole-pieces of a dynamo-electric machine or electric motor, and an armature provided with a flat or disc commutator, of an end plate or cap attached to the pole-pieces, which acts as, or supports a bearing for the armature shaft and forms a shield or cover, which encloses the armature and also the commutator, and brushes, substantially as described. 31st. The combination, with the pole-pieces of a dynamo-electric machine or electric motor, of an end plate or cap attached to the pole-pieces, which acts as, or supports a bearing for the armature shaft and forms a shield or cover, which encloses and protects the armature and also the commutator and brushes, and is provided with recesses or openings to receive the brushes. 32nd. The combination, with the pole-pieces of a dynamo-electric machine or electric motor of an end plate or cap attached to the pole-pieces, which acts as, and supports a bearing for the armature shaft and forms a shield or cover, which encloses and protects the end of the armature and brushes and is provided with recesses or openings which guide and determine the position of the brushes. 33rd. The combination, with the pole-pieces B, B, of the plate or cap C attached thereto, formed with recesses or hoods to receive the brushes, and the brushes F attached to the pole-pieces and passing through the hoods. 34th. The combination, with the pole-pieces B, B, of the end plate or cap C attached thereto formed with hoods to receive the brushes and the insulated block E, and brushes F mounted therein. 35th. The combination, with the pole-pieces B, B, of the end plate or cap C attached thereto formed with hoods to receive the brushes, and the insulating blocks or supports E fitting closely within the hoods so as to have their positions determined thereby, and the brushes F mounted in recesses or slots in the said blocks. 36th. The combination of the pole-pieces B, B, the plate or cap C attached thereto formed with the flange *c*, and hoods to receive the brushes, the blocks E fitting closely within so as to have their positions determined by the hoods, the brushes F resting in, and guided by the blocks E, and the screws H passing through the brushes and blocks, and screwed into the pole-pieces. 37th. A dynamo-electric machine or electric motor, having its armature together with its commutator brushes, entirely enclosed by a casing formed by the pole-pieces and suitable shields or covering plates attached thereto, so as to completely cover and enclose the

armature and commutator space, substantially as described. 38th. The combination of the pole-pieces B, B, of the clamp of non-magnetic material rigidly fixed to each of the pole-pieces at its foot, and provided with a clamping screw. 39th. The combination of the pole-pieces B, B, the caps or shields C and the top plate or shield N, covering the opening between the pole-pieces, and having its ends resting upon the caps C, substantially as described.

No. 25,840. Door Knob. (*Bouton de Porte.*)

Henry H. Humphery, Detroit, Mich., U.S., U.S., 24th January, 1887; 5 years

Claim.—In combination with a spindle threaded at its angles, a door-knob provided with a hollow shank threaded interiorly, a rose internally threaded to engage with an external thread on the knob shank, and provided with an open-ended slot *e*, and a set screw passing through a hole in the shank and bearing against one of the faces of the spindle, substantially as described.

No. 25,841. Municipal Signal Service.

(Service Municipal des Signaux.)

John C. Wilson, Boston, Mass., U.S., 24th January, 1887; 5 years.

Claim.—1st. In an electric circuit, a signal-transmitting apparatus, having a switch co-operating therewith and under the control of the operator, combined with two or more message-receiving instruments connected with the same circuit and independent of each other, to receive the signals produced by the signal-transmitting apparatus, the position of the said switch determining which message-receiving instrument shall receive the signal transmitted, substantially as described. 2nd. In an electric circuit, a signal transmitting apparatus, constructed and arranged substantially as described, to transmit signals either by total interruptions in the current, or by changes in the current strength, combined with the switch *n*, and means, substantially as described, controlled by the operator to operate the said switch, the position of the latter determining by which way the signal should be transmitted, as set forth. 3rd. In an electric circuit, a signal-transmitting apparatus, constructed and arranged substantially as described, to transmit signals either by total interruptions in the current or by changes in the current strength, two message-receiving instruments connected with said circuit and independent of each other, to independently respond to signals produced by the said transmitting apparatus by the different ways combined with a controlling switch, substantially as described, forming a co-operative part of the signal-transmitting apparatus, the position of the said switch determining by which way the signal shall be transmitted, as set forth. 4th, The combination, substantially as hereinbefore set forth, of an electric circuit having a signal transmitter and a switch under the control of the operator, co-operating therewith at one station, two independent message-receiving instruments at another station, each actuated by a distinct and different change in the said circuit, which change is determined by the position of the said switch co-operating with the signal transmitter, and a pole changing transmitter also at the last-named station, and operating, substantially as described, and a polarized receiving instrument at the first-named station, operated by the said pole-changing transmitter, all as set forth. 5th. In a system for transmitting signals from a sub-station to a central office, a signal-transmitting apparatus, a dial and co-operating pointer, each located at the sub-station, two or more independent message receiving or recording instruments at the central station, connected in circuit with the signal-transmitting apparatus, the said signal transmitting apparatus, including, as a co-operative part of it, a switch, controlled as to its position by the pointer, to determine at will which of the said message-receiving instruments shall operate, substantially as described. 6th. In an electric circuit, a signal-box containing signal-transmitting apparatus, consisting of a series of signalling surfaces, springs co-operating therewith, and a signal-selecting cylinder in the main circuit, and a resistance in a branch circuit, combined with means, substantially as described, controlled by the signal-selecting cylinder to introduce the resistance into the main circuit and remove it therefrom, all as set forth 7th. In a signal transmitting apparatus, a main electric circuit, a break-wheel therein, a multiple signal-transmitting device, substantially as described, in a branch circuit around the said break-wheel, and a resistance in a branch circuit around the multiple signalling device, combined with a circuit breaker located at the junction of said branch circuits and the main line, and operating substantially as described, to control the said branch circuits, as set forth, 8th. A signal box, containing a break-wheel, or equivalent, in the main circuit, and a co-operating multiple transmitting device, substantially as described, and a circuit-breaker in a branch circuit, said circuit-breaker being controlled by the door of the box or station, and operating, when closed, to cause a signal characteristic of the box or station, together with one of a series of auxiliary signals, characteristic of the multiple signal-transmitting device to be transmitted, and operating, when open, to cause a signal characteristic of the box or station only to be transmitted, substantially as described. 9th. An electric circuit, containing automatic signal-transmitting instruments, substantially as described, adapted to transmit signals by changes of current strength, and also by total interruptions thereof, and message-receiving instruments and their receiving electro-magnets adjusted to respond to the signals produced by the changes of current strength and to those produced by total interruptions of the said current, and receiving electro-magnets adjusted to respond only to signals produced by total interruptions of the said current, substantially as described. 10th. An electric circuit, containing automatic signal-transmitting instruments, substantially as described, adapted to transmit signals by changes of current strength, and also by total interruptions thereof, and two message-receiving instruments and their receiving electro-magnets, adjusted to respond to the signals produced by the changes of current strength and to those produced by total interruptions of the said current, and one or more signal-receiving electro-magnets adjusted to respond only to signals produced by total interruptions of the current, combined with a battery-reversing instrument, and polarized receiving instruments in the same circuit, substanitally as described. 11th. In an electric circuit, two independent message-receiving instruments at one station, each actuated by a distinct and different change in the circuit, a signal-transmitting apparatus constructed and arranged, substantially as described, to transmit signals by two different and distinct changes in the circuit, and having a dial and a co-operative pointer concealed by the door at another station, the said pointer being normally set to send a signal by one change in the circuit to be received upon one message-receiving instrument, when the dial is concealed, but accessible, when the dial is exposed, to be operated to send a signal by another change in the circuit to be received respectively upon either instrument at the will of the operator, all as set forth. 12th. In an electric circuit, a signal transmitting apparatus, constructed and arranged to transmit two or more different signals, message-receiving apparatus for receiving the signals transmitted, combined with a battery reversing instrument, and polarized receiving instruments in the same circuit, substantially as described. 13th. A signal box, having a movable door and transmitting mechanism, the operation of which is controlled by a key inserted from the outside of the box while the door is closed, and a locking device for the said key operated by the movement of the door, preventing the withdrawal of the key when the door is closed, and releasing or unlocking said key when the door is open, substantially as described. 14th. A signal-box, a door to close the same, and a multiple signal transmitter, having a movable pointer and a co-operating dial, normally concealed by the door, the pointer being normally set to cause the transmitter to send a predetermined signal, but accessible when the door is opened to be turned to enable other besides the predetermined signal to be sent, combined with a motor mechanism to operate the said signal-transmitter and send the signal normally set by the pointer, while the said signal transmitter remains unexposed, and to send other signals when the signal-transmitter is exposed and its condition changed, substantially as described,

No. 25,842. Gas Lamp and Lantern.

(Lampe et Lanterne à Gaz.)

Friederick Siemens, Dresden, Germany, 24th January, 1887; 15 years.

Claim.—1st. A gas lamp or lantern, divided into two campartments by a reflecting partition, through a central hole, of which projects a trumpet-mouthed chimney surrounded by a number of jet tubes, which descend from a gas duct, and are circularly arranged in an annular air passage between heated metal surfaces, so that a central bulbous flame proceeds from the jets downwards, then inwards and upwards, the products of combustion ascending the chimney and heating the gas and air passages, substantially as herein described. 2nd. In a gas lantern, in combination with a reflecting partition P dividing the interior into a lower glazed compartment, and an upper compartment U, having shielded air inlets A, the ring *m*, the cylinder M containing gas duct G, the circularly-arranged gas tubes *r* and the central trumpet-mouthed chimney *c*, substantially as described.

No. 25,843. Telephone and Telegraph Circuit. (*Circuit de Téléphone et de Télégraphe.*)

John J. Carty, Cambridge, Mass., U.S., 25th January, 1887; 5 years

Claim.—1st. The combination of two main lines, a transmitting device connected with both main lines and consisting of an inductorium for establishing electrical impulses upon said main lines, a receiving instrument having coils included in both said main lines, and a conductor or conductors uniting said main lines with the earth or a return conductor. 2nd. The combination, as hereinbefore set forth, of a transmitter and a receiving instrument, coils in each of said instruments, two main lines, each including one of the coils in each instrument, conductors uniting said main lines with the earth, or with each other, a third coil in one of said instruments, and means for establishing currents therein, substantially as described, 3rd. The combination, substantially as hereinbefore set forth, of two cores, opposing coils upon each of said cores, two main lines, each including one of the coils upon each core, conductors uniting said main lines with the earth, or with each other, a third coil upon one of said cores, and means for establishing currents therein, substantially as described. 4th. The combination, substantially as hereinbefore set forth, of two pairs of coils, two main lines, each including one of the coils of each pair, substantially as described, two inductoriums, having primary and secondary coils, the secondary coils being respectively included in said main lines, conductors uniting said main lines with a common return conductor or the earth, and telegraphic or telephonic instruments included in the first-named conductors. 5th. The combination, substantially as hereinbefore set forth, of two pairs of opposing coils, two main lines, each including one of the coils of each pairs, substantially as described, two differentially wound inductoriums, the opposing coils of each of which are respectively included in said main lines, a transmitter for establishing impulses in the primary coils, conductors uniting said main lines with a common return conductor or the earth, and telegraphic or telephonic instruments included in the first-named conductors. 6th. The combination, substantially as hereinbefore set forth, with two main lines of a magnetizable core at one station, opposing coils upon said core and respectively included in said main line, a third coil upon said core, a circuit including said third coil, means for establishing a variable current in said third coil, and then varying the magnetization of said core, a conductor uniting both said main lines with the earth, a second core located a distant station, opposing coils upon said core respectively included in the main lines, and a conductor uniting both of said lines with the earth or return conductor at distant station. 7th. The combination, substantially as hereinbefore set forth, of a transmitting instrument, a soft iron core, a coil upon said core connected in circuit with said transmitting instrument, two coils wound in opposite directions, also mounted upon said core, two main lines respectively including the last-named coils, a conductor connecting the two lines with the earth, and a receiving

instrument responding to currents simultaneously transmitted in opposite directions upon said lines, but silent to currents in the same direction. 8th. The combination of two main lines, a transmitting device consisting of differentially-wound inductorium for sending currents of opposite character upon said lines, a receiving instrument included in said main lines and responding only to currents transmitted in opposite directions upon said main lines, and conductors leading from said main lines at points respectively beyond said transmitting instrument and said receiving instrument, and connecting with apparatus designed to be operated by currents transmitted in the same direction through said main main lines. 9th. The combination of two main lines, a transmitting device consisting of a differentially-wound inductorium for sending currents of opposite character upon said lines, a receiving instrument responding only to currents of opposite character upon said lines, a receiving instrument responding only to currents of opposite character upon said lines, a transmitting device for sending currents of the same character upon said lines, and a receiving instrument responding only to currents of the same character upon said lines. 10th. The combination, substantially as hereinbefore set forth, of two main lines, a transmitting device for sending currents of opposite character upon said lines simultaneously, a receiving instrument included in said main lines and responding only to currents transmitted in opposite directions upon said main lines, conductors leading from said main lines at points respectively beyond said transmitting instrument and said receiving instruments to the earth, a battery and a receiving instrument included in each of the last-named conductors, said batteries opposing each other, and two keys respectively serving, when operated, to cut said batteries out of circuit. 11th. The combination, substantially as hereinbefore set forth, of two or more pairs of main lines, electrical instruments included in said main lines for sending and responding to opposing currents upon each pair of main lines, conductors uniting the respective pairs of main lines with each other, and an instrument having opposing coils respectively included in the last-named conductors, substantially as described. 12th. The combination, substantially as hereinbefore set forth, of a main line divided at intervals into two branch lines, a transmitting and receiving instrument for respectively transmitting and responding to opposing currents upon said branch lines, and transmitting and receiving instruments respectively included in the main line. 13th. The combination, substantially as hereinbefore set forth, of two main line conductors divided at intervals into branch conductors, and again uniting into a single conductor, instruments included in each of the loops or branches thus formed for transmitting and responding to opposing currents upon the branches, and conductors uniting the two first-named conductors with each other at their respective terminals, instruments included in the last-named conductors having opposing coils and conductors uniting these conductors with the earth, substantially as described, 14th. In a telephone system, opposing coils, a core carrying the same, a transmitter, a circuit for the same, and coils included in said circuit and mounted upon said core. 15th. The combination of two main lines, coils included, in said main lines respectively, a transmitting device, a circuit for the same, and coils included in said circuit, and located in inductive proximity to the first-named coils, whereby opposing currents are established in the two lines through the instrumentality of the first-named coils, by variations in the current caused by the transmitter.

No. 25,844. Electric Meter. (*Electromètre*)

John J. Drake, Providence, R.I., U.S., 25th January, 1887; 5 years.

Claim.—1st. In a recording time and electric current meter, the combination, with the helix and its armature having a pencil or tracer adapted to move in unison with the armature, of a suitably-mounted lever having one end thereof connected with said armature, and the other end having a flexible connection carrying counter-weights, substantially as shown and for the purpose set forth. 2nd. In a recording electric meter, the standard F having an adjustable stop *a*, in combination with the weighted beam N, fulcrumed to the standard F, and the cup-armature C connected with the beam, substantially as shown and described. 3rd. The paper-carrying cylinder D, adjustably secured to the centre-moving spindle *m* of a clock train and completely encasing said train, the latter being supported by means of the standard *e*, substantially as shown and set forth. 4th. In combination with a base F, standards F, *e* and helix B1, all secured to said base, the counterweighted lever N pivoted to the standard F, a cup-armature C carrying a pencil or tracer P connected with said lever, and the clock-train T operating the paper carrying drum or barrel D, the whole constructed and arranged substantiallp as shown and for the purpose hereinbefore set forth. 5th. In a self-recording electric meter, the combination, with a helix or selenoid connected in an electric circuit, an armature having a pencil or tracer, and mechanism for moving a piece of paper *d* against the point of said tracer, of the suitably-mounted lever N, having its inner end *n* connected with said armature, the outer portion of the lever having a series of counter-weights connected therewith, adapted to move in a straight line, or parallel with the vertical axis of the standard, or other support in which the lever is mounted, all constructed and arranged substantially as shown and set forth.

No. 25,845. Device for Simultaneously Locking and Unlocking a number of Paper Files. (*Appareil pour Fermer et Rouvrir Simultanément un groupe de Serre-Papiers.*)

George R. Richter, Toronto, Ont.. 25th Januarv, 1887; 5 years.

Claim.—1st. The combination, with the spindle I and notched disc P carried thereby, of a lock M having a spring-bolt N, designed to engage the notch in the disc P, when said notch and spring-bolt are coincident, substantially as and for the purpose specified. 2nd. A series of bars C set within a cabinet A, behind each row of files B, and provided with a hook E for each respective file, a cross-bar G for connecting the base C, and means for connecting the said bars to the spindle I, in combination with a spring H and a lock M, the latter having a bolt N designed to spring into the notch O formed in the disc P, substantially as and for the purpose specified.

No. 25,846. Envelope. (*Enveloppe.*)

Jacob E. Krucker and Charles Gulath, St. Louis, Mo., U. S., 25th January, 1887; 5 years.

Claim.—1st. In an envelope, the combination of the end flaps having locking tongues, and the outer and inner flaps adapted to receive the locking-tongues on the end flaps, for the purpose set forth. 2nd. In an envelope, the end flaps having locking tongues, in combination with the inner flaps having openings to receive the locking tongues, and the outer flap having a tongue provided with slots to receive the locking-tongues, and supplemental tongues to fold upon the locking tongues, substantially as set forth. 3rd. In combination with the end flaps and side flap C provided with tongues, the side flap D provided with a head, substantially as and for the purpose set forth. 4th. In combination with the end flaps and side flaps C, provided with tongues, the side flaps D provided with a head connected to the flap by a neck that received the tongues on the ends of the envelope, substantially as and for the purpose set forth. 5th. In a safety envelope, the combination of the end flaps provided with locking tongues, side flaps C provided with tongues, one of which is perforated to receive the tongues on the end flaps, and the others of which fold upon said end tongues, and the side-flap D having T head embraced by said end tongues, substantially as and for the purpose set forth.

No. 25,847. Stand for Flat Irons.

(*Dessous de Fer à Repasser.*)

Robert Crommer and Adelbert H. Phillips, Philadelphia, Penn., U. S., 25th January, 1887; 5 years.

Claim.—A stand for the reception of a flat-iron provided with the roller B journalled in suitable bearings, said roller being covered with a webbing of fibrous material saturated with a lubricant applicable to the flat-iron.

No. 25,848. Dash Rail for Vehicles.

(*Ferrure de Garde-Crotte de Voiture.*)

John N. Smith, Windsor, Ont., 25th January, 1887; 5 years.

Claim.—1st. A sectional dash-rail consisting of the following elements: the bracket having supporting arms formed integral therewith, the hollow connecting rod and central stud, substantially as and for the purposes specified. 2nd. In combination with the dash of a sleigh, the brackets B, B attached thereto, said brackets provided with the arms *h*, *h* formed integral therewith, the central stud having a screw-point, said stud adapted to receive the tube R, said tube fitting at its ends over the arms *h*, *h* of the brackets, as and for the purposes specified.

No. 25,849. Manufacture of Iron Plates, Shafts, Axle Bars, etc. (*Fabrication des Plaques, Arbres, Essieux, etc., en Fer.*)

Frank B. Felt, Pullman Ill., U.S., 25th January, 1887; 5 years.

Claim.—1st. The improvement in the art of manufacturing iron plates, shafts and axles, herein described, consisting in forming a fagot from pieces of scrap, so arranged that the original fibre of the iron in each piece shall be parallel to the fibre in the other pieces and to the sides of the fagot, and then heating and reducing the fagot, substantially as described. 2nd. In the manufacture of iron plates, shafts and axle bars, forming a pile from pieces of scrap with the fibres of all the pieces parallel, and then heating and reducing said pile by rolling it longitudinally, substantially as and for the purpose set forth. 3rd. In the manufacture of iron plates, shafts and axle bars, forming a pile of scrap with the pieces so arranged that the fibres of all shall be parallel, then heating and rolling the pile to a bar, and then piling sections of such bars, reheating and compacting and reducing by means of a hammer to the form of a plate, shaft, bar or axle, substantially as described.

No. 25,850. Porous Earthenware Product with Strengthening Cores. (*Article de Poterie Poreuse avec Noyau.*)

Charles C. Gilmour, Eldora, Iowa, U.S., 25th January, 1887; 5 years.

Claim.—1st As an article of manufacture, a burned earthenware product obtained from a mixture of earthen and vegetable matters, and having an iron core or cores held therein and engaging the pores of the material, substantially as described. 2nd. As an article of manufacture, a burned earthenware product obtained from a mixture of earthen and vegetable matters, and strengthened by an iron rod or rods closely united thereto, in a manner substantially as described. 3rd. A column or girder consisting of a burned earthenware product, obtained from a mixture of earthen and vegetable matters, having one or more strengthening cores united to the material by casting, substantially as described.

No. 25,851. Machine for Cutting the Bands of Sheaves of Grain and Feeding the same to Threshing Machines. (*Machine à Gouper les Harts des Gerbes de Grain et Alimenter les Machines à Battre.*)

Donald Livingston, Mariposa, and Marshall L. Nutting, Cannington, Ont., 26th January, 1887; 5 years.

Claim.—1st. The combinaton of the vibrating inclined table A, with the oscillating knives C, substantially as and for the purpose speci-

fied. 2nd. The combination of the oscillating knives C, with the arms B and the forks *b*, substantially as and for the purposes specified. 3rd. The combination of the arms B, the oscillating knives C and the beaters D, with the feed board E, substantially as and for the purposes specified. 4th. The method of adjusting the motion of the arms B by changing the position of the rod O, by means of the ratchet lever P, substantially as and for the purpose specified.

No. 25,852. Nut Lock. (*Arrête-Ecrou.*)

Orlando L. Castle, Upper Alton, Ill., Marshall Arnold, John A. Kelly and Rodney J. Hudson, Lakeport, Cal.. U.S., 26th January, 1887; 5 years.

Claim.—A nut-holder provided at each end with a washer having a half-hinge, by means of which the said holder is connected on opposite sides of the nuts to be held with the washer, as shown and described.

No. 25,853. Combined Horse Hay Rake and Tedder. (*Râteau Faneuse à Cheval.*)

John N. Wallis, Auburn, and Egbert J. Treat, Weedsport, N. Y., U. S., 26th January, 1887; 5 years.

Claim.—1st. In a horse hay-rake, a tripping mechanism consisting of a foot-crank 9, secured to a trip-shaft 8 mounted upon the shafts, the rod 13 connecting the crank-levers 12 to the foot-crank, and the rods 14, guides 31 and clutches 2, and the bars 23 connected to the trip-shaft and to the spider 19, and engaging with the slots 25 in the supports 21, and the bars 24 connected to the trip-shaft and to the links 40 of the spider, and engaging with the notches 34 therein, substantially as shown and described. 2nd. In a horse hay-rake, the mechanism for locking the rake-head consisting of notched rake-head supports and bars 24 engaging such notches and connected to the shafts, substantially as shown and described. 3rd. A horse hay-tedder consisting of main wheels mounted upon a straight axle, sprockets mounted upon said wheel by arms 1 secured to the wheels, mechanism to support the rake-head, substantially as described, and a chain-belt connecting the rake-head sprockets to the main wheel sprockets, substantially as shown and described. 4th. In a horse hay-rake or tedder, a rake-head consisting of a tubular rod diametrically bored to receive the teeth, and mounted in supports connected to the main axle, substantially as shown and described. 5th. In a horse hay-rake or tedder, a driving sprocket wheel mounted upon arms branching outward from, and secured to the inner face of the main wheel, substantially as shown and described. 6th. In a horse hay-rake or tedder, a rake-head lifting mechanism consisting of the rods 14 operated by the foot crank 9, substantially as described, and engaging with the clutches 2, in combination with the main wheels, main axle supports 21 and rake-head 20, substantially as shown and described.

No. 25,854. Axle Box for Railway and other Carriages. (*Boîte à Graisse pour Voitures de Chemins de Fer et autres.*)

Justice W. Marshall, Cazenovia, N. Y., U. S., 26th January, 1887; 5 years.

Claim—1st. The combination, with the axle-box constructed with internal shoulders *b*, *b*1 and stuffing box, of the gland and packing, and the washer *c* confined to the shoulder *b*1 by the gland and packing, and assisting to form between the said shoulder and the shoulder *b* an annular oil chamber *g*, substantially as herein described. 2nd. The combination, with the axle-box constructed with internal shoulders *b*, *b*1 and stuffing-box, and fitted with a gland and packing, and with a washer supported against the shoulder *b*1, of the axle constructed with a collar *a*1 held against the shoulder *b*, by the gland and packing, in such manner that an annular oil chamber and cushion *g* is formed between said collar and washer, substantially as herein described. 3rd. The combination of the axle having the collar *a*1 and oil groove *a*, the axle-box constructed with the shoulders *b*, *b*1 and stuffing-box, and annular oil space *g*, the divided washer *c*, divided gland *e* and follower *f*, all substantially as herein described. 4th. The combination, with the axle, of the axle-box which has internal shoulders *b*, *b*1, and a stuffing-box and is fitted with a gland and packing, and a washer *c*, and is provided with two oil spaces *g* and *g*1 communicating with each other by a groove *a*, substantially as herein set forth.

No. 25,855. Car-Coupler. (*Attelage de Chars.*)

Charles Thayer, Ann Arbor, Mich., U. S., 26th January, 1887; 5 years.

Claim.—1st. In a car-coupler, the combination of the draw-heads, each having a link copartment with raised portion *f*, the transverse drank-shaft having the wing *a* with opening *e*, to register with the pin-hole of the draw-head, said wing being housed within the draw-heads, the lug mounted on the crank-shafts, and stops *d* on the draw-head with link and pins, as and for the purposes specified. 2nd. In a car-coupler, the combination of the draw-heads having a link copartment with raised portion *f*, the transverse crank-shaft having the wing *a* with opening *e*, said wing being housed within the link copartment, the mechanism for limiting the movement of the orck-shaft, the coupling pin, the link having the hole *n* at one end, and an oblong opening *t* at the other, substantially as and for the purposes set forth.

No. 25,856. Fire Extinguisher.

(*Extincteur d'Incendie.*)

William H. Gray, (Co-inventor with Thomas G. Turner), New York, N.Y., U.S., 26th January, 1887; 5 years.

Claim.—1st. In a chemical fire-extinguisher, a case H with chamber H1, suspended from the cover of chamber G, substantially as and for the purpose set forth. 2nd. In a chemical fire-extinguisher. the case H, suspended from cap L by means of thimble J in combination with a clamping strap C and screw D, substantially as and for the purpose set forth. 3rd. In a chemical fire extinguisher, an inner chamber H1 provided with an automatic stopper or valve I, substantially as and for the purpose set forth. 4th. In a chemical fire extinguisher, a safety valve R located in the bottom of chamber G, substantially as and for the purpose set forth. 5th. In a chemical fire extinguisher, the tube M in combination with an outlet cock E, substantially as and for the purpose set forth. 6th. In a chemical fire extinguisher, the main chamber G provided with an outlet cock E and safety valve R, in combination with an inner chamber H1, provided with an automatic stopper I and suspended from cover B, substantially as set forth.

No. 25,857. Art of Making Butter.

(*Art de faire le Beurre.*)

Lyman Guinnip, Chicago, Ill., U S., 27th January, 1887; 5 years.

Claim.—1st. The process herein described of making butter, the same consisting in mingling two bodies of milk and risen cream of different ages churning the shme together and mingling with it, during the process of churning, portions of ordinary butter, in the proportion and at the time substantially as specified. 2nd. As a new article of manufacture, a butter or food product made from milk or milk and mingled cream, composed of the oleaginous and other solid matters, viz: caseine and sugar and salts contained in the milk, and compounded and gathered substantially as and for the purposes described.

No. 25,858. Feed Water Heater and Purifier for Steam Boilers. (*Réchauffeur et Epurateur de l'Eau d'Alimention des Chaufdières à Vapeur.*)

Thomas Seale, San Francisco, Cal., U.S., 27th January, 1887; 5 years.

Claim.—1st. A feed water heating attachment to steam boilers having a heating and purifying chamber composed of the communicating passages *a*, *a**, forming a continuous space with feed water apertures *c*, *c*, at one end inside the boiler, and a feed inlet and blow-off outlet at the opposite end and outside the boiler. 2nd. In a feed water heater and purifier for steam boilers, a heating and purifying chamber composed of the parallel spaces or passage *a*, *a**, the walls of which are exposed to direct contact of the surrounding steam in the boiler space, in combination with the head E secured on the outside of the boiler having feed water and blow-off connections as described, and the bullet apertures *c* at the end of the passage *a*, *a**, inside the boiler. 3rd. In a feed water heater and purifier adapted to be inserted in a steam boiler, as described, a heating and purifying chamber composed of communicating spaces *a*, *a**, with outside walls or heating surfaces, and having feed water inlet and blow-off outlet at one end outside the boiler, and apertures at the opposite end opening into the boiler space. 4th In combination with a steam boiler, the feed water heating and purifying chamber composed of the parallel ways or passages *a*, *a**, one returning on the other, of which one passage terminates outside the boiler and has a feed water inlet and a blow-off outlet at that end, and the other passage terminating inside the steam generating space is provided with feeding in apertures. 5th. The herein described heater and purifier for boiler feed water consisting of the tubes A, A*, coupting B, head E, feed water pipe F, blow-off G and feeding in apertures *c*, *c*.

No. 25,859. Friction Clutch.

(*Embrayage à Friction.*)

Arthur L. Stanford, Wankegan, Ill., U. S., 27th January, 1887; 5 years.

Claim.—1st. In a friction clutch apparatus, the combination of a fixed standard or support, a lifting-bar, a moving clutch-box and a friction plate extending beyond the clutch-box, and having at its outer extremity a lug or flange adapted to rest upon the standard or support, in the release of the clutch, substantially as set forth. 2nd. In a friction clutch apparatus, the combination of a fixed standard or support, in the release of the clutch, substantially as set forth. 2nd. In a friction clutch apparatus, the combination of a fixed standard or support, a lifting bar, a moving clutch-box containing a friction-roll and a friction-plate extending beyond the clutch-box, and having at its outer extremity a lug or flange adapted to rest upon the standard or support in the release of the clutch, and having its inner end within the clutch-box curved to operate in connection with said friction roll, substantially as set forth. 3rd. The combination, in a friction clutch box, of a removable and adjustable backing plate and adjusting devices, substantially as and for the purposes set forth. 4th. In a friction clutch, the combination of a clutch-box, friction-roll, friction-plate, spring and lifting bar, substantially as set forth. 5th. A friction-clutch, consisting of the clutch-box, a friction roll or rolls working against a diverging surface upon one side of the bar to be operated upon, and having at the other side a bearing-plate F and bar G, said plate and bar being pivotally attached, substantially as set forth.

No. 25,860. Lifting Jack and Track Raiser.

(*Cric de Chemin de Fer.*)

Arthur L. Stanford, Wankegan, Ill., U. S., 27th January, 1887: 5 years.

Claim.—1st. In a lifting-jack, the combination, substantially as set forth, of a standard, a stationary clutch, a movable clutch, a lifting bar and an actuating lever, said standard being extended above the movable clutch to form a guide for the lifting bar, and also as a rest for flange eIII, as described. 2nd The combination, in a lifting-jack, of movable and stationary clutches and a lifting bar, with a standard having a stationary clutch box cast integrally therewith, and an upward extension, substantially as and for the purpose set forth. 3rd. In a lifting-jack, a standard having the centre of its supporting foot midway between one perpendicular drawn through the centre of the load, and another drawn through the fulcrum of

the operating lever, combined with friction clutch devices, a lifting bar and a forked lifting lever, substantially as set forth. 4th. The combination of the standard A, extension F, lifting bar B, clutches C and E, with a lifting lever, located between them, releasing lugs e^{111}, e^{111}, operating against said extension F and the trip lever H.

No. 25,861. Bridle Bit. (*Mors de Bride.*)

George A. Doherty, Crescent Mills, Cal., U. S., 27th January, 1887; 5 years.

Claim.—1st. In a bridle-bit, the mouth-piece B, having one of its ends split into longitudinal sections hinged together, and provided with a two-part socket forming, when the sections of the split end are closed, a complete hole or aperture, and the removable rein-ring fitting in said hole, in combination with the tubular rubber piece or sheath E fitted on the mouth-piece, substantially as herein described. 2nd. In a bridle-bit, the mouth-piece B, having its end *b*, consisting of hinged separable sections, which, when fitted together, engage the rein-ring of the bit, and, when separated allow its removal, in combination with the removable rubber piece or sheath E, fitted upon said mouth-piece and held in position by the ring, and the removable nut b^3 for holding the two sections of the end *b* together, and fitting the ring in place, substantially as herein described. 3rd. In a bridle bit, the mouth-piece B having one end *b* consisting of two longitudinal sections hinged together at their inner end, and having their outer ends threaded, and the rings C engaging holes or apertures in the ends of the mouth-piece, one of said rings being removable by the separatiou of the sections of their end *b*, in combination with the removable rubber piece or sheath E on the mouth-piece, and held in position by the rings and the nut b^3 on the end *b*, substantially as herein described.

No. 25,862. Horizontal Steam Boiler.

(*Chaudière à Vapeur Horizontale*)

John Carroll, Hantsport, N.S., 27th January, 1887; 5 years.

Claim.—1st. The horizontal boiler-casing A, increasing in diameter from front to rear, having a horizontal cylindrical furnace B set in the small end, and the horizontal boiler tubes F opening through the rear end of the furnace and boiler, as set forth. 2nd. The combination of the horizontal boiler casing A, tapering from rear to front, the horizontal cylindrical furnace B set in the small end of the casing, and tubes F spreading apart laterally from the furnace to the rear end of the boiler, substantially as described.

No. 25,863. Vehicle Spring. (*Ressort de Voiture.*)

Wesley Cole, Detroit, Mich., U.S., 27th January, 1887; 5 years.

Claim.—1st. The combination, with the bolster and bolster plate of a vehicle, of the cups D, having perforations, as shown, the inverted cups F and the springs G, substantially as specified. 2nd. The combination, with the bolster and bolster plate of a vehicle, of the perforated cups D, inverted cups F, springs G and flexible connecting cable H, the parts being constructed, arranged and operating substantially in the manner and for the purposes described.

No. 25,864. Adjustable Wrench.

(*Clé à Ecrou Mobile.*)

Charles C. Hearle, Montreal, Que., 27th January, 1887; 5 years.

Claim.—1st. In combination with an adjustable wrench, having the moving frame G, a spiral spring E operating within the recess F in jaw B, substantially as and for the purpose described. 2nd. In an adjustable wrench, the combination, with the spiral spring E in the recess F, operating on the bar A, of a solid jaw B, substantially as and for the purpose described,

No. 25,865. Adjustable Seat for Carriages.

(*Siège Mobile pour Voitures.*)

Edward Major, Port Perry, Ont., 27th January, 1887; 5 years.

Claim.—The combination of the board C, and the seat A, A, as described, substahtially as and for the purpose set forth.

No. 25,866. Metal Fabric. (*Toile Métallique.*)

Israel Kinney, Windsor Ont., 27th January, 1887; 5 years.

Claim.—1st. A metal fabric, constructed of strips or bars of metal A, A, having edges a^1, a^2, said strips or bars being corrugated or embossed, or having longitudinal grooves, angles or channels to give them strength and ornamentation, substantially as described. 2nd. A metal fabric, composed of strips or bars of metal A, A, having edges a^1, a^2, strips or bars being corrugated or embossed, or having longitudinal curves, angles or channels and indentations *b*, *b*, as and for the purpose set forth. 3rd. A metal fabric, composed of curved corrugated or embossed strips of metal A, A, said strips having ornamental edges or flanges, D, D, on one or both of their sides, substantially as described and shown. 4th. A metal fabric, composed of strips of metal A, A, the edges a^1, a^2, of which are corrugated or bent at angles to the face of said strips, and leaving a flat portion between the turned down edges a^1, a^2, for the purpose described. 5th. A metal fabric composed of strips or bars of metal A, A, having edges a^1, a^2, which are bent at an angle to the face or body of said strips or bars, and leaving a curved corrugated or embossed portion between the turned down edges a^1, a^2, as set forth. 6th. As a new article of manufacture, metal strips or bars A, A, having edges a^1, a^2, said strips or bars being corrugated or embossed, or having longitudinal grooves, angels or channels and indentations *b*, *b*, for the purpose specified. 7th. An ornamental brace G fitted to and held in place by the corrugated, curved or embossed strips of metal A, A, or strands of wire, substantially as described. 8th. A metal fabric, composed of tubular metal rods or strands, substantially as described. 9th. A fabric constructed of strips or bars of metal, having longitudinal grooves, said strips or bars being crossed and secured together by riveting, or other suitable means, substantially as described. 10th. A fabric, constructed of strips or bars of metal, having longitudinal grooves, said strips or bars being woven together, substantially as described. 11th. A fabric consisting of strips or bars of metal, some of said strips or bars having longitudinal grooves or corrugations to strengthen or stiffen the structure. 12th. A metal fabric, composed of strips or bars of metal, having longitudinal grooves or corrugations, or embossed longitudinally, said strips or bars having flanges projecting from their sides, substantially as and for the purpose set forth. 13th. As a new article of manufacture, a strip or bar of metal corrugated or embossed or having longitudinal grooves, angles or channels, and the end of said strips or bars spoon-shaped, or of the same contour as the body thereof, substantially as described. 14th. A tubular rail or border A^3, having edges or flanges *i*, *i*, adapted to receive and hold in place metal bars or strips, as set forth. 15th. In combination with a metal fabric, as described, a rivet or bolt head, or nut, or washer, having their under sides composed of an uneven surface, snbstantially as and for the purpose specified.

No. 25,867. Composition of Matter to be used upon Tanned Sole Leather, etc. (*Composition de Matières pour Appliquer sur le Cuir à semelles, etc.*)

Joseph A. Dietz, St. Mary, Penn., U.S., 27th January, 1887; 5 years.

Claim.—1st. The within method of treating leather and hides, and the like, to render them water-repellant and pliable, consisting in applying water thereto, then partially drying the same, then applying a solution of sugar of lead and hot water, and subsequently supplying a solution of alum and hot water, substantially as described. 2nd. The within compound for treating leather and hides, and the like, to render them water-repellant and pliable, composed of two solutions, one being hot water, one gallon, and sugar of lead, one ounce, and the other hot water, two gallons, and alum, two pounds, to be used in the order named, substantially as described.

No. 25,868. Anti-Rattler for Thill Coupling.

(*Armons de Limonière à Compensation.*)

George W. Blair, Louis H. Fongeres and James M. Haas, Wabash, Ind., U.S., 28th January, 1887; 5 years.

Claim.—The anti-rattler for thill-couplings hereinbefore described made of a steel or other elastic plate, with the sharp return curve at *a*, the curved portions *c* and *i*, and rib p^1 in the outer limb thereof, and having the back part bent forward at *a* to form the part X, and with the plate D secured thereto, as described and shown.

No. 25,869. Elevated Filter Bed. (*Filtre.*)

Walter S. West, New York, N.Y., U.S., 28th January, 1887; 5 years.

Claim.—The combination of the filtre-bed frame A provided with the floors B and C, each composed of the longitudinal joists, cross-strips, and longitudinal strips, substantially as described, and the latter braced upon the former by the standards c^7, with the chutes D inclined slightly longitudinally, and the walls d^1 forming the gutters *d* therewith, substantialy as specified.

No. 25,870. Method of Attaching Stiffenings to Dress Waists. (*Manière de Poser les Baleines aux Corsages des Robes.*)

The St. Thomas Featherbone Company, St Thomas, Ont., (assignee of Edward K. Warren, Three Oaks, Mich., U. S.), 28th January, 1887; 5 years.

Claim.—The method of attaching the stiffening material to seams by placing it in the open seam after the main seam is sewed, and attaching it to the fabric by stitch sides to the inside portion of the open seam without connecting it to the main seam, substantially as described.

No. 25,871. Horse Collar Lock.

(*Courroie de Collier de Cheval.*)

Erastus S. Lafferty and Godfrey Marshall, Indiana, Penn., U.S., 28th January, 1887; 5 years.

Claim.—1st. The combination, with a hame or collar having a loop attached to one of the free ends of same, a cam-link B secured to the opposite loop, substantially as shown and for the purpose set forth. 2nd. In a hame or collar fastener, a loop A, substantially as shown, in combination with a cam-link B adapted to be passed through said loop, and depressed so as to lie above the opposite end of the hame or collar, substantially as and for the purpose set forth. 3rd In a collar fastener, a loop A having supplemental loops *a*, with projecting tongues a^1 formed integral therewith, a cross-bar forming the front portion of the main loop and located below the plane of the other members, in combination with the lever D having bent portions adapted to partially encircle the cross-bar *d* and ordinary projecting end *g*, the parts being organized substantially as shown and for the purpose set forth.

No. 25,872. Caster. (*Roulette de Meuble*)

William P. Tracy, Grand Rapids, Mich., U.S., 28th January, 1887; 5 years.

Claim—1st. In combination, the spindle and socket of ordinary form, a cone-shaped retaining spring carried loosely by the spindle, and means for limiting the vertical movement of said retainer upon the spindle, substantially as described. 2nd. In combination, the spindle and socket of ordinary form, the cone-shaped retaining spring carried loosely by the spindle, the shoulder upon the spindle and the reduced portion of the retainer, substantially as described.

No. 25,873. Self-Salting Curd Mill.

(*Menolle Distribuant le Sel.*)

George D. Pohl, Ava., N.Y., U.S., 28th Jannary, 1887; 5 years.

Claim.—1st. In a curd-mill, the roller *b*, having the teeth *t* provided with the rearwardly inclined spur *s*, in combination with the toothed roller *a*, substantially as described and shown. 2nd. In a curd-mill, the roller *b*, having teeth *t* inclined forward at their face ends, and flattened in planes parallel with the axis of the roller, in combination with the toothed roller *a*, substantially as set forth and shown. 3rd. In a curd-mill, the roller *b*, having teeth *t* inclined forward at their free ends, and flattened in planes parallel with the axis of the roller, and rearwardly inclined spurs *s* projecting from the teeth *t*, in combination with the tooth roller *a*, substantially as described and shown. 4th. In a curd mill, the roller *a*, having the teeth *u* formed at their free ends, with broad edges standing parallel with the axis of the roller, in combination with the toothed roller *b*, substantially as described and shown. 5th. The combination of the roller *b*, having teeth *t* inclined forward at their free ends, and flattened in planes parallel with the axis of the roller, and rearwardly-inclined spurs S, projecting from the teeth *t*, and the roller *a* having teeth *u* formed at their free ends, with broad edges standing parallel with the axis of the roller, substantially as described and shown.

No. 25,874. Mail Bag. (*Valise à Lettres.*)

William Hawn, Knoxville, Tenn., U.S., 28th January, 1887; 5 years.

Claim.—1st. In a fastening for mail-bags, the combination, with the spring-bolts of a cam-actuating device for operating them, consisting of two circular discs eccentrically connected to a shank on different vertical planes and with relation to each other, substantially as shown and described. 2nd. In a fastening for mail-bags, the combination, with spring bolts, of a cam-actuating device consisting of two discs eccentrically connected to the shank of a staple, and simultaneously operating on the bolts, substantiallyas and for the purpose described.

No. 25,875. Dyeing Wool or other Textile Fibres. (*Teinture des Laines at autres Fibres Textiles.*)

Thomas Halliday, Huddersfield, Eng., 28th January, 1887; 5 years.

Claim.—The method of dyeing wool or other textile fibres by the formation thereon of the coloured products of the combination of nitroso alpho or beta napthol with metallic oxides separately or in combination with other dye-stuffs, substantially as described.

No. 25,876. Manufacture of Rubber Belting. (*Fabrication des Courroies en Caoutchouc.*)

John Murphy, Brooklyn, N.Y., U.S., 23th January, 1887; 5 years.

Claim.—1st. The improvement in the manufacture of rubber belting, which consists in applying to the edges of the inner fabric of the belting, a binding strip of thin rubber-coated material or fabric, covering the whole with a coating of clear rubber, and rolling, pressing and vulcanizing the same, substantially as set forth. 2nd. In combination with the inner layers of a belt, a binding of thin rubber-coated fabric or material, and an outer protective covering of clear rubber, substantially as set forth. 3rd. In combination with the several layers or portions of a rubber belt, a binding strip of thin rubber-coated fabric or material attached immediately to the edges of the inner fabric of the belt, substantially as set forth.

No. 25,877. Stair Carpet Covering.

(*Couverture de Tapis d'Escalier.*)

Thomas J. Dennis, Newark, N.J., U.S., 28th January, 1887; 5 years.

Claim.—1st. A stair-carpet protector consisting of separate and removable sections covering each step and suitably held in position, for the purposes set forth. 2nd. A stair-carpet protector consisting of separate and removable sections covering each step, and connected by straps removably connected to said coverings, for the purpose set forth. 3rd. In a stair-carpet protector, the combination, with a stair-carpet and stair-rods, of separate and removable sections having eyes therein, and connected with elastic straps hooked into the eyes in the coverings and passing under the stair-rods, for the purposes set forth.

No. 25,878. Sprinkler. (*Arrosoir.*)

Moses Goldman Pittsfield, Mass., U.S., 29th January, 1887; 5 years.

Claim.—1st. I a sprinkler, the reservoir A and the flexible pipe B, in combination with the perforated nozzle or sprinkler C having a volve at its inlet, and a bulb D connected to, and projecting at right angles from the nozzle, the liquid entering both nozzle and bulb and being forced through the perforations in said nozzle by the compression of the bulbs, as herein described. 2nd. In a sprinkler, the bulb D in combination with the perforated elastic ball C, substantially as and for the purpose set forth. 3rd. In a sprinkler, the perforated ball C provided with a valve at its inlet, in combination with the bulb D provided with a valve at its inlet, all constructed to operate substantially as and for the purposes set forth. 4th. In a sprinkler, the perforated ball C and bulb D, in combination with a pipe B, all constructed substantially as and for the purpose set forth

No. 25,879. Table Sink. (*Evier de Table.*)

Thomas M. Dils, Davenport, Iowa, U.S., 29th January, 1887; 5 years.

Claim.—1st. The combination, with the table having a solid rigid top, and the fixed cleats *s* arranged beneath the top, of the sliding drawer frame supported on the cleats; and a rigid tray or pan suspended from its upper edges in the drawer, and having its bottom terminating on a plane above the lower edges of the drawer frame, whereby the bottom of the pan is prevented from coming in contact with the table, substantially as described for the purpose set forth. 2nd. In a table sink, the combination, with the frame having rigid top, and the cleats arranged beneath the top, of the sliding drawer frame supported on the cleats and having a transverse partition *p* near its middle, and the fixed stop *t* depending from the table top and arranged in the path of the partition on the drawer frame, to limit the inward movement of the latter, substantially as described for the purpose set forth. 3rd. A table sink having a sliding drawer and a metallic rigid pan or tray suspended from its upper edges in the drawer, and having its bottom terminating on a plane above the lower edges of the drawer frame, said tray or pan forming the only bottom for the drawer, as set forth. 4th. A table sink having a sliding drawer, a rigid metallic pan or tray suspended from its upper edges in the drawer, and having its sides bevelled or inclined sides of the pan or tray and the drawer, as and for the purpose set forth. 5th. A table sink having a sliding drawer, a metallic pan or tray suspended from its upper edges in the drawer, and having its sides bevelled or inclined, and a bevelled or inclined lining W interposed between the inclined sides of the pan or tray and the drawer, the bottom of the pan or tray serving as the only bottom of the drawer and terminating on a plane above the lower edges of the drawer frame, for the purpose set forth.

No. 25,880. Horse Shoe. (*Fer à Cheval.*)

Henry M. Oliver, Newark, N.J., U.S., 29th January, 1887; 5 years.

Claim.—1st. The combination, with a horse-shoe, provided with a V-shaped groove in the toe and heels thereof, having a straight perforation or socket in the bottom of said groove, extending upward and backward into the body of the shoe, of removable heel and toe calks having a wedge-shaped top adapted to fit in said groove in the shoe, and provided with a straight arm which enters the socket in the bottom of the groove, and means, substantially as described, for holding said calk tn the groove, for the purposes set forth. 2nd. The combination, with a horse-shoe, provided with a V-shaped groove in the toe and heels thereof, having a straight perforation or socket in the bottom of said groove, extending upward and backward into the body of the shoe, in a line with one of the inclined sides of the groove, the said side being provided with a mortise therein, of toe and heel calks having a wedge shaped top adapted to fit in said grooves in the shoe, and provided with a straight arm which enters the socket in the groove, said arm being a continuation of one of the inclined sides of the top, the said side being provided with a tenon thereon, which engages with the mortise in the groove, and a pin *p* which extends through a perforation in the shoe and the calks, substantially as and for the purposes set forth.

No. 25,881. Injector. (*Injecteur.*)

Albert S. Eberman, Baltimore, Md., U. S., 29th January, 1887; 5 years.

Claim.—1st. In an injector, the combination, with the main casing and main water-passage, of an injector discharge nozzle and a valve for automatically closing the initial and secondary overflows independently of the check-valve, substantially as set forth. 2nd. In an injector, the combination, with the main casing, the main water passage and injector tube adapted to operate as a combining and delivery tube, of a valve for automatically closing the initial and secondary overflows, substantially as set forth. 3rd. In an injector, the combination, with the main casing and main water passage, of an injector combining-tube adapted to slide within the casing, and thereby automatically close the initial and secondary overflows, substantially as set forth. 4th. In an injector, the combination, with the main casing and water supply pipe, of an injector combining tube adapted to admit water to the overflow, both from the supply-pipe and from the pipe leading directly to the boiler, and further adapted to automatically close the said overflow passages, substantially as set forth. 5th. In an injector, the combination, with the main casing and main water passage, of a movable injector tube adapted to act automatically as a valve for shutting off the initial and secondary overflows, substantially as set forth. 6th. In an injector, the combination, with the main casing and main water passage, of a movable injector tube, provided with enlarged portions which serve as valves to close the initial and secondary overflows, said tube being automatically operated by the pressure of steam-forced water, substantially as set forth. 7th. The combination, with the main casing, main water passage, an injector tube and a valve for automatically closing the overflows, of a loose valve for throwing the whole force of the steam onto the water-lift in starting the injector, substantially as set forth. 8th. In an injector, provided with a water lift and means for automatically closing the initial and secondary overflows, a loose valve, operated bo the valve which admits steam, and adapted to remain on its seat while the steam-inlet valve is slightly raised, for the purpose substantially as set forth. 9th. The combination, with the main casing and main water passage, of a water lift, an injector tube and a valve for automatically closing the initial and secondary overflows independennly of the check valve, substantially as set forth.

No. 25,882. Method of Joining Pieces of Rubber Cloth. (*Manière d'Assembler les Toffe Caoutchoutée.*)

Theodore Hawley and The Fairfield Rubber Company, Fairfield, Conn., U.S., 29th January, 1887; 5 years.

Claim.—1st. The improvement in the art of joining pieces of rubber cloth, which consists in heating the lower piece, placing the upper one over it, then rolling, them together, under great pressure, the lower piece being kept heated and the upper piece cold. 2nd. The improvement in the art of joining pieces of rubber cloth, which consists in placing them face to face, heating the lower piece, whereby the gum is softened, mechanically pressing them together the width of the seam, then turning the upper piece back, face upward, and finally mechanically pressing them together again with heat ap-

plied to the lower piece only. 3rd. The method of joining pieces of rubber cloth, which consists in cementing the edge of the upper upper piece, placing the upper piece over the lower, face to face, heating the lower piece, whereby the gum is softened, mechanically pressing the pieces together, then turning the upper piece over backward, and finally mechanically pressing them together again with heat applied to the lower piece only. 4th. The method of joining pieces of rubber cloth, which consists in heating the lower piece, placing the upper one over it, then pressing them together with heat applied to the lower piece only, and finally placing a strip of gum over the seam and pressing it thereon with heat applied from below only.

No. 25,883. Eye Glasses. (*Binocle.*)

Siegmund Lubin (co-inventor with John J. Frawley and Albert Abraham), Philadelpeia, Penn., U.S., 29th January, 1887; 5 years.

Claim.—1st. In combination with an eye-glass frame nose rests, each on its back at one side and intermediate of its length, provided with a lug and L-shaped nose rests supports, each at the end of its vertical branch or arm attached to the eye-glass frame and at the end of its arm, which extends inwardly from and at an approximate right angle to the lenses pivotally connected with the nose rest lugs respectively, substantially as specified. 2nd. In combination with an eye-glass frame, nose-pieces F provided with lugs G and nose rest supports E, substantially as and for the purpose specified.

No. 25,884. Fish Trap. (*Parc de Mer.*)

Thomas Thompson, Eventon, W.C., and Allan Rutherford, Washington, D.C., U.S., 29th January, 1887; 5 years.

Claim.—1st. The herein-described fish-trap, consisting of the heart or main compartment, having oppositely-disposed openings, the inclined wings or passage-ways connected to the corners of said heart, the pounds or traps having the cone-shaped tunnels and connected to the ends of said wings or passage-ways, and the inclined guide-ways located at opposite sides of the heart, and between and extending beyond two of the pounds or traps, substantially as shown and described. 2nd. The combination, with the heart or main compartment, having oppositely-disposed openings and the pounds or traps, of the inclined wings or passage-ways connecting said heart at its four corners with the pounds or traps, arranged substantially as shown and described. 3rd. The combination, with the heart or main compartment having opposite opening, the inclined wings or passage ways connected to the four corners of said heart, and the pounds or traps connected to the ends of said wings or passage-ways, of the inclined guide-ways or leads, secured each at its ends and centre by stakes, whereby a passage-way is provided between its walls and between each wall and pound or trap, substantially as shown and described.

No. 25,885. Trimming Mechanism for Sewing Machines. (*Machine à Garniture pour Machines à Coudre.*)

Thomas C. Robinson, Boston, and E. B. Welch, Cambridge, Mass., U.S., 29th January, 1887; 5 years.

Claim.—1st. The combination, with the feed-dog widened back of the needle, the throat plate cut away or slotted to leave a tongue containing the needle-hole *u*, said tongue being connected with the plate only at one end, as seown, and the bridge *v* secured to the under side of the throat-plate, so as to support the outer end of said tongue, and provided with a recess *v*1 adapted to receive the feed-dog, as set forth. 2nd. The combination of the knife-bar V, the needle-bar, operating shaft W, having the positive cam W_2, and the bell-crank lever W_2 pivoted to a fixed support on the arm of the machine, and engaged at one end with said cam, and having a pivotal connection at its other end with the knife-bar, as set forth. 3rd. The combination, with the reciprocating blade T, of the pressure-adjusting device *h*, having the raw hide core *h*1 bearing directly against said blade and in rubbing contact therewith, whereby friction between the device *h* and blade T is reduced, as set forth. 4th. The pressure-regulating screw *h*, having the raw-hide core *h*1 and screw-follower *h*, combined with the arm *g* and reciprocating blade F, as set forth. 5th. The combination of the knife-bar V, the reciprocating blade T pivoted to the knife-bar and provided with a pin T_2 in its lower portion, and the fixed cutting-blade having a diagonally slotted arm receiving said pin, as set forth. 6th. The combination of the presser-foot, the folder *r* attached thereto, and the folding blade r^2 supported by the bed of the machine, as set forth. 7th. The combination, with the folder *r* attached to the presser-foot of the folding blade adapted to be moved into and out of its operative position, as set forth. 8th. The folding blade adapted to slide, and provided with a spring *r*6, as set forth.

No. 25,886. Trimming Attachment for Sewing Machines. (*Appareil à Garniture pour Machines à Coudre.*)

Thomas C. Robinson, Boston, and E. B. Welch, Cambridge, Mass., U.S., 29th January, 1887; 5 years.

Claim.—1st. In a sewing machine, the combination of the throat-plate having a slot and a fixed blade at one side thereof, a shaft or arbor rotated in fixed bearings above the bed of the machine, and a rotary blade affixed to said arbor, and having a perimeter projecting continually into a part of said perimeter, co-operating once during each rotation of the shaft with said fixed blade, the projection of the perimeter of the rotary blade into the slot preventing the displacement of said blade from its operative position with relation to the fixed blade, as set forth. 2nd. A sewing machine, provided with a shaft or arbor rotated in fixed bearings, a rotary blade affixed to said arbor, and provided with an off-set cutting edge adapted to act intermittently, a slot in throat-plate or bed, into which said blade projects, a fixed blade at one side of said slot adapted to co-operate with the rotary blade, and intermittently acting devices for pressing the rotating cutting edge against the fixed blade, only when said blades are in co-operation, as set forth. 3rd. The combination, with a sewing machine, having a slot *a* in its throat-plate, and a fixed blade *b* at one side or edge of said slot, of the shaft *h* journalled in fixed bearings and adapted to be rotated by the driving shaft of the machine, the blade *e* affixed to the arbor projecting into the slot *a*, and having the offset cutting edge *e*1, the cam *i* affixed to said shaft and the adjustable bearing J for said cam, as set forth 4th. In a sewing machine, the combination, with the fixed and moving blades, of the bed having a depression beside the fixed blade and under the moving blade, as set forth.

No. 25. 887. Reversible Self-Attaching Lap Robe. (*Robe à Pan Mobile Reversible.*)

Theodore Hawley and Edward U. Hanal, Fairfield, Coun., U.S., 31st January, 1887; 5 years.

Claim.—1st. As a new manufucture, a lap robe provided with a spring adapted to embrace the person of the user, whereby the robe is held firmly in place but may be readily detached. 2nd. A lap robe having a pocket near one end, and a U-shaped spring in said pocket adapted to embrace the person of the user, so that the robe is held in place. 3rd. A lap robe having a pocket 2 near one end. and a spring 3 adapted to lie loosely in said pocket, which holds the spring in place in use, said pocket being loose enough to permit the spring to turn so that either side of the robe may be placed outward. 4th. A reversible lap robe or similar article having at the centre, near one end, a pocket and a curved and secured spring shorter than the width of the robe lying loosely in said pocket, whereby the robe is held closely about the person of the user, wherever it may be placed. 5th. A lap robe having a pocket 2 in combination with a spring lying in said pocket, and rings 4 provided with shanks, which pass through the lap robe and are attached to the spring.

No. 25,888. Mechanism for Joining Pieces of Rubber Cloth. (*Machine pour Assembler l'Etoffe Caoutchoutée.*)

Theodore Hawley and The Fairfield Rubber Company, Fairfield, Conn., U.S., 31st January, 1887; 5 years.

Claim.—1st. A machine for joining pieces of rubber cloth consisting essentially of a table and a heated lower roller, in combination with an adjustable cold upper roller. 2nd. The table and heated lower roller, in combination with an upper roller of less diameter than the lower roller, and gears whose relative diameters correspond with the diameters of the rollers, so that the surface motion of the two rollers is equal. 3rd. Shaft B and D carried by framework A and C, in combination with a heated roller and a cold roller carried by said shafts and located outside of the framework, and gears at the other ends of said shafts also outside of the framework, whereby an open space is provided through which garments, etc., may be passed. 4th. The table and lower roller having steam and exhaust pipes connected to said roller or to both, in combination with a cold upper roller and mean for example, journal blocks and screws for adjusting the upper roller. 5th. The table and lower roller having steam and exhaust pipes connected therewith, in combination with an elastic adjustable upper roller and means for example, gears of suitable size, whereby motion is imparted by one roller to the other, the surface motion of the two rollers being equal. 6th. In a machine for joining pieces of rubber cloth, shaft B carrying a heated roller, in combination with shaft D carrying a cold roller, and also a stitcher, whereby the gum upon one piece of cloth is softened without affecting the other piece, the two pieces are firmly pressed together and an imitation of stitching is produced upon the upper piece, all at a single operation.

No. 25,889. Furnace for Locomotive. (*Foyer de Locomotive.*)

Joshua B. Barnes, Springfield, Ill., U.S., 31st January, 1887; 5 years.

Claim.—1st. In a locomotive engine, the combination, in the smoke box of a baffling-plate, a horizontal screen or spark-arrester, an induction pipe *t* in connection with the exhaust-nozzle and a deflector adapted to cut off the upper forward part of the smoke-box, so as to form, by their union with the upper arched half thereof and the flue plate or end of the boiler, a chamber adapted to fill essentially the office of a secondary induction pipe and co-operate with the primary induction pipe, substantially as set forth. 2nd. In a locomotive engine, the combination of the fire-box having a series of induction tubes and an inclined deflector, as herein described, with a smoke-box having a baffling-plate, a spark-arrester and a deflector, all of said parts constructed and located with reference to each other for co-operative action, as and for the purpose set forth. 3rd. In a locomotive engine, the combination of the fire-box having a series of induction tubes arranged and controlled as herein described, and the smoke-box provided with a deflector located in the upper front part thereof and inclined, as set forth.

No. 25,890. Machine for Cutting and Punching Iron. (*Machine à Découper le Fer.*)

John Durst, Sebringville, Ont., 31st January, 1887; 5 years.

Claim.—The combination of the slide block O. knife blocks H and K, for cutting, and punch block P and die block S. S, for punching, substantially as and for the purposes hereinbefore set forth.

No. 25,891. Contrivance for Holding up Waggon Poles. (*Appareil pour Soutenir les Timons des Voitures.*)

Edwin Fitzgerald, Peterboro, Ont., 31st January, 1887; 5 years.

Claim.—The combination of the handle E, rods C, C and dogs O, O, with the ratchet F and F, substantially as and for the purpose hereinbefore set forth.

No. 25,892. Reach Coupling for Vehicles.
(Joint de Flèche de Voiture.)

Henry Oakes, Silver City, N.M., U.S., 31st January, 1887; 5 years.

Claim.—1st. The combination of the front axle, the fifth-wheel having the upper and lower sections, the box or sleeve M secured rigidly to the upper sections, and the reach having the spindle swivelled in the box or sleeve, substantially as described. 2nd. The combination of the front axle having the lug e_1, the fifth-wheel comprising the upper and lower sections having the lugs L and G, the king bolt passing through the said lugs and also through a lug e_1, on one side of the axle, the box or sleeve M secured to the upper section of the fifth-wheel, and the reach having the spindle swivelled in the box or sleeve, substantially as described. 3rd. The combination of the box or sleeve M, the reach having the spindle B at its front end, entering the bore of the box or sleeve, and provided with the annular groove D, and the screw m_3 in the box or sleeve, and entering the said annular groove for the purpose set forth, substantially as described. 4th. The combination of the fifth-wheel having the upper section provided with the lug L, the box or sleeve having the wings I bolted to the said lug, and the reach having the spindle swivelled in the box or sleeve, substantially as described. 5th. The combination of the fifth-wheel, the box or sleeve M, secured to the upper section thereof and having the depending shoulders m_1, to bear against the rear sides of the curved arms of the fifth-wheel, and the reach having the spindle journalled in the box or sleeve, substantially as described.

No. 25,893. Social Game. *(Jeu de Société.)*

Theodore R. Colberg, Leipsic, Germany, 31st January, 1887; 5 years.

Claim.—1st. A social game in which a ball, which is shot forth, falls upon the correspondingly formed end *h* of a lever *g*, after passing the tracks *d*, the end of the lever thus impacted is pressed down into a depression *c*, thus setting free a three or four wheeled velocipede, which is suspended from the other end of the lever. The velocipedes may possess a movable or fixed front axle, so that they can run down the sloping table A, or the ball, which is shot forward and likewise conducted along the ball-track *d* may run along a large plate B, which is connected with the table A, but which stands perfectly horizontally and independently. In this case the ball comes in contact with pins placed upon plate B forming the bowling or billiard game. 2nd. The cannon-like apparatus for shooting the ball has percussion-caps or leaflets placed in depressions, and these made to explode by coming in contact with projections on the face of the piston handle, substantially as and for the purpose set forth.

No. 25,894. Wire Drawing and Apparatus therefor. *(Etirage du Fil et Tréfilière.)*

Samuel H. Byrne, Brighouse, Eng., 31st January, 1887; 5 years.

Claim.—1st. The improvement, in apparatus for wire drawing, consisting in providing the said apparatus with a jet pipe or nozzle, from which a stream or jet of liquid issues and impinges at the eye of the die. 2nd. The improvement, in apparatus for wire drawing, in which wire is drawn through a die, having the eye formed in carconate bolas or other jewel, or like mineral, consisting in providing the said apparatus, with a jet pipe or nozzle from which a stream or jet of liquid issues and impinges at the eye of the die. 3rd. The improvement, in apparatus for wire drawing, in which wire is drawn through a rotating die, consisting in providing the said apparatus with a jet pipe or nozzle from which a stream or jet of liquid issues and impinges at the eye of the die. 4th. The improvement, in apparatus for wire drawing, in which wire is drawn at one operation through a series of dies, having eyes formed in bolas or jewels, or like minerals, consisting in providing the said apparatus with jet pipes or nozzles from which streams or jets of liquid issue and impinge at the eyes of the dies. 5th. A die for drawing wire having the eye formed in the stone or mineral bolas or pea bort. 6th. The improvement, in apparatus for wire drawing, consisting in provided the same with a series of dies having eyes formed in bolas or pea bort, through which series of eyes the wire is drawn continuously at one operation. 7th. The improvement, in apparatus for wire drawing, consisting in providing the same with a series of dies, which are caused continuously to rotate, and which have eyes formed in bolas or pea bort through which the wire is drawn continuously at one operation.

No. 25,895. Harrow. *(Herse.)*

J. Morris Childs, Utica, N.Y., U.S., 31st January, 1887; 5 years.

Claim.—1st. The combination of the angle draft bars, the cross-beams mounted thereon, and the curved spring teeth, the three held in rigid contact with each other, substantially as set for the purposes stated. 2nd. The combination of an angle draft bars, the slotted cross-beams, the curved spring teeth, the three held in rigid contact with each other, substantially as set forth for the purposes stated. 3rd. The combination of the metallic channelled draft bars, the cross-beams mounted thereon, the curved spring teeth with means for holding the three in rigid contact, substantially as set forth for the purpose stated. 4th. The combination of the metallic channelled draft bars, the slotted cross-beams mounted thereon, the curved spring teeth and means for holding the three in rigid contact, substantially as set forth for the purposes stated. 5th. In a harrow frame having metallic draft bars, in combination with the perforated and overlapping ends, and the bolt, whereby a hinge is formed, substantially as set forth for the purposes stated. 6th, The combination of a harrow frame, and the curved spring teeth with the reversible clip having projecting lugs and perforated ears, with means for holding the clip, substantially as set forth for the purposes stated. 7th. The combination, with a harrow frame and curved spring teeth, of a clip resting in the inner circle of the curve, its ends engaging the tooth with bolts and nuts for maintaining the clip in contact with the tooth under spring tension, substantially as described for the purposes stated.

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

779. C. GREENWOOD, 2nd 5 years of No. 14,547, from the 5th day of April, 1887. Improvements on Ear Mufflers, 3rd January, 1887.

780. J. G. GERMAN, 2nd 5 years of No. 14,093, from the 30th day of January, 1887. Improvements in Wrought Iron Fences, 3rd January, 1887.

781. W. E. HOWARTH, 2nd 5 years of No. 13,978, from the 11th day of January, 1887. Improvements on Combined Fanning Mills and Grain Separators, 7th January, 1887.

782. R. H. SMITH, 2nd 5 years of No. 14,085, from the 26th day of January, 1887. Improvements on Saw Handles, 7th January, 1887.

783. P. K. DEDERICK, 3rd 5 years of No. 7,485, from the 18th day of May, 1887. Improvements on a Machine for Baling Hay and other Loose Material, 7th January, 1887.

784. G. T. TUCKETT, 2nd 5 years of No. 13,985, from the 16th day of January, 1887. Improvements on Tin Caddies for Putting up Tobacco, 8th January, 1887.

785. J. CRUICKSHANKS, 2nd 5 years of No. 13,975, from the 11th day of January, 1887. Improvements on Waggons, 10th January, 1887.

786. F. H. RANSOM. 2nd 5 years of No. 13,997, from the 16th day of January, 1887. Improvements on Trunks, 11th January, 1887.

787. A. NEWELL, 2nd 5 years of No. 14,665 from the 26th day of April, 1887. Improvements on Reed Organs, 11th January, 1887.

788. H. BEZEL, 2nd 5 years of No. 14,003, from the 16th day of January, 1887. Improvements on Skates, 14th January 1887.

789. A. S. FISHER, 2nd 5 years of No. 14,074, from the 26th day of January, 1887. Improvements in Devices for Removing Impurities from the Water of Steam Boilers, 14th January, 1887.

790. J. H. BRINKOP, 2nd 5 years of No. 14,116, from the 31st day of January, 1887. Improvements on Presses, 14th January, 1887,

791. J. H. SMALE, 2nd 5 years of No. 14,004, from the 16th day of January, 1887. Improvements on Harrows, 15th January, 1887.

792. K. M. JARVIS and A. F. UPTON, 3rd 5 years of No. 6,984, from the 22nd day of January, 1887. Improvements on Gas Consuming Furnaces of Steam Boilers, 17th January, 1887.

793. H. W. SEARLE, 3rd 5 years of No. 7,001, from the 22nd day of January, 1887. Improvement in Snow Shovels, 17th January. 1887.

794. W. H. FIELD, 2nd 5 years of No. 6,976, from the 19th day of January, 1887. Improvements in Horse Hay Rakes, 18th January, 1887.

795. W. J. PERKINS, 2nd 5 years of No. 14,118, from the 6th day of February, 1887. Improvements on Shingle Machines, 18th January, 1887.

796. THE HUYETT and SMITH MANUFACTURING CO. (assignee), 2nd 5 years of No. 14,112, from the 31st day of January, 1887. Improvements on Blowers, 19th January, 1887.

797. J. S. ANTHES, 3rd 5 years of No. 7,044, from the 9th day of February, 1887. Improvements in the Construction of Chairs, 20th January, 1887.

798. P. FILMAN, 3rd 5 years of No. 6,996, from the 22nd day of January, 1887. Improvements in Sleigh Knees, 22nd day of January, 1887.

799. G. J. O'DOHERTY, 2nd 5 years of No. 24,078, from the 17th day of May, 1881. Improvements in Force Pumps, 24th January, 1887.

800. E. B. DUFORT, 2nd 5 years of No. 14,119, from the 6th day of February, 1887. Improvements on Feather Renovators, 25th January, 1887.

801. D. M. MACPHERSON, 2nd 5 years of No. 14,336, from the 6th day of March, 1887. Improvements on Milk Coolers, 25th January, 1887.

802. G. STEPHENSON, 2nd and 3rd 5 years of No. 22,715, from the 2nd day of November, 1880. Improvements in Stove Drums, 25th January, 1887.

803. D. M. KENNNDY, 2nd and 3rd 5 years of No. 25,201, from the 25th day of October, 1881. Improvements for Desulphurizing and Purifying Hydro-Carbon Petroleum Oils, 26th January, 1887.

804. G. F. TILLEY, 2nd 5 years of No. 14,090, from the 28th day of January, 1887. Improvements on Cooking Stoves, 26th January, 1887.

805. G. F. TILLEY, 2nd 5 years of No. 14,480, from the 24th day of March, 1887. Improvements on Cooking Stoves, 26th January, 1887

806. J. E. CULVER, 2nd 5 years of No. 14,097, from the 30th day of January, 1887. Improvements on Apparatus for Heating, Cooling and other Purposes, 29th day of January, 1887.

807. STEPHEN PEACE, 2nd 5 years of No. 14,111, from the 31st day of January, 1887. Improvements on Sweat Collars for Horses, 31st January, 1887.

808. J. H. SMART, 2nd 5 years of No. 14,113, from the 31st day of January, 1887. Improvements in the Boss Washing Machine, 31st day of January, 1887.

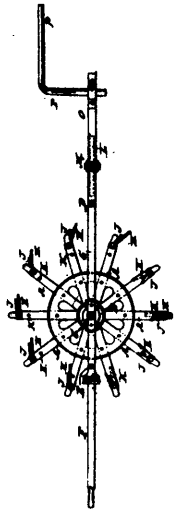
809. G. W. ARCHER, 3rd 5 years of No. 7,292, from the 31st day of March, 1887. Improvements on Barber and Dental Chairs, 31st January, 1887.

THE

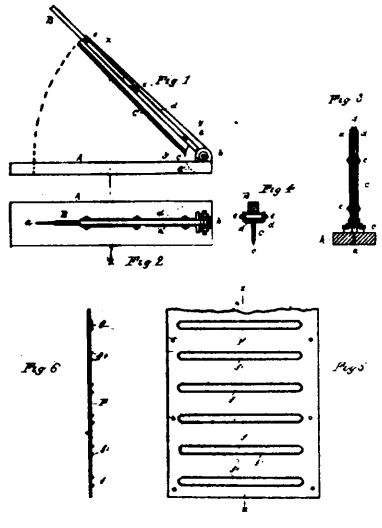
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

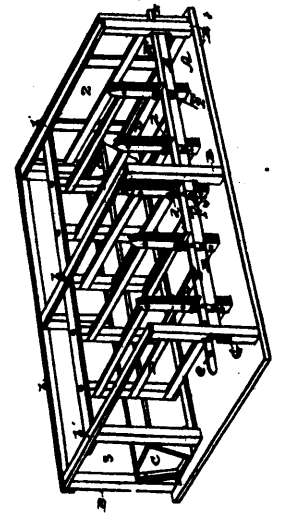
Vol. XV. FEBRUARY, 1887. No. 2.



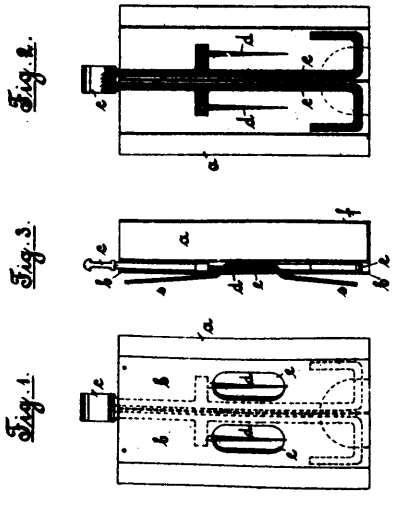
25676 Campbell's Revolving Cultivator.



25677 Tunstead & Moore's Machine for Slitting Metallic Lathing Sheets.



25678 Holton's Cattle Pen.



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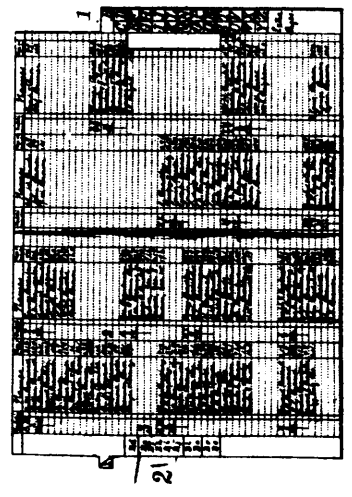

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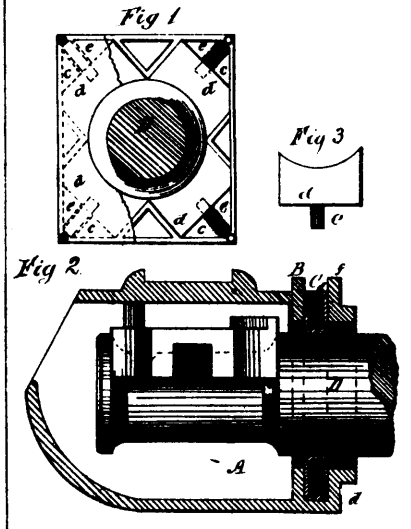
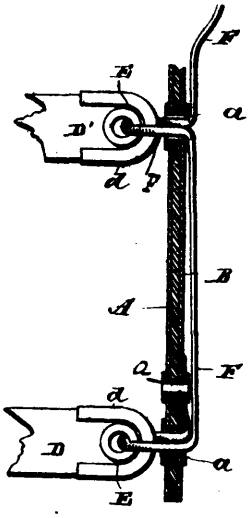
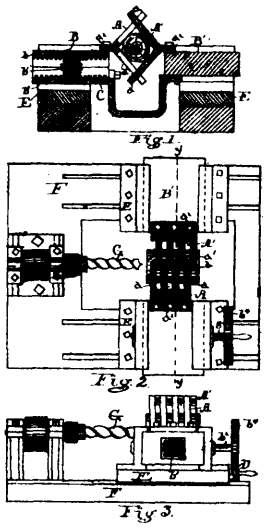


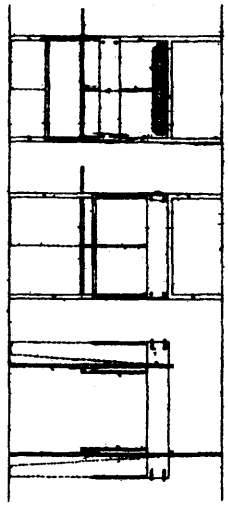
25681 Cushman's Dust Guard for Car Axles.



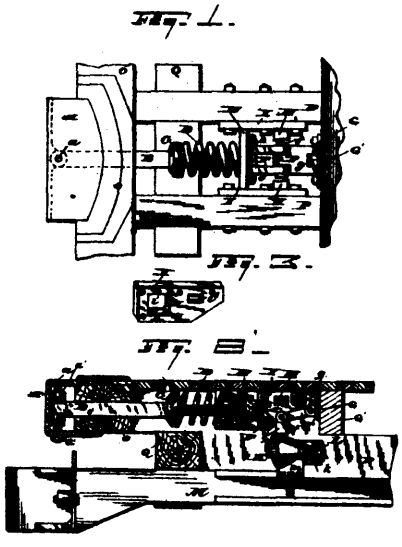
25682 Canfield's Bustle.



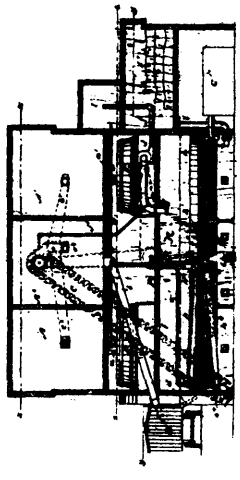
25683 Wing's Device for Centering Hubs, etc.



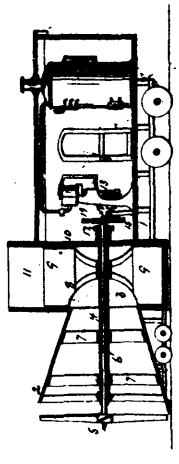
25684 McGeough's Machine for Making and Stuffing Mattresses.



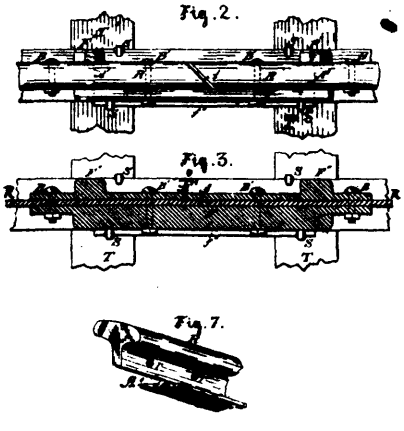
25685 Cowell's Spring Car Bumper.



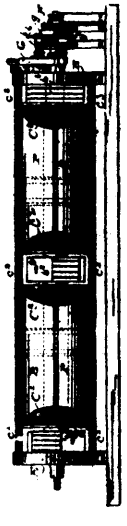
25686 Free's Malting Apparatus.



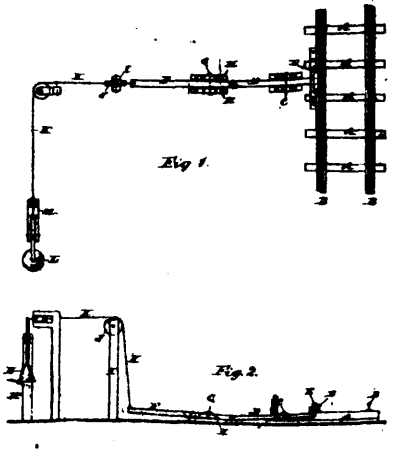
25687 Bastian Snow Plough.



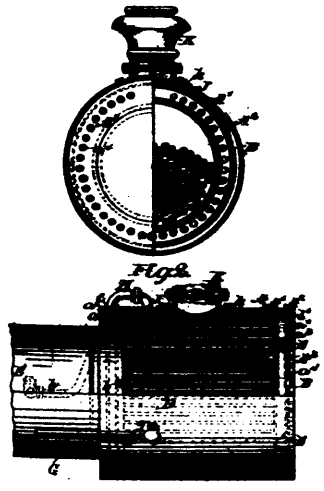
25688 Siegel's Railway Rail Joint.



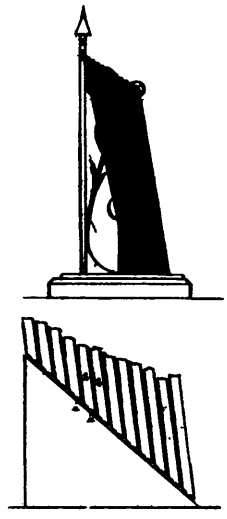
25689 Main's Electromotor.



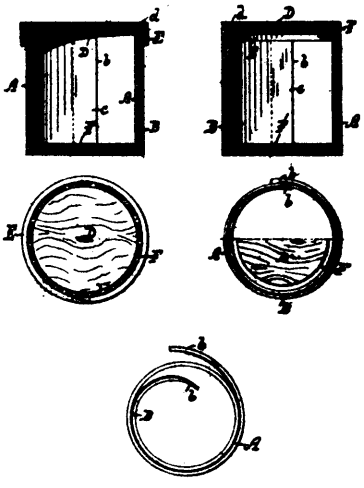
25690 Leonard's Railway Signal.



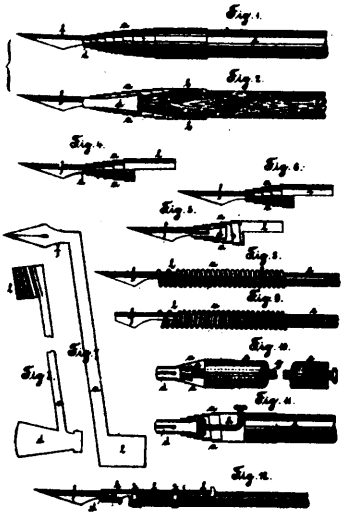
25691 Clifford's Boiler Water Heater.



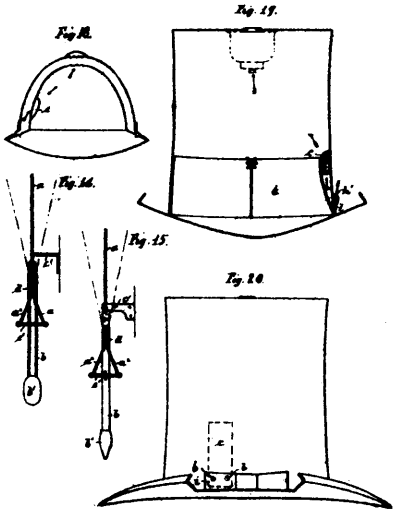
25692 Pachtmann's Holder for Photographs, Pictures, etc.



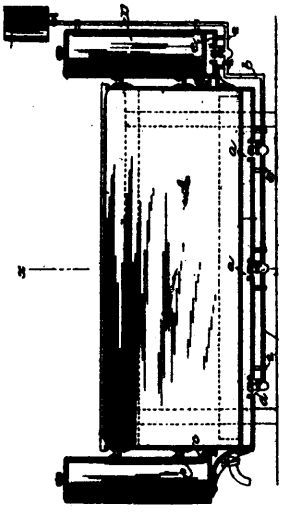
25693 Tomlinson's Cylindrical Wooden Package.



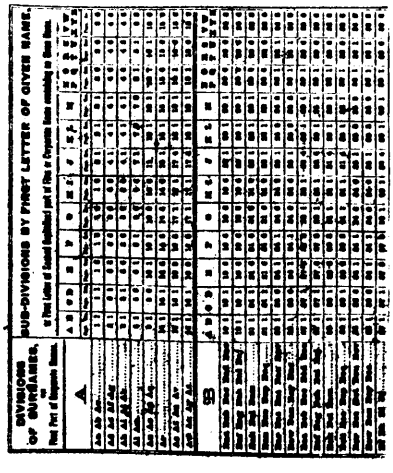
25694 Mogel's Elastic Pen and Penholder.



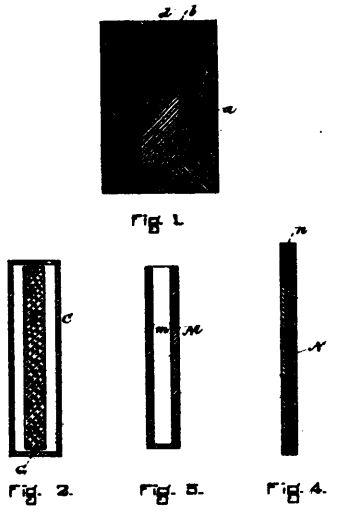
25695 Potter's Method of Ventilating Hats, etc.



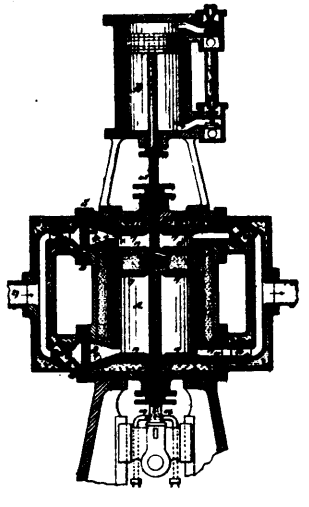
25696 Day's Bath Tub.



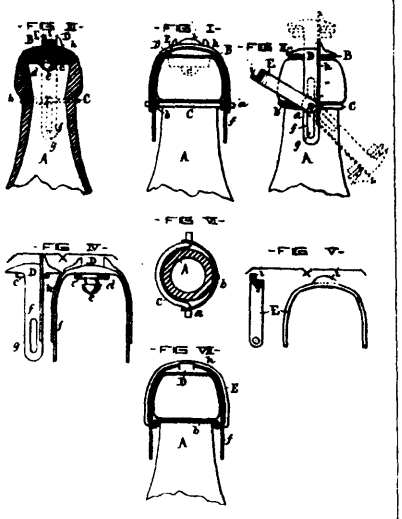
25697 Schlicht's Index.



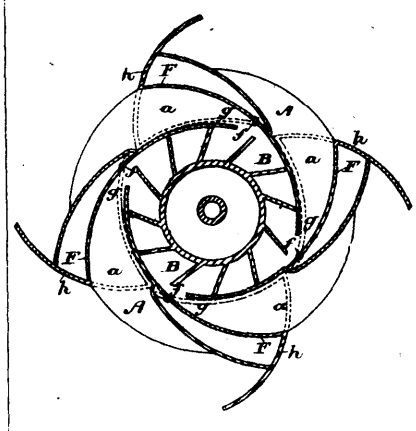
25698 Williamson's Electric Conductor.



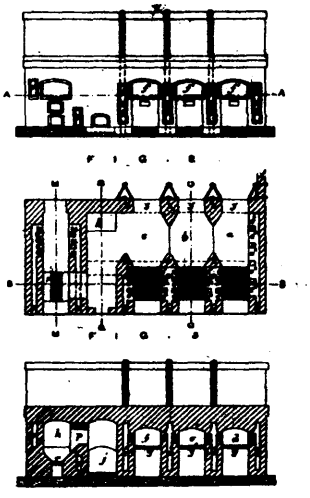
25699 Wilcox's Air and Gas Engine.



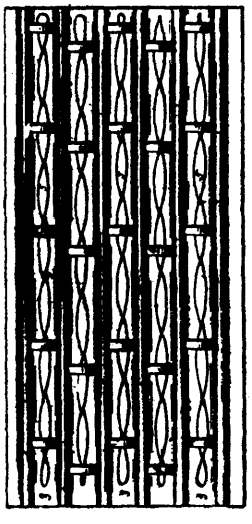
25700 Kalling's Bottle Stopper Fastening.



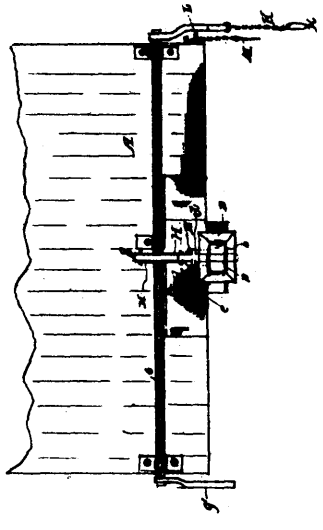
25701 Cameron and Larsing's Turbine Wheel.



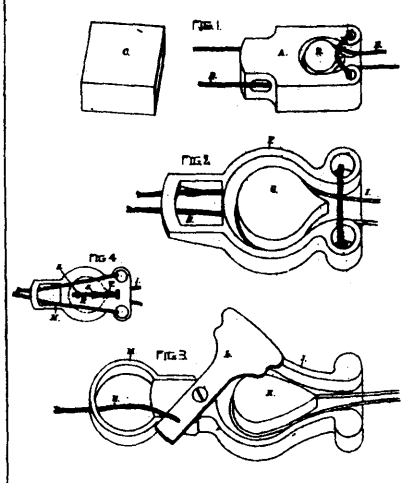
25702 Richmond & Birtwistler's Furnace for Treating Refuse.



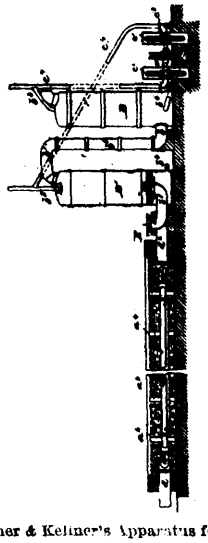
25703 Keusett's Metallic Lathing and Foundation.



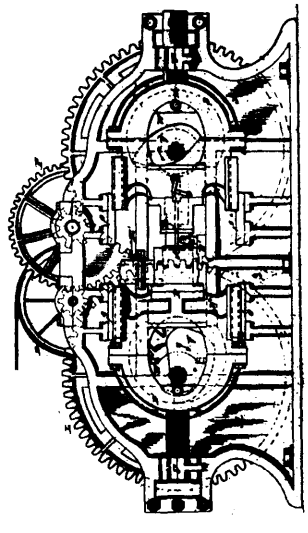
25704 Wooley's Car-Coupling.



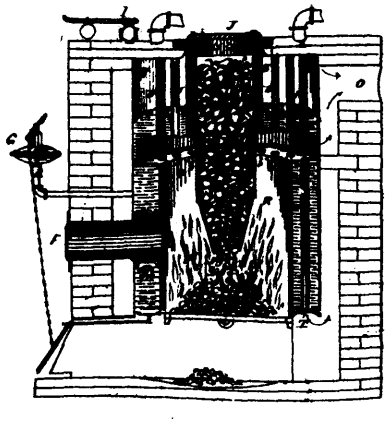
25705 Tambling's Rein-Holder.



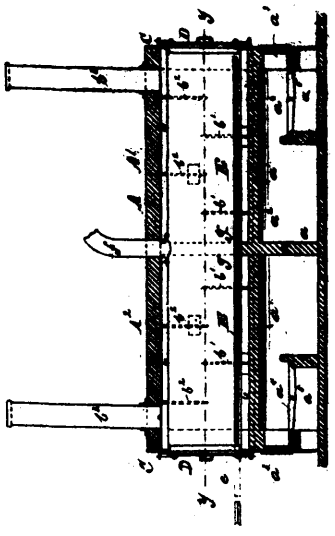
25706 Rither & Kellner's Apparatus for Washing, etc., Gases, etc.



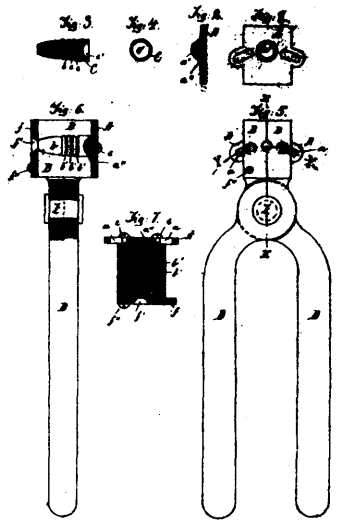
25707 Anderson's Brick and Tile Machine.



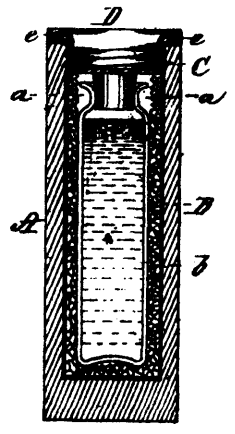
25708 Dunning's Steam-Heating Boilers.



25709 Hansen & Smith's Retort Furnace.

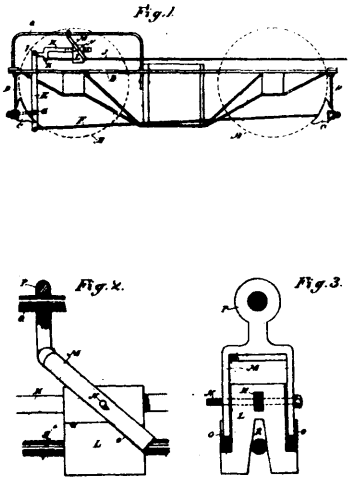


25710 Jewett's Bullet Mould.

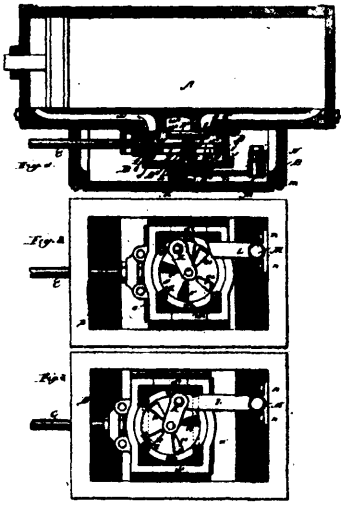


25711 Davis' Mailing Case.

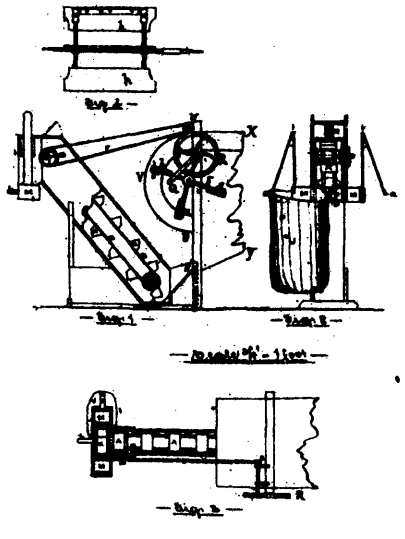
25712 Dean's Flat Wire Nails.



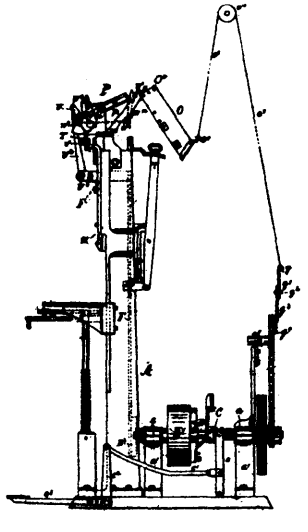
25713 Masterman's Car Brake.



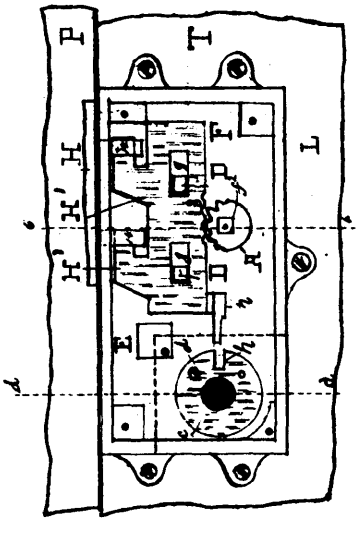
25714 Schmid's Valve Mechanism for Steam Engines.



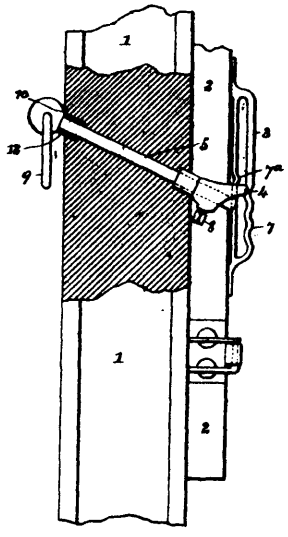
25715 McCaig's Fanning Mill.



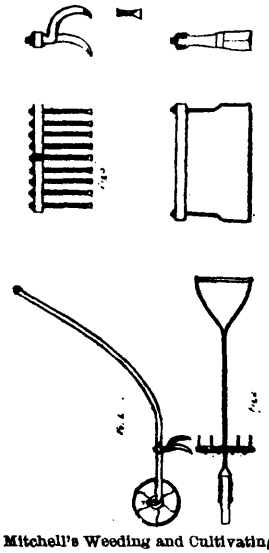
25716 Smith's Box-Nailing Machine.



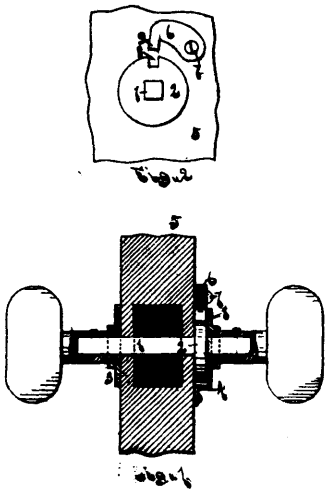
25717 Grau's Permutation Lock.



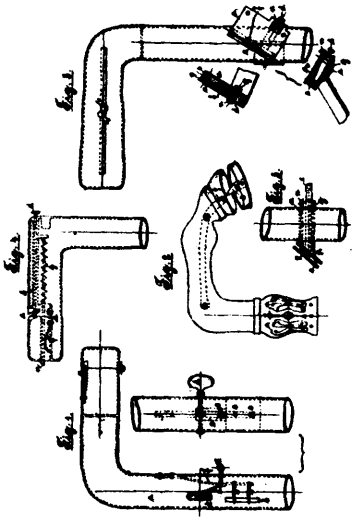
25718 Burnham's Shutter Operating and Locking Device.



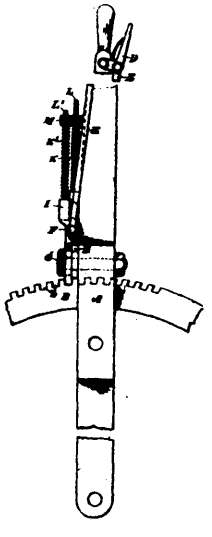
25719 Mitchell's Weeding and Cultivating Implement.



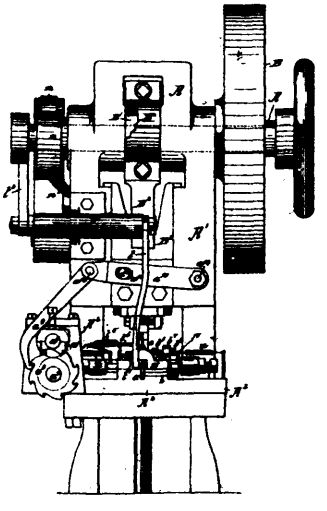
25720 Rogers' Door Lock.



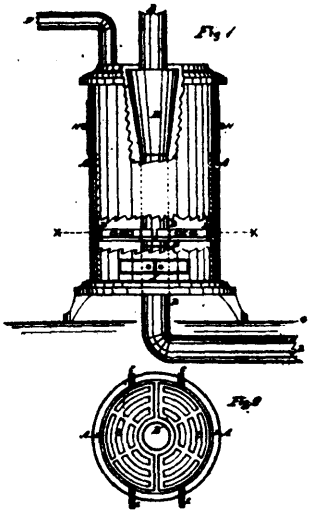
25721 Mogel's Holder for Tickets, etc.



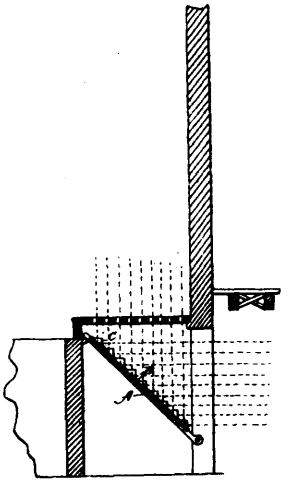
25722 May's Throttle Lever Lock.



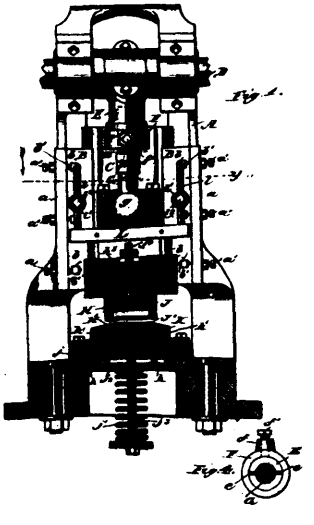
25723 Vinton's Machine for Making Staples.



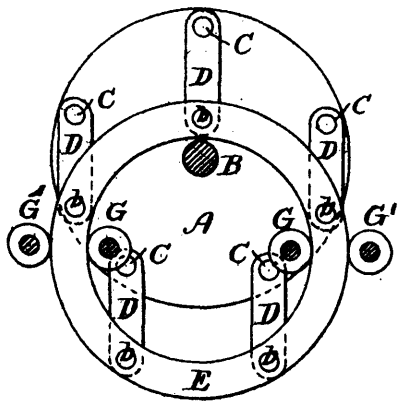
25724 Boggess' Hot Air Distributor.



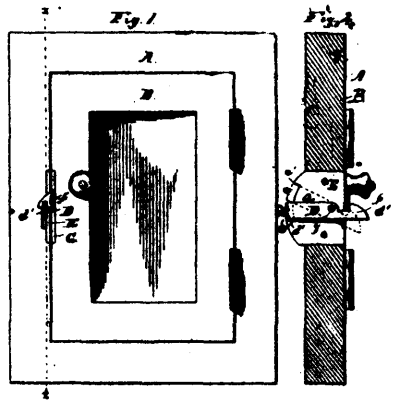
25725 Schoenberg's Window for Basements, Vaults, etc.



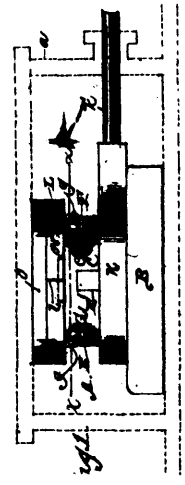
25726 Clapp's Power Press.



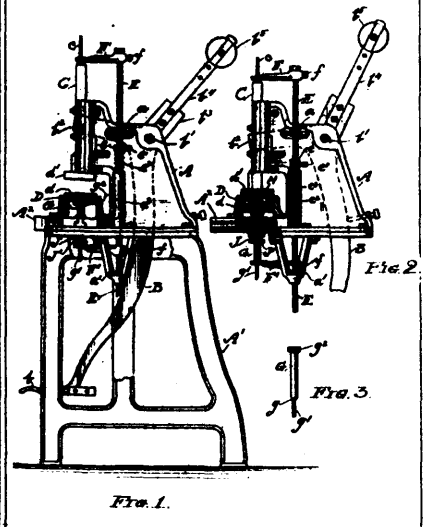
25727 True's Mechanical Movement.



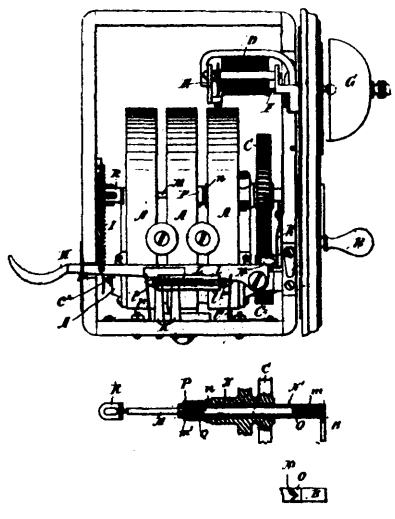
25728 Dey's Latch.



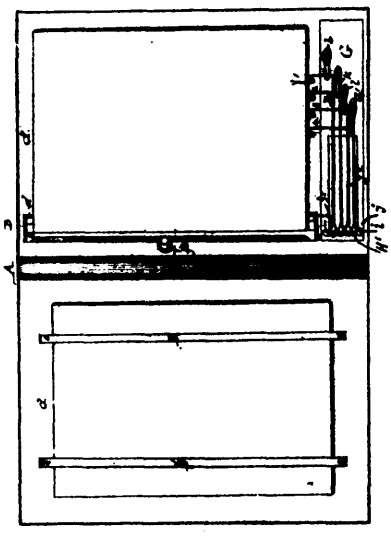
25729 Kneedler's Balance Valve for Locomotives.



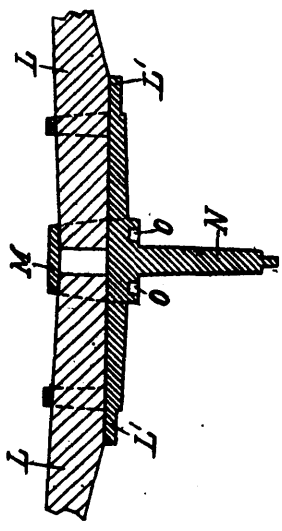
25730 Clapp's Soap Press.



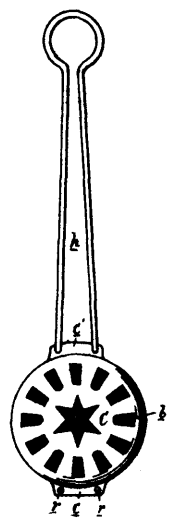
25731 Brown's Magneto-Electric Signalling Apparatus.



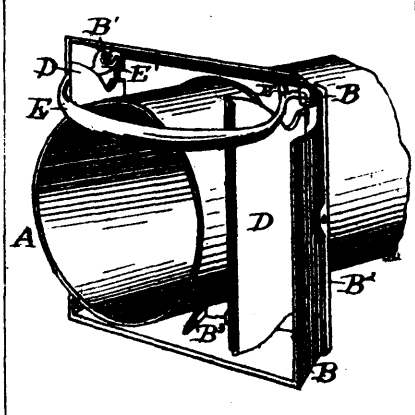
25732 Sage's Music Portfolio and Leaf-Turner.



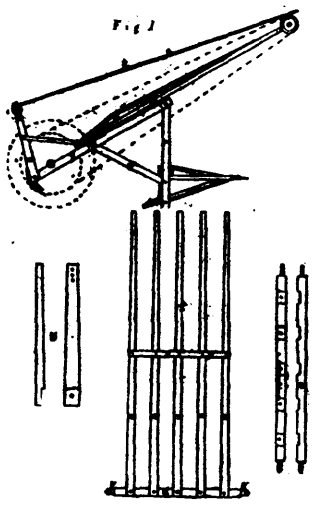
25733 Tillson's Clothes Reel.



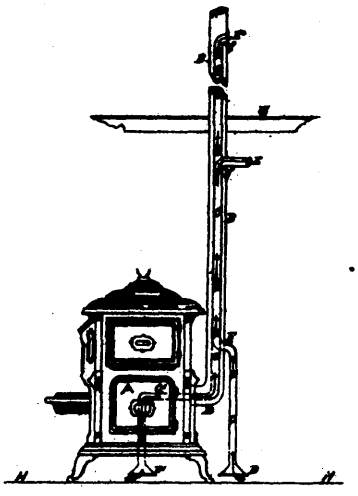
25734 Henderson's Fire Kindler.



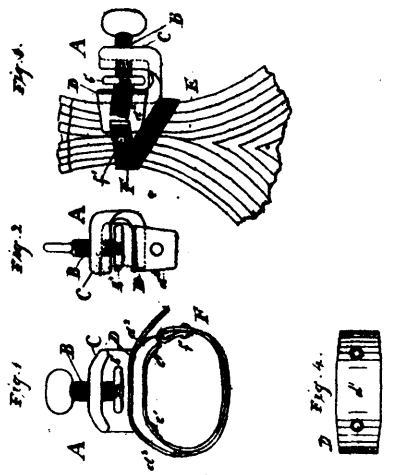
25735 Heinig's Flue Cap.



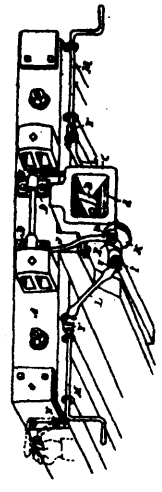
25736 Dixon's Grain and Hay Loader.



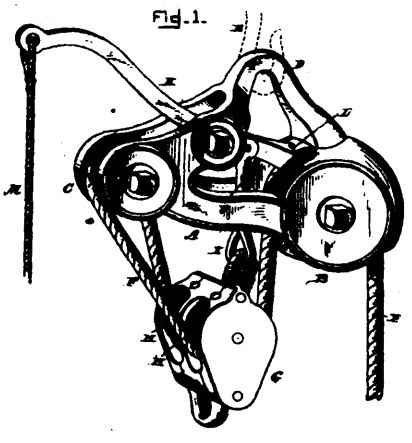
25737 Horning's Heating Stove.



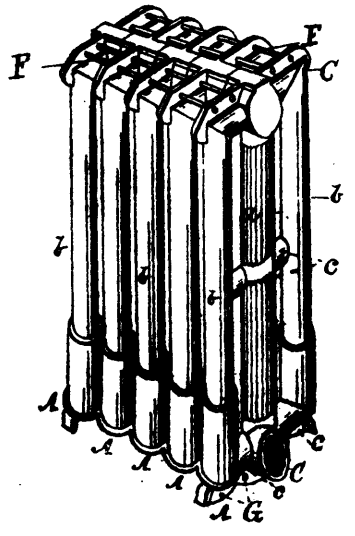
25738 Reggin's Bag Tie.



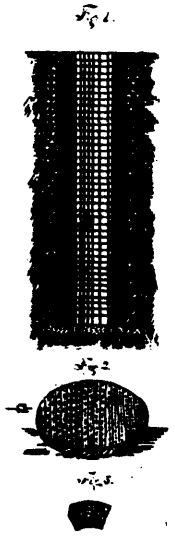
25739 Mark's Car-Coupling.



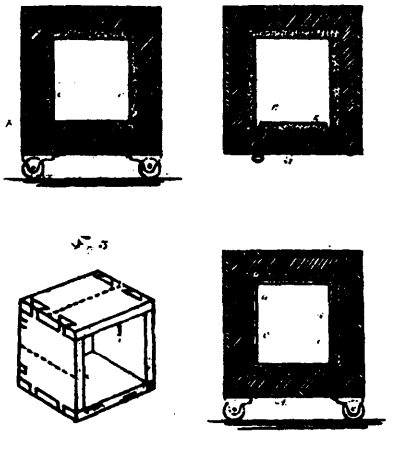
25740 Spragg's Hoisting Device.



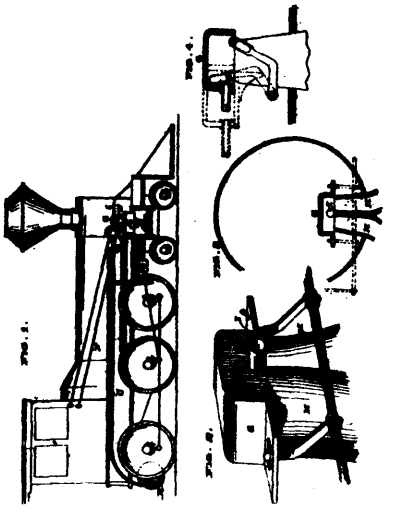
25741 Reed's Heat Radiator.



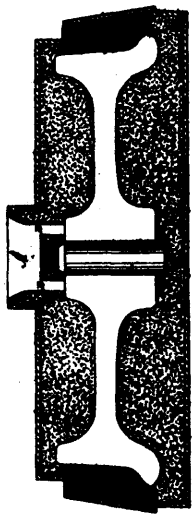
25742 Gilman's Filtering Water Wells, etc.



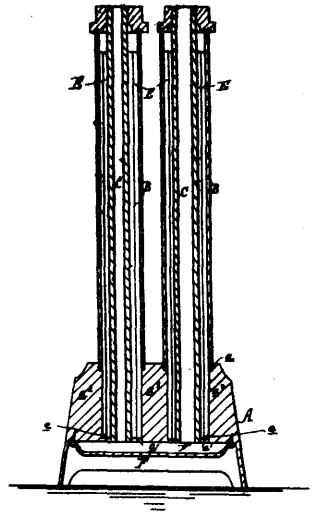
25743 Gilman's Fire Proof Safe, etc.



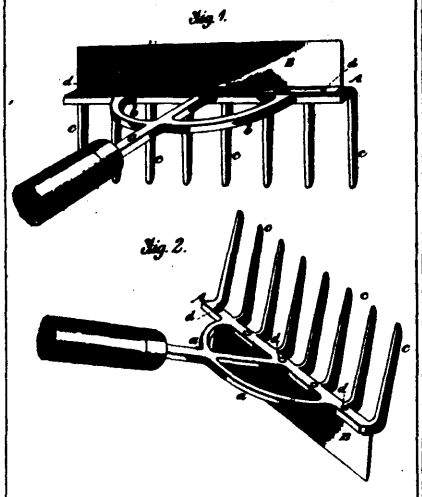
25744 Sweeney's Locomotive Air Compressor.



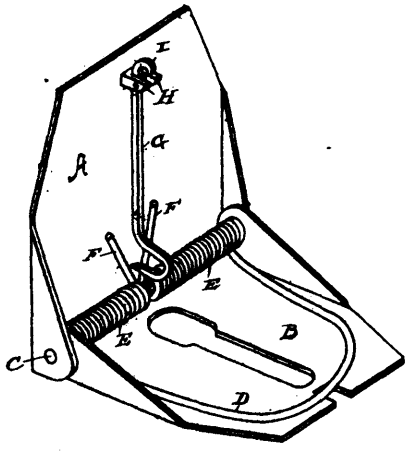
25745 Wilmington's Method of Casting Car Wheels.



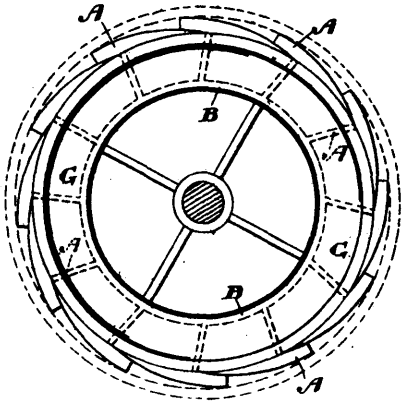
25746 Askins' Heat Radiator.



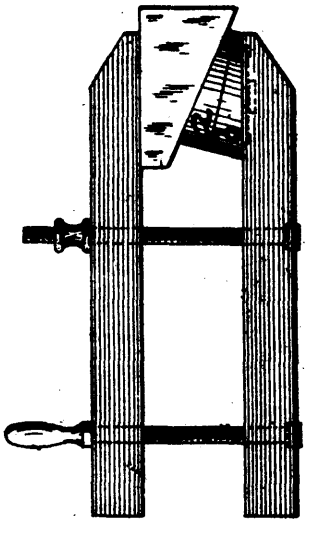
25747 Seatter's Rake and Hoe.



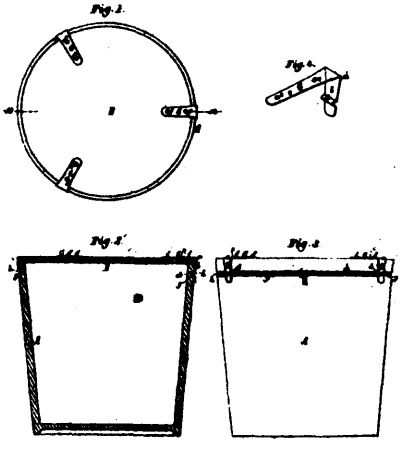
25748 Hotchkiss's Animal Trap.



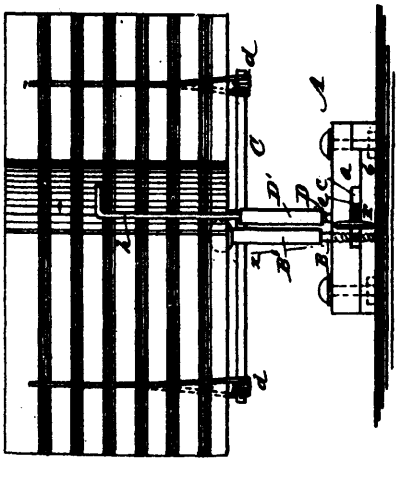
25749 Cole's Turbine Wheel,



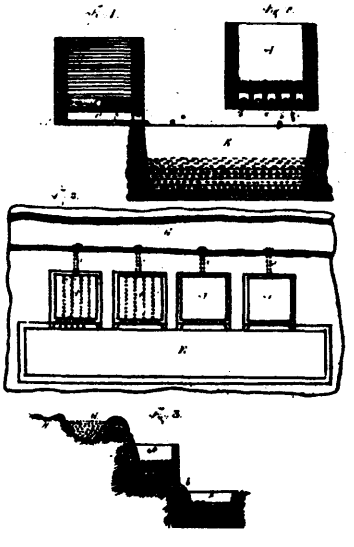
25750 Shaw's Support for Vise Jaws, etc.



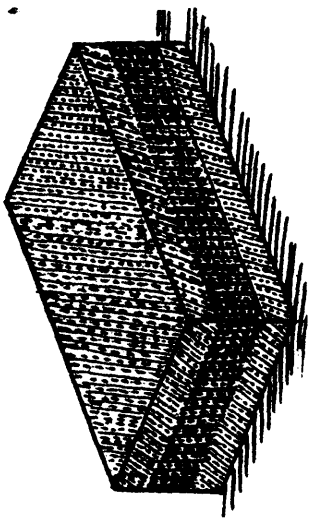
25751 Keye's Fastening for the Covers of Tubs, etc.



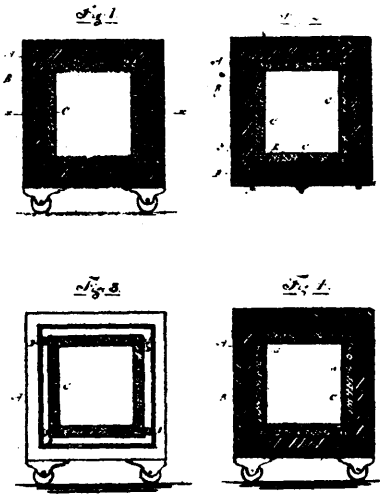
25752 Fesler's Music-Leaf Turner.



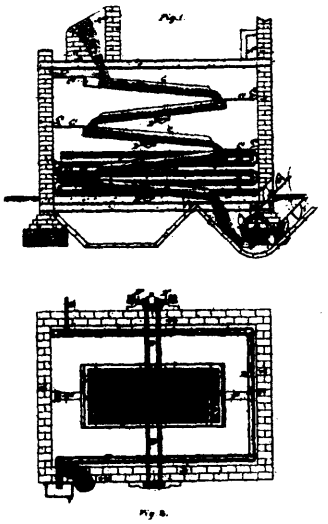
25753 Gilman's Filtering Cisterns.



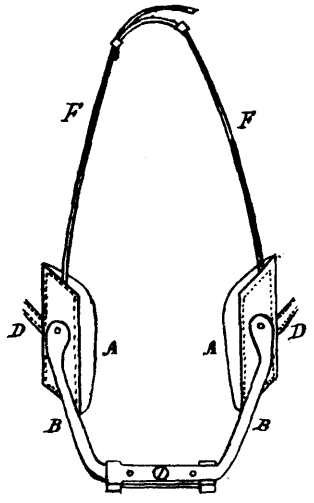
25754 Gilman's Filtering Material.



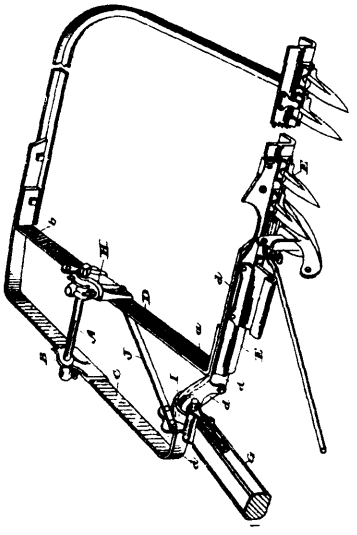
25755 Gilman's Fire-Proof Safe.



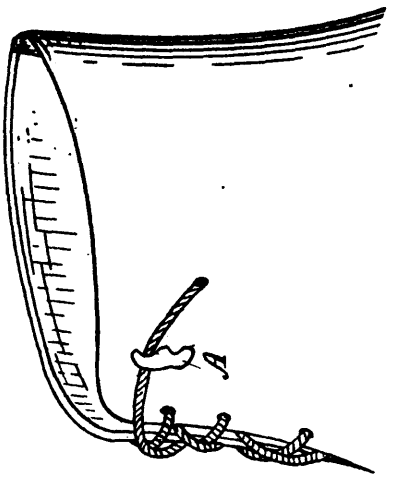
25757 Stanley's Machine for Preparing Material for Making Paper.



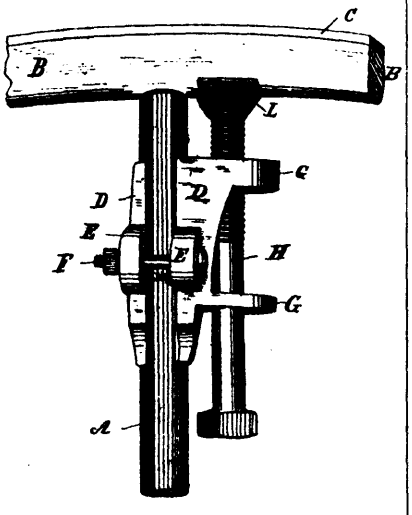
25758 Nichol's Shoulder Pad for Horses.



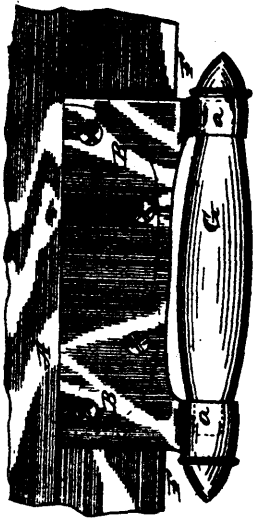
25759 Clokey and Johnston's Harvester.



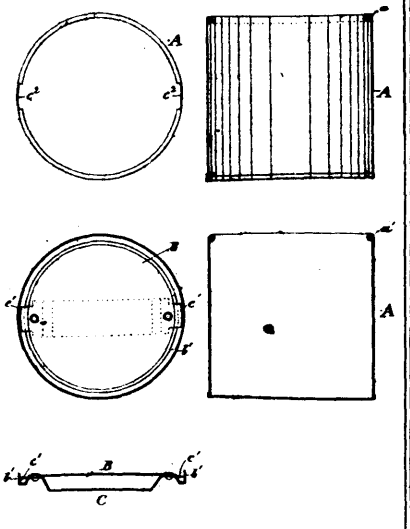
25760 Sullivan's Attachment to Shoes.



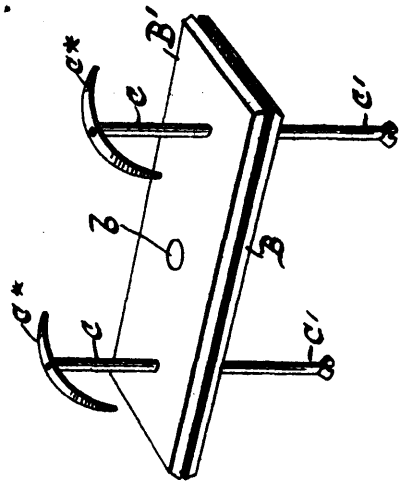
25761 Locke's Tire Tightener.



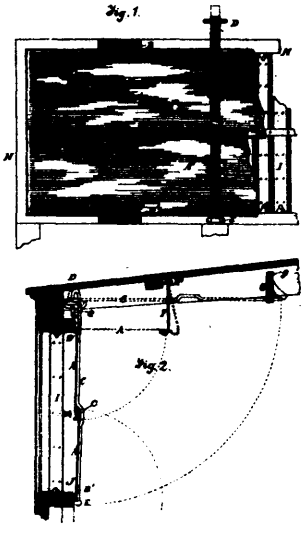
25762 Bailey's Fender for Vehicle Bodies.



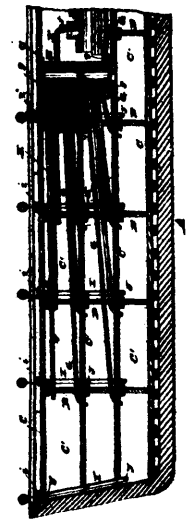
25763 McGolpin's Metal Can.



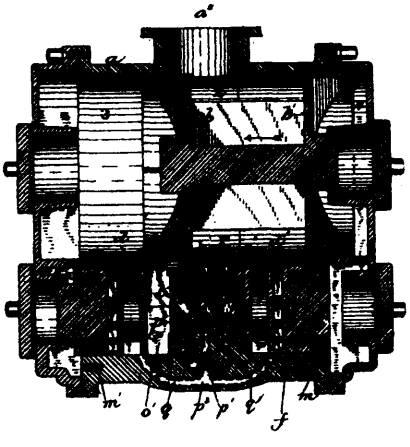
25764 Reed's Fastening for Whiffletrees.



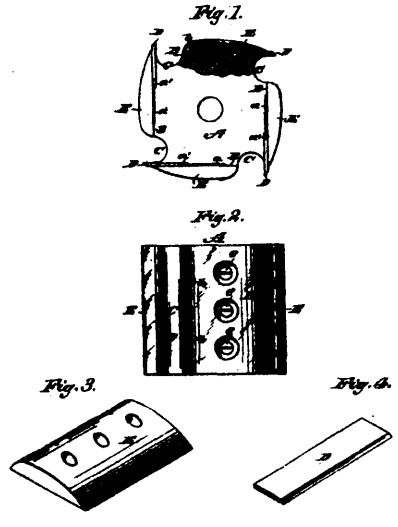
25765 Arms Stock Car.



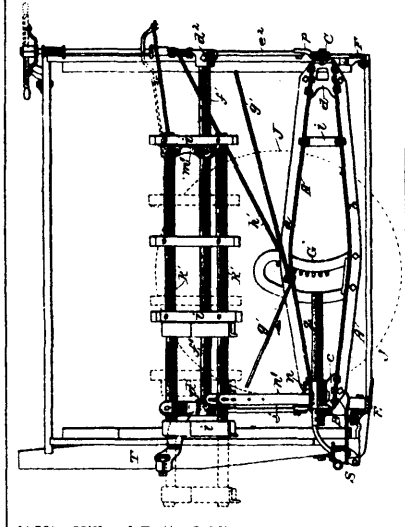
25766 Palmer's Apparatus for Localizing and Extinguishing Fires.



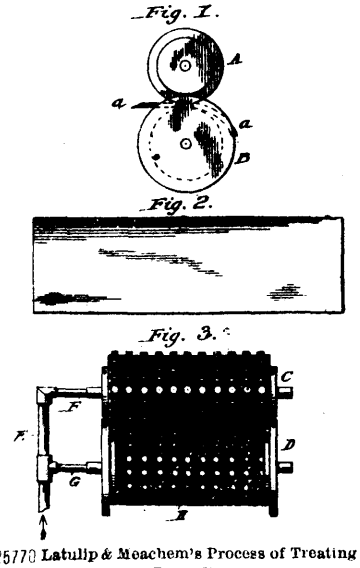
25767 Bartlett's Fluid Piston Meter.



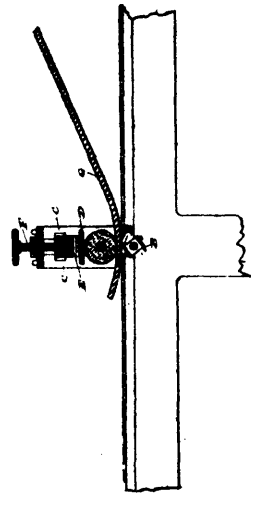
25768 Hand's Cutter Head for Wood Planing Machines.



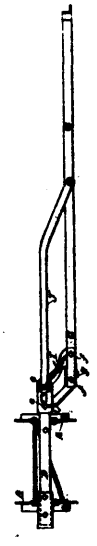
25769 Miller & Butterfield's Frame for Binders and Harvesters.



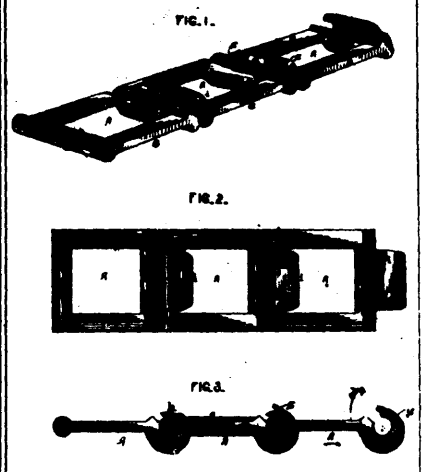
25770 Latulip & Meachem's Process of Treating Raw Hides.



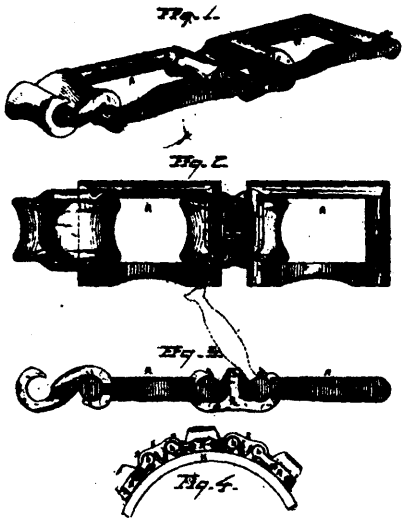
25771 Allen & Smedley's Wood Planer.



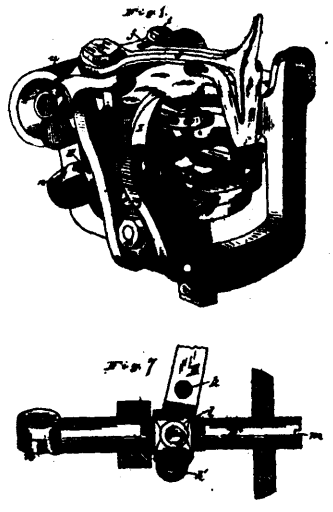
25772 Young's Harvester.



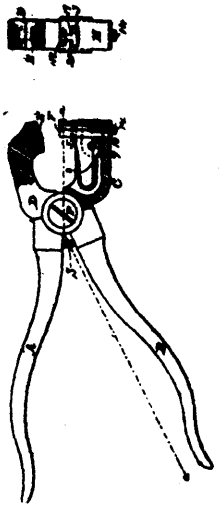
25773 Whiteley's metal Drive Chain.



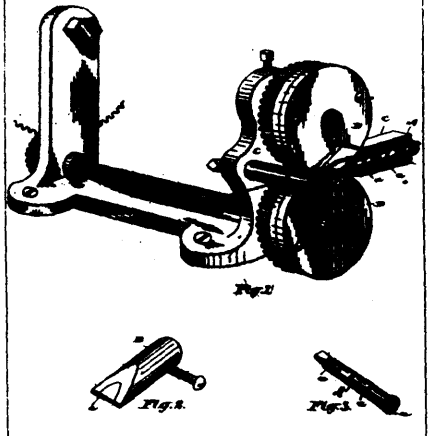
25774 Whiteley's Drive Chain.



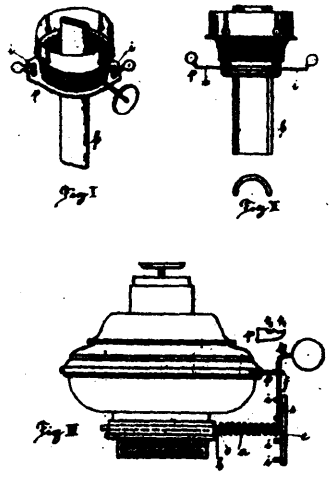
25775 Whiteley, Bayley & Dyer's Knotting Device for Grain binders.



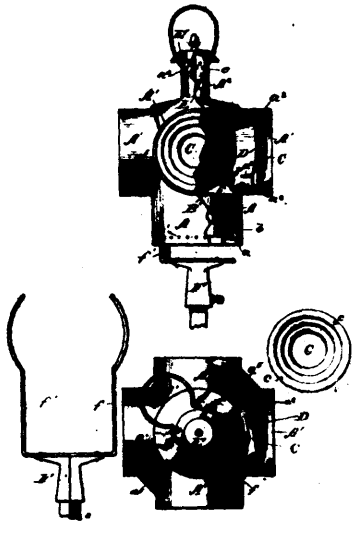
25776 Richards' Button Fastener Setter.



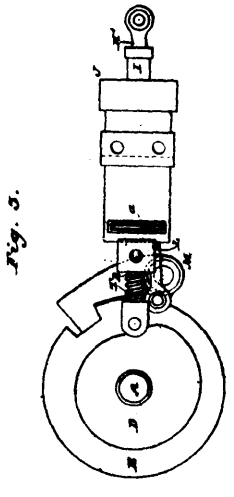
25777 Allen's Wire-Coiling Machine.



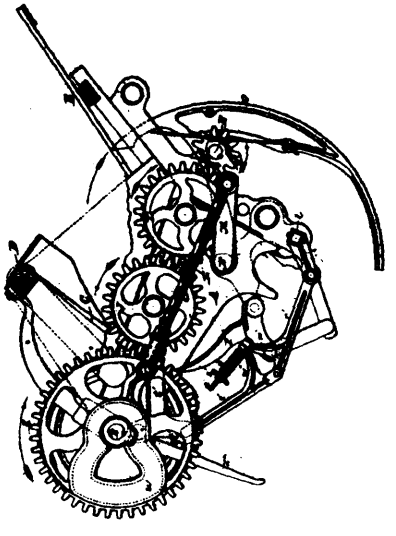
25778 Siemang's Hydrocarbon Lamp and Lantern



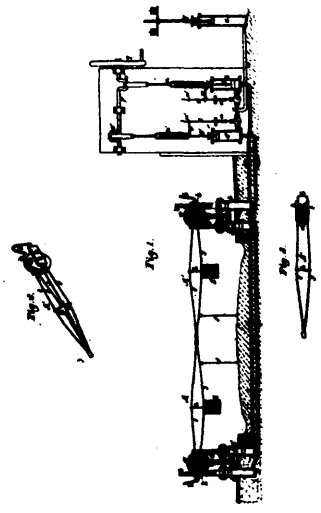
25779 Jordan & Curry's Switch Lamp.



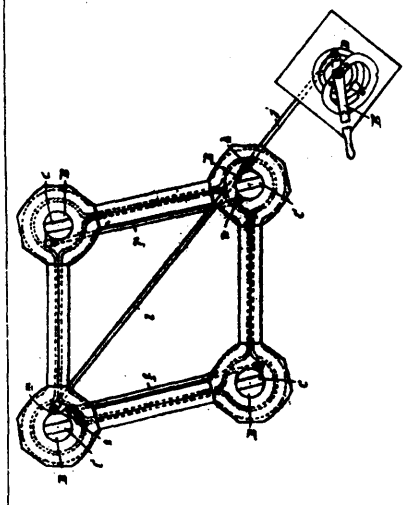
25780 Peake's Coin or Ticket Receiving Turn Stiles.



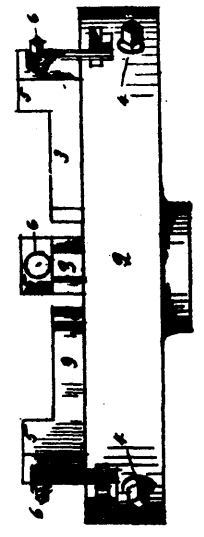
25781 Butterfield's Grain Binding Machine.



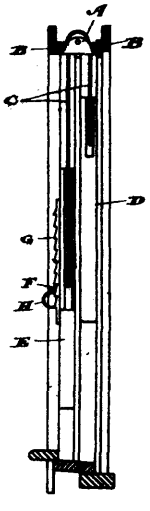
25782 Ewart's Railway Gate Mechanism.



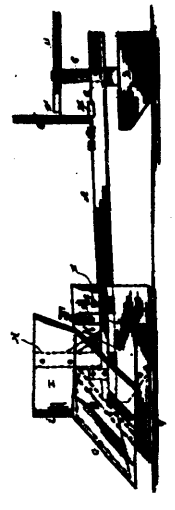
25783 Fontaine's Railway Crossing.



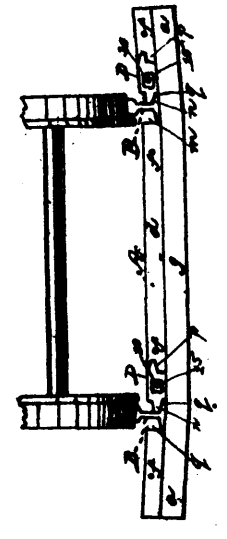
25784 White's Sliding Jaw Chuck.



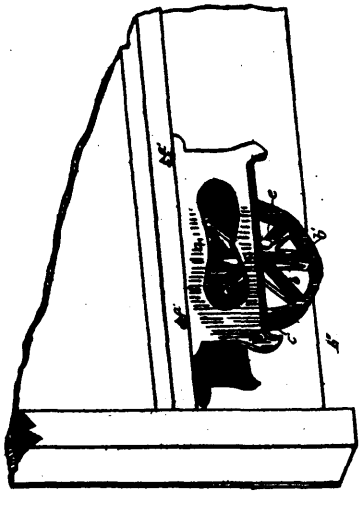
25785 Cooney's Window Sash Balance.



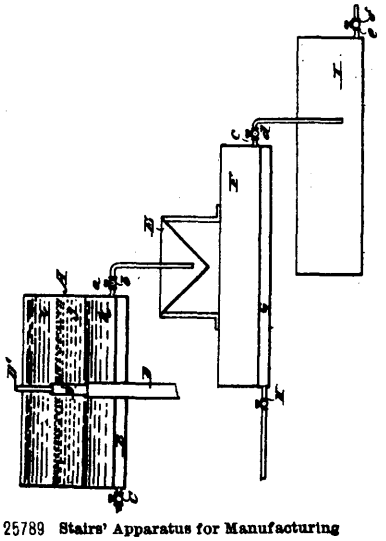
25786 Stauffer's Snow Plough.



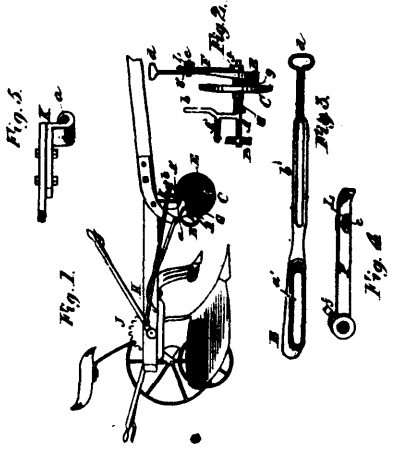
25787 Higley's Railway Tie.



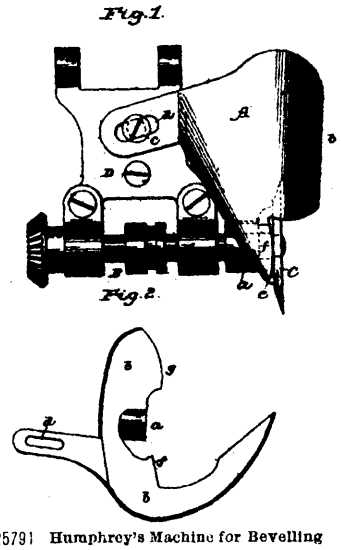
25788 Sawtelle's Door Roller.



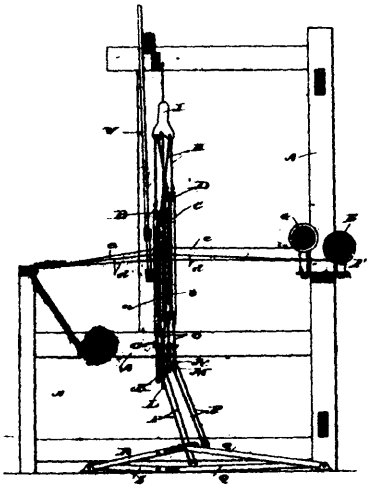
25789 Stairs' Apparatus for Manufacturing Extracts of Cod Liver.



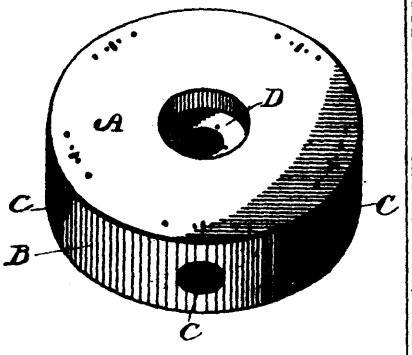
25790 Grout's Sulky Plough



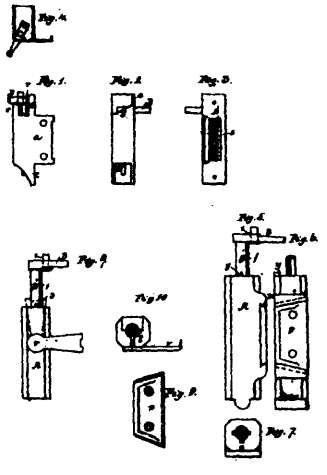
25791 Humphrey's Machine for Bevelling Leather.



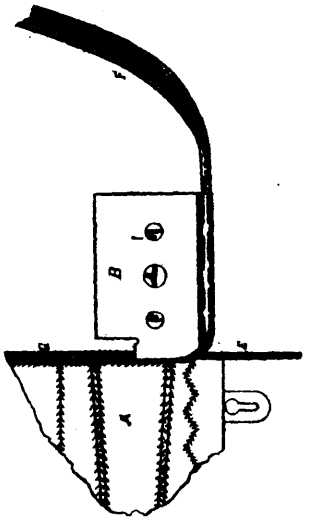
25792 Dubois' Loom.



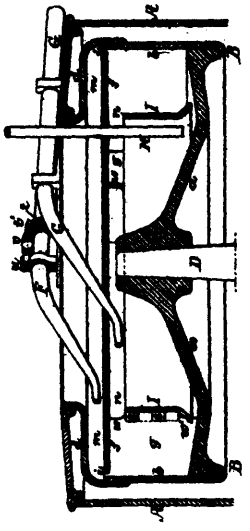
25793 Hotchkiss' Mouse Trap.



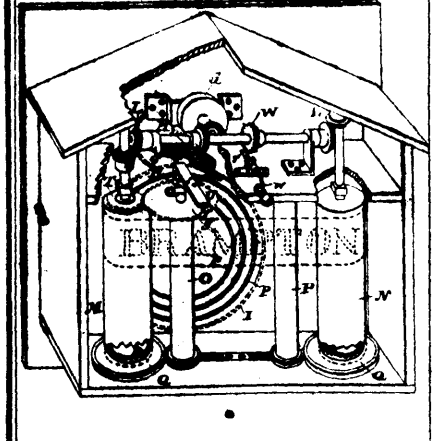
25794 Lauffer's Sash or Door Lock and Burglar Alarm.



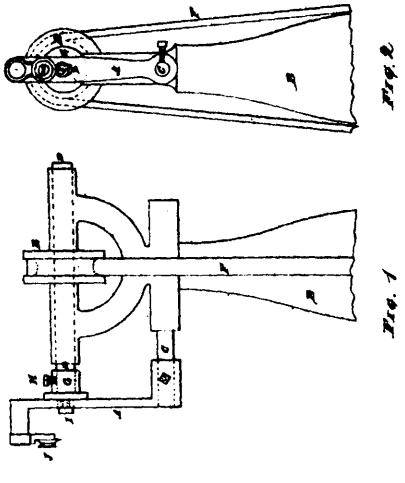
25795 Holden's Binding of Corsets.



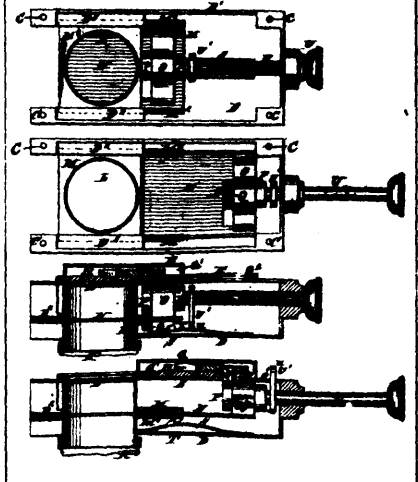
25796 Mellor's Centrifugal Separator.



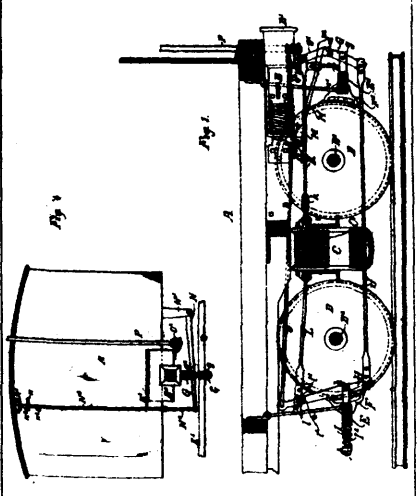
25797 Cheyne's Station and Street Indicator.



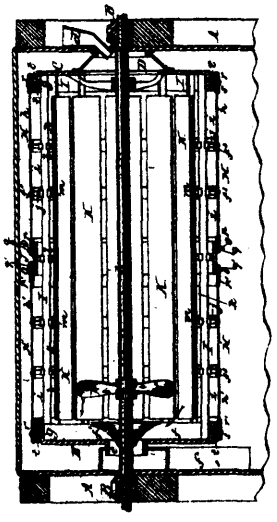
25798 Hudson's Machine for Polishing the edge of Shoe Soles.



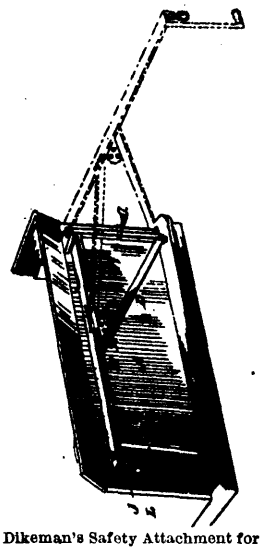
25799 Wherry, Rottaken & Wiegel's Cash and Ticket Box.



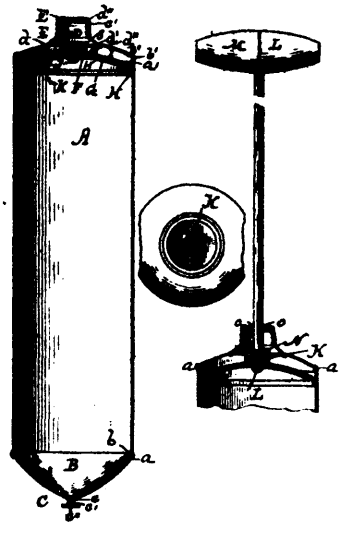
25801 Cooke's Car Brake.



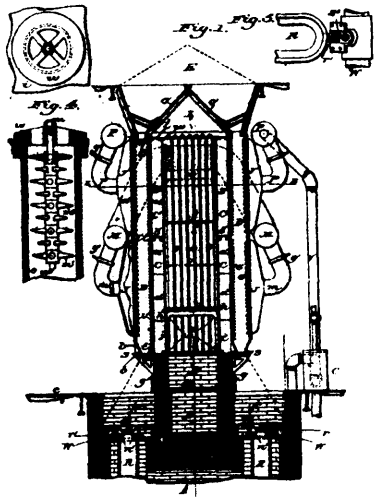
25802 Heine's Flour-Bolt.



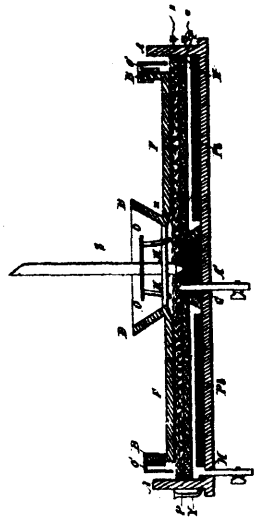
25803 Dikeman's Safety Attachment for Locomotive Tenders.



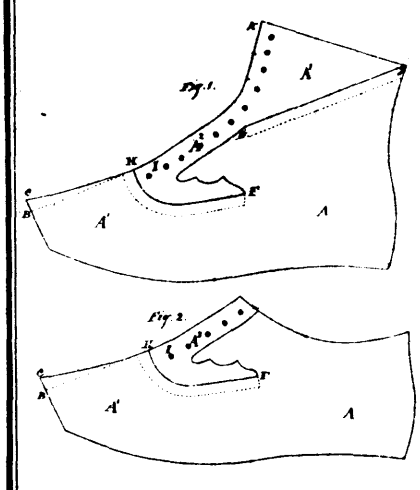
25804 Harrison's Hand Fire Extinguisher.



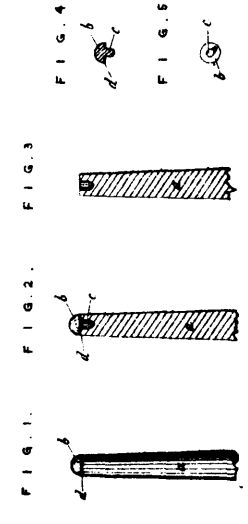
25805 Lillie's Apparatus for Drying Bone Black.



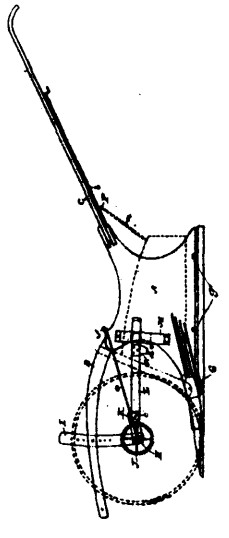
25806 Molloy's Metal Amalgamator.



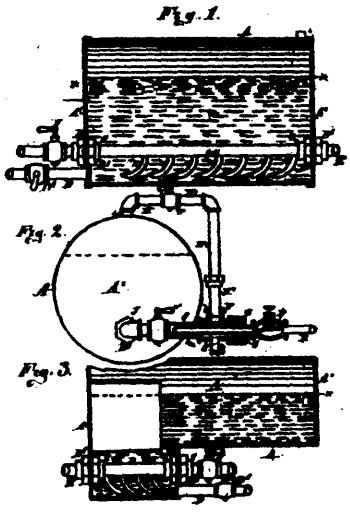
25807 Damer's Manufacture of Boots and Shoes.



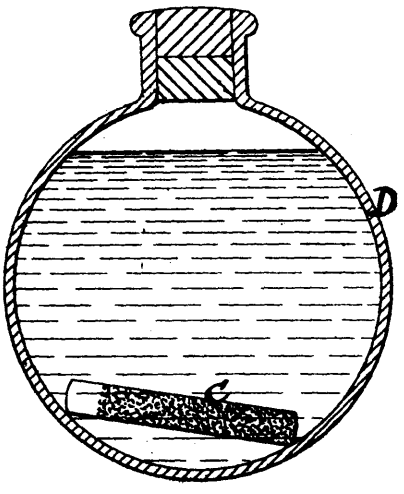
25808 Holding's Mode of Tipping Billiard Cue.



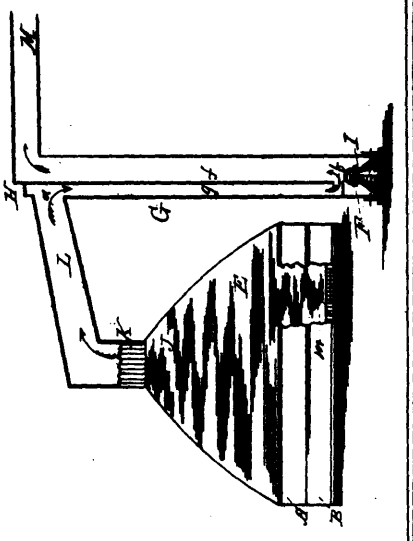
25809 Cameron's Potato-Digger.



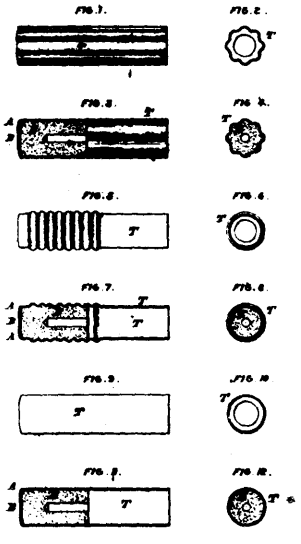
25810 Baker's Steam Boiler Cleaner



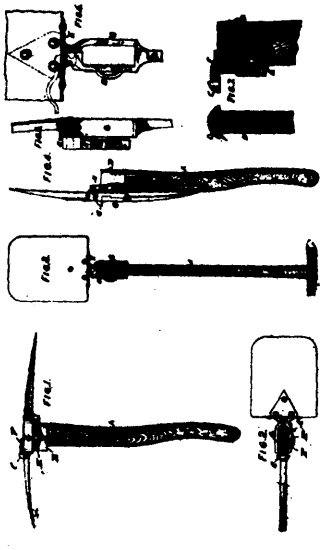
25811 Bolton's Packing Case for Fire Extinguishing material.



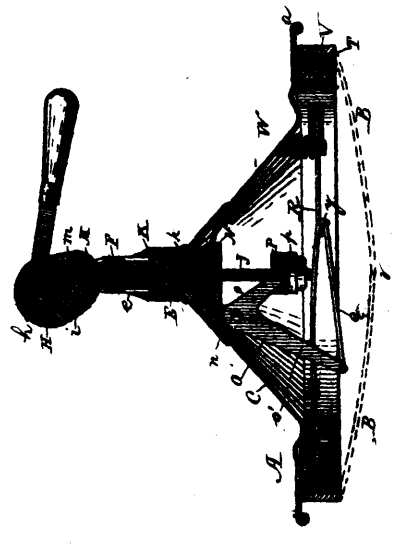
25812 Holbrook & Mann's Ventilating Urinal.



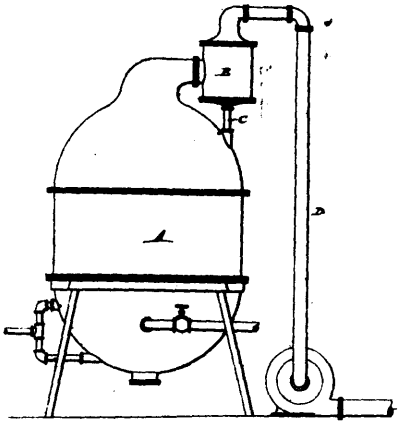
25813 Smith's Detonator for Explosives.



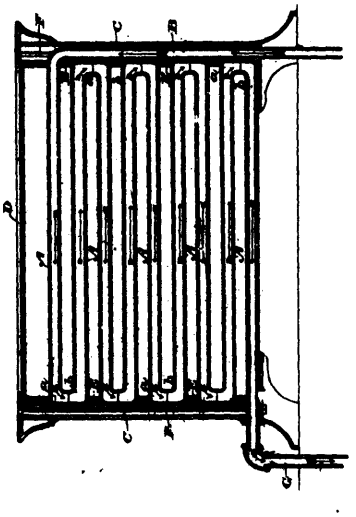
25814 Storey's Pike and Shovel.



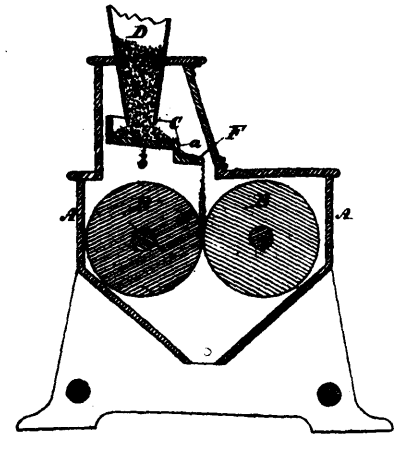
25815 Schwab's Gas Trap Cover.



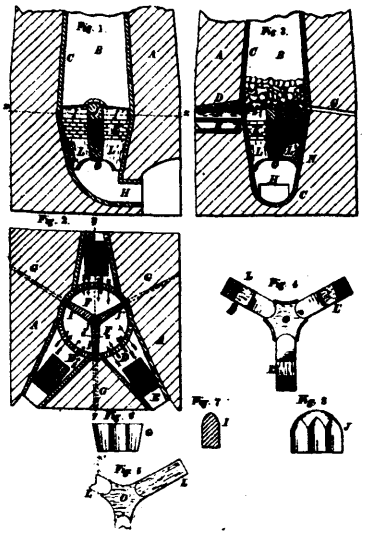
25817 Moffat's Process for Making Candy.



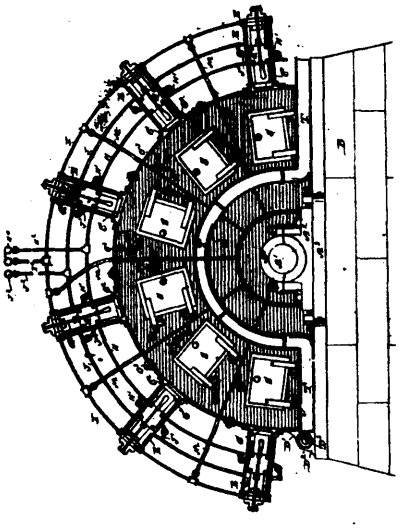
25818 Brake's Hot Water Radiator.



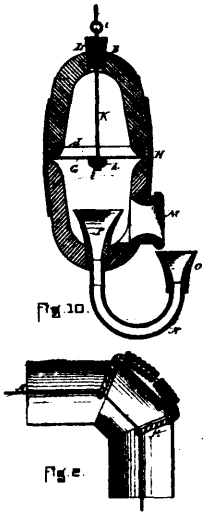
25819 Marshall's Roller Mill Feeder.



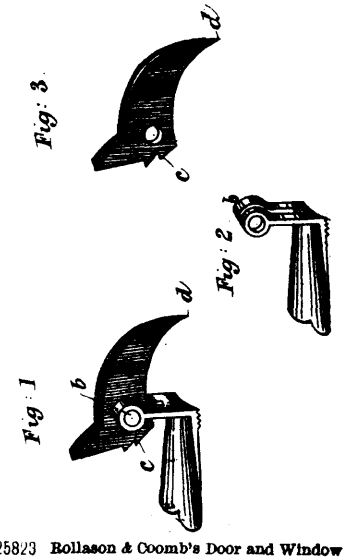
25820 Page's Lime Kiln.



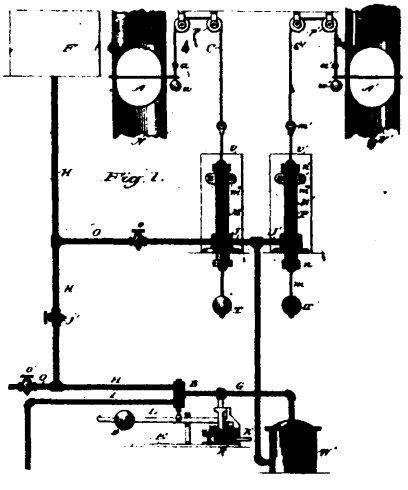
25821 Curtis' Wood Pulp Machine.



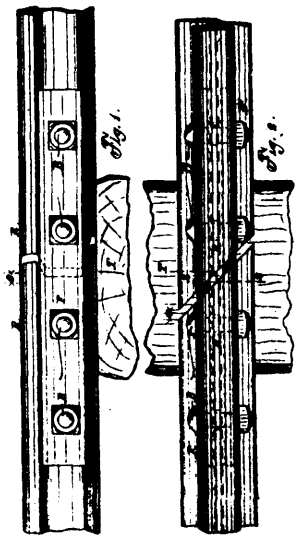
25822 Lord's Telephone.



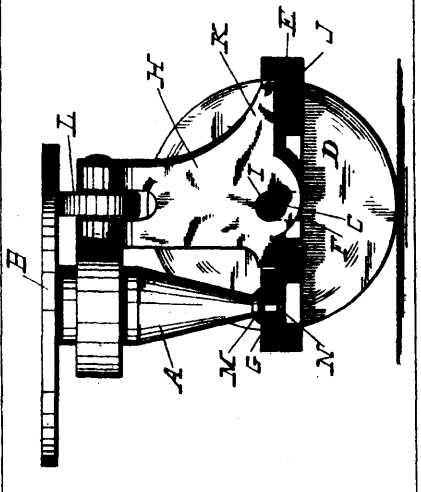
25823 Rollason & Coomb's Door and Window Fastening.



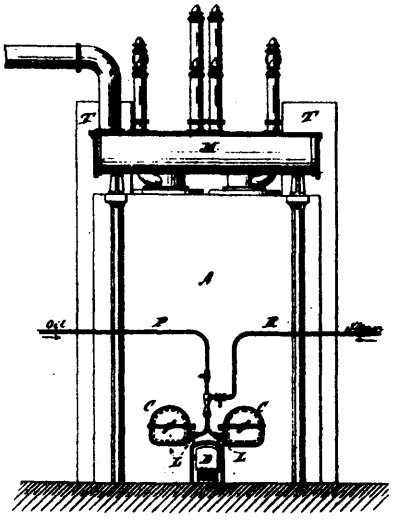
25824 Locke's Damper Regulator.



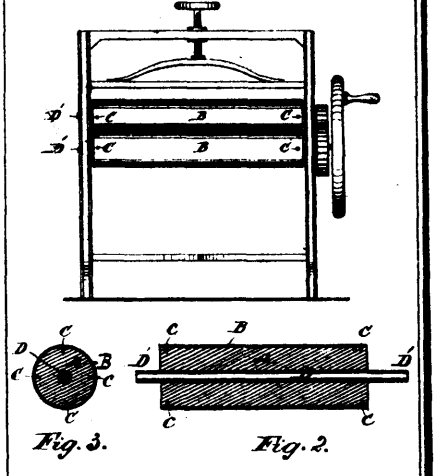
25825 Siegel's Railway Rail Joint.



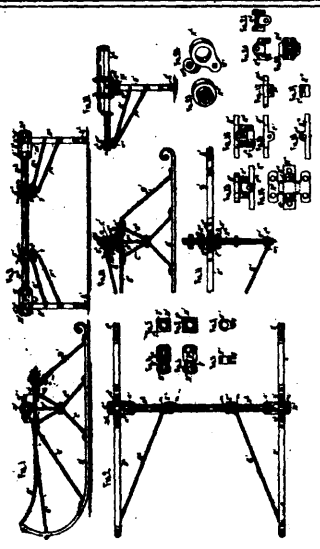
25826 Thompson's Furniture Caster.



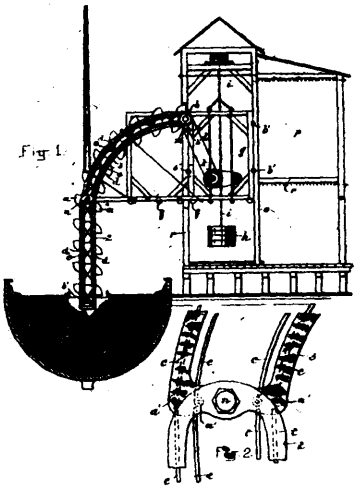
25827 Jerzmanowski's Gas Apparatus



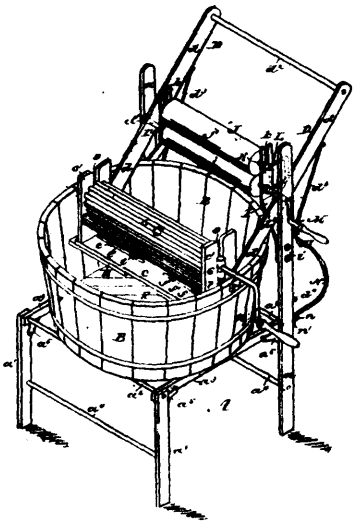
25828 Shirreff's Mangel.



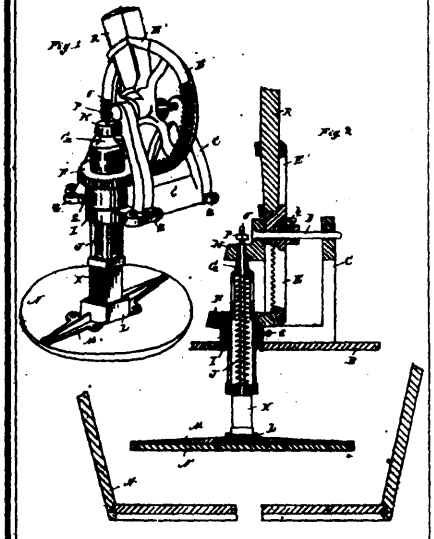
25829 Scott's Sleigh.



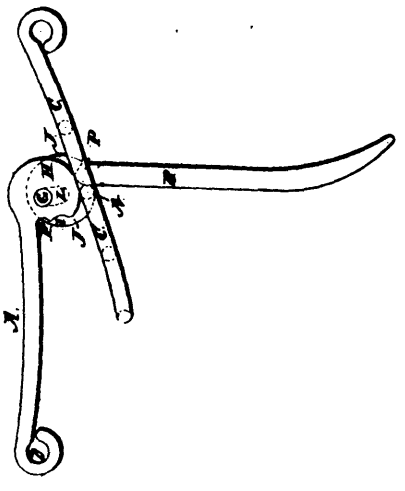
25830 Lawton's Coal Elevator.



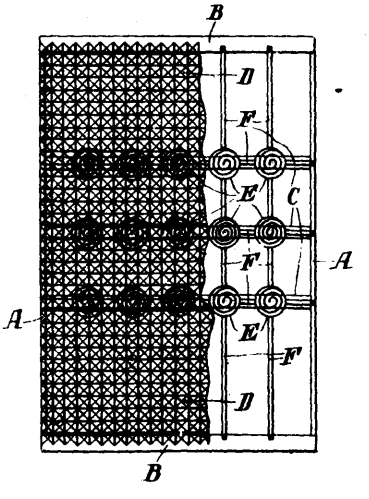
25831 Cornett's Washing and Wringing Machine.



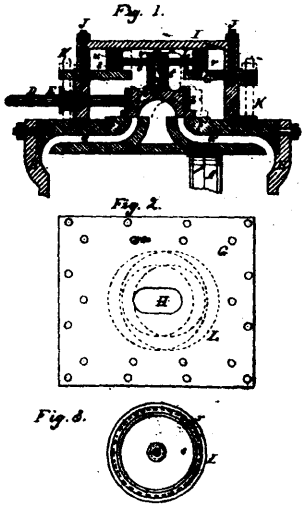
25832 Parsons' Washing Machine.



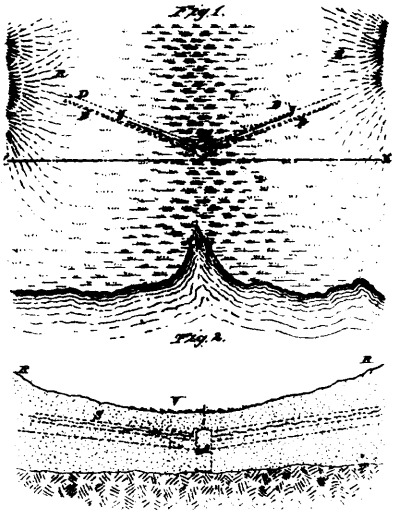
25833 Uecke's Hame Fastener.



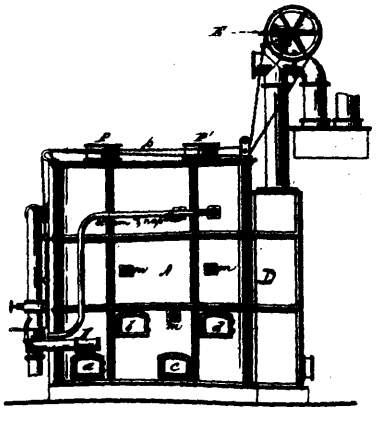
25834 Townsend's Bed Bottom



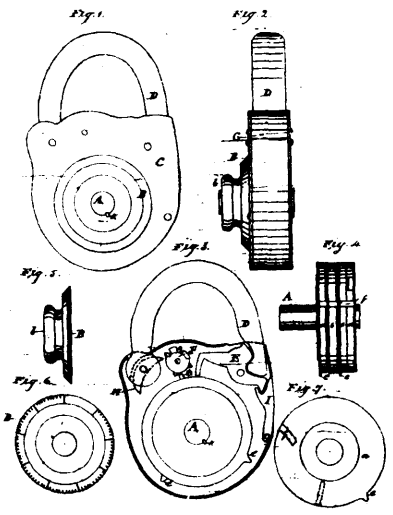
25835 Sintsenich's Machine for Balance Valves.



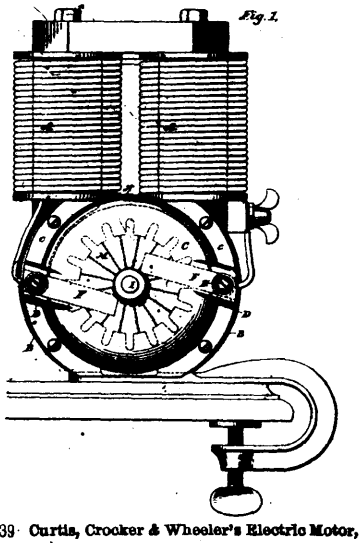
25836 Valentine's Water Collecting Dam.



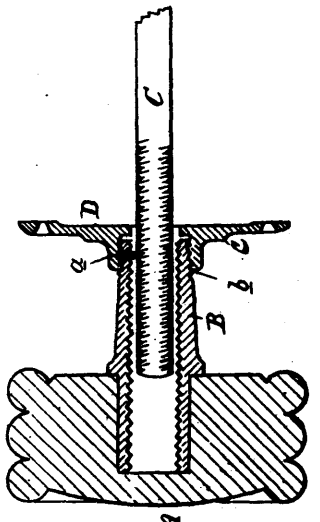
25837 Jerzmanowski's Gas Process.



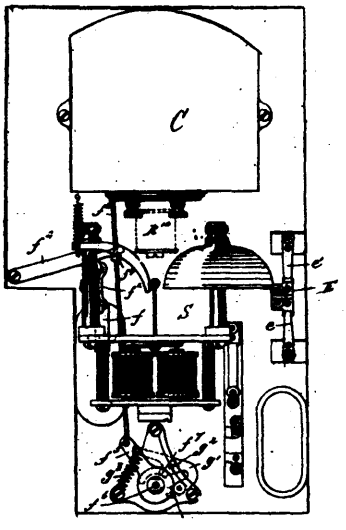
25838 Lawrence's Lock.



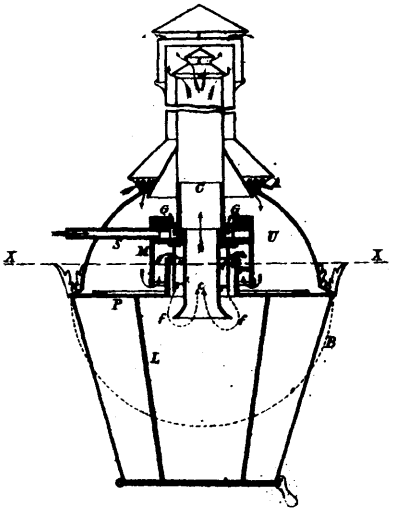
25839 Curtis, Crocker & Wheeler's Electric Motor, etc.



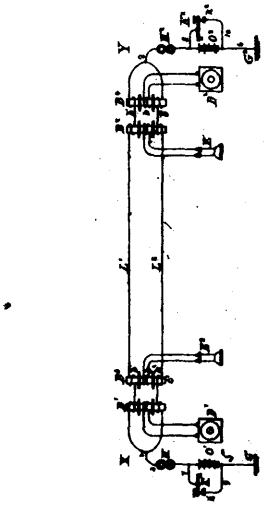
25840 Humphrey's Door Knob.



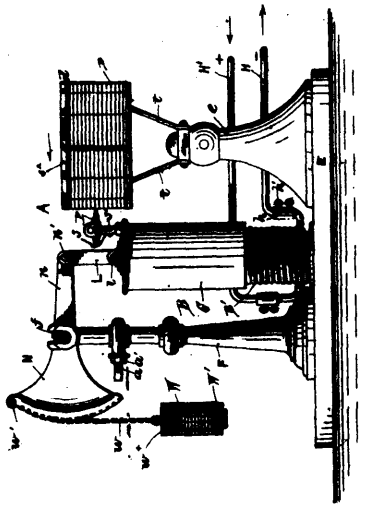
25841 Wilson's Municipal Signal Apparatus



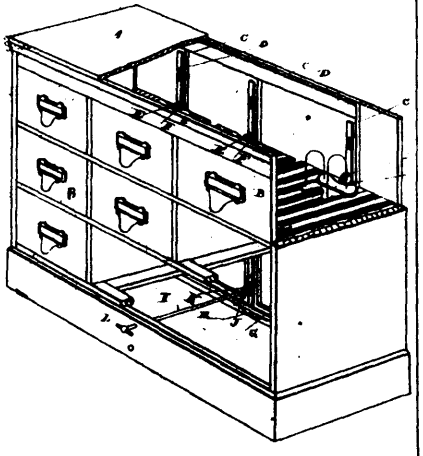
25842 Siemers' Gas Lamp and Lantern.



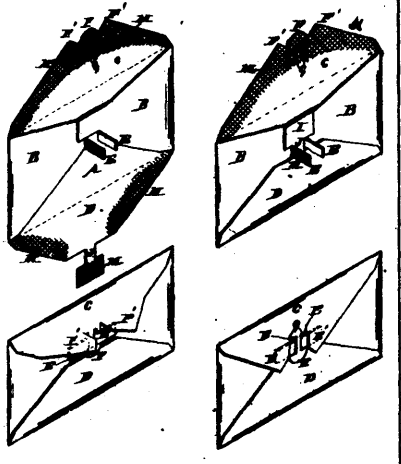
25843 Carty's Telephone and Telegraph Circuit.



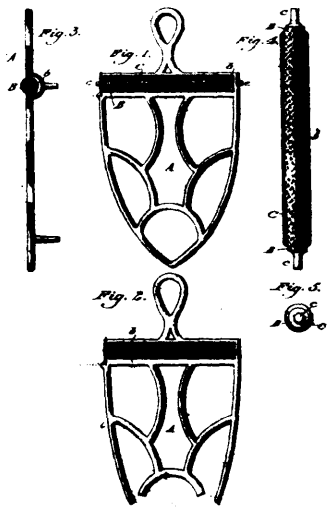
25844 Drake's Electric Meter.



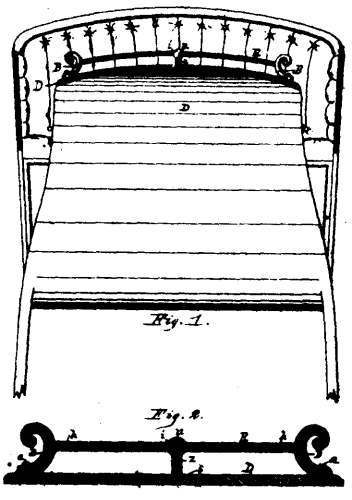
25845 Richter's Paper File Lock.



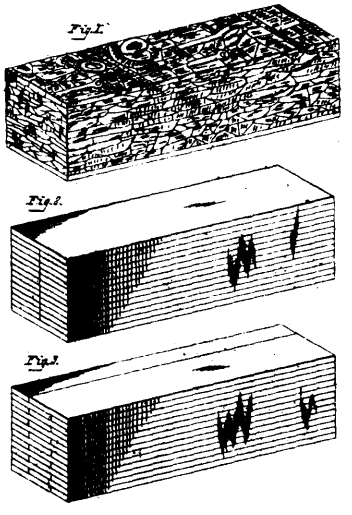
25846 Krucker & Gulath's Envelope.



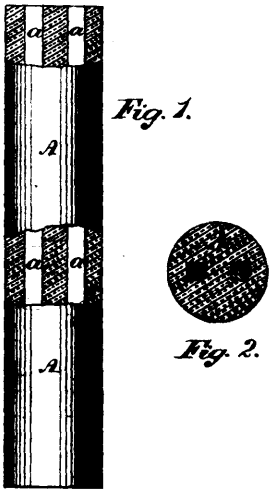
25847 Crommer & Phillips' Stand for Flat Irons.



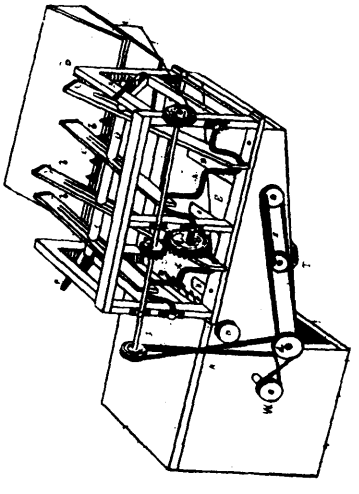
25848 Smith's Dash Rail for Vehicles.



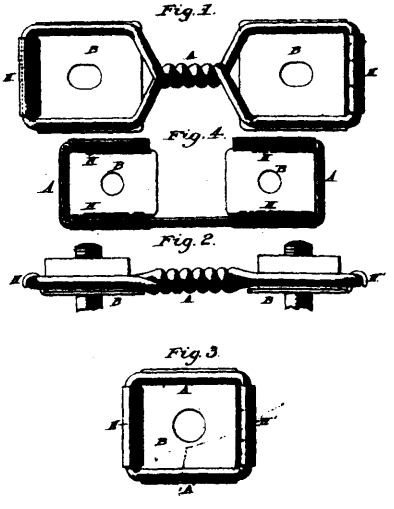
25849 Felt's Manufacture of Iron Plates, Shafts, etc.



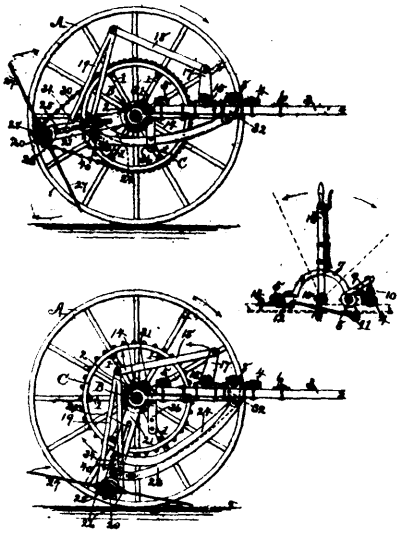
25850 Gilman's Porous Earthware Product with Strengthening Core.



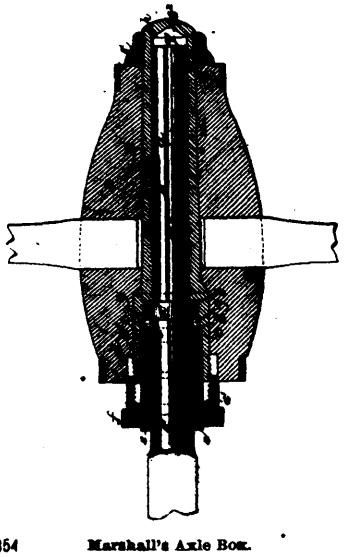
25851 Livingstone's Machine for Cutting the Bands of Sheaves.



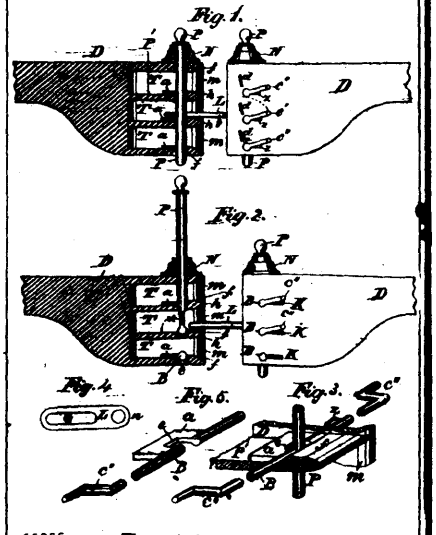
25852 Castle's Nut Lock.



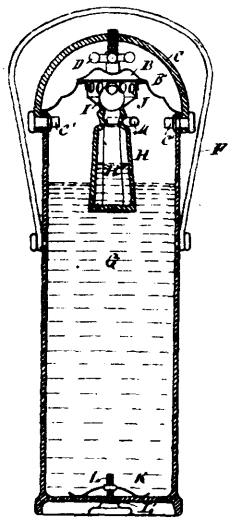
25853 Wallis & Treat's Hay Rake and Tedder.



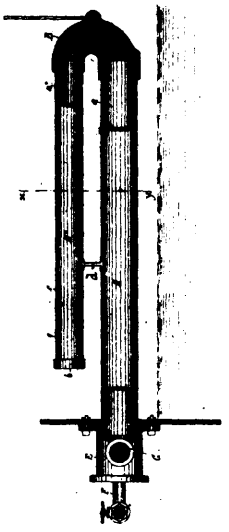
25854 Marshall's Axle Box.



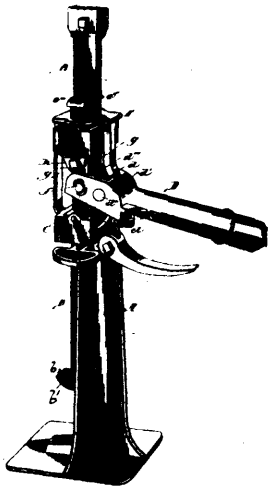
25855 Thayer's Car-Coupler.



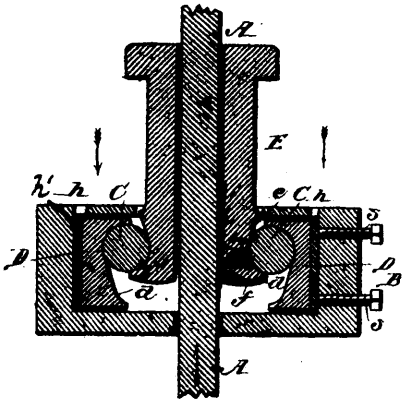
25856 Turner's Fire Extinguisher.



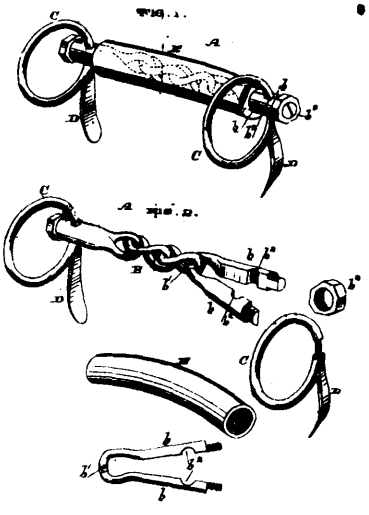
25858 Seale's Feed Water Heater and Purifier.



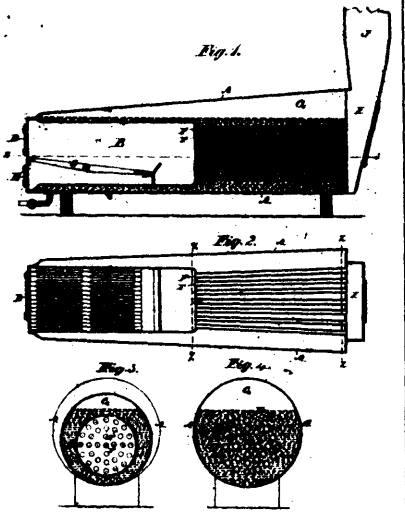
25859 Stanford's Friction Clutch.



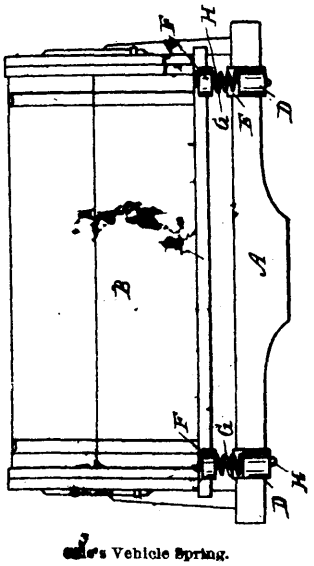
25860 Stanford's Lifting Jack.



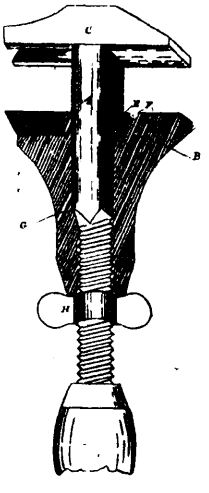
25861 Doherty's Bridle Bit.



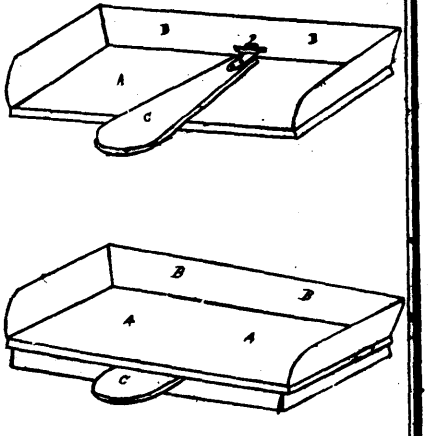
25862 Carroll's Horizontal Steam Boiler.



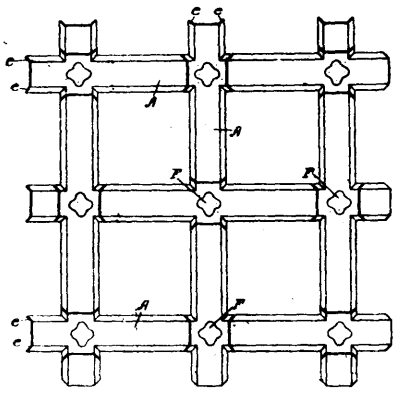
25863 's Vehicle Spring.



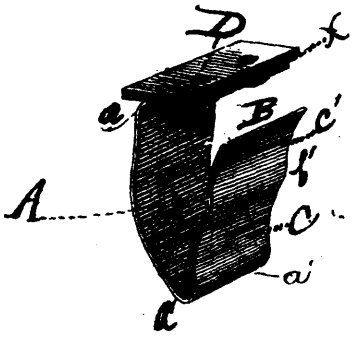
25864 Hearle's Adjustable Wrench.



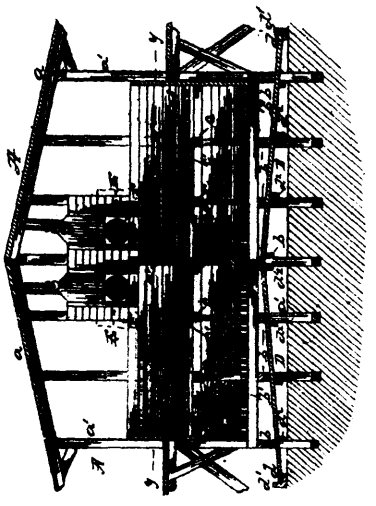
25865 Major's Vehicle Seat.



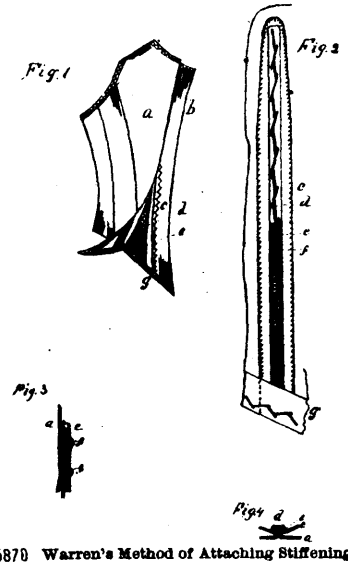
25866 Kinney's Metal Fabric.



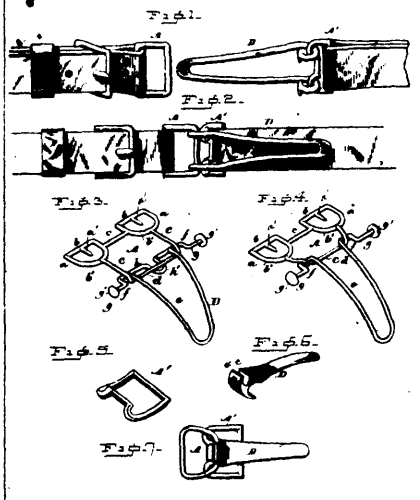
25868 Blair's Anti-Rattler for Thill Coupling.



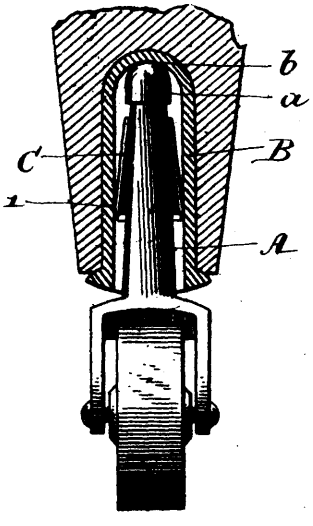
25869 West's Elevated Filter Bed.



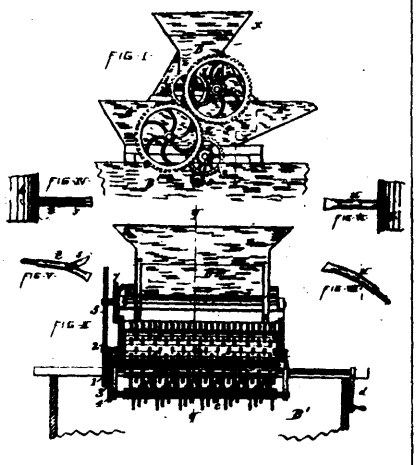
25870 Warren's Method of Attaching Stiffenings to Dress Waists.



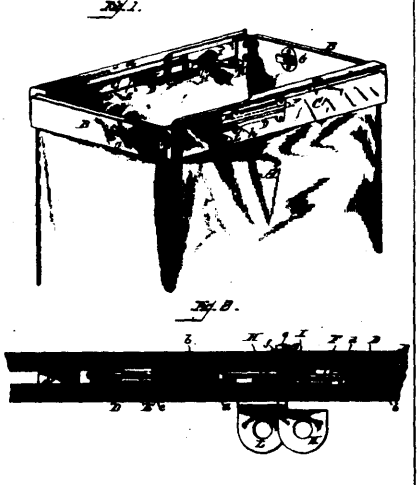
25871 Lafferty & Marshall's Horse Collar Lock.



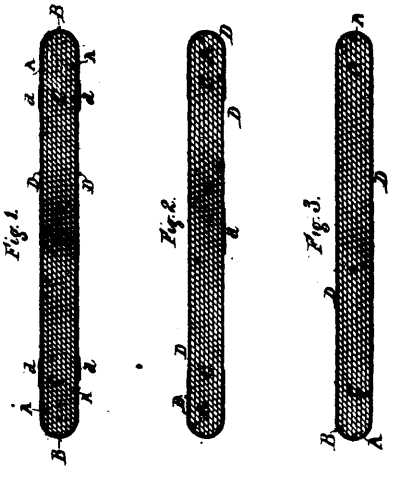
25872 Tracy's Caster.



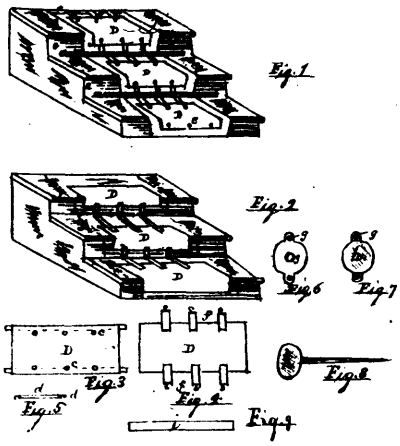
25873 Pohl's Self Salting Curd Mill.



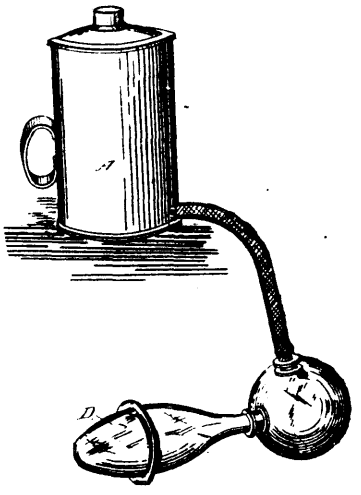
25874 Hawn's Mail Bag.



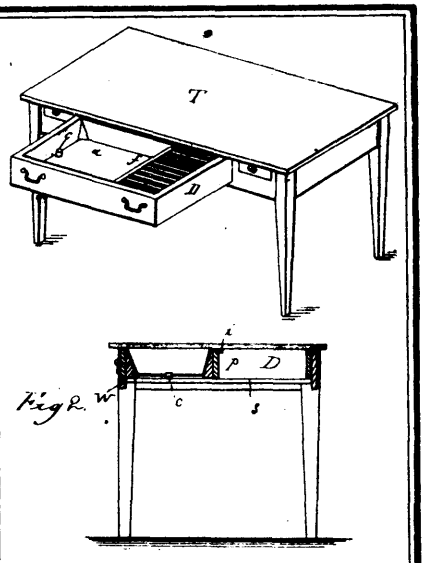
25876 Murphy's Rubber Belting.



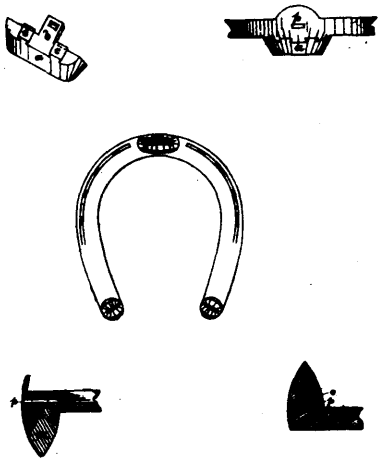
25877 Dennis' Stair Carpet Covering.



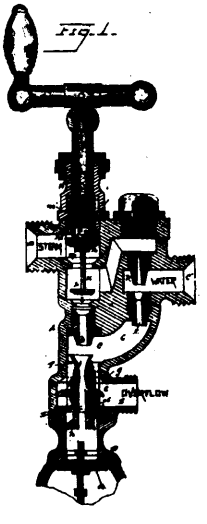
25878 Goldman's Sprinkler.



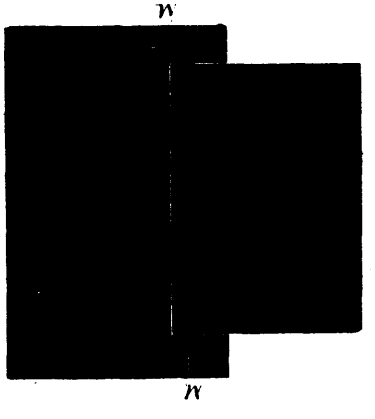
25879 Dils' Table Sink.



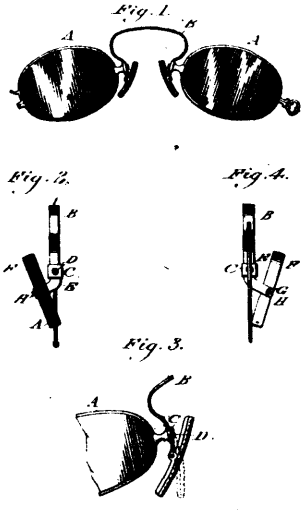
25880 Oliver's Horse Shoe.



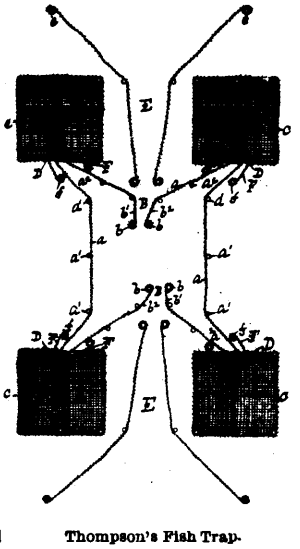
25881 Eberman's Injector.



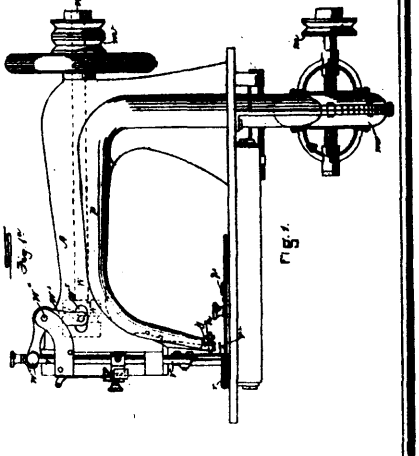
25882 Hawley's Method of Joining Pieces of Rubber Cloth.



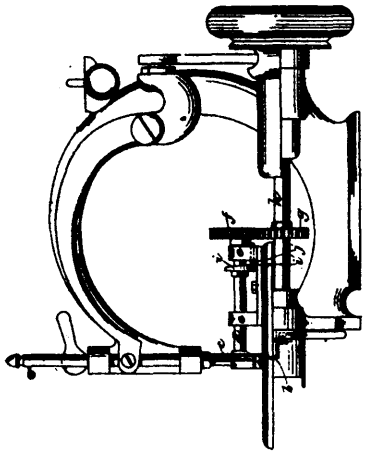
25883 Lubin, Frawley & Abraham's Eye Glass.



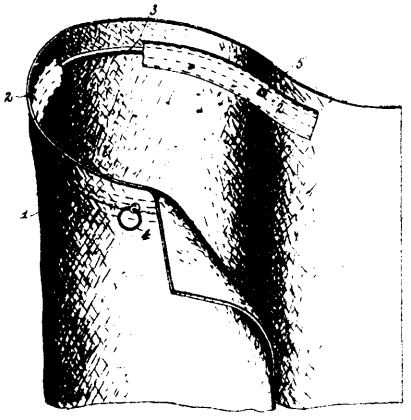
25884 Thompson's Fish Trap.



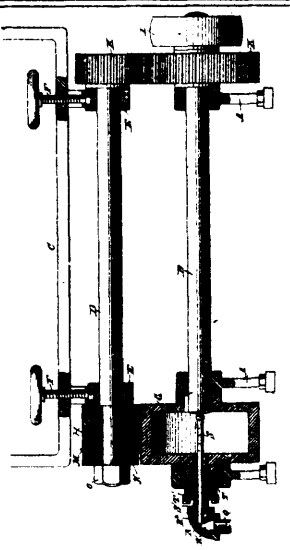
25885 Robinson's Sewing Machine.



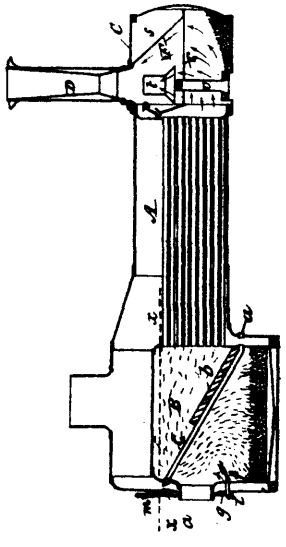
25886 Robinson's Sewing Machine.



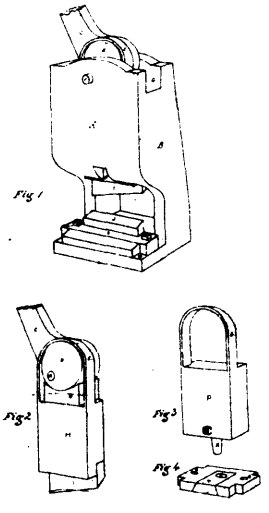
25887 Hawley's Lap Robe.



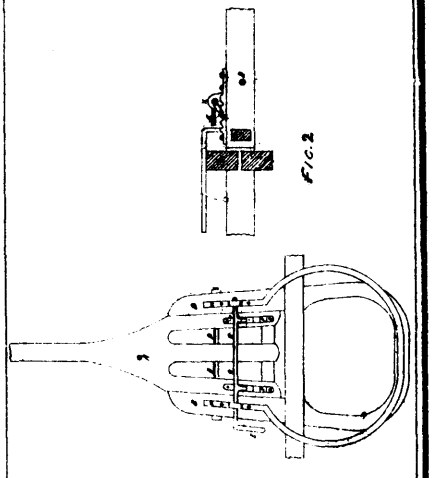
25888 Hawley's Machine for Joining Pieces of Rubber Cloth.



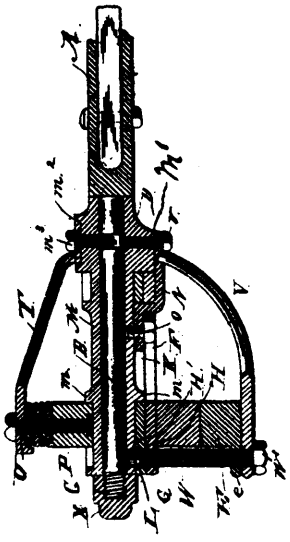
25889 Barnes' Furnace for Locomotive.



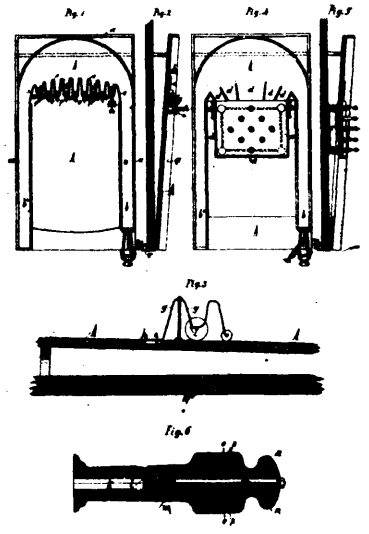
25890 Durst's Machine for Cutting and Punching Iron.



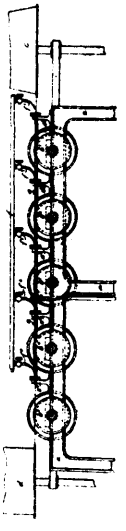
25891 Fitzgerald's Waggon Pole Support.



25892 Oakes' Vehicle Reach Coupling



25893 Colberg's Social Game.



25894 Byrnes' Apparatus for Drawing Wire.