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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. 25,074. Can Opener.

(Ciseaux à Boîte Métallique.)

Bryan S. Wakeman, Batavia, N.Y., U.S., 2nd October, 1886; 5 years.

Claim.—In a can-opener, the combination of the cutter C and thumb of the cutter C and thumb nut D, with the handle H and shank B, said shank being provided with the forwardly projecting hook K, the longitudinal slot S and the grooves or channels M, M, the latter to prevent the cutter from slipping from any point of the said shank at which it may be set constructed and operated, substantially as hereinbefore set forth.

No. 25,075. Paper Holder. (Serre-Papier.)

Joseph Burnett, Montreal, Que., 2nd October, 1886, 5 years.

Claim.—1st. The combination of the board a, having arms k and tubes et secured thereon, substantially as described, and swinging bars f, the whole constructed and arranged substantially as and for the purposes set forth. 2nd. The combination of the board a, arms k, swinging bars f, attachable and detachable base a' having tubes et, the whole constructed and arranged substantially as described. 3rd. The combination of the board a, arms k, bar f, base a' having tubes et and board s, the whole constructed and arranged substantially as described for the purposes set forth. 4th. The combination of the board a, base d having projections f and h, and projections g having slot l, also having sockets e, arms k, bars f, base a' having projections b' and tube. 5th. A having arm and eye pt, arm having eye o' and flange r, board s and catches t, the whole constructed and arranged substantially as described. 5th. The combination of the binder d, file secured therein as described, with removable and replaceable bracket K, having arms k and swinging bars f, the whole constructed and arranged substantially as described for the purposes set forth. 6th. The combination of the binder d' having bar e' and sockets a', file as described, brackets K', arms k and bars f', the whole arranged and operating substantially as described.

No. 25,076. Water Closet. (Latrine à l'Eau.)

William B. Malcolm, Toronto, Ont., 2nd October, 1886, 5 years.

Claim.—1st. A water reservoir or tank composed of a series of cylinders A, connected to and leading into the cylinder B, substantially as and for the purpose specified. 2nd. A three-way valve-case C, formed substantially as shown, and having the seats a and b formed in it, in combination with a double-ended valve F, substantially as and for the purpose specified. 3rd. A water reservoir or tank composed of a series of cylinders A, connected to and leading into the cylinder B, in combination with a three-way valve-case C having a small branch to connect with the supply pipe D, and large branches to connect with the cylinder B and discharge-pipe E respectively, the said branches being separated by means of the double-ended valve F, seated alternately on the valve-seats a and b, substantially as and for the purpose specified. 4th. A three-way valve-case C, formed substantially as shown, and connected respectively to the cylinder B, supply-pipe D and discharge-pipe E, a double-ended valve F designed to be seated alternately upon the valve-seats a and b, and provided with a valve-spindle f, in combination with a pivoted crank G, and pivoted lever I, arranged substantially as and for the purpose specified.

No. 25,077. Wash Board. (Planche à Savonner.)

Melvin Jinks, Conesus Centro, N.Y., U.S., 5th October, 1886; 5 years.

Claim.—1st. The combination, in a wash-board, of the rubbing surface B and the transverse staples B', secured in transverse equidistant rows across the said surface, so as to retain soap thereon and having their joints broken so as to direct the descending lather from one row to the lower adjacent row, substantially as specified. 2nd. In a wash-board, the combination of the rubber-surface B, provided with the transverse staples B' secured to the rubbing-surface in transverse rows between the channels, and so arranged that adjacent rows break joints, substantially as specified and shown.

No. 2,5078. Process of Recovering Tin from Scraps of Tin Plates. (Procédé pour faire revenir l'Etain des Retailles de Fer Blanc.)

Wilhelm Hasenback, Mannheim, Germany, 5th October, 1886, 5 years.

Claim.—The process of obtaining tin from lyes, containing protochloride of tin and protochloride of iron which are obtained in the recovery of the tin from scraps of tin plate, consisting in treating these lyes with finely divided carbonate of lime or other carbonate of the alkaline earths, whereby the tin precipitates in the form of oxyprotochloride of tin, or as protoxide of tin.

No. 25,079. Railway Car. (Char de Chemin de Fer.)

Harrison Loring and Luther K. Jeavett, Boston, Mass., U.S., 6th October, 1886; 5 years.

Claim.—1st. The car-body and jack-screw C₃, C₅, combined with a chain to sustain one end of the jack-screw, the opposite end of the chain being fixed with relation to the car-body, the outer lower end of the said jack screw taking a bearing, substantially as described, being on a foot or plate outside the track, substantially as described. 2nd. The car-body and pivoted mast mounted thereon, and provided with a turn-table d near its bottom, combined with the rope E, connected to said pivoted mast at its top, and with the anchor adapted to be secured to the track independent of and removed from the car, substantially as described. 3rd. The car-body and trunnion-plate, combined with the bolt 16 pivoted to the car-body, and provided with the nuts 17 and 18, arranged to operate substantially as described. 4th. The car-body and trunnion-plate, combined with the pivoted trunnion-plate stop connected with the car-body, substantially as described.

No. 25,780. Method of Starching Washed Goods. (Mode d'Empeser le Linge.)

Ernest A. E. Meyer, Watertown, N. Y., U.S., 6th October, 1886; 5 years.

Claim.—The within-described method of starching collars, cuffs, and other washed goods, which consists in building up within a suitable stationary receptacle, alternate layers of hot starch, and the goods to be starched, and then driving or beating the starch into the goods by mechanically pounding the whole mass within the receptacle, substantially as specified.

No. 25,081. Lime Kiln, (Four à Chaux.)

Edward V. Wingard, Philadelphia, Penn., U.S., 6th October, 1886; 5 years.

Claim.—1st. A double limekiln having tapered cupolas separated by a wall of masonry, arched furnace openings arranged on opposite sides of each cupola at the base thereof, furnaces disconnectedly set within the arched furnace openings of the kiln with their back walls forming the walls of the cupolas between the arched openings, inclined bottoms to the cupolas extending entirely across the same having air chambers under them, and terminating in a stop arranged across the draw-holes, and draw-holes in the ends of the kilns, provided with floors arranged on a level with the bottoms of the steps of the inclined kiln-bottom, substantially as described. 2nd. A double

limekiln having tapering cupolas separated by a wall of masonry, arched furnace openings arranged on opposite sides of each cupola at the base thereof, furnaces disconnectedly set within the arched furnaces, openings with their back walls forming the walls of the cupolas between the arched openings, stacks mounted on the cupolas and separated by a hollow partition wall, and having feed-holes in the bases of the stacks, inclined bottoms to the cupolas extended across the same, and having air-chambers under them, and terminating in a step arranged across the draw-holes, and draw-holes in the end of the kiln having floors on a level with the bottom of the steps of the inclined kiln-bottom, substantially as described. 3rd. A double limekiln having tapering cupolas separated by a wall of masonry extended from the bottom to the top thereof, said cupolas being lined on all sides with fire brick from their bases to a line above complete combustion, and from thence lined with common bricks to the top, said lining of common bricks being bound to the outer walls of the kiln, and set with a square space between them and the main wall, a packing of incombustible and non-conducting material arranged in said space, and tapering stacks of less exterior area than the top of the cupola mounted on top thereof, and having a hollow partition wall between them and provided with feed-holes at their bases, substantially as described. 4th. The double limekiln herein described, consisting of tapering cupolas separated by a partition wall, and having arched furnace openings at their base and on opposite sides of each cupola, and draw-holes in each end of the kiln, and inclined bottoms extending entirely across the bottom of the cupola and terminating in a step arranged across the draw-holes, and having air chambers beneath them, linings of fire-brick in said cupolas extending from the base to above complete combustion, and linings of common bricks above the fire-bricks to the top of the cupola, said lining of common bricks being set with a space between them and the main walls of the kiln, stacks mounted on the cupolas and separated by a hollow partition wall, and furnaces disconnectedly set in the arched furnace openings of the kiln, with their back walls to form the walls of the cupolas between the arched furnace-openings substantially as described.

No. 25,082. Metallic Hip Shingle.

(Barreau Métallique à Arête.)

William H. Prentice, Toledo, Ohio, U.S., 6th October, 1886; 5 years.

Claim.—1st. The metallic corner bindings for shingled hip roofs, flanged at C to fit over the shingles, substantially as described. 2nd. The corner bindings for shingled hip roofs, having the sides B to bear against the upper sides of the shingles forming the angles, and the flanges C to bear against the lower ends of the shingles, substantially as described. 3rd. The corner bindings for shingled hip roofs having the sides B to bear against the upper or outer sides of the shingles forming the angles, the flanges C to bear against the undersides of the shingles at their lower ends, substantially as described.

No. 25,083. Process for Treating Broom Corn.

(Procédé de Traitement de la Houque.)

John W. Booth, Wayne, Mich., U.S., 6th October, 1886; 5 years.

Claim.—1st. The process herein described of permanently colouring broom corn, for the purposes set forth. 2nd. The process herein described of colouring and bleaching broom corn, substantially as set forth.

No. 25,084. Seat Spring for Road Sulkeys.

(Resort de Siège de Désobligeante.)

John R. Hawkey, Parkhill, Ont., 6th October, 1886; 5 years.

Claim.—In combination, with the seat A and cross-bars c, c, of a road sulky, a pair of springs B, B, constructed shown and described, the lower ends being attached by clips to said cross-bars, and the upper ends carrying the seat, substantially as shown and described.

No. 25,085. Hot Air Furnace.

(Calorifère à Air.)

Miron H. Jacobs, Syracuse, N.Y., U.S., 6th October, 1886; 5 years.

Claim.—1st. The combination, with a heating furnace having a dome above the fire pot and an interior shield T, of the tubular spiral radiator opening into the lower part of the dome within the shield by a proper duct. 2nd. The combination, with a heating furnace having a dome above the fire pot, of the tubular spiral radiator opening into the dome and provided with couplings and clean-out openings. 3rd. The combination, of the tubular spiral radiator cast in sections, and provided with couplings, and clean-out openings W cast therein and connected to the dome C by a duct G provided with clean-out openings. 4th. The combination, with a heating furnace, of a dome above the fire-pot, having a duct G with a clean-out opening cast therein. 5th. The combination, of a heating furnace, fire-pot C, dome D, duct G, radiator E cast in section and provided with proper couplings and clean-out openings W, and the shield T, all substantially as shown and described and as and for the purpose set forth.

No. 25,086. Dumping Car. (Char à Bascule.)

Stephen W. Cook and Henry Summers, Bozeman, T. M., U.S., 6th October, 1886; 5 years.

Claim.—1st. In a dumping-car, the truck-frame A, the axles B and C, the wheels B₁ and C₁, the hinged frame D, the friction rollers E₁ and the pin E, in combination with the bed-plate F having an incline F₂, the disk F₁, the car-frame G₁ and the car-body G, substantially as shown and described. 2nd. In a dumping-car, the truck-frame A consisting of the side beams A₁, the end cross-beam A₂ and the bed-plate A₃, the pin E, the friction rollers E₁ and the keepers E₂, in combination with the car bed-plate F having an incline F₂, the disk F₁, the car-frame G₁ hinged to the bed-plate F, the car-body G and the handle I, substantially as shown and described. 3rd. In a dumping-car, the truck-frame A consisting of the side beams A₁,

the end cross-beam A₂ and the bed-plate A₃, in combination with the axles B attached to the side beams A₁, wheels B₁, the hinged frame D, the axle O and the wheels C₁, substantially as shown and described. 4th. In a dumping-car, the truck-frame A, the axles B and C, the wheels B₁ and C₁ and the hinged frame D, in combination with the guide D₁, the brake shoes K₁, the bars K₂, the cams L₁, the bars L and the lever L₂, substantially as shown and described. 5th. In a dumping-car, the truck-frame A, the pin E, the friction-rollers E₁ and the keepers E₂, in combination with the bed-plate F having an incline F₂, the disk F₁, the car-frame G₁ consisting of the side beams G₂, the end cross-beams G₃ and the centre beam G₄ hinged to the bed-plate F, the car-body G, the hinged door H and the locking-rod H₁, substantially as shown and described.

No. 25,087. Band Saw Machine.

(Scierie à Lame Sans Fin.)

David K. Allington, East Saginaw, Mich., U.S., 6th October, 1886; 5 years.

Claim.—1st. In a band-saw machine, the combination of a base-plate supporting columns B and C, upper and lower saw-wheel journaled therein, an endless saw carried on said wheels, and means for adjusting the upper wheel to regulate the tension of the saw, substantially as described. 2nd. In a band-saw machine, the combination of two supporting columns fastened to a base plate, and adjustable bracket having vertical movement on said columns, and means for securing and adjusting said bracket thereto, substantially as described. 3rd. In a band-saw machine, the combination of supporting columns B and C secured to a base-plate, upper and lower band wheels, the lower wheel journaled in column B, the upper wheel having adjustable bearings in a bracket secured to both columns, and the mechanism for adjusting the saw, substantially as described. 4th. In a band-saw machine, the combination of two supporting columns, upper and lower saw-wheels, an adjustable bracket supporting the upper wheel on a shaft having bearings therein, which bracket is secured to both of said columns, whereby uniform and steady movement is given to said wheel, sliding plates in each of said columns for supporting said bracket, and means for adjustably securing the same, substantially as described. 5th. In a band-saw machine, the combination of the supporting columns B and C resting on and secured to a base-plate, band-wheels m and m', band-wheel m being carried on shaft o having suitable bearings, band-wheel m' being carried on shaft n having three bearings in bracket D, one on the outside of the wheel and the other two nearly opposite the supporting columns B and C, whereby uniform motion is given to said wheel, the endless saw and adjusting and operating mechanism, substantially as described. 6th. In a band-saw machine, the combination of the base supporting two columns B and C, upper and lower band-wheels, the lower band-wheel being carried on a shaft having three bearings, one on the base, one on the lower portion of column B, and one on a bracket rigidly suspended from the column B, the upper band-wheel being carried on a shaft having three journal-bearings upon a bracket adjustably supported on both columns, and means for operating the same, substantially as and for the purposes set forth. 7th. In a band-saw machine, the combination of the base-plate A, supporting-columns B and C, cap o, adjustable bracket D, sliding plates g and h, band-wheels m and m', endless saw R, brackets E and F, guide-arms P, f and P₁ and mechanism for adjusting and operating the same, substantially as described.

No. 25,088. Band Saw Guide.

(Guide-Scie Sans Fin.)

David K. Allington, East Saginaw, Mich., U.S., 6th October, 1886; 5 years.

Claim.—1st. In a band-sawing machine, the combination of a supporting-column, a pair of saw-wheels carrying an endless band-saw, and a pair of guide-wheels in contact with and revolved by the saw, such guide-wheels extending beyond the main saw-wheels, so as to deflect the saw from the perpendicular, substantially as and for the purposes set forth. 2nd. In a band-sawing machine, the combination of a supporting column carrying saw-wheels, and an endless saw, and upper and lower guide-arms carrying adjustable guide-wheels, such guide-wheels projecting beyond a vertical line drawn tangent to the main saw-wheels, one of the guide-arms being vertically adjustable on the column, substantially as and for the purposes set forth. 3rd. In a band-sawing machine, the combination of a supporting column, upper and lower saw-wheels carrying an endless band-saw, and upper and lower guide-arms carrying guide-wheels in contact with the saw, such guide-wheels being movable toward and from the column, substantially as described and for the purposes set forth. 4th. In a band-sawing machine, the combination, with a supporting column and with saw-wheels carrying an endless band-saw, of guide-arms and guide-wheels journaled therein, such guide-wheels being adjustable toward and from the column, and also adjustable horizontally relatively to the plane of the guide-arms, substantially as described and for the purposes set forth. 5th. The combination, with the guide-arms I, D₁, having the horizontal plate c, of the sliding plate d, the plate c having a partial rotary motion, and supporting the guide-wheels, and means for forcing the plate d outward from the column and holding it there, substantially as described. 6th. The combination of the guide-arms D, D₁, the sliding plate d, the plate c carrying the guide-wheels and having a partial rotation, the arm a feathered on the shaft B, so as to be turned to engage with the plate d, to control the backward movement thereof and the vertical shaft B, substantially as described. 7th. In a band-sawing machine, a saw-guide consisting of an arm adjustable to and from a supporting column, a friction wheel m mounted in the outer end of the saw-arm, and means for adjusting the said friction-wheel m with relation to the saw to set it to a true line of its cut, substantially as described. 8th. In a band-sawing machine, a lower guide-arm supported on a supporting column and having a vertical movement only, a friction-wheel m₁ mounted in the outer extended portion, said friction-wheel being adjustable in a semicircular groove, whereby the saw running over the wheel will be adjusted to a true line of its cut, substantially as described.

No. 25,089. Process of Refining Petroleum. (*Procédé pour Raffiner le Pétrole.*)

Henry G. W. Kittredge, Petrolin, Ont., 7th October, 1886; 5 years.

Claim.—I claim as my invention, the process of refining illuminating petroleum by distilling the petroleum distillate at the point after it has been first treated with sulphuric acid, caustic soda and litharge, and before any flowers of sulphur have been added, as before specified, then treating the re-distillation in the ordinary method with sulphuric acid, caustic soda, litharge and the flowers of sulphur, as before specified and for the purposes set forth.

No. 25,090. Bearing for Harvester Frames. (*Coussinet pour Bâties de Moissonneuses.*)

The Massey Manufacturing Company, Toronto, Ont. (Assignee of William N. Whiteley, Springfield, Ohio, U. S.), 7th October 1886; 5 years.

Claim.—1st. A half-cylindrical or open seat for a cylindrical box or bush-bearing, constructed first as a cylindrical case, then bored out true and in proper line, and then the top or cap of said case broken away, as set forth. 2nd. A frame A, made with the hollow shell D, and grooves d, d', longitudinally along the opposite side of the same, whereby the removal of the top or cap of said shell is facilitated. 3rd. A frame A, made with the hollow shell D, and recesses a, a', and grooves d, d', whereby the seat for the bushing may be bored and the bushing secured by yokes, as set forth.

No. 25,091. Railway Station Indicator. (*Indicateur des Stations de Chemins de Fer.*)

Joseph Flauto, Lévis, Que., 7th October, 1886; 5 years.

Réclame.—1o. Dans un indicateur central de char de chemin de fer, une roue centrale dentée faisant marcher les deux paires de roues dentées sur chaque paire, desquelles s'enroule une toile contenant les noms des stations en sens opposés, tel que décrit pour les fins désignées. 2o. Dans un indicateur central de char de chemin de fer, deux toiles donnant les noms des stations de deux côtés opposés de la boîte, tel que décrit pour les fins désignées. 3o. Dans un indicateur de char de chemin de fer, une sonnerie d'alarme dont la clef produit l'alarme en entrant et en sortant de la machine, tel que décrit pour les fins désignées. 4o. Dans un indicateur de char de chemin de fer, deux toiles exhibant les noms des stations de côtés opposés de la boîte, et une par une elfe donnant l'alarme en entrant et en sortant, tel que décrit pour les fins désignées. 5o. Dans un indicateur de char de chemin de fer, la partie F, avec les roufcaux H, tel que décrit pour les fins désignées.

No. 25,092. Foundry Ladle. (*Cuiller de Fonderie.*)

George A. Goodwin and William F. How, London, Eng., 9th October, 1886; 5 years.

Claim.—1st. A foundry ladle, of which the shell is extended to form a permanent projecting trough spout B (in Figs. 1 and 2), in combination with a sliding concave or convex double or single partition or shutter C projecting above the top of the ladle, detachably secured in guides D, and by eyes H and cotter pins K, and provided with strips E, wings G and perforations F, substantially as and for the purposes described. 2nd. A foundry ladle, to the shell of which is detachably attached an extended projecting trough spout B (Figs. 3 and 4), in combination with a double or single partition or shutter C projecting above the top of the ladle provided with strips E, wings G and perforations F, substantially as and for the purposes described.

No. 25,093. Flour Bolt. (*Bluteau.*)

Isaac W. W. Plewes, Toronto, Ont., 9th October, 1886; 5 years.

Claim.—1st. A flour-bolting reel, consisting of the circular heads 4 and spiders 4 mounted on axle 2, bnr. 1 supported by the spiders, and posts 7 standing radially from said bars, hoops 3 secured to the ends of said posts, and the bolting-cloth 5 stretched over said hoops and fastened to the heads 6, whereby the middlings "I" have an interrupted sliding motion upon the cloth during the rotation of the reel to effect separation of the bran and flour, and the middlings flow from head to tail of the reel without material obstruction, as set forth. 2nd. The combination with a reel-bolt effecting separation of the flour and bran by the sliding action of the middlings on the interior surface, as set forth, of a rotary brush having contact with the exterior surface of the bolting cloth, as and for the purpose described.

No. 25,094. Window Screen Frame. (*Châssis d'Ecran de Fenêtre.*)

John E. Stuart, Newark, N. Y., U.S., 9th October, 1886; 5 years.

Claim.—1st. A frame made up of side pieces or bars D, joined as shown, each bar being formed with a longitudinal tongue a at one side thereof, and a slot c at one end of the bar in line with the tongue, the slot of each bar being of a size to receive and be filled by the tongue of the contiguous bar, substantially as described and for the purpose set forth. 2nd. A screen frame, composed of side pieces or bars D, joined as shown, each bar being formed with longitudinal depressions or rabbets d, d', and tongue a at one side thereof, and a slot c at the end of the bar in line with the tongue, the slot of each bar being of a size to receive and be filled by the tongue of the contiguous bar, the frame having an inner depression g, in which to receive the wire cloth or screen, substantially as shown. 3rd. The combination, in window screen frames, of the screen-holders b, the screen C and frame B, the latter being composed of bars D, each provided with a longitudinal tongue a and slot c, substantially as shown and described. 4th. A side piece or bar B for a window-screen frame, being a prismatic bar formed with a reduced longitudinal part or tongue a at one side thereof, and a slot c at one end of the bar in line with and at the end of the tongue, the plane of either side of the tongue being also the plane of the adjacent side of the slot and the plane of the end of the tongue being the plane of the bottom of the slot, substantially as shown and described.

No. 25,095. Hop Trellis. (*Trellis à Houblon.*)

William Norris, Toronto, Ont., 9th October, 1886; 5 years.

Claim.—A hop trellis, composed of three or more standards, constructed of spiral or twisted galvanized steel wire or other suitable wire, each standard provided with a loop B at the top end, and an eye D about five and a half feet from the lower end, and a foot rest G from six to nine inches from the lower end, and standards held together at the top by means of a ring C or linked into each other without the ring, each standard is also provided with a branch or leader E made also of twisted wire, and having a loop F and is looped into the eye D, the whole constructed as described and operating as set forth.

No. 25,096. Treatment of Hides and Skins for Tanning and other Purposes. (*Traitement des Peaux pour le Tannage et autres fins.*)

Edward P. Nesbit, Priory Road, Eng., 9th October, 1886; 5 years.

Claim.—The herein described method of removing lime from hides and skins by subjecting them while in water to the action of carbonic acid gas.

No. 25,097. Manufacture of Salt. (*Fabrication du Sel.*)

Joseph M. Duncan, Warsaw, N. Y., U.S., 9th October, 1886; 5 years.

Claim.—1st. An apparatus for manufacturing salt, wherein the brine receiving and evaporating vessels are arranged directly above the mixer, and the mixed directly over the washers, substantially as described. 2nd. The vessels C, C', C'', for receiving and evaporating brine, composed of upper and lower chambers, each a lap for receiving and evaporating brine and divided by a valve, substantially as described. 3rd. The vessels C, C', C'', for receiving and evaporating brine, composed of upper and lower chambers, and combined with brine feed pipes tapped into each chamber, substantially as described. 4th. The vessel C for receiving and evaporating brine, composed of upper and lower chambers, and combined with brine feed pipes and steam supply pipe, substantially as described. 5th. The vessel C for receiving and evaporating brine, composed of upper and lower chambers and combined with brine feed pipes tapped into each chamber, a steam supply pipe and an exhaust pipe, substantially as described. 6th. In an apparatus for manufacturing salt, the combination of the series of receiving and evaporating vessels C, C', C'', composed of upper and lower chambers, the first in the series supplied with a steam pipe, and each supplied with brine feed pipes tapped into each upper and lower chamber, and connected together by the intermediate pipes G, G', G'' and cylinders H, H', H'' with the exhaust J, substantially as described. 7th. The combination of the vessels C, C', C'', for receiving and evaporating brine, composed of upper and lower chambers, provided with the valves L and M, and with brine feed pipes tapped into each chamber, an air supply pipe n and a mixer N placed immediately below said vessels, substantially as described. 8th. The combination of the vessels C, C', C'', for receiving and evaporating brine, composed of upper and lower chambers, provided with the valves L and M, brine feed pipes tapped into each chamber, an air supply pipe n, a mixer N and washers P, P', arranged one directly above the other, substantially as described. 9th. In combination, with the vessels C, C', C'', for receiving and evaporating brine, composed of upper and lower chambers revolving scrapers arranged at the bottom of said upper chambers, substantially as and for the purposes set forth. 10th. In combination with salt making apparatus, the centrifugal baskets P, each enclosed in an outer shell P', and provided with shafts p and driven together by a single belt, substantially as described.

No. 25,098. Gas Burner. (*Bec à Gaz.*)

Adolpho Wasserman, (assignee of Oscar D. McLellan), Philadelphia, Penna., U.S., 9th October, 1886; 5 years.

Claim.—1st. A gas burner having a deflector of the form of an inverted cone, the lower end whereof is with the burner, as described. 2nd. A gas burner having a deflector of the form of an inverted cone, and at the lower end a head of the form of an inverted cone coinciding with the inclination of the deflector, substantially as described. 3rd. A gas burner having a globe which surrounds a chimney and is open at top and closed at bottom, substantially as described. 4th. A gas burner having a globe whose lower end closes under the burner, substantially as described. 5th. A gas burner having a hollow deflector and a core within the same, substantially as described. 6th. A gas burner having a deflector with a lip at top and a chimney with a neck above the same, substantially as described. 7th. A burner and a globe having a closed bottom, in combination with the deflector M, which is located between the under side of the burner and said bottom of the globe, substantially as described. 8th. A gas burner having a deflector within the burner of the form of an inverted cone, a chimney and a globe open at top and closed at bottom, the bottom being below the burner, substantially as described. 9th. A gas burner having a gas distributor A₁ with deflectors A₂, having a firing space between them, substantially as and for the purpose set forth.

No. 25,099. Method of Making and Raising Salt Brine from Deep Veins. (*Mode de Production et de Passage de l'Eau Salée des Veines Profondes.*)

The Hydraulic Salt Forcing Company, New York, (assignee of John Peters, Haverstraw), N. Y., U.S., 11th October, 1886; 5 years.

Claim.—The method of obtaining brine from salt wells, consisting in forcing water into the well under pressure, permitting it to absorb salt by contact with the salt deposit, and then expelling the same from the well by pressure, substantially as described.

No. 25,1 G. Apparatus for Making and Raising Salt Brine from Deep Salt Veins. (*Appareil de Production et de Puisse de l'Eau Salée des Veines Profondes.*)

The Hydraulic Salt Forcing Company, New York, (assignee of John Peters, Haverstraw, N.Y., U.S., 11th October, 1886; 5 years.

Claim.—1st. The combination of the force-pump, with the inflow and outflow pipes arranged within the well, and with reference to a subterranean deposit of salt, substantially as described. 2nd. A tube or casing C placed in the well and packed at d, in combination with an outflow pipe E through which brine may be forced out of the well, substantially as described.

No. 25,101. Carriage Foot Pad.

(*Bourrelet Marche-Pied de Voiture.*)

The Initial Toe Pad Company, St. Joseph, (assignee of Henry P. Harrows and Lawrence D. Knowles, Three Rivers, Mich., U.S., 11th October, 1886; 5 years.

Claim.—A carriage foot-pad composed of different materials cemented upon each other, the essential materials being buck-rim and suitable exterior layer, provided with a letter, figure, character design, ornamentation, or the like, or a combination thereof pressed in the cemented material and being raised on the exterior surface, substantially as set forth.

No. 25,102. Wheel for Vehicle, Agricultural Machine, etc. (*Roue de Voiture, Instrument d'Agriculture, etc.*)

James R. Parsons, (assignee of John M. Rosebrooks), Hoosick Falls, N.Y., U.S., 11th October, 1886; 5 years.

Claim.—1st. The rim of the wheel made of metal, and provided with two projections running around its interior surface, far enough apart to receive the spokes between them, and the nuts or their equivalents which hold the spokes to the rim with inwardly-flanged edges, substantially as and for the purpose described. 2nd. The hub formed in two pieces, one with a flange cast thereon, with recess formed therein to receive one-half of each of the spokes, and the other, a shell or disk with corresponding recesses to receive the other half of the spokes, in combination with the spokes and their straining nuts on the interior surface of the rim, substantially as and for the purpose described. 3rd. The combination of the skein G and its arms b, with the corrugated or recessed hub cast in two parts, with the spokes all resting upon said hub, fastened together by bolts between them, substantially as and for the purpose described. 4th. The combination of the skein G, with the corrugated or recessed hub cast in two parts, the spokes resting upon said hub and the gear-wheel H fastened together, substantially as and for the purpose described. 5th. The spokes fastened to the rim by a straining-nut on the interior surface of the rim, and the lugs on the outside surface of the rim, substantially as and for the purpose described. 6th. The spokes abutting at their lower ends against the exterior surface of the hub furnished with threads and straining-nuts at their upper ends to screw against the interior surface of the rim and their extreme ends held to the exterior surface of the rim by lugs riveted thereon, substantially as and for the purpose described. 7th. The spokes abutting at their lower ends against the exterior surface of the hub and clamped between the two corrugated flanges C and B of the hub their upper ends furnished with a thread and nut to screw against the interior surface of the rim and their extreme ends held to the exterior surface of the rim either by lugs or rivets into a countersink thereon, substantially as and for the purpose described.

No. 25,103. Thrashing Machine.

(*Machine à Battre.*)

Luther D. Sawyer, (assignee of Robert Christie), Hamilton, Ont., 11th October, 1886; 5 years.

Claim.—1st. In combination, a, with a thrashing machine, of a hinged cylinder formed in two parts, the front portion made to slide on the rear portion, and adjustably attached thereto, by which means the size of the throat opening to the cylinder may be adjusted, substantially as and for the purpose described. 2nd. In combination, with a thrashing machine, of the cylinder formed in two parts C and C', the front part C' formed with projections b, b and slots d, d, so as to permit the lower portion to slide on the upper or rear one, and be adjustably fastened thereto by thumb-screws e, e, substantially as and for the purpose described. 3rd. In combination, with the piston D, of a thrashing machine, of the crank-shaft pitman boxes, constructed with the axle box g, plates h, h, the upper and lower fastening plates i provided with screw ends washer plates j and nuts k, k, all arranged substantially as and for the purpose specified. 4th. In combination, with a thrashing machine, of the drive-wheel F, constructed with outwardly-slanting spokes or arms m, so as to allow the crank shaft box G carrying the shaft E to be placed in the centre of the wheel, substantially as and for the purpose specified. 5th. The arched crank-shaft box G attached to the bracket H of the thrashing machine, and made to project outwards to the centre of the drive-wheel F, to prevent springing and staking of the shaft and admit of a right pitman, substantially as specified. 6th. The combination of the wheel F constructed as shown, the arched crank-shaft box G, crank-shaft E and pitman D, substantially as specified. 7th. In a thrashing machine, the combination of the axle-lever n, lever o, lifting arms n', n', and sieve J, for raising the outer end of the same, substantially as specified. 8th. In a thrashing machine, the combination of the axle-lever r, lever o, lifting arms m', m' and sieve J, for elevating the inner end of the same, substantially as specified. 9th. In a thrashing machine, the combination of the axle-lever q, lever r, lifting arms o', o' and sieve K, for raising the outer end of the same, substantially as specified. 10th. In a thrashing machine, the combination of the axle-lever l, rod s, lifting arms u, u, and sieve K, for raising the rear end of the latter, substantially as specified.

No. 25,104. Incubator. (*Incubateur.*)

George I. Gray, Chicago, Ill., U.S., 12th October, 1886; 5 years.

Claim.—1st. An incubator having two shells one within the other, with a water-space between and an offset or extension connected therewith, in combination with a lamp provided with a smoke-escape pipe passing through the water-space, and an air supply pipe having its outer end terminating within the offset or extension of the main casing just above the liquid therein, substantially as and for the purpose set forth. 2nd. In an incubator, the main body formed of an inner and an outer shell having the space between them filled with water and oil, extending into an open topped offset of the outer casing, and provided with an air outlet running through the water-space, and an air supply terminating in the offset of the case just over the oil seal, in combination with the lamp placed beneath the outer pipe, and formed with a depression containing water into which the end of said pipe extends, substantially as and for the purpose set forth. 3rd. The combination, with a water-tank or receptacle, of a lamp or heating device, provided with an air supply terminating just above the surface of the water, whereby the supply of air to the flame and the heat imparted to the water is regulated by the expansion and contraction of the water, substantially as shown and described. 4th. In an incubator, a lamp or equivalent heating device, provided with an air supply pipe, which is closed automatically at a given temperature, and a smoke-escape pipe, in combination with a pipe connecting the supply with the escape, substantially as and for the purpose set forth. 5th. The combination, in an incubator, of a hatching chamber, provided with a series of egg-trays having an air-space on the side, and a series of openings over each tray for the escape of air into a flue in rear of the chamber, with a heating device around which air is passed to a chamber or reservoir communicating with the lower part of the hatching chamber, whereby the heated air is passed evenly over each tray at the same temperature, substantially as shown and described. 6th. A hatching chamber having hollow walls filled with water, and provided with a series of egg-trays having a space for the passage of air on one side, and the walls on the opposite side formed with a series of air-escape holes over each tray into a flue behind, and an air chamber beneath the hatching chamber and connected therewith by a series of pipes passing through the water-space in the walls, in combination with a heating device around which the air must pass to the air chamber, provided with a smoke-escape and heating pipe and an air supply pipe automatically closed as the heat becomes too great, substantially as and for the purpose set forth.

No. 25,105. Sewin Machine.

(*Machine à Coudre.*)

Samuel Brodeur, Montreal, Que., 12th October, 1886; 5 years

Claim.—In a sewing machine, the combination of the needle-carrier, having a sliding plate and projection holding the needles, a lever pivoted to main carrier and actuating sliding plate, and a dog mounted on rocking shaft receiving motion from main shaft through intermediate mechanism, and throwing said lever in either direction, as herein set forth and for the purpose described.

No. 25,106. Telephone Transmitter.

(*Transmetteur de Téléphone.*)

Henry S. Thornberry, New York, N. Y., U. S., 12th October, 1886; 5 years.

Claim.—1st. The combination, in a telephone transmitter, of a flexible diaphragm, a mass of finely-divided conducting material in a loose and free state in contact with the diaphragm, and a rigid back plate having a pendant projecting into said conducting material, substantially as described. 2nd. In a telephone-transmitter, the combination of a horizontal diaphragm forming one electrode, and a mass of finely-divided conducting material resting thereon, and confined by an insulated coil of conducting material, the interior surface of which is extended by one or more projections forming the complementary electrode. 3rd. In a telephone transmitter, using a granular substance as the current-varying medium, the combination of a horizontal flexible diaphragm forming the primary electrode, a mass of finely-divided conducting particles resting thereon, and a rigidly fixed complementary electrode immersed in the said conducting particles, substantially as and for the purpose described. 4th. In a telephone transmitter, using a granular substance as the current-varying medium, the combination of a flexible horizontal diaphragm, and a rigidly fixed complementary electrode, the mean plane surface of which lies in the horizontal, substantially as and for the purpose described. 5th. In a telephone-transmitter, using a granular substance as the current-varying medium, the combination of a flexible vibratory horizontal diaphragm, and a complementary electrode, the face of which is hemispherical, substantially as and for the purpose described. 6th. In a telephone-transmitter, using a granular substance, as the current-varying medium, a complementary electrode having one or more lateral V-shaped grooves (3 and 4) cut around its circumference, substantially as and for the purpose described. 7th. In a telephone transmitter, using a granular substance, as the current-varying medium, a rigidly fixed complementary electrode immersed in, and maintaining permanent contact by reason of gravity with said granular material, substantially as and for the purposes set forth. 8th. In a telephone-transmitter, using a granular substance, as the current-varying medium chamber 5, and an annular casing of metal 9, in metallic contact with and a part of the complementary electrode, substantially as and for the purpose set forth. 9th. In a telephone-transmitter, using a granular substance, as the current-varying medium, a complementary electrode 1, with recesses 19, 19, for the purpose described, and screw post 2 forming the terminal to said electrode, all substantially as and for the purpose set forth. 10th. In a telephone-transmitter, an annular chamber of insulating material, recessed as shown to receive the complementary electrode threaded externally, and with screws 20, 20, all for the purpose set forth substantially as described. 11th. In a telephone-transmitter, a cup with a central opening 21, and annular recess 1 on its inner face, and threaded to screw on to the face of chamber 5,

substantially as and for the purpose described. 12th. In a telephone-transmitter, a metal case threaded, substantially as shown, to receive annular chamber 5, said case forming one terminal electrode, substantially as described. 13th. In a telephone-transmitter, a mouth-piece 15 and tube 16, formed and for the purpose substantially as described. 14th. In a telephone-transmitter, the method of sealing the chamber hermetically, substantially as and for the purpose described.

No. 25,107. Marine Boat Slide.

(*Glissoire de Bateau.*)

Harry J. Schaefer, Point Duquesne, N. B., 12th October, 1886; 5 years.

Claim.—1st. The combination, with the inclined slide having the parallel grooved rails, and the rollers journaled in the said rails, of the boat having the parallel keels, as set forth. 2nd. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel keels, and the rollers journaled in the said keels, as set forth. 3rd. The combination, with inclined slide having the parallel grooved rails, and the rollers journaled in the said rails, of the boat having the parallel keels, and the rollers journaled in the said keels, substantially as set forth. 4th. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel runners or keels, as set forth. 5th. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel keels, provided with the anti-friction blocks. 6th. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel keels provided with the anti-friction blocks, and the longitudinal guards arranged as described. 7th. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel keels formed with the discharge apertures, and the reservoir arranged within the boat and having the controlling stop-cocks, substantially as set forth. 8th. The combination, with the inclined slide having the parallel grooved rails, of the boat having the parallel keels, and the hoisting-chain, arranged as described. 9th. The combination of the inclined slide having the parallel grooved rails and safety side rails, the boat having the parallel keels provided with the anti-friction blocks, and means, substantially as described, for lubricating the grooved tracks through the keels, safety line and hoisting chain, arranged as described, all constructed and arranged to operate in the manner and for the purpose herein set forth. 10th. The combination, with the inclined slide having the parallel grooved tracks, of the boat having the parallel keels, the safety line and hoisting chain, arranged as set forth.

No. 25,108. Pulley. (*Poulie.*)

George Campbell and Leo Frankel, Toronto, Ont., 12th October, 1886; 5 years.

Claim.—A pulley having a light metal rim, connected to its hub by means of a series of light rods, which extend substantially at a tangent from the hub of the pulley to which they are connected, substantially as and for the purpose specified.

No. 25,109. Horseshoe. (*Fer à Cheval.*)

Philip Pitton, Cincinnati, Ohio, U.S., 12th October, 1886; 5 years.

Claim.—1st. A supplemental ice shoe for attachment to ordinary horse-shoes, consisting of a pair of hinged bars having toe and heel calks, hook-shaped lugs on the inner edges of said bars to embrace and grip the inner edges and top face of the shoe, and a pair of plate springs secured at their inner or front ends to said bars, and each having an outwardly and upwardly-extending lip to embrace and grip the outer edges of the hinged bars and main shoe, substantially as and for the purpose set forth. 2nd. The combination, with an ordinary horse-shoe having the customary toe and heel calks, of a supplemental ice shoe consisting of a pair of curved bars hinged together at their inner or toe portion, and having angularly-extending heels to impinge against the heel calks, of the main shoe toe calks and angular heel calks, and on their inner edges hook-shaped lugs to engage the inner edges and upper faces of the main shoe, and curved plate springs secured at their inner or front ends to said hinged bars, and each having an outwardly-extending heel or outer portion, and an upwardly-extending lip to embrace and grip the outer portions of said bars and the main shoe, substantially as and for the purpose set forth.

No. 25,110. Press for Moulding Pail Bodies.

(*Presse pour Façonner les Seaux.*)

Frank E. Keyes, Newport, N.H., U.S., 13th October, 1886; 5 years.

Claim.—1st. The combination of the inelastic hood A, provided with the stuffing box 21, with the contractile hood F encompassing the foraminous frustum G, and provided with the upright pipes E going through the said stuffing box, and furnished with the pulp inductor N arranged within the said pipe E, and having mechanism for operating it, the said inductor for the discharge of pulp through and from it into the upper part or crown of the hood F, all being substantially as set forth. 2nd. The combination of the inelastic hood A, provided with the standards D and the stuffing box 21 extending upward from it, the said hood as represented with the contractile hood F encompassing the foraminous frustum G, and provided with the upright pipe E going through the said stuffing box, and furnished with the pulp inductor N, arranged within the said pipe E, and having mechanism for operating it, the said inductor for the discharge of pulp through and from it into the upper part or crown of the hood F, all being substantially as set forth. 3rd. The combination of the inelastic hood A, provided with the standards D, and the stuffing box 21 extending upward from it, the said hood, as represented with the contractile hood F encompassing the foraminous frustum G, and provided with the upright pipe E going through the said stuffing box, and having mechanism for raising it the said pipe and allowing it to descend, as specified, and with the pulp inductor N arranged within the said pipe E, and having mechanism for opera-

ting it the said inductor, for the discharge of pulp through and from it into the upper part or crown of the hood F, all being substantially as set forth. 4th. The combination of the stationary pipe e and the hose u with the pulp inductor N, the hood A provided with the standards D, and the stuffing box 21 extending upward from the said hood, as represented, the contractile hood F encompassing the foraminous frustum G, and provided with the upright pipe E going through the said stuffing box, and having within it the said pipe, the said pulp inductor N, all being substantially as set forth. 5th. The combination of the hose e, with suction apparatus pipe h, and the foraminous frustum G, and its base H provided with the guide pipes I, and K, and the induct e, and arranged to operate with the elastic hood F and inelastic hood A, substantially as set forth. 6th. The combination of the ring h, and its rods 2, and spring 21 with the foraminous frustum G, its supporting and movable base H, and with the stationary stops 22, all being arranged substantially as set forth. 7th. The combination of the two hose e and u, with the suction apparatus pipe h, the foraminous frustum G, and its base H, the guide pipes I and K, and the induct e, the elastic hood F and inelastic hood A and the pipes E and N thereof, all being arranged substantially as and to operate as represented.

No. 25,111. Mechanical Movement.

(*Mouvement Mécanique.*)

John McIntosh, Alexandria, Ont., 13th October, 1886; 5 years.

Claim.—The combination of a rolling facrum, represented by inclined wheel F driven from the periphery by a fixed fulcrum, represented by cog wheel K journaled on a centre of motion represented by shaft C, the axle E and drum G, substantially as set forth.

No. 25,112. Bed Bottom. (*Sommier Elastique.*)

Dallas Kuowitow, Brantford, Ont., 13th October, 1886; 5 years.

Claim.—1st. In a bed bottom, the bars G fastened to bars E and F, in combination with sides A, spiral spring U, chain I and hook K, substantially as and for the purposes hereinbefore set forth. 2nd. In a bed bottom, the woven wire band L, hoop iron bands M, with springs O and spiral springs P, in combination with sides A, substantially as and for the purposes set forth.

No. 25,113. Dressmaker's Chart.

(*Patron de Modiste.*)

Mathilde A. Durocher, Montreal, Que., 13th October, 1886; 5 years.

Résumé.—Un patron universel pour dames composé des trois pièces représentées sur les dessins ci-joints et ayant les portions courbées A, B, C, D, E, F, G, H, I, J, K, et L, telles que ci-dessus décrites et pour les fins sus-mentionnées.

No. 25,114. Directory. (*Almanac.*)

George Butterfield, Oconto, Wis., U. S. (assignee of Harman B. Butterfield, Toronto, Ont.), 13th October, 1886; 5 years.

Claim.—The combination of a directory, with a carbon leaf copying book, said combined book having index tapes bound between its leaves, each leaf having one or more perforations facilitating its separation into two or more similarly numbered parts, said parts having the directory matter on one side only.

No. 25,115. Process for Preserving Milk.

(*Procédé de Conservation du Lait.*)

Kristian G. Dahl, Drammen, Norway, 13th October, 1886; 5 years.

Claim.—The process of preserving milk, consisting in cooling the freshly-obtained milk to about 10 to 15° C *in situ*, then putting same into the vessels intended for the consumer's use, hermetically sealing same, heating same to about 70° C, and keeping this temperature for about 1½ hours, cooling down to about 40° C, and keeping same thus for about 1½ hours, then heating quickly to about 70° C, repeating such aforesaid heating, cooling and heating operations, the last heating lasting about ½ an hour, then heating to about 80° to 100° for about ½ an hour, and then cooling down below 15°, substantially as described.

No. 25,116. Knob Attachment.

(*Broche de Bouton de Porte.*)

Williston I. Alvord, Bridgeport, Conn., U. S., 13th October, 1886; 5 years.

Claim.—1st. In a knob attachment, the combination, with a hub or hubs, recessed as shown, of a stationary spindle secured to the knob shank and terminating in a suitable head, and a spring-actuated locking collar arranged around said spindle, and held in its normal position firmly against the head, whereby the latter may be forced within the hub and securely held therein by the abutment of the collar against the hub, substantially as set forth. 2nd. The combination of the knob shank, the spindle A secured thereon and terminating in head B, the coil spring D around the spindle, the collar C also on the spindle between the said head and spring, and held by the latter firmly against the former, and the latch hub recessed to accommodate the head as against retraction, substantially as and for the purpose set forth.

No. 25,117. Knob Attachment.

(*Broche de Bouton de Porte.*)

Williston I. Alvord, Bridgeport, Conn., U. S., 13th October, 1886; 5 years.

Claim.—The combination, with a latch hub having a central opening therethrough, and inwardly projecting lugs at either end thereof, of a headed knob shank provided with channels longitudinal of its head, and corresponding in relative position to said lugs and recesses

formed in the inner end of the head of the shank and alternating with said channels and adapted to contain said lugs, substantially as set forth.

No. 25,118. Knob Attachment.

(*Broche de Bouton de Porte.*)

Williston I. Alvord, Bridgeport, Conn., U. S., 13th October, 1886; 5 years.

Claim.—1st. In combination with a latch hub, recessed as shown, the knob shanks terminating in heads adapted to be inserted within the hub and held there against retraction, and a coil spring interposed between the shanks and adapted to keep the latter apart and in attachment with the hub substantially as set forth. 2nd. The shanks A having openings C and terminating in heads B, in combination with hub D recessed to accommodate said heads, and the coil spring E interposed between said shanks within said openings, as specified.

No. 25,119. Lock and Latch. (*Serrure et Loquet.*)

Williston I. Alvord, Bridgeport, Conn., U. S., 14th October, 1886; 5 years.

Claim.—In combination with a latch or bolt, a shell capable of motion around a centre, and detachably connected to the shank of the latch or bolt, spring actuated tumblers arranged within said shell, and extending laterally beyond the sides thereof, and means, as a stop, with which the extremities of the tumblers may engage, whereby the movement of the shell may be arrested at certain times, substantially as set forth.

No. 25,120. Harvester Binder.

(*Moissonneuse-Lieuse.*)

Thomas H. Noxon, Ingersoll, Ont., 14th October, 1886; 6 years.

Claim.—1st. The combination, with the canvas A and elevating canvas or table B, of a revolving roller C located between the two, substantially as and for the purpose specified. 2nd. The combination, with the canvas A and elevating canvas or table B, of a revolving roller C located between the two, and fingers D attached to the cross-bar E and fitting into grooves a, substantially as and for the purpose specified. 3rd. The combination, with the canvas A and elevating canvas or table B, of a revolving roller C located between the two, having longitudinal ribs δ formed on its surface, substantially as and for the purpose specified.

No. 25,121. Waggon Carriage, etc.

(*Wagon, Voiture, etc.*)

Edward Storm, Poughkeepsie, N. Y., U. S., 14th October, 1886; 5 years.

Claim.—1st. The combination, with the axle, of a waggon or other vehicle, and a body or side bars supporting a body of a spring supported by the axle composed of two sections hinged together, and severally having a central flat portion and straight inclined end portions, and another spring considerably longer than the spring first mentioned, having a central flat portion and upwardly-inclined end portions, the flat central portions of one of the sections of the spring last mentioned, said springs extending transversely to the length of the body of the waggon or other vehicle, substantially as specified. 2nd. The combination, with an axle in a waggon or other vehicle, and a body or side bars supporting a body of a spring supported by the axle and comprising two sections hinged together at their ends, having central flat portions, and inclined converging end portions which extend into contact or close proximity near their ends, and another spring considerably longer than the spring first mentioned and secured to the former, substantially as specified, whereby the spring last mentioned will take up the initial force, and as force is increased, the portions of the two sections of the spring first mentioned, which are near the ends thereof, will be brought into contact increasing proportionally with the force applied to the spring, in such manner that the spring first mentioned will be shortened and its resistance to strain augmented.

No. 25,122. Plough. (*Charrue.*)

Johnston Pettigrew, Seneca, Ont., 14th October, 1886; 5 years.

Claim.—1st. A plough, having horizontal corrugations formed on its mould-board and land side. 2nd. A plough having horizontal corrugations formed on its mould board, by adjustable steel ribs embedded in its surface, substantially as and for the purpose specified. 3rd. In a plough, a mould board having a portion of its land side removed, in combination with the land side wheel B, having a bevelled rim a, and a bevelled and hollowed centre b. 4th. In a plough, a mould-board having a portion of its land-side removed, in combination, with the land-side wheel B, constructed as described, and a vertical roller D inserted in front of the wheel B. 5th. In a plough, a mould-board having a portion of its land-side removed, and a wheel B placed in lieu thereof, in combination with the shield C, substantially as and for the purpose specified. 6th. In a plough, the combination of a wheel H, formed by bevelled rim a and bevelled hollowed centre b, the said wheel being pivoted on the vertical standard i, which projects below the centre of the wheel and fits into a vertical bracket J attached to the frame G, substantially as and for the purpose specified. 7th. In a plough, the combination of a leading wheel L having a sharpened flange and pivoted upon the standard M, which is adjustably connected to the bracket N, substantially as and for the purpose specified. 8th. In a plough, the combination of a frame G, arranged to support the wheel H in such a manner that the said wheel may be moved nearer to or farther from the plough-beam F, substantially as and for the purpose specified. 9th. In a plough, the combination of a frame G fixed to the front of the plough-beam B, braced thereon by the stays O, and provided with an adjustable cross-bar h, substantially as and for the purpose specified.

No. 25,123. Baby Jumper. (*Escarpolette.*)

Mary P. Norman, St. Lambert, Que., 14th October, 1886; 5 years.

Claim.—1st. In a baby-jumper, a baby's dress fastened to the jumper, and provided with a crutch cloth attached to the dress, as shown and described. 2nd. In a baby-jumper, the sling f and g, in combination with a baby's dress, and the hoop d provided with bells or other ornaments, as shown and described. 3rd. The combination, in a baby-jumper, of the chain C, elastic b and slings f and g, as shown and described.

No. 25,124. Car Starter. (*Appareil de Mise en Mouvement des Chars.*)

Rudolf O. Gereke, Augusta, Ga., U. S., 14th October, 1886; 5 years.

Claim.—In a car-starter, the combination of the wheel having its flange toothed to form a ratchet, with the lever E pivoted between its ends, provided with the pedal G at one end, and the pawl H pivoted to the opposite end, and pins at opposite sides of the pawl for holding it in a proper position, substantially as set forth.

No. 25,125. Hub and Box Fastening.

(*Ferrure de Moyen et de Boîte de Roue.*)

Andrew W. Lano, Susanville, Cal., U. S., 15th October, 1886; 5 years.

Claim.—1st. The hub A having conical sockets f, h at its opposite ends, the box C formed with the collar e resting in the socket f, the conical collar g formed of a series of longitudinally divided sections, and the bolts i, one for each section of the collar extending longitudinally through the hub into the said sections, substantially as set forth. 2nd. The hub A having conical sockets f, h at its opposite ends, the box C formed with the collar e resting in the socket f, the outer face of the collar having grooves registering with grooves in the walls of the said socket f, the collar at the opposite end of the box in the socket h, and bolts extending through the grooves in the collar e and socket into the opposite collar, substantially as set forth. 3rd. The hub A formed in two sections, each having a flange B connected by bolts d, conical sockets f, h, the box C having a collar e in the socket f, longitudinal apertures through the socket and collar, the sectional collar g in the socket h, and the bolts i passed through said apertures and hub into the sections of the collar g, whereby the bolts i will assist in holding the hub and collars together, and also prevent the box from turning in the socket f, substantially as set forth.

No. 25,126. Fifth Wheel. (*Rond d'Avant-Train.*)

Edward, Storm, Poughkeepsie, N. Y., U. S., 15th October, 1886; 5 years.

Claim.—In a fifth-wheel, the combination of two circular parts fitted together one upon the other, guides made integral with one and extending therefrom, and embracing the other, transversely to its length, screws or like devices passing through the guides to secure the two circular parts together, springs arranged within recesses in the guides against which these securing devices act at one end, and a loose plate below the guides supported by the securing devices, substantially as specified.

No. 25,127. Forge. (*Forge.*)

Ophny L. Galoury, St. Placido, Que., 15th October, 1886; 5 years.

Claim.—1st. The chamber E set in the hearth B, and having in it the spout h, substantially as shown and described. 2nd. The chamber E having the extension I, and the sleeve g fixed therein, substantially as shown and described and for the purpose set forth. 3rd. The vat V connected by the flow-pipe J, and the return-pipe k with the chamber E, substantially as shown and described and for the purpose set forth.

No. 25,128. Draft Equalizer.

(*Régulateur du Tirage.*)

Alanson B. Griswold, Bunker Hill, Es., U. S., 15th October, 1886; 5 years.

Claim.—The combination of the tongue, the lever E pivoted thereon, the double-rod with the lever I and the three connecting rods J, L, substantially as shown and described.

No. 25,129. Bed Bottom. (*Sommier de Lit.*)

George A. Miller, Toronto, Ont., 15th October, 1886; 5 years.

Claim.—1st. A bed composed of a case formed by sides A joined to the bottom B, and a pliable sheet C fastened to it, in combination with the bellows H connected to the bottom B, and arranged for the purpose of inflating the said case, substantially as and for the purpose specified. 2nd. In combination, with a case, constructed as described, the bellows H located in the chamber I, and communicating with the interior of the case through the pipe b, in combination with the cock d, bell-crank e, spring f and cord g, substantially as and for the purpose specified. 3rd. In connection with a case, constructed as described, a bellows H located in the chamber I communicating with the interior of the case to a pipe b, in combination with a cock d, bell-crank e, spring f, cord g, alloy h and strap J, substantially as and for the purpose specified. 4th. A bed composed of a case formed by sides A joined to the bottom B, and a pliable sheet C fastened to it, in combination with bellows H connected to the bottom B, and arranged for the purpose of inflating said case and relief valve K, substantially as and for the purpose specified. 5th. A case formed by sides A joined to the bottom B, and a pliable sheet C fastened to it, in combination with a bellows H provided with a pipe b leading into the case, a valve L placed over the mouth of the pipe, substantially as and for the purpose specified.

No. 25,130. Tubular Case Mortise and other Locks and Latches. (*Serrure et Loquet Cachés à Palastre Tubulaire et autres.*)

Frederick J. Biggs, London, Eng., 15th October, 1886; 5 years.

Claim.—1st. In a mortise lock, an inner frame carrying the lock mechanism, and having an opening in same extending from the upper side to the lower side, in combination with an outer case formed of a drawn tube in one piece into which the said inner frame fits, substantially as hereinbefore described. 2nd. In a mortise lock, the combination, with an inner frame carrying the lock mechanism, and having an opening in same extending from the upper side to the lower side, and with an outer case formed of a drawn tube in one piece into which the said inner frame fits, of means, substantially as described, whereby the said inner frame and outer case are secured together and rotation of the one relatively to the other prevented. 3rd. The projection *i* at the rear end of the inner frame *e, e*, in combination with a hole or recess in the rear end of the outer case *a*, as and for the purpose described. 4th. In a mortise lock, an inner frame carrying the lock mechanism and having an opening in same extending from the upper side to the lower side, said frame being rounded at top and bottom but flat at the sides, substantially as represented in Fig. 8 for the purpose set forth. 5th. The combination of a swivelling latch and a removable face or end plate, said latch being free to be reversed when said plate is detached, but prevented by said plate from reversing when the latter is in position, substantially as herein described. 6th. The combination, with the swivelling latch *d*, of the fore plate *f* having a latch hole large enough to allow the latch to turn, and of the face or end plate *e* having a latch hole not large enough to allow the latch to turn, substantially as and for the purpose herein described.

No. 25,131. Combined Latch and Lock.

(*Loquet et Serrure Combinés.*)

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

Claim.—1st. The combination of the bolt 5 having a notch 8 provided with the converging sides 9, 9, and the spindle socket 6 having a trippet 7 provided with converging sides 10, 10, whereby the bolt is expelled when the convergent sides of the bolt and trippet are in frictional contact, substantially as set forth. 2nd. The combination, with bolt 5 and spindle socket 6 having trippet 7, of the gravitating lever 11, gravitating weight 22, dog 14 and fumble 21, as set forth for the purpose described. 3rd. The slide 23, in combination with the gravitating lever 11, and gravitating weight 22 to simultaneously lock the bolt and close the key holes, as set forth.

No. 25,132. Process of Manufacturing Beer.

(*Procédé de Fabrication de la Bière.*)

John C. C'Mullin, Halifax, N.S., 15th October, 1886; 5 years.

Claim.—The process of manufacturing beer by running the malt liquid from the fermenting tub at temperature of from 62° F. to 72° F. into cask white fermentation is actually going on, and by the addition of liquid sugar for the purpose feeding of the beer in the proportion above mentioned, substantially as above described.

No. 25,133. Door Hanger.

(*Poulie de Porte en Coulisse.*)

John Braun, Philadelphia, Penn., U.S., 15th October, 1886; 5 years.

Claim.—1st. A door hanger having a frame with fixed boxes, a rising and falling box, a door plate connected with the latter, and a movable wedge, said wedge passing through the several boxes, and having its upper edge bearing against the movable box, substantially as described. 2nd. A frame with fixed boxes, a plate attachable to a door connected with a rising and falling box, and a movable wedge passing through the several boxes and bearing against the movable box, said plate having a boss, and said wedge a threaded end or shank on which is fitted an adjusting nut which bears against the boss, substantially as and for the purpose set forth. 3rd. In a door hanger, a frame having depending boxes fixed thereto, a rising and falling box and means for moving the latter, said box being connected with the door plate and located between the fixed boxes, whereby the space below the frame is closed and the displacement of the sheaves thereby prevented, substantially as described.

No. 25,134. Tedder. (Faneuse.)

J. O. Wisner, Son & Co., (assignees of James S. Heath), Brantford, Ont., 15th October, 1886; 5 years.

Claim.—1st. The prongs A having a coiled loop B, in combination with the tedder arm D, and spring F, substantially as and for the purpose specified. 2nd. The prongs A, having loop B coiled around the ferrules C, and secured to the tedder arm by means of the bolt E, in combination with a spring arranged to connect the loop B to the arm D, substantially as and for the purpose specified. 3rd. The prongs A having a loop coiled on either side of the arm D to which it is connected, in combination with the bracket I and spring F, substantially as and for the purpose specified.

No. 25,135. Jar Cover. (Couverture de Jarre.)

John Doherty, Thomas C. Roy and Henry Kuffor, Lockport, N. Y., U.S., 15th October, 1886; 5 years.

Claim.—1st. The combination, with the main portion of a cover, said portion being formed with flanges *c* and *D*, a shoulder *d* being formed on the flange *D*, of packing rings *B* and *f*, and an auxiliary cover, substantially as described. 2nd. A fruit jar cover formed with the flanges *c* and *D*, the flange *c* being formed with the ridges *b, b*, and the flange *D* having a shoulder *d*, said cover being provided with an auxiliary cover *E*, with ridges *i, i* and grooves *h, h*, substantially as described.

No. 25,136. Automatic Car-Coupler.

(*Atelage de Chars Automatique.*)

John D. Ripson and Robert Watson, Toronto, Ont., 15th October, 1886; 5 years.

Claim.—1st. A draw-head A having a block C fitted within it, and a loop D formed in the said block to receive the conical head *a* of the link-pin J, and a spindle E to pass through the bottom of the draw-head A, in combination with the pivoted lever F, actuated by the spring H, substantially as and for the purpose specified. 2nd. A draw-head A having a recess or slot formed in it to receive the link C and a shoulder *b, b*, in combination with the said block C having a shoulder *d* formed in it, and a loop D attached to it from which loop a spindle E extends to be actuated on by a spring, substantially as and for the purpose specified. 3rd. A draw-head A having a block C fitted within it, and a loop D formed in the said block to receive the conical head *a* of the link-pin J, and a spindle E to pass through the bottom of the draw-head A, in combination with the pivoted lever F, actuated by the spring H, and crank-rod I, substantially as and for the purpose specified.

No. 25,137. Nail Plate Feeder.

(*Alimentateur de Machines à Clou.*)

Randolph Hersey, Montreal, Que., 16th October, 1886; 5 years.

Claim.—1st. In combination with a nail-cutting machine, the swinging frame *a*, partially rotated cylinder *c*, segmental lever *f* having segmental rack *a*, segment *m* and cam projection *n*, slide *l* having pawls *l* and *m*, and nipper rod or tongs *r*, the whole substantially as described. 2nd. The combination, with a nail-cutting machine, of the vibrating lever *l*, operated by the nail machine, as described, connecting rod *p*, segmental lever *f*, connecting rod *e*, arm *v*, rock shaft *s*, arm *l* and connecting rod *e*, with the frame *a* having its pivot point *t*, located as described, the whole substantially as described. 3rd. In combination with the slide *l*, operated as described, and having pawls *l* and *m*, the rest *g* having gripping and friction heads *p*, nipper rod or tongs *r* having serrations *e* and jaws *o*, the whole constructed and arranged substantially as described and for the purposes set forth. 4th. In combination, with the slide *l*, operated as described, and having pawls *l* and *m*, the rest *g* having gripping and friction heads *p*, nipper rod or tongs *r* having serrations *e* and jaws *o*, blank space *u*, and collar *t*, the whole constructed and arranged substantially as described. 5th. The improved construction of the nipper rod or tongs, consisting of the combination of the jaws *o*, rod *r*, serrations *e*, blank space *u* and collar *t*, with an actuating pawl mechanism, constructed and arranged for operating the same, substantially as described. 6th. The combination of the segmental lever *f*, operated as described, having segment *m*, cam projection *n*, slide *l*, spring *d*, pawls *l* and *m*, and nipper rod or tongs *r*, the whole substantially as described.

No. 25,138. Steam Trap. (Trappe de Vapeur.)

John Morehead, Detroit, Mich., U.S., 16th October, 1886; 5 years.

Claim.—1st. A steam trap consisting of a chamber provided with an inlet and outlet pipe at one side of the centre of gravity, said inlet pipe axially connected with a steam pipe, and the outlet pipe axially connected with a discharge pipe, a valve located in the outlet pipe arranged to open when the vessel is tilted and *vice versa*, said vessel having an upwardly-extended interior pipe to admit condensed water, and a channel to carry the water from the chamber into the outlet pipe, said chamber with said interior pipe and said channel, all constructed in an integral casting, substantially as described. 2nd. The combination, with a chamber communicating with an inlet pipe and an outlet pipe at one side of the centre of gravity, and constructed with an upwardly-extended interior pipe to admit condensed water, a channel to carry the water from the chamber to the outlet pipe, of a pipe to return the condensed water to the boiler, a steam pipe D communicating with the inlet pipe, check-valves located in the steam pipe and the return pipe, a steam pipe G connected with the steam space of the boiler and with the inlet pipe between its check-valve and the chamber, said steam pipe provided with a valve arranged to be closed when the chamber is in a horizontal position and *vice versa*, said chamber having an oscillatory connection with the steam pipe D and the return pipe, all arranged to operate substantially as and for the manner described. 3rd. In a steam trap, a chamber constructed to communicate with an inlet and outlet pipe at one side, the centre of gravity having an interior pipe to communicate with the inlet pipe upwardly extended, said chamber provided with a channel to carry the water from the chamber to the outlet pipe having end openings, and a hand-hole to facilitate cleansing the same, and a vent orifice all constructed of an integral casting, substantially as described. 4th. The combination, with a tilting chamber, of inlet and outlet pipes connected therewith at one side of the centre of gravity, said pipes axially connected with a steam pipe and a waste pipe, a valve located in the outlet pipe arranged to open automatically when the chamber is tilted and *vice versa*, an automatic air valve connected with said chamber, said chamber provided with an interior pipe to admit condensed water to the chamber and carry the steam above the surface of the water and a channel to carry the water from the lowest point of the chamber when the same is tilted to the discharge pipe, substantially as described. 5th. The combination, with a chamber having an inlet and outlet pipe communicating therewith at one side of the centre of gravity, of a valve located in or connected with said outlet pipe, said valve and inlet pipe having an oscillatory union with journal bearings in the manner specified, supports for said bearings, and a bar secured upon said support having an adjustable roller thereon for tripping the valve, substantially as described. 6th. The combination, with a chamber having an inlet and an outlet pipe communicating with the inlet pipe between the check valve and trap, and with the steam space of the boiler, a valve heated in said steam pipe provided with an operating lever, said chamber having connected therewith an arm provided with an adjustable weight, and an adjustable bar I to tilt said lever as the chamber tilts, substantially as and for the purpose described.

No. 25,139. Hoisting Pulley. (Poulie.)

Horace Butters, Ludington, Mich., U.S., 16th October, 1886; 15 years.

Claim.—The combination, with a pulley block, of oil reservoirs B having oil openings G and the pulley shaft extending through the oil reservoirs and block and pulley, and provided with a longitudinal oil groove extending into the reservoirs, substantially as set forth.

No. 25,140. Woven Fabric. (Tissu.)

George Crompton, Worcester Mass., U.S., 16th October, 1886; 15 years.

Claim.—A double faced fabric in which the face and binder warps are combined with stuffer or cord-waft, and with binder-waft, substantially in the manner hereinbefore set forth, whereby a fabric is produced with ribs on both of its faces formed by the same face-warps bent about the stuffer or cord-waft, the ribs at opposite picks of the fabric being substantially opposite each other, the face-warps being bound down at each side of each stuffer or cord waft by the binder-warps and binder-waft, two picks of the latter lying between each two picks of the stuffer or cord-waft, the binder-warps separating each two alternate picks of stuffer or cord-waft, substantially as described.

No. 25,141. Buggy Top. (Couverture de Voiture.)

Daniel Conboy, Toronto, Ont., 16th October, 1886; 5 years.

Claim.—1st. As an improved method of securing the quarter-curtain to the back rail of a buggy-top, a strip C extending across the quarter-curtain A, in combination with a bolt or bolts D for securing it to the back rail B, substantially as and for the purposes specified. 2nd. As an improved method of securing the quarter-curtain to the back rail of a buggy-top, a back rail B having its outer side concave, so as to receive the convex inner side of the strip C, in combination with a bolt D for securing the strip to the rail B, substantially as and for the purpose specified. 3rd. A strip G fitting over the rail J, in combination with a block H, the whole being secured to the bracket F by the bolt I, substantially as and for the purpose specified.

No. 25,142. Sash Fastener. (Targette.)

Henri Fauteux, Montreal, Que., 16th October, 1886; 5 years.

Résumé.—Un mécanisme de targette pour fenêtres ou autres ouvertures, composé des pièces B, P, T, s, c, m, et u, renfermé dans la boîte A, recouvert de la manière susdite et pour les fins susmentionnées.

No. 25,143. Sewer Trap. (Trappe d'Egout.)

Christopher Moody, Hamilton, Ont., 16th October, 1886; 5 years.

Claim.—1st. The combination, substantially as described, of a cylinder A, piston B, pipes H, F, plug D, plug seat E, gas pipe I, operating in conjunction with a sewer for the purpose specified. 2nd. In a sewer trap, a cylinder constructed with an inclined bottom c, a piston B, weight C, concave plug D, plug seat recess E, inlet pipe F connecting cylinder to a dwelling outlet pipe H, connecting cylinder at plug seat E to sewer main, and a gas pipe I connecting sewer main G to opening d at the top of the cylinder A, the said cylinder being placed at any convenient position underground between the sewer main and dwelling, all arranged and constructed to operate substantially as and for the purpose specified. 3rd. In a sewer trap, a plug D, constructed concave on its under side, attached to a piston B acting in a plug seat E, of a cylinder A, in combination with an inlet pipe F outlet pipe H, and air or gas pipe I, connecting sewer main to the interior of the upper part of the cylinder A, substantially as and for the purpose specified.

No. 25,144. Hoop Coiler.

(Machine à Pler les Cerclés.)

Alexander F. Ward, Detroit, Mich., U.S., 16th October, 1886; 5 years.

Claim.—1st. The combination, with the frame A and the coiling head, of the curved rail W secured to said frame beneath the coiling head, the foot-lever V pivoted to said curved rail, the curved lever U pivoted to the frame and terminating in a finger, and a rod connecting said lever V directly with the lever U, substantially as shown and described. 2nd. In a hoop-coiling machine, in combination with the tension-strap and the face-plate B, the guide flange Q secured near the outer edge of said face-plate, and having the overhanging flange Q', all arranged to keep the tension-strap from being displaced in removing the coil, substantially as described. 3rd. In a hoop-coiling machine, the combination, with the ram E, of a cross-bar F secured to its rear side transversely the frame and carrying said ram, and of the sliding bolts G adjustably secured in bearings to the end of said cross-bar, and having bearings i upon opposite sides of said cross-bar, and a gate K hinged at one end of said bolts, substantially as described. 4th. In a hoop-coiling machine, the combination, with the main shaft C, of the sliding bolts G having bearings i, the cross-bar F, the ram E carried by said cross-bar, and the hub g carried by the ram and having an enlarged opening through which the main shaft passes, and a bevelled edge f, substantially as and for the purpose described. 5th. In a hoop-coiling machine, the combination, with the friction-wheel M and the coiling mechanism operated thereby, of the friction-pinion M' and its swinging frame, the adjustable tension spring s to normally keep the swinging frame in its adjusted position, the rock-arm T and trap S carried thereby, substantially as described. 6th. In a hoop-coiling machine, the combination, with the coiling mechanism, the tension strap L, of the curved cam K pivoted to the frame, and connected at one end with said tension-strap, and intermediate connections, substantially as described, for producing a decrease of tension on said strap as the coiling progresses, as set forth. 7th. In a hoop-coiling machine, the

combination, with the tension-strap L, of a power device, such as formed by the combination of the friction wheels M', M', carried by the shafts N, t respectively, strap S, the free end of which hangs between said friction wheels, and lever K' secured on said shaft and constructed to release the tension of the tension-strap, substantially as described.

No. 25,145. Machine for Making Sand Moulds for Casting Metals. (Machine à faire les Moulés en Sable Maigre de Fonderie.)

Matthew R. Moore, Indianapolis, Ind., U.S., 16th October, 1886; 5 years.

Claim.—1st. Two or more pattern-slides, as I and J, adapted to carry the parts of a divided pattern, in combination with means for mechanically operating the same, whereby they may be drawn from the sand successively, as herein specified. 2nd. In a pattern chest, two or more slides I, J, carrying portions of the pattern respectively in combination with each other, and a silhouette plate S, and with partially revolving shafts K carrying cams K', K' arranged to withdraw the respective portions of the patterns at different periods, as herein specified. 3rd. The locking means z, in combination with two or more pattern-slides I, J, and with the shafts K carrying cams K', K', arranged for joint operation, as herein specified. 4th. The sheet metal packing G and cover C, in combination with the sand-box O, pattern-box L, and provisions as the piston and cylinder P, A' for raising the latter, and with provisions, as the air bags K and their inflating means, for compressing the sand in a mould all arranged for joint operation, as herein specified. 5th. One or more pattern-chests O, moulding benches adapted to carry a flask and contents, in combination with a platen having yielding pressers, and with a valve N' arranged to control the admission of fluid to actuate the same, and means, as the valve-stem n, for opening the valve by the last portion of the closing movement of the machine, so as to insure that the flask shall be in place when the pressors act, substantially as herein specified. 6th. The fixed projection A' and movable cap or cylinder P, in combination with each other, and with means for admitting fluid to raise the cap and with a platen having yielding pressors, as R, adapted to act independently on different portions of the moulding sand presented thereto, substantially as herein specified. 7th. Two or more pattern-slides I, J, in combination with the partially rotating shafts K, cams K', K', and operating cranks K' with the links l' and k, levers G, H, and operating hand levers h', h', arranged for joint operation, as herein specified. 8th. The combination, with two pattern chests L', L', of two or more pattern-slides I, J, in each and connecting levers G, H, arranged to also balance each other and rise and sink independently thereof, as herein specified. 9th. A yielding platen or pressor adapted to move to varying extents in compressing different parts of the sand, in combination with provisions as the revolving pattern-boxes L', L' for mechanically introducing and removing flasks containing patterns and sand, substantially as herein specified. 10th. Two or more pattern boxes having provisions for supporting flasks, and for operating the patterns therein, in combination with provisions for moving them horizontally, and with a catch B and means for conveniently operating it to hold and release the pattern-boxes, substantially as herein specified. 11th. Two or more pattern-boxes L', L', in combination with each other, and with provisions as E', E' for supporting and balancing the same, and allowing them to be elevated and depressed, as herein specified. 12th. A group of bags or flexible pressors R, and provisions for admitting fluid under pressure thereto, in combination with the rigid cover C, and with two or more pattern-boxes L', L' carrying flasks with sand and provisions for raising and lowering and also revolving the same, all arranged for joint operation substantially as herein specified. 13th. The sand-hopper Q and valve q, cover C and adjusting means and screw D, levers E', E' and pattern-boxes L', L', combined and arranged for joint operation, as herein specified. 14th. The scraper F and adjusting and holding means f, in combination with two or more pattern chests L', L', sand-box O, hopper Q and valve q, and with provisions for compressing the sand under the cover C, as herein specified. 15th. The combination, with two pattern-chests revolving on a common centre, of the two main levers E', E' mounted one above the other, and taking hold of the pattern chests at correspondingly separated points arranged for joint operation, as herein specified. 16th. The sand-box O, in combination with two or more pattern boxes L', L', and turning on a common centre therewith, as herein specified. 17th. Two or more pattern-chests, and mechanism for presenting and withdrawing the patterns therein, in combination with each other and with a platen having yielding pressers, and with a sand-box capable of being moved independently, and with two catches and suitable operating means arranged the one to hold the pattern-chests and the other to hold the sand-box, as herein specified.

No. 25,146. Broom Sewing Machine.

(Machine à Coudre les Balais.)

George F. McCombs, Allegheny, Penn., U.S., 16th October, 1886; 5 years.

Claim.—1st. In a broom sewing machine, the combination of a pair of hinged main or outer jaws, a pair of auxiliary jaws located between said main jaws and adapted to be clamped upon a broom by the closing thereof, and a lever pivoted to one of said main jaws and supporting the auxiliary jaws, these members being combined for joint operation to admit of the lowering of the auxiliary jaws coincidently with the slackening of the jaws by the prior movement of the supporting lever, substantially as set forth. 2nd. In a broom sewing machine, the combination of a pair of hinged main or outer jaws, a pair of auxiliary jaws located between said main jaws, a lever pivoted to one of said main jaws and supporting the auxiliary jaws, and an adjustable lever rack or series of catches fixed upon the main jaw which carries the supporting lever, and adapted to retain said lever in different vertical planes, substantially as set forth.

3rd. In a broom sewing machine, the combination of a vise jaw, a lever pivoted to one end thereof, and an adjustable lever rack composed of a series of plates secured one above the other to the opposite end of the jaw, said plates being provided with lateral teeth or projections and except the one nearest the jaw having longitudinal slots for the passage of the bolts by which they are connected to the jaw, substantially as set forth. 4th. In a broom sewing machine, the combination of a pair of vise jaws, and a pair of shelf hinge plates connected adjustably to lugs or flanges on the jaws, said plates being recessed on their adjacent faces to serve as bearings for a pair of hinge pins or trunnions upon which the vise jaws are pivoted one to the other, substantially as set forth. 5th. In a broom sewing machine, the combination of a pair of vise jaws having hinge plates provided with sockets or bearings on their lower ends, a broom guide or funnel-piece located between said jaws, and having trunnions fitting the bearings thereof, and a vise supporting carriage upon which said funnel-piece is pivoted in a plane perpendicular to the axis of the trunnions, substantially as set forth. 6th. In a broom sewing machine, the combination of a pair of vise jaws having hinge sockets or bearings on their lower ends, a broom guide or funnel-piece located between said jaws and having trunnions fitting the bearings thereof, a guide piece or tongue projecting from one side of the funnel-piece and fitting a vertical slot or mortise on one of the vise jaws, a pivot socket formed on the opposite side of the funnel-piece and projecting through an opening in the adjacent vise jaw, a supporting carriage having a pivot fitting in said socket, a guide bolt passing through a segmental slot on the carriage concentric with said pivot and through an opening in the adjacent vise jaw, and secured to the funnel-piece, and a segmental gear secured to the funnel-piece concentric with said pivot and slot, substantially as set forth. 7th. In a broom sewing machine, the combination of a vise supporting carriage fitted to slide on ways or guides, a broom clamping vise, the jaws of which are hinged together in a plane parallel with the plane of traverse of said carriage, and which is pivoted to the carriage in a plane perpendicular thereto, a pair of centering bars bearing against the jaws of the vise near their free ends, a pair of centering wedges bearing against fixed abutments and against said centering bars, and a rock shaft adapted to be vibrated in its bearings by the supporting carriage and having arms coupled to the rods which carry the centering wedges, these members being combined for joint operation to effect the clamping of the vise jaws with uniform pressure and at equal distances from a central plane upon brooms of different thicknesses, substantially as set forth. 8th. In a broom sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom clamping vise pivoted to said carriage, a rock shaft adapted to be vibrated in its bearings by said carriage in the traverse thereof, and to actuate a mechanism, substantially as described, for clamping the jaws of the vise uniformly and at equal distances from a central plane upon a broom within the same, gearing by which intermittent movement is imparted from a feed shaft to the vise about its pivot on the carriage, a pawl mounted freely on the feed shaft and engaging a ratchet wheel thereon, and a cam fitting on said feed and adjusted in position thereon by the movement of the rock shaft, said cam being adapted to vary the period of engagement of the pawl and ratchet, and thereby to vary the length of the feeding movements of the vise in accordance with the thickness of the broom which is operated on, substantially as set forth. 9th. In a broom sewing machine, the combination of a vise-supporting carriage and a broom-holding vise pivoted thereto, a pair of horizontal guides or ways a pair of wedge blocks interposed between the faces of said guides and the carriage, one of said wedge blocks having an inclined series of end teeth and being coupled to the carriage by a connection admitting of independent longitudinal movement of the carriage relatively to the wedge block, an equalizing lever pivoted at its centre to the carriage and coupled at its ends to the wedge blocks, a rock shaft adapted to be vibrated in its bearings by the carriage in the traverse thereof, and a pivoted segment coupled to and adjusted in position by the rock-shaft, said segment having a series of teeth adapted to act as abutments to the end teeth of the wedge block and arrest the longitudinal movement thereof upon its guide, substantially as set forth. 10th. In a broom sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom-holding vise pivoted to said carriage, a rock-shaft mounted in bearings transversely to the line of traverse of the carriage, mechanism, substantially as described, actuated by said rock-shaft for clamping the vise jaws upon a broom with uniform pressure and at equal distances from a central plane, and a lever mounted loosely on said rock-shaft and held by frictional contact to an arm or post thereon, said lever being adapted to be moved about the axial line of the rock-shaft by an arm on the carriage in the traverse thereof, substantially as set forth. 11th. In a broom sewing machine, the combination of a vise-supporting carriage fitted to slide on ways or guides, a broom-holding vise pivoted to said carriage, a link coupling said carriage to a hand lever pivoted to the frame of the machine, a stop fixed to the frame and adapted to abut against a stop on the vise adjacent to its top, and a chain or cord connected to the lower end of the vise and to the frame, substantially as set forth. 12th. In a broom sewing machine, the combination of a pair of hinged vise jaws, clamping chains secured to one of said jaws, and passing around pulleys on the jaws to winding drums on a shaft mounted in bearings on the jaw to which they are secured, a clamping lever mounted loosely on said shaft, and carrying a pivoted drive wheel engaging the teeth of a ratchet wheel fixed thereon, and a detent pawl pivoted on a fixed stud and engaging the teeth of the ratchet wheel, said pawl having a projecting tail piece adapted to be moved outwardly when pressed upon by the clamping lever, and thereby release the detent pawl from the ratchet lever for relaxing the vise jaws, substantially as set forth. 13th. In a broom sewing machine, the combination of a needle race composed of an upper guide bar having a longitudinal V-shaped tenon or projection on its lower side, a lower guide bar having a corresponding V-shaped recess on its upper side, and connecting bolts and distance-pieces, and a needle block or carriage having a recess on its upper side and a tenon on its lower side corresponding respectively in transverse section with the tenon and recess of the guide bars, substantially as set forth. 14th. In a broom sewing machine, the combination of two guide rods, each carrying a threading rod,

said threading rods being provided respectively with a threading ring and a threading loop, and said guide rods being connected with the capacity of a limited range of independent longitudinal movement, a guide block pivoted to a fixed standard and fitting freely around the guide rod, of the rod carrying the threading ring, a divided clamp fitting around the guide rod, of the rod carrying the threading loop in a recess in the guide block, a bow or U-shaped spring having its arm adjacent to the outer sides of said clamp, and its screws bearing on the clamp and engaging the arms of said spring, substantially as set forth. 16th. In a broom sewing machine, the combination of a threading rod having a loop head fixed upon its end, a threading loop fitting between said head, and a detachable jaw and a clamping screw connecting the head and jaw, substantially as set forth. 17th. In a broom sewing machine, the combination of an unthreading arm, a plate having a socket in which said arm is fitted and secured, a disc fixed upon an operating rock, shaft slots formed in the socket plate and curved concentrically with the axis of the rock shaft, and bolts passing through said slots and connecting the disc and socket plate, substantially as set forth. 18th. In a broom sewing machine, the combination of a needle-operating arm adapted to be vibrated about an end bearing a rock shaft and an unthreading arm secured thereto, a grooved cam arm fixed upon said rock shaft, and a roller journaled upon the needle-operating arm and fitting in the groove of said cam arm, substantially as set forth. 19th. In a broom sewing machine, the combination of a vise-supporting carriage, a broom-holding vise pivoted thereto, a work segment fixed upon the vise concentric with its pivot, a shaft carrying a worm adapted to engage said segment, a bearing journaled upon a shaft or pivot at right angles to said worm shaft and supporting the end thereof farthest from the worm, a bearing connected to a vertical weighted rod and supporting the opposite end of the worm shaft, and a lever pivoted to the frame of the machine and coupled to said weighted rod, substantially as set forth. 20th. In a broom sewing machine, the combination of a worm shaft, and a worm shaft and a worm fixed thereto, a bearing journaled upon a shaft or pivot at right angles to said worm shaft and supporting the end thereof farthest from the worm, a bearing provided with a lateral pivot and supporting the opposite end of the worm shaft, a socket fitting said pivot and secured upon a vertical weighted rod, and a lever pivoted to the frame of the machine and coupled to said weighted rod, substantially as set forth. 21st. In a broom sewing machine, the combination of a reciprocating vise-supporting carriage, a broom-clamping vise pivoted thereto, a pair of centering bars fitted to slide in guides perpendicularly to the plane of traverse of the carriage and vise and to bear against the outer sides of the vise jaws, springs bearing against fixed abutments and against said centering bars and tending to move the centering bars out of contact with the vise jaws, centering wedges bearing against fixed abutments and against said centering bars and tending to press the centering bars against the vise, and a rock shaft adapted to be vibrated by the carriage in its transverse and carrying arms coupled to rods which are secured to the centering wedges, substantially as set forth. 22nd. In a broom sewing machine, the combination of a feed shaft, a segmental gear fixed upon a sleeve or carrier mounted loosely thereon, a feed pawl pivoted to said carrier, a bell crank lever adapted to be vibrated by a cam on a driving shaft, and carrying a segmental gear meshing with the gear of the feed pawl carrier, a ratchet wheel fixed upon the feed shaft and adapted to be engaged by the feed pawl, a cam mounted loosely on the feed shaft adjacent to the ratchet wheel in position to be overhung by the toe of the feed pawl, the periphery of said cam being partly of greatest radius than the feed pawl, and partly of less radius than the distance from the centre of the feed shaft to the bottom of the teeth of the ratchet wheel, a segmental gear connected to the hub of said cam, and an internally-toothed segment formed upon an arm fixed to an adjusting rock shaft, said segment engaging the teeth of the segmental gear and acting to vary the axial position of the cam relatively to the initial position of the feed pawl, substantially as set forth.

No. 25,147. Weighing Machine.

(Balance-Bascule.)

Jean C. J. Favre, Montreal, Que., 16th October, 1836; 5 years.

Claim.—1st. In a weighing machine, one section of the actuating rod formed in two parts, connected together by springs, as and for the purpose set. 2nd. In a weighing machine, the combination of the following elements: a bent three armed lever with one arm engaging with each on main rod, a secondary rack moving with main rod acting upon second arm of said lever, a coin receptacle mounted on the end of the third arm, all as herein set forth. 3rd. In a weighing machine, a conduit or runway made in two parts, with means for holding together and forcing apart its sides. 4th. The combination, with the conduit F, of rod H, moving with main rod and button I, as and for the purpose described. 5th. In a weighing machine, the moving platform or stand-plate sunk below the level of the rim or frame, as and for the purpose described.

No. 25,148. Vehicle Seat. (Siège de Voiture.)

James Steele, Guelph, Ont., 16th October, 1836; 5 years.

Claim.—1st. The combination, with a pivoted seat back and seat rigidly secured thereto, of an end board hinged to the vehicle body, and rods connecting the seat back and the hinged end board to cause them to move together, substantially as described. 2nd. The combination, with the pivoted seat formed of a seat C and seat back D, of an auxiliary seat E hinged to an extension of the seat back D, and means for guiding and supporting the auxiliary seat, substantially as described. 3rd. The combination, with the pivoted vehicle seat, formed of the seat C and seat back D rigidly secured together, of the hinged end board B, rods *s* connecting the end board and the seat back, the auxiliary seat E provided with the rollers *k* and hinged to an extension of the seat back D, the curved inclined guides *g* and the board J, substantially as described. 4th. The combination, with the auxiliary seat E and body A, provided with mortises *p*, *pi*, of the lever *k* pivoted to the auxiliary seat, and the bolts *m*, *mi*, *n* pivotally

connected with the lever *k* and arranged to enter the mortises *p, p'*, substantially as described.

No. 25,149. Saw-Sharpener Device.

(Appareil à Limer les Scies.)

William Tucker, East Brookfield, Mass., U. S., 16th October, 1886; 6 years.

Claim.—1st A rotary saw file of spiral form, formed upon a metallic cylinder, with intervening spaces *r* ways for each alternate tooth of the saw, substantially as set forth. 2nd The combination, with a rotary spiral file, mounted as shown and described, of a fit rest or table for a straight saw, substantially as and for the purpose set forth.

No. 25,150. Machine for Turling Fabrics.

(Machine à Pelucher les Draps.)

Matthew F. Connitt, Jr., Peoria, and Charles B. Merriman, Springfield, Ill., U. S., 16th October, 1886; 5 years.

Claim.—1st. In combination with the sheath and the needle-bar, the stop on the bar and the sleeve on the sheath, provided with a lug to engage the stop on the bar, substantially as and for the purpose shown. 2nd. In combination, with the sheath, the needle-bar, the stop on the bar and the sleeve on the sheath made adjustable along the sheath, and provided with a lug or stop to engage the stop on the needle-bar and limit the upward movement of the latter, substantially as and for the purpose described. 3rd. In combination with the sheath and the needle-bar within the same, both open at the same side, the stop within the bar and the adjustable sleeve on the sheath provided with a lug projecting into the needle-bar, substantially as and for the purpose specified. 4th. In combination with the sheath open at its rear side, the sleeve on the sheath, the stop-lug thereon and the spring-catch adapted to engage any one of a series of holes or notches on the sheath, substantially as and for the purpose shown. 5th. In combination with the sheath and the needle-bar within the same, carrying a tubular needle, the spring rigidly connected with the sheath projecting down into the needle and serrated or roughened at its lower end, substantially as and for the purpose set forth. 6th. In combination, with the sheath, the needle-bar, the hollow needle carried thereby, and an arm connected with the sheath so as to be stationary as the needle-bar, and needle reciprocate projecting down into the needle and serrated at its lower end, substantially as and for the purpose described. 7th. In combination, with the sheath and the needle-bar, the tubular needle carried by the latter, the plate held rigidly to the sheath, and the spring-arm attached to such plate extending down into the needle, and adapted at its lower end to catch and hold the yarn as the needle rises, substantially as and for the purpose specified. 8th. In a turling machine, in combination with the needle-bar, the tubular needle carried thereby, having its lower end cut away at an angle to form a point, and adapted to catch the yarn and prevent it from slipping through the needle as the latter descends, and means for causing the yarn to feed through the needle, substantially as and for the purpose shown. 9th. In a turling machine, in combination with the needle-bar, the tubular needle having its lower end cut away at an angle to form a penetration point, and notched or roughened at the rear side of this cut, and means for holding the yarn from being pulled upward as the needle ascends, substantially as and for the purpose set forth. 10th. In combination, with the needle-bar and the pivot-bar on the rear side of the same, the needle pivoted at its rear side upon this pivot-bar, and a spring engaging the upper end of the needle, above its pivotal point, and pressing such end rearward, substantially as and for the purpose shown. 11th. In combination with the needle-bar, open at its rear side, the pivot-bar extending across such side, the needle pivoted to such bar near its upper end, and provided with a plate to steady it in the bar as it swivels on its pivot, and the spring within the bar pressing the portion of the needle above its pivot rearward, so that the lower portion of the needle normally slants downward and forward with reference to the needle-bar, substantially as and for the purpose set forth. 12th. In combination with the needle-bar and the pivot-bar extending across the same, the needle provided with a series of notches adapted to engage the pivot-bar, and a spring pressing the needle toward such pivot-bar, substantially as and for the purpose described. 13th. In a turling machine, in combination with the needle bar, provided at its lower end with ears to strike the fabric and limit its stroke, the needle provided on its rear side with several pivoted notches, the pivotal bar on the rear side of the needle-bar adapted to be engaged by any of the notches on the needle, and the spring engaging the upper end of the needle and pressing it rearward, substantially as and for the purpose specified. 14th. In a turling machine, in combination with the sheath adapted to rest on the fabric, the needle-bar, means for limiting the upward stroke of the bar in the sheath, means for limiting the downward stroke of the bar with relation to the fabric, and the needle so attached to the bar as to descend down through the fabric a greater distance than its point rises above the fabric, substantially as and for the purpose shown. 15th. In a turling machine, in combination with the sheath adapted to rest on the fabric, the needle-bar within the same having its lower end provided with suitable ears to strike the fabric and limit the downstroke of the bar, means for limiting the upward stroke of the bar, the needle carried by the bar and so attached to it that its point projects beyond the limiting ears a greater distance than it rises above the fabric on its up-stroke, substantially as and for the purpose set forth. 16th. In combination with the sheath for the needle-bar of a turling machine, the two parallel feet at the sides of the lower end thereof formed of a single piece of wire, substantially as and for the purpose described. 17th. In combination with the sockets on each side of the lower end of the sheath and on the front side thereof, the feed formed of a single piece of wire having one end fastened in the socket on one side of the sheath, then extending downward, then forward, then upward, then across through the sockets on the front side of the sheath, then downward, then rearward, and finally upward and into the socket on the other side of the sheath where it is fastened, substantially as and for the purpose specified.

No. 25,151. Telephone. (Téléphone.)

The Bell Telephone Company, Montreal, Que. (Assignee of Ezra T. Gilliland, Boston, Mass., U. S., 16th October, 1886; 5 years.

Claim.—1st. In a magneto telephone, the combination of a permanently magnetic cast iron inclosing case, a core or pole piece internally attached thereto and in magnetic connection therewith, so that the edge of the said case constitutes one pole of the magnet and the said core the other, and a diaphragm resting on the edge of the said case. 2nd. In a telephone, a circular magnetized cast iron inclosing case or cup, a core or pole piece of iron attached to the internal surface of the base of said cup, and maintained in a magnetic condition by virtue of attachment, a diaphragm resting on the edge of said cup, the said edge being extended outwardly beyond the end of the core sufficiently to enable the centre of the diaphragm to be close to said core without touching the same, a coil or helix of insulated wire adapted to be included in an electric circuit surrounding the said pole-piece within the said magnetic inclosing case, and a cap capable of being screwed down on the case to hold the diaphragm in place and to serve as an ear piece, substantially as described. 3rd. In a telephone, the combination of the metal inclosing case, a hollow handle therefor attached thereto, as described, an insulating disk attached to the floor of said case, a pair of binding screw posts secured to said disk for the attachments of the electric connections of a flexible conductor, and a third binding screw attachment similarly mounted and adapted to be connected with a non-conducting strand of the said flexible cord, so as to relieve the strain upon the electric conductors thereof, substantially as described. 4th. In a telephone, a permanently magnetic case adapted to contain the operating parts and to serve as a seat for the diaphragm, an iron core deriving its magnetism from the said case and constituting a central pole therefor, and a wire coil surrounding said central pole and connected by central springs with screw terminals, whereby the said coil may be included in an electric circuit. 5th. In a magneto-telephone, a detachable inducing coil or helix complete in itself, and adapted by means of terminal pins affixed to the edge of the bobbin on which the said helix is wound to engage and lock with contact springs connected with or adapted to be connected with an electric circuit, as and for the purposes described. 6th. In an electric telephone, a magnet and an iron core or pole-piece therefor, a coil or helix of insulated wire surrounding the said core, binding screws for connection with an electric circuit and spring connections extending between two said binding screws and the coil terminals, the said springs being permanently secured to the former and adapted to make contact with the latter by the resiliency of their free ends, whereby the coil may be readily attached for use or detached for inspection or repairs. 7th. In a magneto-telephone, the following elements in combination: a magnetized cast iron inclosing cup or case, a core or pole-piece attached to and projecting from the centre of the floor of said cup and magnetized therefrom, a pair of screw connections attached to a non-conducting disk, which disk is permanently attached to the floor of the inclosing case and adapted to connect by suitable wires with an electric circuit, a metal spring attached to each screw-connection and extending therefrom within the case, and a helix of insulated wire, the spool of which is adapted to slide easily over the pole-piece, and is likewise provided with rigid metal pins constituting the terminals of the helix, which pins are adapted when the helix is slid on the core to be turned round, and to be brought under and into electrical contact with the free ends of the metal springs or to be reversely detached therefrom, in the manner and for the purposes described. 8th. A magneto telephone, comprising the following elements: a circular magnetized cast iron case, an iron core or pole-piece projecting from the interior centre of the floor thereof, a vibratory diaphragm resting by its edges on the edge of the case, and having its centre in close proximity to, but not in contact with, the core, a helix or coil surrounding the said core, a non-conducting disk or washer mounted upon the interior surface of the floor of the inclosing case, a pair of binding posts mounted on said disk and adapted for connection with the electrical-conducting strands of a flexible conducting cord, a single binding post adapted to hold a non-conducting strand of said cord, spring connections between the two electrical binding screws and the coil terminals, a hollow handle opening into the case, whereby a flexible conductor is conveyed to the binding screws, and an ear piece or cap, all arranged as described and for the purposes set forth. 9th. The combination, in a telephone, of the magnetized iron case or head B, provided with a threaded and perforated shoulder E, with the non-conducting perforated handle D, the said handle having a collar D' by which it may be suitably supported in a yoke, and having a flaring or bell-shaped expansion to the channel at its outer end or muzzle, substantially as and for the purposes described. 10th. In a telephone, a cast iron permanent magnet, substantially as described. 11th. In a telephone, a permanently magnetized cast iron cup, the edge whereof constitutes one pole of the operating magnet, provided with a soft iron core affixed to the bottom of said cup, and extending outwardly to form the other pole of said magnet. 12th. The combination, in a magnet-telephone, of a metal cup or inclosing case enclosing the pole-piece and electro-magnetic helix, and provided with perforated neck extending from one side thereof, with a handle therefor of non-conducting material, the stem whereof is adapted to fit in the said neck and to be secured thereto, the said handle being likewise perforated or channelled throughout its length, whereby a flexible conductor may be introduced through the said handle into the metal telephone case, substantially as specified. 13th. In a telephone, the detachable coil having permanent firm terminals and adapted to surround the magnetic core, combined with screw line terminals and metal springs permanently affixed to the said screw terminals, and extending to the coil terminal pins, with which the free ends of the said springs are maintained in contact by their own resiliency, in the manner described.

No. 25,152. Mail Bag. (Valise à Lettres.)

The Union Mail Bag Company, (assignee of Leander W. Freeman) Liberty, Ind., U. S., 16th October, 1886; 5 years.

Claim.—1st. The combination, with a mail bag, of hinged mouth plates connected by hinges that extend only part way across said

plates, and having intervening spaces for receiving the opposite hinges, the hinges on one side of the bag mouth being provided with projecting pintles that are engaged by sliding bolts on the opposite side of the closed bag, substantially as described. 2d. The combination, with a main bag, of hinged mouth plates having intervening spaces 6 and horizontal slots 16, the intermediate front hinges 5 and rear hinges 4 having projecting pintles 17, and the sliding bolts 15 adapted to engage the pintles 17 of the rear hinges, substantially as described. 3rd. The combination, with a main bag, of hinged mouth plates having intervening spaces 6 and horizontal slots 16, the intermediate hinges 4 and 5 extending only partly across the plates, the rear hinges being provided with projecting pintles 17, the bolts 15 and the last 18, pivoted to and adapted to actuate said bolts, substantially as described. 4th. The combination, with a main bag, of the mouth plate 2 having spaces 6, slots 16, and hinges 3 and intermediate hinges 4 and 5, said intermediate hinges being extended only partly across the plates, and the rear intermediate hinges being provided with downwardly-projecting pintles 17, the staple 9 secured to the rear central plate and engaging a slot 8 in the front central plate, the bolts 15 sliding on the inside of the front central plate and engaging the pintles 17, and the hinged last 15 pivoted to the guide arms of said bolts, substantially as described.

No. 25,153. Sewing Machine.

(Machine à Coudre.)

The Singer Manufacturing Company, New York, N. Y., assignee of Robert Whitchell, Milwaukee, Wis., U.S., 16th October, 1886; 5 years.

Claim.—1st. In a sewing machine, the combination, with a driving shaft having a crank or elbow, of a vertical oscillating shaft or post provided with arms embracing said crank or elbow, and having an inclosed opening through which the driving-shaft passes, pivots for said vertical shaft or post arranged centrally in the vertical plane of the driving-shaft, a shuttle-carrier and connections between the latter and the said oscillating shaft or post, substantially as set forth. 2nd. In a sewing machine, the combination, with a driving shaft having a crank or elbow, of a vertical oscillating shaft or post provided with arms embracing said crank or elbow, and an arm at its lower end, and having an inclosed slot or opening through which said driving-shaft passes, pivot-pins for said vertical shaft or post arranged centrally in the vertical plane of the driving-shaft, a second oscillating shaft or post, a shuttle-carrier connected therewith, and a link serving as a connection between the arms of the said oscillating shaft or post, substantially as set forth. 3rd. The swing-post K and its camflanges, mechanism connecting it with the driving-shaft and the feed bar having a member, one end of which engages between the cam flanges of swing-post K, in combination with a rock-shaft H, the driving-shaft and connecting mechanism. 4th. The combination of oscillating shaft or post M₃ and its arms, the elbowed driving-shaft lever M₂, link M₁, swing-post K, the shuttle-carrier cam flanges feed bar and mechanism, substantially as described, for reciprocating the feed-bar all timed to operate, substantially as described. 5th. The combination of the driving-shaft, its rear cam lever D₂, connection D₁, rock-shaft E₁ having flanges A, A', with the swinging and adjustable hanger rock-shaft H₁ and the feed-bar, as and for the purpose set forth. 6th. The connecting rock-shaft E₂, its swinging-bearing and mechanism for adjusting said bearing, in combination with the with the rock-shaft H₁, and feed-bar whereby the stroke of the feed-rod is regulated, as set forth. 7th. The driving-shaft and its cam D₁, in combination with the lever D₂ pivoted at one side thereof to the frame of the machine and having arms embracing said cam, a link jointed to the other side of said lever, and a feeding mechanism connected with said link, substantially as set forth. 8th. The driving-shaft and its cam D₁, in combination with the slotted or split lever D₂ pivoted at one side of the frame of the machine, and provided with arms embracing said cam, a link jointed to one side of said lever opposite its fulcrum or pivotal point, a set-screw or bolt for drawing said arms towards each other, and a feeding mechanism connected with said link, substantially as set forth. 9th. In a sewing machine, the combination, with a feed-bar and a shuttle-carrier, of an oscillating shaft or post having an arm to which said carrier is connected, and also provided with a cam for imparting positive critical movements to said feed-bar, substantially as set forth. 10. In a sewing machine, the combination, with a shuttle-race having well or recess for the needle near its centre, and an inclined under or half-dove-tailed recess, the upper edge of which communicates with the said needle recess about midway vertically of the shuttle-race or in the path of the point of the shuttle, of a shuttle having a cavity in its nose on its upper side, and a shuttle-carrier having a horn fitting loosely in said cavity, substantially as set forth.

No. 25,154. Ore Separator.

(Séparateur de Minerais.)

Charles H. Krause, jr., assignee of Henry E. Krause, Lake Linden, Mich., U.S., 16th October, 1886; 5 years.

Claim.—1st. In an ore-separator, the pan A made with a front end A₁ and tail A₂ arranged about at right angles to each other, and with an oblique head A₃ set at an angle of from twenty-five to thirty degrees to its tail, substantially as described for the purposes set forth. 2nd. In an ore-separator, the pan A made with a front A₁, and tail A₂ arranged about at right angles to each other, and with an oblique head A₃ set at an angle to the tail of from twenty-five to thirty degrees, an ore-feeding chute W at the front end of the pan, and head and tail aprons a₂, a₁ and front and back flanges a₃, a₄, substantially as described for the purposes set forth. 3rd. In an ore-separator, the pan A made with a front end A₁, and tail A₂ arranged about at right angles to each other, and with an oblique head A₃ set at an angle to the tail A₂ of from twenty-five to thirty degrees, in combination with mechanism for adjusting the pan surface to give it backward slope from its front head corner B toward its front tail corner B₁ and toward its back end C, substantially as described for the purposes set forth. 4th. In an ore-separator, the pan A made with a

front end A₁, and tail A₂ arranged about at right angles to each other, and with an oblique head A₃ set at an angle to the tail A₂ of from twenty-five to thirty degrees, combined with mechanism for adjusting the pan vertically to give it a slope from its front head corner B toward its front tail corner B₁, and toward its back end C, and mechanism for imparting an accelerated horizontal movement to the pan toward its front head corner B, substantially as described for the purposes set forth. 5th. In an ore-separator, the pan A made with a front end A₁ and tail A₂ arranged about at right angles to each other and with an oblique head A₃ set at an angle to the tail A₂ of from twenty-five to thirty degrees, in combination with mechanism for adjusting the pan to give it a downward inclination from front to back ends and from head to tail, mechanism for imparting an accelerated horizontal movement to the pan toward its high front head corner B and a water-distributing pipe arranged over a discharge the oblique head A₃ of the pan, and having orifices giving a downward discharge of water upon the pan toward its tail in gradually diminishing volume from the front of the pan toward its back end, substantially as described for the purposes set forth. 6th. In an ore-separator, the pan A made with a front end A₁ and tail A₂ arranged about at right angles to each other, and with an oblique head A₃ set at an angle to the tail A₂ of from twenty-five to thirty degrees, in combination with mechanism for adjusting the head and tail of the pan to give it an inclination from the front head part B toward the front tail corner B₁ and toward the back end C, mechanism for imparting a forward horizontal movement to the pan toward the front head corner B, and a laterally adjustable bearing at the back end C of the pan with which said end is in sliding connection, substantially as described for the purposes set forth. 7th. The combination, in an ore-separator, of a pan having an oblique head mechanism for giving the pan a downward slope from its front head corner B to its tail and back end, mechanism for imparting a horizontal forward movement to the pan toward its front head corner B, and a laterally adjustable bearing at the back end of the pan with which said end is in sliding connection, substantially as set forth. 8th. The combination, in an ore-separator, of a horizontally movable pan, an eccentrically arranged flange plate beneath and connected to the pan, a vertical driving shaft to which the eccentric plate is adjustably connected, and an eccentric driving gear wheel on said shaft, substantially as described for the purposes set forth. 9th. The combination, in an ore-separator, of a horizontally movable pan having an oblique head and high front head corner, as at B, an adjustable eccentric flange plate beneath and connected to the pan, and eccentric imparting an accelerated horizontal bodily movement to the pan toward the front head corner B, substantially as described for the purposes set forth. 10th. The combination, in an ore-separator, of a horizontally movable pan, a gumbar-ring bearing D, a vertical driving shaft, an adjustable eccentric flange-plate working in said ring-bearing and connected to the driving shaft, an eccentric gear wheel H on said shaft, and a pinion I gearing with said wheel H, substantially as herein set forth. 11th. The combination, in an ore-separator, of a horizontally movable pan, an eccentrically arranged flange plate beneath the head of the pan, a shaft to which said flange plate is connected, an eccentric gear wheel on said shaft, and a swivelled sliding bearing supporting the back end of the pan, substantially as described for the purposes set forth. 12th. The combination, in an ore-separator, of a pan having an oblique head and a high front head corner B, headed screws K, K' arranged beneath the front end of the pan, an arm L connected to the back end of the pan, a slide block M' swivelled to said arm, and a screw N threaded into a support O and having a head forming a guide for the block M, which thereby may be set at different angles to the stroke-line of the pan, and mechanism for imparting a horizontal movement to the pan toward its high front head corner B, substantially as described for the purpose set forth. 13th. The combination, in an ore-separator, and with a horizontally movable pan having an oblique head and a front end and a tail arranged about at right angles to each other, and the surface of said pan sloping toward its tail and back end, of mechanism for imparting a forward movement to the pan toward its high front end corner B, and mineral and tailings boxes P, P' placed below the head and tail of the pan respectively, substantially as described for the purposes set forth. 14th. The combination, in an ore-separator and with the horizontally movable pan A, constructed and operated substantially as specified, of mineral and tailings boxes P, P' arranged below the head and tail of the pan respectively, said boxes being connected by a conduit T to the tail of the pan, substantially as herein set forth.

No. 25,155. Canning Apparatus.

(Appareil à Conserves Alimentaires.)

Charles F. Mudge and John Sudweeks, Eskridge, Ks., U. S., 16th October, 1886; 5 years.

Claim.—1st. The combination, with a boiler, a support therein above the bottom of the boiler, and a jar resting on said support, of the drum or cover placed over the jar, the said drum or cover being open at the bottom and having a restricted opening or vent in the top, substantially as set forth. 2nd. As a new article of manufacture, a drum for incasing a jar of fruit or other article within a boiler, the said drum having an open bottom and closed top, the latter having a depressed central portion and a vent-hole, the said vent-hole being located in the depressed portion of the top, substantially as set forth.

No. 25,156. Buttoned or Laced Boot Vamp.

(Empègne de Chaussure Boutonnée ou Lacée.)

Guillaume Boivin, Montreal, Que., 18th October, 1886; 5 years.

Résumé.—Une empègne pour chaussures de différentes grandeurs, soit boutonnées ou lacées, composée des portions A, B, C, E, ayant en forme montrée aux dessins ci-jointes, ayant de plus la contour D en dehors du pied pour la chaussure boutonnée, et cette même contour indifféremment d'un côté et de l'autre pour la chaussure lacée, le tout tel que ci-dessus décrit et pour le fins mentionnées.

No. 25,157. Machine for Cutting, Bundling and Binding Fire Wood. (*Machine à Couper et Empaqueter les Bois de Chauffage.*)

Frank Kingston, St. Johns, Eng., 18th October, 1886; 5 years.

Claim.—In a machine for cutting, bundling and binding fire wood, in combination with the knife *k*, the lever *k* gripping cheeks *k1* and presser *k2*, and the compound slide *S* and *U* with its knife blades and slopes, arranged and operating substantially as herein described.

No. 25,158. Catamenial Sack.

(*Sac Cataménial.*)

Jaines W. Hughes, New York, N. Y., U. S., 18th October, 1886; 5 years.

Claim.—1st. The herein described catamenial sack, consisting of a bandage made of delicately-textured fabric, and formed in part as a pouch or receptacle filled with soft absorbent material, said bandage being adapted for a single use, substantially as described. 2nd. A catamenial sack, consisting of a delicately textured bandage, having a pouch filled with absorbent material, which is medicated with a solution of boracic acid and oleum gaultheriae, substantially as described. 3rd. An antiseptic solution for medicating catamenial bandages, consisting of boracic acid and oleum gaultheriae, as set forth. 4th. The herein described catamenial sack, consisting of a bandage formed of soft delicately textured material, and having a pouch filled with a cushioning absorbent, in combination with suitable devices for attaching the bandage to the person of the wearer, substantially as described.

No. 25,159. Paddle for Paddle Vessels.

(*Aube de Vaisseau à Aube.*)

Daniel McDermid, Darlington, Eng., 18th October, 1886; 5 years.

Claim.—1st. The combination of a large driving drum *a*, with a smaller loose drum *d*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the drums *a* and *d* and the endless band or chain *b*, of the pivoted paddles *c*, substantially as and for the purpose hereinbefore set forth.

No. 25,160. Apparatus for Perspective Drawing. (*Appareil pour Dessiner en Perspective.*)

Robert E. Creasey, Jersey, N. J., U. S., 18th October, 1886; 5 years.

Claim.—1st. The combination of drum *a* and spindle *c*, with the string *g*, rod *f* and slide *m*, substantially as specified. 2nd. The combination of drum *a*, with spindle *c*, ratchet-wheel *d*, pawl *e*, hand-wheel *c* and string *g*, and with the rod *f* and slide *m*, substantially as specified. 3rd. The combination of drum *a*, with spindle *c*, ratchet-wheel *d*, pawl *e*, hand-wheel *c*, string *g*, button *s*, cap *p* having socket *k*, and with the rod *f* and slide *m*, substantially as specified.

No. 25,161. Nail Machine. (*Machine à Clou.*)

Franklin A. Gleason, Brooklyn, N. Y., U. S., 18th October, 1886; 5 years.

Claim.—1st. In a nail machine, the combination of the shaft *A*, with the clutch *C* and loose pinion *d*, the clutch *C* being constructed of the rings *a* and *b*, spring *f*, pivoted pawl *h* and supporting projection *m*, and the pinion *d* having tooth *l*, substantially as described. 2nd. The clutch *C*, composed of the rings *a*, *b*, spring *f* and pivoted pawl *h*, and which has the tongue *c* on the ring *b*, in combination with the collar *e* having recess to receive said tongue, substantially as described. 3rd. The combination of the eccentric *k*, with the rod *15*, box *17* having internal shoulders, rod *16* having collars *19*, spring *18* and elbow *12*, substantially as and for the purposes herein shown and described. 4th. The combination of the vibrator *B*, with the lever *X* pivoted thereto, said lever having arm *b2* and tooth *ca*, and with the lever *T* having forked piece *da*, nipper slide *H* having cam *ce*, nipper jaw *h* having pin *ja* and lever *Z*, substantially as and for the purpose herein shown and described. 5th. The combination of the pivoted heading lever *F*, with mechanism, substantially as described, for swinging it on its pivot, said lever having ribs *r*, and with the socket *E*, header *D*, and frame *M* having perforated guide-portion *t*, substantially as and for the purpose herein shown and described. 6th. The combination of the driving shaft *G*, cutter lever *I* and rotary pivot *J* having projection *s*, with the double hook *L*, header lever *F*, socket *E*, header *D* and perforated frame portion *t*, substantially as herein shown and described. 7th. The combination of the pivot *J* and its cam *s* having ball socket, with the double hook *L* having ball projection *u*, and with the heading lever *F*, substantially as herein shown and described.

No. 25,162. Reed Organ. (*Orgue.*)

James R. Hamilton, Worcester, Mass., U. S., 18th October, 1886; 5 years.

Claim.—The combination of a range of reed chambers, open at their front ends, and there provided with a closing valve or cover, as described, with a series of channels leading from such reed chambers to several ranges of holes, formed in a board over such channels, and varying in size or diameter, substantially as and for the purpose as specified.

No. 25,163. Reed Organ. (*Orgue.*)

James B. Hamilton Worcester, Mass., U. S., 18th October, 1886; 5 years.

Claim.—1st. The combination, with the series of reeds and their induction and eduction passages and the valve or valves thereof, of the closure board provided with an orifice extending through it over the upper end of each of such eduction passages, and of the series of

mouths arranged upon such closure-board, and having eduction openings in their bottoms, all being substantially as described. 2nd. The combination of the air drum or tune augments, substantially as described, arranged below the valves, with the series of reeds and their induction and eduction passages, and the valve or valves thereof, and with the closure board and the series of mouths arranged on such board and with it provided with openings, as specified. 3rd. The combination, with the closure board and the series of mouths applied to the reeds and their induction and eduction passages, as described, of means of pressing such mouths upon the said board, such means as specified, consisting of the friction rollers, the guide rails and the pressure bars and their screws and springs, all arranged and applied essentially as set forth. 4th. The combination, with the closure-board applied to the reed passages block, of the series of rails or ribs extending upward from and arranged upon such board, essentially as described. 5th. The combination of the series of reeds and their induction and eduction passages, the valve or valves thereof, and the closure board having in it an orifice over each of the said eduction passages, with the series of mouths, each arranged directly over one of such orifices, and of the perforated slide to operate with such orifices, as set forth.

No. 25,164. Force Pump. (*Pompe Foulante.*)

Alexander Doyle, St. Thomas, Ont., 18th October, 1886; 5 years.

Claim.—1st. The combination of the piston *p*, without a valve, with the piston *p* having a valve attached to the same piston rod and being operated by the same motor, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the piston *p* without a valve, and the piston *p* having a valve fixed to the same piston rod, and the discharge pipe *c* in the position shown and described, substantially as and for the purpose hereinbefore set forth.

No. 25,165. Bustle. (*Tournure.*)

Frank C. Randall, Joliet, Ill., U. S., 18th October, 1886; 5 years.

Claim.—In the bustle shown and described, the tapo *R*, in combination with the coil spring *S* and the pocketed fabric *D*, substantially as and for the purposes set forth.

No. 25,166. Car Spring. (*Ressort de Char.*)

Richard Vose, New York, N. Y., U. S., 18th October, 1886; 5 years.

Claim.—1st. A spiral spring formed of a bar of uniform thickness throughout, but whose width from end to end varies, the width being greatest at the centre on one side from a straight line drawn through said bar, the opposite side being perfectly straight wound on its edge on the mandrel to shape said spiral, substantially as described and for the purpose specified. 2nd. A spiral spring formed of a bar of uniform thickness throughout, whose width varies from end to end, the width being greatest at the centre on one side, the opposite side being a straight line, said bar being wound on a double mandrel, as shown in Fig. 5, substantially as described and for the purpose specified.

No. 25,167. Machine for Making Bale Ties. (*Machine pour Faire les Cercles d'Etalage.*)

David I. Eckerson and Abram Diefendorf, Worcester, N. Y., U. S., 21st October, 1886; 5 years.

Claim.—1st. In a machine for making wire bale ties, the combination of a wire straightening and stretching mechanism and a cutting-off device, of the mechanism for automatically forming loops on each end of the wire, as set forth. 2nd. In a machine for making bale ties, the combination, with a bed and suitable journal supports mounted thereon, of a driving shaft, and carrying wheels or disks rotating with said shaft, but having a longitudinal movement thereon, and mechanism connected with the aforesaid parts for looping and twisting the wires, as stated. 3rd. In a bale tie machine, the two movable bed plates supporting the carrying wheels, loops forming and twisting mechanism, in combination with the non-rotating cam and gear plates attached to said wheels and supported by said bed plates, and an adjusting screw for moving the same, in the manner and for the purpose set forth. 4th. In a wire bale tie machine, the rotating disks or carrying wheels, provided with diametrically sliding clamps and carrying spindles, provided at their outer ends with a loop forming hook, in combination with a shaft revolving in suitable bearings, and carrying a forming pin at one end, and the non-rotating cam and gear plates provided with suitable teeth and projections to give the desired movement to the several parts, as set forth. 5th. The combination of the bed plate, the rotating disks or carrying wheels, and the central supporting band or bands secured to said bed plate to prevent the sagging of the wires between the wheels, as set forth. 6th. The combination, with the bed plate *A* and supporting bands *G1*, of the curved extensions *G11* attached to and integral with said bands, and forming a receptacle for the finished bale ties, as specified. 7th. In a bale tie machine, a carrying wheel, provided with a clamp formed of two parts *I1* and *I2* elastically connected, in combination with the cam plate *F* and springs *c12* arranged to operate said clamp as the wheel rotates, for the purpose specified. 8th. In a bale tie machine, the carrying wheel provided with bracket *I* and loop forming spindle and hook, in combination with pinion *s1*, sector lever *K* and adjustable stop *K11*, arranged and operating to form the loops in the ends of the wire, as set forth. 9th. The combination, in a bale tie machine, of the loop forming hook, the pinion *s1*, and spindle *J*, sector lever *K* and spring *A*, said spring acting to return the parts to their normal position after displacement by the stop *K1*, as specified. 10th. In a bale tie machine, the combination of loop forming hook *J1*, provided with notch *s12* with the curved guide *o*, and recess *o1* arranged to catch and carry the wire around a forming pin, as set forth. 11th. In a bale tie machine, the combination of the rotating loop forming hook with the shaft *II*, its pinion, the triangular guide block gear plate and connected toothed segment, arranged as set forth to form and twist the loop. 12th. In a bale tie machine, the shaft *II* having one end thrown out of the axial line, in combination with the removable loop-forming pin, as set forth. 13th. In a

balance machine, a wheel G, bracket I, shaft P carried by said bracket and provided with removable pin *d*, spring *e*, pinion *d*, and triangular block *d*, in combination with the gear plate and toothed segments for imparting motion to said shaft, as set forth. 14th. In a balance machine, the combination of the horizontal driving shaft, vertical shaft B, crank plate C having recess *c*, with adjustable slide *C*, carrying the crank pin and set screws *f* for securing said slide in any desired position to regulate the length of stroke to the length of the tie, as specified. 15th. In a balance machine, the adjustable crank and adjustable connecting rod in combination with the cross-head M and slide *M*, arranged to have a limited movement within the slide *M*, as set forth. 16th. In a balance machine, the reciprocating cross-head M and M' having a limited movement in said cross-head of the jaws pivoted to the cross-head, and operated by the slide in the manner set forth. 17th. The combination, in a balance machine, of the cross-piece N, stationary jaw *n* and pivoted jaw *m* with the cam rod N' having stops *o*, and suitable projections *n* to operate the pivoted jaw, as specified. 18th. The reciprocating cross-head carrying slide M' and provided with wire-grasping jaws operated by said slide, in combination with the jaws *m*, *m* attached to cross-piece N and cam rod N' having stops *o*, all arranged and operating to hold and stretch the wire, as set forth. 19th. In a balance machine, the combination of the spring-supported plate *p*, with slide M, the cutter P₁ and carrying wheel G, as set forth. 20th. In a balance machine, the combination of the wire-supporting reel tension pulley and standard D, cross-piece N having spring-supported plate P, and holding jaws *n*, *m*, cam rod N' having adjustable stops *o* and projections *n*, cross-head M having grasping jaws, slide M₁, and operating connecting rod *u* for straightening and stretching the wire, substantially as shown and described.

No. 25,168. Electric Generator or Spark-Producing Apparatus. (*Générateur d'Électricité ou Appareil à Produire des Étincelles.*)

The Domestic Electrical Manufacturing Company, Boston, Mass., U. S., (assignee of Charles L. Clark, Manchester, Eng.), 21st October, 1886; 5 years.

Claim.—1st. A connection-induction machine, or electro-static inductive generating device, constructed in a cylindrical form, and comprising an outer cylinder of ebonite or similar material supporting armature or inductors of metal foil, an inner cylinder of like material supported on pivots or journals and adapted to rotate within the outer cylinder, and supporting carriers of metal foil, contact springs mechanically attached to the outer cylinder so as to make contact successively with the carriers when said inner cylinder is rotated whereby the electrical charges induced on said carriers are redistributed, and leading out wires or electrodes electrically connected with two of the said contact-springs, and serving as terminals of the generator, substantially as hereinbefore described. 2nd. An electro-static inductive generating apparatus, constructed in cylindrical form, and comprising an outer cylinder of card rubber or similar material supporting on its interior surface armatures or inductors of metal foil, an inner cylinder of like material supporting carriers of metal foil and adapted to rotate within the charges induced upon the said carriers are redistributed, and means, as indicated, whereby the said inner cylinder may be rotated with reference to the outer, substantially as described. 3rd. In an electro-static machine, substantially of the character described herein, the inclosing case of ebonite vulcanite or like dielectric, supporting on its inner surface the inductive armatures of said machine, and adapted when rubbed on its external surface to re-excite the said machine should it become discharged. 4th. The combination with the hereinbefore described electro-static generator comprising two concentric cylinders, one of which is adapted to be rotated within the other, of the mechanism for revolving the internal cylinder consisting of a rack actuated by a push-button and from the outside of the outer cylinder, and reacted upon by springs, together with accelerating gear and a ratchet and pawl, substantially as and for the purposes specified.

No. 25,169. Washing Machine.

(*Machine à Laver.*)

Samuel Mirfield and Davidson Carlaw, Newcombs Mills, Ont., 21st October, 1886; 5 years.

Claim.—The combination of the wash-box A and agitator B, with the rod C, the connecting rods D, D, the vibrating arms E, E and the rolling shaft F, the oscillating arm H, the balance wheel I and the drive shaft J, and holding rod L, substantially as and for the purpose hereinbefore set forth.

No. 25,170. Railway Gate.

(*Barrière de Chemin de Fer.*)

John A. Lidback and John J. Gerrish, Portland, Me., U. S., 21st October, 1886; 5 years.

Claim.—1st. In combination with a railway gate pivoted upon a hollow post to swing in vertical plane, a closed liquid cylinder pivoted within the hollow post having its piston connected to an arm rigidly connected with the gate, and pipes leading into the cylinder above and below the piston, said pipes being connected with a suitable forcing mechanism, whereby the gate is operated positively both in raising and lowering, all substantially as described. 2nd. In combination with a gate pivoted upon a hollow post to swing in vertical plane, a closed liquid cylinder pivoted within the hollow post to swing in plane parallel with that of the gate, and having its piston rod attached to an arm connected rigidly with the gate, passages for the liquid communicating with the interior of the cylinder above and below the piston, and connected also with mechanism for forcing the liquid and operating the gate, substantially as described. 3rd. In combination with a vertically-swinging gate pivoted upon a hollow post, a closed cylinder pivoted within the hollow post to swing in a plane parallel with that of the gate, provided with passages through

its trunnions, and having its piston rod attached to an arm rigidly connected to the gate, and suitable pipes connecting the interior of the cylinder above and below the piston with suitable forcing mechanism, all substantially as described. 4th. In combination with pivoted gates, adapted to be operated by hydraulic power of closed cylinders pivoted to swing within the hollow post, provided with operating pistons and inlet and exit passages, and a forcing mechanism consisting of a main shaft, pistons mounted thereon and the toothed piston, substantially as described. 5th. In combination with pivoted gates, adapted to be operated by hydraulic power, of closed cylinders pivoted to swing within the hollow posts provided with operating pistons and inlet and exit passages, a forcing mechanism consisting of a main shaft, collars mounted thereon carrying pistons, the toothed piston rods and clutch mechanism, whereby the gates may be operated in pairs, substantially as described.

No. 25,171. Nut Lock. (*Arrêt-Ecrou.*)

Robert W. Matthews, Lawrence, Texas, U. S., and George Robb, Oranoville, Ont., 21st October, 1886; 5 years.

Claim.—As an improved nut-lock, a longitudinal slot *a* made in the threaded portion of the bolt A, and holes *b* made in the nut B, in combination with the cutter-pin C, substantially as and for the purpose specified.

No. 25,172. Vice. (*Étau.*)

Helen M. Babcock, West Bay City, (assignee of John Ernst, Bay City), Mich., U. S., 21st October, 1886; 5 years.

Claim.—1st. In a vice, the jaw *a* having an opening *f* through its body, and provided with a groove *j* in the bottom of the opening, and the portion *p* in the front portion of the opening, in combination with the supporting-piece *j* within the opening, and fitting into the groove *i* and provided with a reduced portion *m* having the grooves *n*, the pieces *P* on opposite sides of the screw, and provided with the recesses *g* and having the lower end *o* within the groove *i*, and the portions *r* within the groove *n*, substantially as and for the purpose herein set forth. 2nd. In a vice, the combination, with the screw *d* and the pieces *P* on the opposite sides of the screw, and provided in their central portions with the threaded recesses *g*, of the diagonal arms *t* extending from the upper ends of the pieces *P*, the plate *S* hinged to a rigid support at its rear end, and provided on its central portions with the openings *U* passed over the arms *t*, substantially as set forth. 3rd. In a vice, the combination, with the screw *d*, the divided nut *r* engaging with the screw and provided with the inclined arms *t* on its upper portion, and the plate *S* having the openings *u* passed over the arms of the piece *a*, adjustably secured at the upper end to the plate *S*, and the rod *d* passing through the jaws and provided with an extended arm *g*, having its outer end pivoted to the lower end of the piece *a*, substantially as and for the purpose set forth. 4th. In a vice, the combination, with the screw *d*, the divided nut *r* engaging with the screw and provided with the inclined arms *t* on its upper portion, and the plate *S* having the openings *u* passed over the arms of the piece *a*, adjustably secured at its upper end to the plate *S*, and a rod *d* passing through the jaws and provided with an extended arm *g*, having its outer end pivoted to the lower end of the piece *a*, substantially as and for the purpose set forth.

No. 25,173. Pump. (*Pompe.*)

Edward Boyle and John E. Brown, Delta, Ont., 21st October, 1886; 5 years.

Claim.—1st. A pump cylinder having an interior chamber terminated by inwardly projecting flanges at the ends of the cylinder, and provided with an incompressible lining secured in said flanges, as herein shown and described. 2nd. In a pump, the cylinder A having formed in it the chamber B, and the removable and incompressible lining pipe D fitted and secured in the flanges C, substantially as herein shown and described and for the purpose set forth.

No. 25,174. Cash Collecting Lock Box.

(*Boîte de Sécurité pour Recevoir la Monnaie.*)

Duncan Macdonald, Montreal, Que., 21st October, 1886; 5 years.

Claim.—1st. In a cash collecting box having the opening *u*, the travelling diaphragms *f*, arranged in relation to the opening *u*, substantially as described. 2nd. In a cash-collecting box having the opening *u*, the combination of the travelling diaphragms *f*, sounding device or bell *g*, arranged with a mechanism as described. 3rd. The combination, in a cash-collecting box, having the opening *u* with rollers *q* and *h*, band *d*, diaphragms *f*, pinion *n*, toothed segment *g* with a mechanism for operating the segment, substantially as described. 4th. The combination of the bar *b*, spring A, projection *k* having pawl *n* and groove *l*, head *a*, spindle *u* and hammer *d*, bell *e*, lever *r*, projection *s*, toothed segment *g*, pinion *n*, rollers *q* and *h*, band *d*, diaphragms *f* and hopper *v*, the whole constructed and arranged substantially as described.

No. 25,175. Safety Pinion for Watches.

(*Pinion de Sécurité pour Montres.*)

John N. Ferguson, London, Ont., 22nd October, 1886; 5 years.

Claim.—A pinion C, formed with a stop or stud D, and revolving perfectly free on the central wheel staff, in combination with a collet F or other support rigidly secured to the centre wheel staff A, and formed with a stop or flange E, substantially as and for the purpose set forth.

No. 25,176. Wire Nail Machine.

(*Machine à Clou de Fil de Fer.*)

Thaddeus Fowler, Shelton, Conn., U. S., 22nd October, 1886; 5 years.

Claim.—1st. The combination, in a machine of the character described, with the driving shaft and cam thereon, of a pair of grasping

die bars and dies mounted upon the bed plate, and a lever engaging with the main cam and operating to close said dies, a pair of pointing die bars and dies alongside the grasping dies and similarly operated, and means as described, whereby the pointing dies may be given a lateral movement against the grasping dies, substantially as set forth. 2nd. The combination, with the main shaft and the cam G secured thereon, of the levers pivoted between standards mounted upon the bed plate and actuated as to their rear ends by said cam, the grasping die bars and dies arranged beneath one of the levers and operating in a vertical direction only, the pointing die bars and dies arranged beneath the other lever and both opening vertically and adapted to swing laterally, the links through which power is transmitted from the levers to the die bars, and means, as for instance, a toggle joint follower and cam for imparting to the pointing die bars their lateral movement, substantially as set forth. 3rd. The combination with the bed of the machine of the pointing and spring operated grasping die bars and dies arranged thereon, the pivoted and spring opened pointing die bars and dies, the post journaled in the bed plate to which the pointing dies are pivoted and the spring-actuated bar whereby the dies and post are normally controlled as to their position, the cam-actuated pivoted levers, the links interposed between the latter and the die bars, the supporting link arranged within the bed plate and the block toggle lever follower and cam, whereby the dies enclosed longitudinally of the wire, substantially as set forth. 4th. The combination, with the main shaft of the feeding mechanism, composed of the following elements: the face cam on the main shaft, the pivoted and transversely oscillating lever operated by said cam, and spring-actuated against the same, the grasping lever fulcrumed to the last-named lever and carried thereby, and the cam on the main shaft whereby the grasping lever is caused to act, substantially as specified. 5th. The combination with the bed plate of the grasping die bars pivoted at their rear ends and adapted to open vertically the pointing die bars, also pivoted at their rear ends, the post journaled in the bed plate to which the bars last named are secured, the spring-actuated bar attached to and operating the post, means, as described, whereby both pairs of dies may be closed vertically, and additional means whereby the pointing die bars may be closed against the grasping die bars, substantially as specified. 6th. The combination in a wire nail machine, of a pair of standards mounted upon the bed, a pair of pivoted grasping die bars, and dies, and a pair of pointing die bars and dies arranged between the standards, levers fulcrumed to the standards and adapted to close the die bars vertically together, a cam whereby the levers are caused to operate, and means, as described, whereby the two pairs of dies may be closed laterally together for the squeezing of the nail head, substantially as specified. 7th. The combination of the pair of grasping die bars arranged upon the bed plate and adapted to open vertically the pair of pointing die bars arranged beside the grasping die bars, the spring-actuated post journaled in the bed plate, and to which the pointing die bars are secured, the standards and the levers pivoted to said standards, whereby both pairs of dies are closed, and the toggle joint follower and cam on the main shaft whereby the pointing die bars are swung upon their post against the grasping die bars, substantially as set forth. 8th. The combination with the grasping and pointing dies, and the means whereby they are actuated, of the vertically reciprocating trimmer, the block against which it acts, the pivoted lever whereby it is carried, and the roller on the main cam whereby the movement is imparted to the lever, substantially as set forth. 9th. The combination with the bed plate, of the standards mounted thereon, the grasping and pointing die bars, and their levers arranged between the standards and the cam on the main shaft engaging the levers, the means whereby lateral movement is communicated to the pointing die bars, the laterally reciprocating and cam-actuated feed lever, and the grasping lever fulcrumed at the side thereof, the trimmer arranged in ways at the side of one of the standards, the lever whereby it is reciprocated, and the block against which said trimmer cuts and the cam and roller on the main shaft, whereby the feeding and trimming devices are operated, all arranged as described and for the purpose set forth.

No. 25,177. Locomotive Safety Ash Pan.

(*Cendrier de Locomotive de Sécurité.*)

Edgar F. Vaughn, Topeka, Ks., U.S., 22nd October, 1886; 5 years.

Claim.—1st. An ash-pan for a furnace, having a bracing frame, the longitudinal vertical sides and internal inclined sides forming chutes and having air-circulating spaces, substantially as described. 2nd. An ash pan for a furnace, having a bracing frame, chuting sides, air circulating spaces between these sides and the outer walls, and a dumping or tilting bottom, as described. 3rd. The combination, in a furnace ash-pan, of the rigid top frame, the vertical side walls inclined at their ends, as described, the chute boards, a tilting bottom, and the reticulated spark arrester at the ends of the pan, substantially as described. 4th. The combination, with an ash-pan for a furnace, of the means described for dumping the ashes and hinged reticulated dampers, substantially as and for the purposes specified. 5th. The combination of articulating dampers, having reticulated angular walls, with an ash-pan constructed substantially as described. 6th. An ash pan or pit, adapted for locomotive or stationary furnaces, provided at one end with cinder-breaking bars, substantially as described. 7th. An ash-pan adapted for furnaces, having at one end cinder-breaking bars and a reticulated wall, substantially as described. 8th. An ash-pan adapted for locomotive or stationary furnaces, provided at one end with cinder-breaking bars and a reticulated spark arrester, in combination with spray pipes inside of the pan, substantially as described. 9th. The combination in an ash-pan, of a spray pipe for extinguishing incandescent cinders, with reticulated spark-arresting walls and hinged dampers, substantially as described. 10th. The combination in an ash-box or pan, of tilting bottoms provided with slotted plates and the rocking bar provided with forks which enter the slots in said plates, and operate by oscillating the bar to open and shut said bottoms, substantially as described. 11th. An ash-pan, having the exterior vertical sides, the inclined or chute interior sides, a hinged inner diaphragm of wire netting in the rear of the hopper or chute, the tilting bottom reticu-

lated ends and hinged dampers provided with articulating aprons, substantially as described. 12th. The combination in an ash-pan, of the eld walls bevelled at their ends, the rectangular frame, the internal inclined walls, leaving air-circulating spaces, a tilting bottom, a cinder-breaker at the end of the pan and a hinged damper, substantially as described.

No. 25,178. Prisoptometer. (*Prisoptomètre.*)

Howard Culbertson, Zanesville, Ohio, U. S., 22nd October, 1886; 5 years.

Claim.—1st. The combination of a prism holder, a prism or prisms arranged in the holder with a terminal edge of the prismatic face or faces in the central line of sight through the said prism or prisms, and an object circle arranged concentrically in the line of sight, substantially as herein specified and for the purpose set forth. 2nd. The combination of a sustaining disk or frame, a prism holder adapted to be rotated on its axis in the said disk or frame, a prism or prisms arranged in the holder with a terminal edge of the prismatic face or faces in the central line of sight through the said prism or prisms, coincident with the axis of the holder, and an object circle arranged concentrically in the central line of sight, and with the axis of the holder, substantially as and for the purpose herein set forth. 3rd. The combination of a supporting disk or frame, provided with the degree marks upon its face, a tension holder adapted to be rotated on its axis in the said frame or disk, a prism or prisms arranged in the holder with a terminal edge of the prismatic face or faces in the central line of sight through the said prism or prisms coincident with the axis of the holder, and an object circle arranged concentrically in the central line of sight and with the axis of the holder substantially as and for the purpose herein set forth. 4th. The combination of a supporting frame or disk, a prism-holder adapted to be rotated on its axis in the said disk or frame, a prism or prisms arranged in the holder with a terminal edge of the prismatic face or faces in the central line of sight through the said prism or prisms, coincident with the axis of the holder, and a lens-holder attached to the disk or frame in front of the prism or prisms, and with its axis coincident with the axis of the prism-holder, substantially as and for the purpose herein set forth.

No. 25,179. Wash Basin or Similar Vessels.

(*Cuvette de Toilette ou Utensile Semblable.*)

Emily A. Stears, Brooklyn, N. Y., U. S., 22nd October, 1886; 5 years.

Claim.—1st. The combination with the auxiliary basin E, provided with the lug *n*, of the threaded sleeve *p* provided with the angled arms *o* and the internally threaded cap *f* fitted to the sleeve *p*, substantially as specified. 2nd. The combination with a basin A, of the bushing C, collar *c*, provided with a pin *h*, the valve D, perforated sleeve *d* and collar *c*, provided with a hook *f*, substantially as described. 3rd. As an improved article of manufacture, a basin valve consisting of the bushing C, provided with the collar or flange *o*, and the threaded collar *c* carrying the pin *h*, the valve D, perforated sleeve *d* attached thereto and fitted to the bushing C and the collar *c* provided with a hook *f*, all combined and arranged as herein described.

No. 25,180. Dry Dock. (*Bassin de Radoub*)

James E. Simpson, Jr., and Alfred H. Simpson, Brooklyn, N. Y., U. S., 22nd October, 1886; 5 years.

Claim.—1st. A dry dock, wherein the bottom and sides are constructed of the rows of bottom bearing piles *A*, cut off level with the bottom of the excavation, the longitudinal timbers C laid on and firmly secured to said piles, the cross-timbers *F* laid on and firmly secured to the timbers C, the string-pieces *E* laid on and firmly secured to the cross-timbers *F*, the inclined timbers *F*₁ arranged as shown, the exterior rows of brace-piles *A*₂ supporting the timbers *F*₁, the alters *D* laid on the timbers *F*₁ and secured thereto, and the concrete bed *B* carried up to the tops of the timbers C and *F*, substantially as set forth. 2nd. The bottom of a dry dock, composed of the concrete bed laid on the soil or natural bottom and the timbers C embedded in and resting on said concrete, and provided with anchors *a*, *a*, secured to the said timbers and having flanges or toes which take into the concrete, substantially as described. 3rd. A bottom for a dry dock, composed of the longitudinal timbers C laid with intervening spaces and having anchors *a*, *a*, constructed substantially as shown and extending downward from said timbers and the concrete *B*, arranged as shown, between and under said timbers and embedding the anchors, substantially as set forth. 4th. As a means for relieving the bottom of a dry dock from external hydrostatic pressure, said bottom provided with tubes which extend down through it to the natural soil below and said tubes provided with valves to prevent the outflow of water through said tubes, substantially as described. 5th. The combination to form an overflow valve for the bottom of a dry dock of the tube *c* open to receive water at its lower end, and the valve *d* provided with a stem *d*₁ having a weighted bulbous portion *d*₂ near the valve and a suitable packing *e*, all constructed and arranged as set forth. 6th. The combination in a dry dock, of the concrete bed *B* laid upon the natural soil, the longitudinal timbers C embedded in the said concrete and provided with anchors *a*, *a*, which extend down into the concrete, the cross-beams *F* secured to said timbers C and the plankings *G* laid with open joints and secured to said beams *F*, substantially as herein set forth. 7th. The combination with the longitudinal timbers C, the cross-beams *F*, the string-pieces *E*, the inclined timbers *F*₁ and the alters *D*, all constructed and arranged substantially as set forth, of the concrete bed *B* filled into the angle of the excavation and up to the level of the upper faces of the timbers C and *F*₁, substantially as herein set forth. 8th. The concrete filling *B* of the bottom and sides of the dock formed with sloping or inclined surfaces at *x*, *x*, as shown, and having longitudinal channels *L*, *L*, formed in its upper surface, substantially as and for the purposes set forth.

No. 25,181. Refrigerator Store House for Fruits and Vegetables. (*Magasin Frigorifique pour les Fruits et les Légumes.*)

Samuel Brown, Russellville, Ark., U.S., 22nd October, 1886; 5 years.

Claim.—1st. The combination with a store house formed with walls a, of doors B and C, the doors C being made in sections d, di, substantially as described. 2nd. The combination with a store house, formed with double walls, the spaces between the walls being filled in with non-conducting material that is covered and held by strips b, of doors B and C, toothed arms F and brackets G, substantially as described. 3rd. The combination with a double-walled store-house, of double-walled doors, one of which is made in sections, toothed arms F, brackets G and a weather cap N, substantially as described. 4th. The combination with a double-walled store-house, of double-walled doors, one of said doors being formed in sections and one of the doors carrying a facing cushion D, bracket E, arms F F and brackets G, substantially as described.

No. 25,182. Reed Organ. (*Orgue.*)

James B. Hamilton, Worcester, Mass., U. S., 22nd October, 1886; 5 years.

Claim.—1st. The combination of the series of reeds and their induction and eduction passages, the valve or valves thereof, the closure-board provided with an orifice extending through it over the upper end of each of such eduction passages and the series of mouths arranged upon such closure-board, and having induction openings in their bottoms, with the air exhaust chamber fixed to and extending above the closure-board, and movable therewith, and covering the said mouths, all being substantially as set forth, and the said valve or valves of such combination being exposed to the external air, or arranged within a chamber into which the external air has free access and circulation. 2nd. The combination of the vibrating diaphragm or drum covering the air exhaust chamber with such chamber fixed upon and movable with the said closure board and with the series of reeds and their induction and eduction passages, the valve or valves thereof, the said closure-board provided with an orifice extending through it over the upper end of each of such eduction passages and the series of mouths arranged upon such closure board and having induction passages in their bottoms, all being substantially as set forth, and the said valve or valves of such combination being exposed to the external air or arranged within a chamber into which the external air has free access and circulation. 3rd. The combination of the air exhaust chamber, fixed upon and extending above the closure board, and having in its bottom an air passage leading to and opening into one through the reed block, with such block, its reeds, induction and eduction passages valve or valves, and mouths arranged adapted and to operate substantially as set forth. 4th. The combination of an air induction chamber arranged under the reed block, and having an air inlet and a swell valve or register thereto, as described, with the series of valves, the reeds, the induction and eduction passages of such reeds, the closure-board having openings and hinged to the reed block and provided with mouths and an air induction passage, as described, and with the air exhaust chamber fixed to and extending above such closure-board, and provided with an eduction passage to extend over and communicate with the said air eduction passage of the reed block, all being essentially as set forth.

No. 25,183. Reed Organ. (*Orgue*)

Henry W. M'caul, Worcester, Mass., U. S., 22nd October, 1886; 5 years.

Claim.—1st. In a reed-organ, the combination, with the keys pivoted at the centre and provided with adjusting buttons at their rear ends, of the reed-valves located above the reeds and operated by the keys without the intervention of any pitman or levers, substantially as set forth. 2nd. The combination, with keys H pivoted at its centre and provided with an adjustable button I at its rear end, of the reed-valve F and its actuating spring located above the reeds, substantially as shown and described. 3rd. The combination, with the key H and the adjusting button I secured upon the rear end of said key, and adapted to engage directly with the free end of the reed valve to open the same, of the reed valve F provided with a spring, and hinged at one end, and having its free end extend out beyond the rear end of the key to be acted upon by the same, in the manner substantially as set forth. 4th. The combination, with the key H and the adjusting button I secured upon the rear end of said key for the purpose stated, of the reed-valve F located within the swell box and hinged at its rear end, and having its forward free end extend out beyond the rear end of the key H, and adapted to engage therewith for the purpose stated, substantially as shown and described. 5th. The combination, with the key H and adjusting button I secured upon its rear end, of the reed-valve F adapted to engage with, and operated by the button I and located within the swell-box G, and said swell-box G and the reed-boards E for holding the reeds in a vertical position below the reed-valves, substantially as shown and described. 6th. In a reed-organ, the combination, with the keys provided with adjusting buttons at their rear ends, of the reed-valves located above the reeds and adapted to be operated by the keys, substantially as set forth.

No. 25,184. Block Presser for Paper Pulp Mills. (*Presse-Bloc pour Moulins à Pâte à Papier.*)

Warren Curtis, Corinth, N.Y., U.S., 22nd October, 1886; 5 years.

Claim.—1st. The combination, with a cylinder, of a piston, a tubular piston rod and a rod sliding in the tubular piston, and valve-operating gear operated by the rod in the piston-rod, substantially as herein shown and described. 2nd. The combination, with a cylinder, of a piston in the same, a tubular piston-rod on the piston, a rod sliding in the tubular piston rod, a lever pivoted on the cylinder, a valve connected with the lever, which lever is also connected with

the rod in the tubular piston rod, substantially as herein shown and described. 3rd. The combination, with the cylinder D, of the piston C, the tubular piston rod B, the rod M in the same, the cylindrical piece K on the upper end of the rod M, the pivoted lever J having its upper end connected in a suitable manner with the piece K, and a valve connected with the lever J, substantially as herein shown and described. 4th. The combination, with a cylinder, of a piston in the same, a tubular piston rod connected with the piston, a sliding rod in the tubular piston rod, a pivoted lever connected with the sliding rod in the piston rod, a rod pivoted to the lever and connected with the valve on the cylinder, and springs acting on the said valve-rod, substantially as herein shown and described. 5th. The combination, with the cylinder D, of the piston C, the tubular piston rod B, the rod M in the same, the lever J, the rod G connected with the same, the valve F on the rod G, the block P on the said rod, the spring Q and R acting on the rod G, the spring-catch N connected with the lever J, substantially as herein shown and described. 6th. The combination, with the cylinder D, of the piston B, the tubular piston rod B, the rod M in the same, the piece K on the upper end of the rod M, the head M' in the lower end of the rod M, the stop-nut S in the upper end of the piston rod, the lever J, the rod G connected with the same, the valve F on the rod G, a spring acting on the rod G, and a latch for holding the rod, which latch is operated from the lever J, substantially as herein shown and described.

No. 25,185. Roller Grinding Mill.

(*Moulin à Blé à Cylindres.*)

Robert Morrell, Summit, N.J., U.S., 22nd October, 1886; 5 years.

Claim.—1st. In a grinding mill consisting of a series of grinding rolls and separators in the alternate arrangement described, the said series of rolls and separators arranged in two ranges located side by side, in combination with an elevator intermediately arranged therewith, substantially as described. 2nd. In a grinding mill consisting of a series of grinding rolls and separators in the alternate arrangement described, the said series of rolls and separators arranged in two ranges located side by side, in combination with an elevator intermediately arranged therewith, the partition x and the shutters h, substantially as described. 3rd. In a grinding mill consisting of a series of grinding rolls and separators in the alternate arrangement described, the combination of the said rolls and separators arranged in two ranges located side by side, the driving belt running directly from one set of rolls to another of the two ranges alternately throughout the whole series, whereby one of the rolls of each pair is driven, and connecting gearing, whereby the other roll of each pair is driven, substantially as described.

No. 25,186. Block Presser for Paper Pulp Mills. (*Presse-Bloc pour Moulins à Pâte à Papier.*)

Warren Curtis, Corinth, N.Y., U.S., 23rd October, 1886; 5 years.

Claim.—1st. The combination, with a cylinder, of a piston in the same, a piston rod on which the piston is mounted, the upper end of the piston rod projecting through the upper end of the cylinder, and of a plunger or presser-head on the lower end of the piston rod, substantially as herein shown and described. 2nd. The combination, with a cylinder, of a piston in the same, a rod on which the piston is mounted, the said rod projecting through the upper end of the cylinder, a plunger or presser-head on the lower end of the piston rod, a lateral projection on the upper end of the rod, and a lever connected with a valve for regulating the admission of steam, water or compressed air into the cylinder, substantially as herein shown and described. 3rd. The combination, with the cylinder B, of the piston rod C, the piston A on the same within the cylinder, a plunger or presser-head on the lower end of the piston rod, the projection K on the upper end of the rod C, the lever G having a notch J, and the valve F connected with the lever G, substantially as herein shown and described.

No. 25,187. Snow Clearer. (*Charrue à Neige.*)

Finlay A. McRae, Montreal, Que., 23rd October, 1886; 5 years.

Claim.—1st. The combination, with a locomotive, of a shell or case secured thereto in place of the cow-catcher, and carrying rotating shaft on which is mounted a lifting screw, substantially as and for the purpose set forth. 2nd. The combination, with a rotating shaft, carried in shell A, and carrying screw B, of fans E, E operating to drive snow out through openings in shell, all as herein set forth. 3rd. The combination, with the openings F in shell A, of a slide or hook G, substantially as described and for the purposes herein set forth. 4th. The combination, with the hollow shaft C and screw B carried in shell A, of steam pipe H, as and for the purposes described.

No. 25,188. Explosive Compound.

(*Composition Explosible.*)

Béla Broncs, Oberdöbling, Austria, 23rd October, 1886; 5 years.

Claim.—1st. In manufacturing explosive compounds, the employment and application of the double salt compounds of picrate of sodium with other picrates, and especially the picrates of baryta and lead, substantially in the proportions and for the purpose described in the foregoing specification. 2nd. In explosive compounds which contain the compounds or double salts as mentioned in the preceding claim, or picric acid or its salts; the application and employment of highly nitrated naphthalene for the purpose of obtaining on the one hand the utmost possible oxidation of the carbon, and on the other hand a slower consumption of the explosive compounds through the large quantity of nitrogen contained in the same, and for generally increasing the volume of gas evolved, substantially in the proportions described in the foregoing specification and for the purposes set forth.

No. 25,189. Pocket Sewing Machine.*(Machine à Coudre les Sacs.)*

Sally A. Rosenthal, Berlin, Germany, 23rd October, 1886; 5 years.

Claim.—1st. In a pocket lock-stitch sewing machine, the combination of parts consisting of a frame E, the needle bars *a, a', a''*, the cloth plate *i*, the cloth presser and feed lever *l*, with an under thread construction which requires a shuttle *S* for the under thread, and a thread guide *F* for the upper thread, as set forth. 2nd. The arrangement of the shuttle *S* carried by the basket *K*, which latter is closed by a lid *n* and spring *p*, and fixed to the segment *H* by means of a bracket *m*, in such a manner that the shuttle will receive its motion from the pin *h*, fixed on the needle bar *a* working in the slot *q*, as set forth. 3rd. The arrangement of the thread guide *F*, which is movable on the bracket *E*, by means of the pin *c* fixed to the head *d*, permitting the needle to pull or draw the required length of thread and drawing up the loop of the upper thread, as set forth.

No. 25,190. Process of Treating Paper to render it Fireproof. *(Procédé de Traitement du Papier pour le rendre Incombustible.)*

Thomas L. Wilson, Port Hope, Ont., 23rd October, 1886; 5 years

Claim.—1st. The impregnation of paper pulp with salt, alum and asbestos, to render the same fireproof, as herein specified. 2nd. The process of treating paper with salt, alum and asbestos in the proportions and manner specified, for the purpose of rendering paper fireproof, as set forth.

No. 25,191. Saw Frame. *(Monture de Scie.)*

Samuel Hale, Bloomfield, N.J., U.S., 23rd October, 1886; 15 years.

Claim.—In a buck saw-frame, the combination, with a straining-lever, of two straining rods pivoted thereto at their inner ends, and having their outer ends screw-threaded and extending through the arms of the frame, and provided with thumb-nuts, substantially as and for the purpose specified.

No. 25,192. Necktie Shield.*(Caricasse de Cravate.)*

Samuel D. Witham, London, Eng., 23rd October, 1886; 5 years.

Claim.—1st. A necktie shield A folded and rivetted, or otherwise secured by rivets or eyelets C, and having the points J, J, in combination with a piece of necktie material L, substantially as and for the purpose set forth. 2nd. A pin B formed with sharp pointed ends and loops D, in combination with a shield A and a piece of necktie material L, substantially as and for the purpose set forth. 3rd. A fastener G, loop H and spring I, in combination with a pin B and shield A, substantially as and for the purpose specified. 4th. A necktie shield A, in combination with a sweat-proof band or cover E, substantially as and for the purpose set forth. 5th. A necktie shield A, in combination with a cover F, substantially as and for the purpose specified. 6th. A shield A formed with pointed ends J, J, and rivets or eyelets C, in combination with a pin B formed with loops D, D, fastener G, spring I and loop H, substantially as and for the purpose hereinbefore set forth.

No. 25,193. Reversible plough.*(Charrue Reversible.)*

Myron R. Hubbell, Wolcott, Vt., U.S., 23rd October, 1886; 5 years.

Claim.—1st. In a reversible plough, the clovis consisting of the two parts *g, g'*, both said parts being held by the clovis-pin, and the part *g* being rivetted or otherwise secured to the part *g'* between the ends of the latter, substantially as described for the purpose specified. 2nd. In a reversible plough, the shifting clovis with its rearwardly-extending arm *g'*, in combination with handles H, H and cross-bar *h*, substantially as described for the purpose specified. 3rd. The socket K attached to the underside of the plough-beam, the open front and the cross-bar at the back against which the back of the cutter rests, in combination with the cutter J pivoted within the socket by the cross-bolt *k*, substantially as described. 4th. In combination with a reversible plough and the shifting clovis *g*, the inclined wheel guide-bars *m, m* secured to the sides of the beam opposite, or nearly opposite to the pivot bolt *f*, thereby allowing the clovis to swing to the right and left without coming in contact with wheel guide-bars, substantially as described.

No. 25,194. Medicine Chest.*(Coffre à Médicaments.)*

Terry J. Hutton, Fergus Falls, Minn., U. S., 23rd October, 1886; 5 years.

Claim.—1st. In a medicine chest, composed of upper and lower case sections A, B hinged together as described, the central compartment D in the lower section, and longitudinal partitions *f* provided respectively with open-sided pockets *e* on their upper surfaces, in combination with the upper and lower compartments C, C', for vials of different sizes, the longitudinal partitions *d, d*, having recesses *c, c*, in them, and the open-sided pockets *e* along the lower inner margin of said sections, the whole being arranged essentially as shown and described. 2nd. In a medicine chest, provided with open-sided pockets *e*, for reception of the lower ends of vials, the combination, with the chest or case sections, of the metal strips *g*, cast, cut or punched, and bent to form wings *h*, constituting the sides of said pockets, essentially as described. 3rd. The combination, with the sections A, B, of the chest, hinged together at their one end, of the lid G hinged to the upper side of the upper section A, and the leg support M pivoted to the exterior of said lid, substantially as and for the purpose herein set forth. 4th. In a medicine chest, having upper and lower hinged sections A, B, the hinged lid G provided on its

inner face with top and bottom guides or rests *a, a'* and cleats *c₁, c₂*, for retention of a hand-book on said lid, in combination with the pivoted leg support M on the exterior of said lid, essentially as specified.

No. 25,195. Fire and Waterproof Paint.*(Peinture Réfractaire et Hydrofuge.)*

George Pfann, Hamilton, Ont., 23rd October, 1886; 5 years.

Claim.—A composition, composed of sweet milk, lime, wood ashes, plaster of Paris, Portland cement, in or about the proportions specified, and the same thinned with sweet milk and coloured with powdered slate, to be used as a fire-proof paint and cement, substantially as specified.

No. 25,196. Propeller Wheel.*(Hélice Propulsive.)*

Cotesworth P. Wetherill, Woodville, Miss., U. S., 23rd October, 1886; 5 years.

Claim.—The screw propeller or propelling wheel, having its blades of suitable pitch, set inclining in the direction of their length, rotatively to the axial line of the shaft of the wheel, and forwardly in the direction of the motion ahead produced by the propeller, the plane of which inclination of said blades crosses the said axial line of the wheel shaft, substantially as and for the purposes set forth.

No. 25,197. Ice Creeper. *(Crampon à Glace.)*

Charles W. Dutcher and Ezekiel B. Ketchum, St. John, N. B., 23rd October, 1886; 5 years.

Claim.—1st. The combination of the plate A, with the extension bar B and the pivot *a* on the plate C, the lug *u* acting as a fulcrum, the whole being kept in position by the lever *y*, with the catch *d*, the whole in place, adjusted and combined as described in the specification, substantially and for the purpose hereinbefore set forth. 2nd. The combination of the plate D with the extension plate E, with the hinged plate F, the whole being held in position when adjusted and combined as described in the specification, substantially and for the purpose hereinbefore set forth.

No. 25,198. Electrical Contact Apparatus worked by Railway Trains. *(Appareil à Contact Electrique Mis en Oeuvre par les Trains de Chemins de Fer.)*

William Buck, London, Eng., 23rd October, 1886; 5 years.

Claim.—Electrical contact apparatus, consisting of a box containing mercury arranged by the side of a rail, so as to be subjected by the passage of a train to a longitudinal shake or movement, causing a wave of mercury to make or break contact with a wire situated midway in the box, substantially as herein described.

No. 25,199. Railway Coach and Car.*(Voiture et Char de Chemin de Fer.)*

Thomas L. Wilson, Port Hope, Ont., 23rd October, 1886; 5 years.

Claim.—1st. A railway car, whose framing is constructed of rolled channel steel or iron, in the manner and for the purpose specified. 2nd. The frame portion of a railway car, constructed of rolled channel steel or iron, so formed as to present a level surface on the inside and outside of the frame, to facilitate the application of the paper covering, as set forth. 3rd. A railway car, whose frame is constructed of rolled channel steel, as described, and sheathed inside and outside with compressed paper, as herein described. 4th. In the construction of railway cars, of the upright pieces *b* arranged and secured, as described, with their edges facing each other, so as to present a smooth surface for the window slides, as described and specified. 5th. The method herein described, of closing the ends of the channel bars, which consists in folding one side over the other across the channel and folding the top over the two sides and welding the same together, as herein described. 6th. A railway car, whose floor framing is constructed of the rolled channel steel side sills *g*, floor beams *h* and head stock piece *n*, all arranged and secured as described, the corner braces *c*, being secured to the sills *g* and head stock piece *n*, as illustrated, the pieces *c* placed between the sills and floor beams, and secured by means of bolts, as shown at *l*, Fig. 2, all as herein set forth. 7th. In the construction of railway cars, the side uprights *b* secured to the sills *g*, as shown at *u*, Fig. 4, in combination with the carlin *a* and wall-piece *e*, the said carlin wall-piece and upright being secured together by means of a bolt, as shown at *e* and *e'*, Fig. 4, and as herein described. 8th. In the construction of railway cars, the combination of the sills *g*, uprights *b*, longitudinal pieces *f* and wall-pieces *e*, all made of rolled channel steel and secured together as herein specified. 9th. In a railway car, the combination of the sills *g*, uprights *b*, longitudinal pieces *f*, and wall-pieces *e*, all arranged and secured together, as specified, with the roof carlins *a* having between them the additional longitudinal pieces *f*, all constructed of rolled channel steel, as described, the said carlins being secured to the wall-pieces *e*, uprights *b*, as herein described. 10th. In a railway car, the combination of the framing constructed of rolled channel steel, and arranged as herein described, in combination with a compressed paper covering the inside and outside surfaces of the said frame.

No. 25,200. Clothes Pin. *(Épingle Américaine.)*

Leander Libby, Dillonton, Que., 23rd October, 1886; 5 years.

Claim.—As a new article of manufacture, a clothes pin, formed of bent wire, having a spring loop or coil at the head, legs intersecting below the loop and bowed outwardly to meet at a distance from the ends of the wire and thence curve apart to the extremity, as set forth.

No. 25,201. Desulphurising and Purifying Hydro-Carbon Petroleum Oils.
(*Désulfuration et Raffinage des Huiles d'Hydro-carbures de Pétrole.*)

Daniel M. Kennedy, Petrolia, Ont., 25th October, 1886; 5 years.

Claim.—The process of combining the sulphur in the oil with the metallic matter contained in a solution of about equal quantities of sulphate of copper (blue vitriol), caustic, soda and chloride of sodium, common salt, and then separating such combined metallic matter and sulphur from the oil by distillation or sulphuric acid treatment, substantially as and for the purposes hereinafore mentioned;

No. 25,202. Perforated Wash-Board.

(*Planche à Savonner Perforée.*)

George P. Fuller, Minneapolis, Minn., U.S., 25th October, 1886; 5 years.

Claim.—A wash-board, provided with a corrugated rubbing surface forming ridges separated by furrows or depressions, and holes or perforations provided in the ridges only for the circulation of air, the furrows being imperforate, and thus serving to retain a supply of suds, as set forth.

No. 25,203. Implement or Mechanism for Inserting a Cover in the Main Spring Barrel of a Watch or Time Piece. (*Outil ou Machine pour Placer un Couverture dans le Tambour du Grand Ressort d'une Montre ou d'un Chronomètre.*)

William W. Dudley, Waltham, Mass., U.S., 25th October, 1886; 5 years.

Claim.—The watch spring barrel head inserter, substantially as described, composed of the shanked head A, furnished with a handle *m* extending laterally from it, and with a cylindrical chamber *d* having in its side a mouth *e* and in its bottom a radial slot or groove *f*, as specified, the plunger B having a radial groove or slot *h* in its side *g*, and arranged within such head A, as represented, the spring *l* for elevating the plunger, and the lever C for depressing such plunger, all being arranged and to operate essentially as specified.

No. 25,204. Stove Door Handle.

(*Loquet de Porte de Poêle.*)

James D. Whitlock, Richmond, Va., U.S., 25th October, 1886; 5 years.

Claim.—1st. The combination, with the handle and its attaching stem 2 and nut 3, of the wrapping 5 of asbestos around the stem, to prevent metallic contact and conduction of heat, as herein shown and described. 2nd. The combination, with the handle and its attaching stem 2 and nut 3, of a body of asbestos interposed between the attaching nut and the plate 1, to which the handle is secured, as explained. 3rd. The combination of the handle 7, stem 2, nut 3, asbestos washer 4 and metallic washer 3a, substantially as and for the purposes set forth. 4th. The combination, with the handle and a plate to which it is attached, of the attaching stem 2, nut 3, asbestos washer 4, asbestos washer 5, substantially as and for the purpose set forth. 5th. The combination, with the handle and plate to which it is attached, of the stem 2, nut 3, metallic insulating shield 6 and asbestos washer 8 between the metallic shield and handle, substantially as described. 6th. The combination of the handle 7, handle stem 2, nut 3, non-conducting asbestos shields 4 and 8, asbestos wrapping 5 and the metallic insulating shield 6, as shown and described. 7th. The combination of the handle 7, handle stem 2, nut 3, non-conducting asbestos shields 4 and 8, asbestos wrapping 5 and the metallic insulating shield 6, as shown and described. 8th. The combination of a handle having a stem and nut for attaching it to a stove or furnace door or other plate, of a non-conducting, non-combustible envelope surrounding said nut, substantially as herein shown and described. 9th. The combination, with a handle and a plate to which it is attached, of the stem 2, nut 3, asbestos envelope 4, asbestos wrapping 5 and non-conducting metallic shield 6, substantially as and for the purposes set forth. 10th. The combination of a handle having a stem 2, a nut by which the handle is secured, metallic handle-base 7 and asbestos shield 9, the asbestos shield being interposed between the handle and handle-base, substantially as set forth. 11th. The combination of a handle 10, having a stem 2, handle-base 7, a nut by which the handle is secured, metallic insulating shield 6, envelope 4, having shield 5, supplemental handle 12 and asbestos non-conducting shields 9 and 11, substantially as set forth. 12th. The combination of a handle 10, handle-base 7, asbestos shield 9, stem 2, nut 3 and envelope 4, substantially as set forth. 13th. The combination of a handle 10, handle case 7, asbestos shield 9, stem 2, nut 3, envelope 4 and cap 14, having flanges 13, substantially as set forth. 14th. The combination of a handle 10, supplemental handle 12, asbestos shield 11, handle base 7, asbestos shield 9, stem 2 and nut 3, substantially as set forth.

No. 25,205. Stove. (Poêle.)

William J. Copp, Hamilton, Ont., 25th October, 1886; 5 years.

Claim.—1st. The plate E, working in the guides G, G, or their equivalents, forming the bottom of the ash-pit when closed, and when drawn out emptying the ashes down into the receiver F, as described. 2nd. The receiver F working in the guides H, H, or their equivalents, under the ash-pan D, to receive the ashes from the pit D when the plate E is drawn, and said receiver being taken out to empty the ashes when required, and replaced again, as described, all operating substantially as and for the purposes set forth.

No. 25,206. Baby Carriage. (Voiture d'Enfant.)

Irving L. Smith, Montreal, Que., 25th October, 1886; 5 years.

Claim.—The combination, with a baby carriage or like vehicle, of a sliding bar carried in rings, eyes or brackets secured to the carriage, and having a handle projecting therefrom, and stops, all as herein set forth and for the purposes described.

No. 25,207. Hinged Sleigh Kneec.

(*Courbe de Traineau Encharnée.*)

John J. Gardner, Sault Ste. Marie, Mich., U.S., 25th October, 1886; 5 years.

Claim.—The combination, with the knee F and the angle-irons D, D secured thereto, as described, of the cross-beam E, the jaw A rigidly secured by bolts to said cross-beam and formed with arms a, a, the jaw G having arms c, c, embracing the arms a, a, the bolts *di*, *di*, passed through the cross-bar of the jaw C into the arms D, D of said angle-irons, and the removable bolt B passed through openings in the arms a, a, c, c, and pivotally connecting said jaws, substantially as shown and described,

No. 25,208. Sewing Machine.

(*Machine à Coudre.*)

Frederick N. Cookson, Wolverhampton Eng., 25th October, 1886; 5 years.

Claim.—1st. In a sewing machine, and for the purpose of imparting an intermittent to-and-fro motion to the shuttle, the combination of a bell crank lever carrying the shuttle at the extremity of its longer arm, and making a loose connection at the extremity of its shorter arm by means of a stud and slot, with the extremity of a link receiving a corresponding intermittent but linear reciprocating motion from a second link with both of said links, said second link receiving a corresponding linear motion of the same length as that of the needle from a cross-head common to both last-mentioned link and needle, both links and needle travelling in parallel planes, and the connection between the two links being by means of a slot in one which receives a stud upon the other, substantially as described with reference to the accompanying drawings. 2nd. In a sewing machine and for the purpose of quickly imparting an intermittent to-and-fro motion to the shuttle thereof, and of preventing the weight of the parts connected with the shuttle occasioning an accidental irregularity of motion on the part of the shuttle, the combination of two links, one of which has a reciprocating linear motion equivalent to that of the needle, which motion is communicated to the second link (fixed to travel in a plane parallel with that of the first), and to which second link the shuttle is connected by means of a bell crank lever through an intermediary bent link having its axis upon the said second link, and a fixed guide independent of both its own motion and of that of either of the aforesaid two links, said bent link having one straight edge which contacts with the adjacent edge of the link upon which it has not its axis, and, in so doing, preventing the link upon which it has its axis from moving so long as such contact is maintained between said straight edge and edge of link, substantially as described with reference to the accompanying drawings. 3rd. In a sewing machine and for the purpose of actuating the cloth presser with a traversing motion over the cloth plate, the combination of a lever, one end of which is connected to, or embraces, the stem of the presser, while the other is loosely connected to a plate to which a reciprocating motion proper, for actuating the traverser in both directions, is communicated by a pin on a reciprocating link engaging in a serpentine slot in said plate, substantially as described with reference to the accompanying drawings. 4th. In a sewing machine, the combination of a bar spring with a notch in the end of a projection on the cloth presser stem, into which notch the end of the spring engages when the presser has been raised to the top of its stroke, for the purpose of retaining the presser at that point for a moment, substantially as described. 5th. In a sewing machine and for the purpose of raising the cloth presser, the combination, with one of the gear wheels having a stud projecting from its face with a bent lever, with which the said stud engages, and during such engagement raises the presser to the end of the stem of which the nose of the lever is connected for that purpose, substantially as described with reference to the accompanying drawings.

No. 25,209. Water Wheel. (Roue Hydraulique.)

John L. Porley, Enosburgh, Vt., U.S., 25th October, 1886; 5 years.

Claim.—The combination, in a water-wheel, of a casing, the bottom or floor of which is provided with a central aperture, a flume entering said casing, a gate in said flume, an overlapping flange around with said aperture projecting below the bottom of said casing, an open-topped wheel below said casing having a series of vertical blades around its outer edge, said blades being secured together at their tops by means of a rim, a flange of leather or pliable material around said rim and projecting above the top of the wheel, and bearing with its upper edge against the floor of said casing, and means, substantially as described, for supporting said wheel and said casing above said wheel.

No. 25,210. Churn. (Baratte.)

Edwin W. Duggan, Toronto, Ont., 25th October, 1886; 5 years.

Claim.—1st. A conically-shaped spring A having its base coil connected to the cover B, in combination with the dash handle E connected to the apex of the spring A, substantially as and for the purpose specified. 2nd. A conically-shaped spring A having a bent end a on its base coil, which rests upon the churn cover B and is held thereon by the hook screw C, in combination with the churn dash handle E secured to the apex of the spring A. 3rd. A conically-shaped spring A having a bent end a on its base coil, which rests upon the churn cover B, and is held thereon by the hook screw C, in combination with the dash handle E connected to the apex of the spring A, by a pin D passing through the eye b and held in the handle E, substantially as and for the purpose specified.

No. 25,211. Steam Engine. (Machine à Vapeur.)

James J. Morrison, Oliveria, Texas, U.S., 25th October, 1886; 5 years.

Claim—1st. In a steam engine, the combination, with a cylinder having two inlet ports entering the interior of the cylinder, at one third the length of the same from each end, of three pistons operating in the said cylinder, substantially as shown and described. 2nd. In a steam engine, the combination, with a cylinder having two inlet ports entering the interior of the cylinder, at one third the length of the same from each end, of three pistons operating in the said cylinder, and a frame connecting the two outer pistons with each other, substantially as shown and described. 3rd. In a steam engine, the combination, with a cylinder having two inlet ports entering the interior of the cylinder, at one third the length of the same from each end, of three pistons operating in the said cylinder, a frame connecting the two outer pistons with each other, and means for connecting the said frame and the central piston with the main shaft, so as to impart a revolving motion to the latter from the reciprocating frame and the central piston, substantially as shown and described. 4th. In a steam engine, the combination of the cylinder A having the ports *a*, *b*, and *c*, and the valve C, with the three pistons E, G and H, operating in the said cylinder, substantially as shown and described. 5th. In a steam engine, the cylinder A having the ports *a*, *b* and *c*, and the valve C operating from the main driving shaft with the pistons F and G, connected with the sliding frame L, having suitable connections with the main driving shaft D, and the pistons H connected in the usual manner with said driving shaft D, substantially as shown and described. 6th. In a steam engine, the cylinder A having the ports *a*, *b* and *c*, the steam chest B and the slide valve C, operated from the main shaft D, in combination with the pistons F and G, the sliding frame L attached to the said pistons F and G, by the piston rods P and Q, the pitmans M and N, the crank arms N and O on the main shaft D, and the piston H operating between the pistons F and G, and provided with the piston rod H attached to the cross-head J, connected by the pitman K with the crank arm L on the main shaft D, substantially as shown and described.

No. 25,212. Car-Coupler. (Attelage de Chars.)

James Tyack, Portland, N.B., 25th October, 1886; 5 years.

Claim—1st. The bail-shaped link-lifter E, attached at the end of the car near the sides, and provided with handles G, at the sides of the car, substantially as shown and described. 2nd. The combination of the link-lifter E, attached near the sides of the car and provided with handles G, and the stops H fixed in the path of the handles G, substantially as shown and described. 3rd. The combination of the link-lifter E, attached near the sides of the car and provided with handles G, and the stops H fixed in the path of the handles and the link ends of handles G, substantially as shown and described. 4th. The bail-shaped pin-lifter D attached to the end of a car near the sides, and provided with handles F at the sides of the car, in combination with a coupling pin having an eye to receive the lifter, substantially as shown and described. 5th. The combination of the pin-lifter D attached to the end of the car near the sides, and provided with depending handles F, the pin C having an eye to receive the said lifter, and two stop J fixed to the car at the upper limit of the path of the pin, substantially as shown and described. 6th. The combination of the pin-lifter D, attached to the car near the sides, and provided with depending handles F, the pin C having an eye to receive the said lifter, and two stop J fixed to the car at the upper limit of the path of the pin, and the rod H, in combination with coupling pin, substantially as shown and described. 7th. The combination of the link-lifter E, attached at the end of the bar near its sides, and provided with handles G and adapted to swing up in front of the draw bar, the pin-lifter D attached to the end of the car near its sides, and provided with handles F, and the link pin C, stop J and rod H, substantially as shown and described.

No. 25,213. Car-Coupling. (Attelage de Chars.)

Charles E. Michaud, Yamaska, Que., 25th October, 1886; 5 years.

Claim—1st. A car coupling, consisting of a hooked post B on the top of the draw-head, a stirrup E pivoted to the draw-head and adapted to engage the opposite post B, and levers F, F₁, F₂, engaging the stirrup and adapted to control the same. 2nd. The combination of a draw-head A, collar B, hooked post B₁, bar C, pivot D, stirrup E, levers F, F₁, F₂, and bracket H. 3rd. The combination of the draw-head A, hooked post B₁, stirrup E, forked arms F₁, shafts F and handles F₂. 4th. The combination of the draw-head A, post B₁, forming part of a collar B, fitted and secured upon the draw-head, bar C, pin P, pivot D, stirrup E, bracket H, levers F, F₁, F₂, segment F and rod G. 5th. The combination of the collar B, screwed shanks B₁, bar C, nuts T, inclined top U, hooked post B₁ and pin P, all substantially as shown and described, and as for the purpose set forth.

No. 25,214. Ox Yoke. (Joug à Bœuf.)

Charles A. Brown, Pittsfield, Vt., U.S., 25th October, 1886; 5 years.

Claim—1st. An improved ox yoke, having its under side cut on substantially the segment of a circle, beginning at the upper rear edge of the yoke and ending in front of the middle width of the same, and continuing from the latter point in a curve of less convexity, substantially as and for the purpose set forth. 2nd. The combination of the connecting bar, provided with the bevelled rear edge and a shoulder, and the movable yokes connected with the connecting bar, and having a rib *d*, bearing against the bevelled side of the bar, and having the yielding surface *e*, substantially as and for the purpose set forth. 3rd. The combination of a slotted connecting bar, provided with the bevelled rear side and a shoulder, the movable yoke having a rib working in the slot of the connecting bar and provided with the projecting rib bearing against the bevelled side of the connecting bar, and a yielding bearing surface, and the cap-plate secured to the rib that works in the slot of the connecting bar, substantially as described, for the purpose set forth. 4th. The combi-

nation, with a yoke having the curved under surface of the form described, the yielding or elastic pad forming the bearing surface, substantially as described. 5th. The combination of the connecting bar having the bevelled edge, and the movable yoke secured to the bar and having the rib *d*, bearing snugly against the rear bevelled edge thereof, substantially as described, for the purpose set forth.

No. 25,215. Feeding Mechanism for Carding Machines. (Appareil d'Alimentation de Machine à Carder.)

John L. Kendlohart (Administrator to the estate of Jean T. Lemaire), Philadelphia, Pa., U.S., 25th October, 1886; 5 years.

Claim—1st. A feed drum, and means, substantially as described, for imparting an intermittent rotary motion thereto, in combination with two combs having means for imparting an elliptical motion to the same, one of the said combs having a support above and in front of the said drum, and the other comb being also above, but in the rear thereof, substantially as described. 2nd. The comb P, in combination with the comb Q, having a shaft Q, a holder, a drum, a frame having curved slots, a rod pivotally secured to said shaft, and means, substantially as described, for imparting a rising and falling motion to said rod and for operating the said comb P, substantially as and for the purpose set forth. 3rd. The drum F, with means for rotating the same, in combination with the comb Q, comb P located between the comb Q and drum F, a support for the material below said comb Q, means, substantially as described, for oscillating said comb P, and means for imparting a rising and falling motion to said comb Q, substantially as and for the purpose set forth. 4th. A discharge apron, in combination with a holder, a comb, and means, substantially as described, for imparting a rising and falling motion to said comb, and for imparting motion to said apron, substantially as and for the purpose set forth. 5th. The comb P, and means, substantially as described, for oscillating the same, and for imparting a variable speed during each oscillation thereof, in combination with the stripping comb Q, a holder, a delivery apron, and means, substantially as described, for imparting a rising and falling motion to said comb Q, and for operating said holder and apron, substantially as and for the purpose set forth. 6th. The holder R, having a lip link R₁ connecting one end of the holder with the frame A, and means, substantially as described, connected with the other end of the holder for imparting a rising and falling motion to the same, substantially as and for the purpose set forth. 7th. The comb P, in combination with the stationary comb S, stripping comb Q and drum F, and means, substantially as described, for operating the combs P and Q and drum F, substantially as and for the purpose set forth. 8th. The stationary comb S, in combination with the stripping comb Q, holder R and apron L, and means, substantially as described, for operating said comb Q, holder and apron, substantially as and for the purpose set forth. 9th. A supply apron and feed drum, in combination with a rotary rush, and mechanism, substantially as described, for operating said apron drum and brush, substantially as and for the purpose set forth. 10th. The comb P, in combination with the frame A, the toothed segments *π*, *π*₁, of elliptical form, and mechanism, substantially as described, for operating the said segments, substantially as and for the purpose set forth. 11th. A comb, provided with teeth, having a body or shank of a single piece, and bifurcated working ends, substantially as and for the purpose set forth. 12th. A feed drum, provided with teeth having a body or shank of a single piece, and bifurcated working ends, substantially as and for the purpose set forth. 13th. A tooth, formed of a shank with bifurcated ends, substantially as and for the purpose set forth. 14th. A supply or feed apron, in combination with a feed drum, two combs having means for imparting elliptical motions thereto, a comb having means for oscillating the same and for imparting a variable speed thereto during each oscillation thereof, a stripping comb, a stationary comb, a holder, a discharge apron and mechanism, substantially as described, for operating said feed apron, drum, stripping comb, holder and discharge apron, substantially as and for the purpose set forth. 15th. A feed apron and a heater thereof, in combination with a drum and means, substantially as described, for imparting an intermittent motion thereto, straightening combs, stripping and holding devices, a discharge apron and a brush for the return of escaping material, and means, substantially as described, for operating the said movable parts, substantially as described.

No. 25,216. Manufacture of Matches.

(Fabrication des Allumettes.)

Gilford Flowwelling and Gilbert J. Harris, Hampton, N. B., 25th October, 1886; 5 years.

Claim—1st. The process of making match-cards directly from the block, which consists in first forming the sides of the match points by grooving the end of the block of stock, and partially cutting the side of the same in parallel lines by cutters operating in the direction of the grain, and then completing by slicing off the side portion or layer, which thus forms the card of matches connected by the unsplit portion, substantially as shown and described. 2nd. In a match machine, the combination of the trough F and feed rollers G, G, with the gang of cutters H, as shown and described. 3rd. The combination of the trough F, the feed rollers G and the gang of cutters H, with the guiding ridges I. 4th. The combination of the trough F, the feed rollers G and the gang of cutters H, with the movable strips L, M, or other, as and for the purpose described. 5th. The combination of the lining strips M, carrying the guiding tongues I, with the trough or set of guides F and pressed against the stock by spring S, or other suitable means, as and for the purpose described. 6th. The combination of the stock-feeding trough or guides F, the rollers G, the gang of cutters H and the guides I, with the reciprocating plate P carrying the gang of incisors knives *k*, acting in the plums of the saws or cutters, across the end of the trough F, substantially as specified. 7th. The combination of the stock-feeding trough or guides F, the rollers G and the gang-cutters H, with the reciprocating plate P, carrying the sheer knife O, acting across the plain of the saws or cutters at the end of the trough F, substantially as specified. 8th. The combination, in a machine, of the trough F, the rollers G,

the cutters H, the guide ridges I, the slitting knives K, and the slicing knife O, all as shown and described.

No. 25,217. Refrigerator. (*Garde-Manger.*)

Harry Greenland, Orillia, Ont., 25th October, 1886; 5 years.

Claim.—1st. A combined refrigerator and show case, the same being constructed with four double grooved posts B, double glass sides and fronts D, D, D, with air spaces E between them, a double bottom and an ice chamber, having its floor formed in sections containing dead air spaces, for the purpose specified. 2nd. In a refrigerator, one or more upper hollow air sections I, for the bottom of the ice chamber, arranged substantially as and for the purpose specified. 3rd. In a refrigerator, the lower sections J placed under the spaces C formed between the upper sections T, and constructed with a dead air space I and a drip pipe J, substantially as and for the purpose specified. 4th. In a refrigerator, the combination of the upper dead air sections I, and the lower dead air sections J, having air spaces between them for the descent of cold air, substantially as specified. 5th. In a refrigerator, the combination of the upper dead air sections I, the lower dead air sections J, the trough K, drip pipes J, J, and main drip pipe M, all arranged and constructed substantially as and for the purpose specified.

No. 25,218. Clothes Drier, (*Séchoir à Linge*)

Frederick G. Manloy, Syracuse, N. Y., U. S., 25th October, 1886; 5 years.

Claim.—1st. In a clothes-drier of the class shown described a vertical support having pivot arms attached thereto and connected to support C, and the movable brace D having a spring-catch adapted to engage with the block secured to the standards, so as to retain the arms and support in a vertical position, substantially as described and for the purpose set forth. 2nd. In a clothes-drier, a vertical standard provided with rectangular portions to which are pivoted arms B, B, B, said arms being secured at their outer ends to a support C, the lower arm being slotted for the attachment of a brace D, said brace being provided near its central portion with a spring catch having a roller F, which is adapted to engage with an inclined block E, having a curved rear end. Said block being secured to the standards, the parts being organized substantially as shown and for the purpose set forth.

No. 25,219. Ditching Machine.

(*Machine à Fossoyer.*)

Robert H. Kersay, Lebanon, Ind., U. S., 26th October, 1886; 5 years.

Claim.—1st. A new improvement in ditching machines, the bottomless and endless scoops G having a U-shaped cross-section smaller at one end than at the other, and united by pivotal connections to form a continuous chain or trough, substantially as shown and described. 2nd. The series of bottomless and endless tapering scoops united by pivotal connections, forming an endless and continuous trough, in combination with the wheel E, which closes the open side of the scoops during the time their contents are in contact with the periphery of said wheel, while being elevated to the discharging point, as set forth. 3rd. The continuous chain of bottomless and endless, tapering and overlapping scoops, in combination with the spring scraper, arranged and operating substantially as and for the purpose described. 4th. The continuous chain of bottomless, endless and overlapping scoops, in combination with the spring scraper and discharging chutes arranged to discharge the earth upon one or both sides of the ditch, and operating conjointly in the manner specified. 5th. In a ditching machine, the sprocket, driving wheel E provided with recessed side flanges b, b, and connecting web of bottom c arranged to carry the scoop chain and form a bottom for its open side while the chain is in contact with the wheel, as set forth. 6th. The scoop chain or trough F, in combination with the wheels E, E, constructed as described, and inclined swinging frame I, extending between the wheels and forming a support for the spring scraper and discharging chutes, as set forth. 7th. The combination, with the scoop chain and its supporting devices, of the vertically-adjustable plough K, bars h, and adjusting devices, constructed and arranged to carry and adjust the plugs and shape the bottom of the ditch, as set forth. 8th. The combination of the scoop chain and plough K, with the straps or bars h, provided with cutters h, for trimming the sides and edges of the ditch, as set forth. 9th. In a ditching machine, the excavating mechanism in combination with the adjusting devices, and a pendulum provided with a sight bar, to aid in keeping the predetermined line and to show the inclination or grade of the bottom of the ditch as excavated. 10th. In a ditching machine, the frame A, and the shafts a, and v connected by suitable gearing, in combination with the sectors R, connected with the swinging scoop, carrying frame to provide means for raising and lowering the same, substantially as shown and described.

No. 25,220. Voltaic Battery. (*Pile Voltaïque.*)

The Primary Battery Company, (assignees of Thomas J. Jones), London, Eng., 26th October, 1886; 5 years.

Claim.—1st. In a galvanic element, a support or current conductor for the active material constructed of an insulating and inoxidizable or nearly inoxidizable material, and of an oxidizable conductor having gold or platinum locally applied or connected thereto, the conductor being embedded in the insulating material with the exception of the gold or platinum portions, which alone make electrical contact between the active material and the oxidizable conductor, whereby all contact of the electrolyte or of the active material with the oxidizable conductor is prevented as herein specified. 2nd. A galvanic element whereof the support for the active material is constructed of a framework of insulating and inoxidizable or nearly inoxidizable material, having an oxidizable conductor embedded therein, and branch wires or strips connected to said conductor, or said branch wires or strips projecting from the insulating material and penetrating the active material and being plated or coated with gold or platinum or made wholly of one or

other of these metals, substantially as and for the purpose specified. 3rd. A galvanic element whereof the support for the active material is constructed of a network of wires or of a corrugated and perforated plate of base metal partially plated or covered with gold or platinum and embedded in an insulating and inoxidizable or nearly inoxidizable material, the portions plated with gold or platinum alone making conductive contact with the active material of the element, substantially as herein specified and shown in the drawings. 4th. A current conductive clip, clamp or terminal for a galvanic element, constructed of an oxidizable conductor embedded in an insulating, or inoxidizable, or nearly inoxidizable material, and provided with platinum, or gold points, or surfaces, which alone make connection with the active material of the element, substantially as herein described and shown in the drawings.

No. 25,221 Preparation of Transparencies.

(*Préparation des Transparents.*)

William Jones and Richard C. Powell, London, Eng., 26th October 1886; 5 years.

Claim.—1st. For the production of transparencies, the use of the "sheet" consisting of an enamel face to receive the print or design, a "body" of "tracing tissue" or other equivalent material, substantially as specified. 2nd. The process of making the said "sheet" consisting in varnishing the "body," pressing and enamelling the same, and backing it with stout paper or other strengthening paper, substantially as specified. 3rd. In the production of transparencies, the combination, with the "body" having tissue or equivalent material of an enamel face, substantially as specified. 4th. Strengthening the "bracing tissue" or "body" of the "sheet" intended to receive the picture, print or other design, by backing it with one or more layers of paper or equivalent strengthening material, to enable it to carry the weight of color and for the purpose of "securing" the "register," substantially as specified. 5th. The process of applying pictures to china or glass by the use of the herein described "sheet" attached by means of a volatile combustible varnish and afterwards forming the articles, substantially as specified. 6th. The use of a mixture of paraffine oil, glycerine, common soda and water for penetrating paper and thereby rendering ordinary prints, chromographs, oleographs, paintings, or the like, available as transparencies, substantially as specified. 7th. The method or process of producing transparencies by saturating prints, chromographs, oleographs, paintings, or the like, with a mixture, such as herein described, attaching the same to glass and removing the excess of paper, when too thick, by the application of a mixture and friction, substantially as specified. 8th. The method of producing transparencies by printing or painting the design upon the specially prepared sheet hereinbefore described, varnishing and coating the face thereof with ordinary paper, removing the backing and painting, or printing the design or parts thereof on the reverse side of the "tissue" afterwards affixing the same to the glass or transparent material, and when dry, removing the ordinary paper, substantially.

No. 25,222. Sponge Cup. (*Godet Eponge.*)

Samuel Allen, Toronto, Ont., 26th October, 1886; 5 years.

Claim.—1st. The combination, with a sponge-cup, of a turning cover provided with an elongated opening which, by the turning of the cover, will expose different parts of the upper surface of the sponge, substantially as set forth. 2nd. The combination, with a sponge-cup, of a cover, a locking device holding the cover upon the cup, but permitting such cover to be turned, and an elongated opening in said cover, composing different parts of the upper surface of the sponge as the cover is turned, substantially as set forth.

No. 25,223. Combined Latch and Lock.

(*Loquet et Serrure Combina.*)

John C. Craig, Fenelon Falls, Ont., 26th October, 1886; 5 years.

Claim.—1st. The combination, with the lock case having a slot 14, of the elbow lever 12, latch bolt 10 and gravity lever 5, whereby the bolt is retracted by lifting one arm of the elbow lever and expelled by the gravitation of the lever, as set forth. 2nd. The combination, with the lock case having slot 22, of the gravity lever 5, pivoted within the case and having a loop 21, and a latch bolt 10 pivoted to an arm of said lever, whereby the bolt will be retracted by lifting the gravitating lever by the loop, as set forth. 3rd. The combination, with the lock case having slots 14, 22 and curved projection 2, of the elbow lever 12, sliding bolt 10, gravity lever 5 having a loop 21, and dog 9 sliding in a curved slot in the gravity lever, and engaging with the projecting on the lock case, as set forth for the purpose described.

No. 25,224. Apparatus for Welding Wheel

Tires. (*Appareil pour Souder les Bandages des Roues.*)

William Harrison, Walker, Mich., U. S., 26th October, 1886; 5 years.

Claim.—1st. In a welding-machine, a die constructed in two sections, each having in longitudinal section the form of a right-angle triangle, and the sides of one section being laid upon that of the other in combination with set-screws bearing against the end of each part, substantially as described. 2nd. In a welding-machine, the combination, with the angular die-section A, of the section B, having a similar form, the two being united by a tongue and groove a and b, and means, substantially as described, for adjusting one section relatively to the other, substantially as described. 3rd. In a welding-machine, the combination, with rear and front lower dies, one acting upon the periphery of a tire, and the other upon its edge, of corresponding upper dies, the tire being submitted to the action of the rear and front dies alternately, substantially as described. 4th. In a welding-machine, the combination, with the lower dies A and D, the former having a groove I, and the latter a concave face K, of the upper dies G and F, the former having a groove I, and the latter a convex face F, substantially as described.

No. 25,225. Device for Cleaning Cisterns.*(Appareil pour Nettoyer les Citernes.)*

John B. Kibler, Minneapolis, Minn., U.S., 26th October, 1886; 5 years.

Claim.—1st. A cistern-cleaning device, comprising a hollow vessel having a fixed cover, and hinged bottom, and a handle, valves in the cover and bottom, and a slide rod for lifting the upper valve, when the vessel is set on its base, substantially as set forth. 2nd. In a device for cleaning cisterns, in combination, a hollow vessel having a fixed cover and a hinged bottom, and opening in said cover and bottom, valves for said openings, a hinged bar attached to the cover-valve and a sliding rod for lifting said rod and cover-valve when said vessel is placed on its base, substantially as set forth. 3rd. In combination, the vessel A, having cover B and bottom C, openings in said cover and bottom, the valves *g* and *n*, the hinged bar *i*, the sliding rod *k*, humps *m* and jointed handle *h*, substantially as and for the purpose set forth.

No. 25,226. Cooking Stove. (Poêle de Cuivre.)

Lewis S. Browning, St. John, Nfld., 26th October, 1886; 5 years.

Claim.—1st. In a cooking stove, the combination, with an oven, the full width of the stove, of a continuous combustion chamber of like width passing round three sides of oven from fire box to exhaust pipe, and damper for regulating the current, all as and for the purposes herein set forth. 2nd. The combination, with the part *cc* of the continuous chamber A, of the diaphragm C and damper D, all as herein described and for the purposes set forth. 3rd. The combination, with the oven O and continuous chamber A, of the openings H and side H', as and for the purposes described.

No. 25,227. Store Service Apparatus.*(Appareil de Service de Magasin.)*

Isidoro Birge, Philadelphia, Penn., U.S., 26th October, 1886; 5 years.

Claim.—1st. In a store service apparatus, the following elements, in combination, a track, a pivoted carrier receiver, a horizontally moving arrester-bar adapted to be deflected toward or from the track, and a device connected with the receiver for occasioning the movement of said arrester-bar, substantially as set forth. 2nd. In a store service apparatus, the following elements in combination, a track, a pivoted carrier receiver, a horizontally moving pivoted arrester-bar adapted as to either of its ends to be deflected toward or from the track, so as to block or permit the movement of the carrier both in advance of, and beyond its pivot, and a cam device moving with the receiver to occasion the deflection of the said arrester-bar, substantially as set forth. 3rd. In a store service apparatus, the following elements in combination, a track, a pivoted carrier receiver, a horizontal moving pivoted arrester-bar so formed as to present a stop on each side of its pivot, and a cam device fixedly connected with the receiver and having a sliding connection or travelling union with said arrester-bar for occasioning the movement of the latter, substantially as set forth. 4th. In a store service apparatus, the following elements in combination, a track, a pivoted carrier receiver, a horizontally moving doubly curved pivoted arrester-bar adapted to be deflected toward or from the track, and a cam device fixedly connected with the receiver and having a sliding connection or travelling union with said arrester-bar for occasioning the movement of the latter, substantially as set forth. 5th. In a store service apparatus, the following elements in combination, a track, a pivoted carrier receiver, a horizontally moving pivoted arrester-bar adapted to be deflected about its pivot toward or from the track, a slotted cam way connected with the receiver, and a headed lug connected with the arrester-bar and engaged with the slot of the cam way, substantially as set forth. 6th. In a store service apparatus, a pivoted carrier receiver having no track bar but provided with a detent having a heel, in combination with a track, the terminal extremity of which is provided with a horizontal foot, which extends in to the receiver in alignment with the heel of the detent and serves as a track-bar to said receiver when the latter is elevated, substantially as set forth.

No. 25,228. Ball and Socket Lock Hinge.*(Penture à Rotule d'Arrêt.)*

Albert G. Rockfellow, Ashland, Oregon, U.S., 26th October, 1886; 5 years.

Claim.—1st. In a screw-shank hinge, the combination, with the screw-shank of the collar B, substantially as and for the purpose set forth. 2nd. In a screw shank hinge with ball-and-socket joint, the combination, with the screw shank and the collar B, of the ball B₂ with its grooves C₂ and the socket S with its lip F, substantially as and for the purpose set forth. 3rd. A ball-and-socket hinge consisting of a supporting part having a ball with an overhanging edge and notches C₂, and a supported section having a socket with a projecting lip F, adapted to pass through the notches C₂ and pass beneath the overhanging edge of the ball to form a protected ball-and-socket lock hinge, as described.

No. 25,229. Art of Forming Gear Teeth.*(Art de Tailler les Alluchons.)*

Henry H. Warren, Cote St. Paul, Que., 27th October, 1886; 5 years.

Claim.—In the art of forming gear-teeth, the process of removing the material required to be taken off, by the friction of a friction disc or rubbing instrument, substantially as described.

No. 25,230. Art of Forming Screws.*(Art de Fileter les Vis.)*

Henry H. Warren, Cote St. Paul, Que., 27th October, 1886; 5 years.

Claim.—The improved art of forming screw-threads on cylindrical bodies, which consists in subjecting them to the action of a revol-

ving disc, constructed as described, when the said cylindrical body is situated at a suitable angle to agree with the pitch of the thread required, the whole substantially as described.

No. 25,231. Gang Plough. (Scarificateur.)

William J. Browne, Rock Island, Ill., U.S., 27th October, 1886; 5 years.

Claim.—1st. The combination, in a wheel gang plough, of the ploughs B, having their beams extending parallel to each other, of the axle-tree D, the arm *d* and the arm *e* radiating therefrom at different angles from each other, and means for oscillating said axle-tree and arms, as hereinbefore set forth. 2nd. The combination, in a wheel gang plough, with the ploughs B, having their beams extending forward parallel to each other, of the adjustable bearings *c* having elongated bolt-hole therein, the oscillating axle-tree journalled in the same arms *d* and *e*, extending from the ends of axle-tree, which have spindles extending from their extremities on which the wheels are journalled, and means, as set forth, for oscillating said axle-tree and arms *d* and *e* thereof. 3rd. The combination, with the ploughs B, having their beams extending forward parallel to each other, of the axle-tree D, the arms *d* and *e* extending from its ends, said arm *e* being longer than arm *d* and radiating at a different angle therefrom, and the means, as set forth, for oscillating said axle-tree and arms thereof. 4th. The combination, with ploughs B having beams extending forward parallel to each other, of the axle-tree D, arm *d*, lever E having arm *e*, pitman F, lever G, quadrant frame and suitable means for entering notches in said quadrant frame, for holding lever G in any desired position. 5th. The combination, with ploughs B, having their beams extending forward parallel to each other, of axle-tree D, arm *d*, lever E, having arm *e*, pitman F, having a portion of its upper edge serrated to form rack *f*, quadrant frame lever G, pinion F' concentric to the fulcrum of lever G engaging said rack *f*, and means for entering notches in said quadrant frame, whereby said lever G is maintained in any desired position.

No. 25,232. Bailing Press.*(Presse d'Empaquetage.)*

Peter K. Dederick, Loudonville, N. Y., U.S., 27th October, 1886; 5 years.

Claim.—In a bailing press, the combination of the double-acting toggle and the double-acting reversible horse-lever with the double-acting reversible connection, the one end of which is secured to the said toggle, and the other end of which is secured to the said horse-lever, whereby the said toggle and the said connection are drawn bodily across the centre alternately from opposite sides of the press, substantially as and for the purpose set forth.

No. 25,233. Car Axle. (Essieu de Char.)

Jonathan Bourne, Jr., Portland, Oregon, U.S., 27th October, 1886; 5 years.

Claim.—1st. A car-axle, composed of two parts, each constituting in itself an axle, in combination with a coupler uniting the two parts in substantially the manner set forth. 2nd. A car-axle, composed of two symmetrical parts, in combination with a coupler uniting the two parts end to end, in the manner set forth. 3rd. A car-axle, composed of two symmetrical parts placed end to end, in combination with a longitudinally divided cylindrical coupler adapted to enclose and unite the two parts, and clamps for binding the sections of the coupler together, as set forth. 4th. A car-axle, composed of two symmetrical parts placed end to end, in combination with a longitudinally divided cylindrical coupler adapted to enclose and unite the two parts, clamps for binding the sections of the coupler together, and means for locking the parts of the axle against movement in the coupler, as set forth.

No. 25,234. Lamp for Burning Volatile Hydro-carbons. (Lampe à Hydro-carbures Volatiles.)

Harry S. Forbes, London, Eng., 27th October, 1886; 5 years.

Claim.—1st. The apparatus for producing and consuming hydro-carbon gas, consisting of the combination of B, the supply-pipe with the contained fibrous material A the burner, and E or F, the metallic conductors of the heat of the flame to the walls of the pipe, substantially as set forth. 2nd. The combination of the receptacle G, with aperture H, valve I, rod K and funnel M, with the outer casing N and the pipe B, substantially as and for the purpose declared. 3rd. The combination, in an ordinary lamp, of H, the usual reservoir B, the supply-pipe with the contained fibrous material A, the burner and E or F, the metallic conductors of the heat of the flame to the walls of the pipe, substantially as set forth. 4th. The combination, with the apparatus for producing and consuming hydro-carbon gas, as claimed, of the screw plug S, with handle P and the seating W, substantially as described. 5th. The combination, with the apparatus for producing and consuming hydro-carbon gas, as claimed, of the spindle X, with handle T, arm Y and plug Z, and the seating W, substantially as described. 6th. The method of obtaining light and heat from volatile hydro-carbons, substantially as specified.

No. 25,235. Railway Car Truck.*(Châssis de Char de Chemin de Fer.)*

Thomas L. Wilson, Port Hope, Ont., 27th October, 1886; 5 years.

Claim.—1st. A truck frame, constructed of metal channel bars secured together, as described and for the purpose set forth. 2nd. A truck frame, constructed of channel steel bars, having their ends madosolid, as described, and secured by means of bolts, in the manner set forth, in combination with the swinging bolster *e*, constructed as described and specified. 3rd. In the construction of railway car trucks, the manner herein described of securing the tie brace *a* to the frame of the truck, which consists in placing the end framing pieces

and bolting through the same to the end of the side framing piece *b*, as described and specified. 4th. In the construction of railway car trucks, the side bar pieces *b*, bolster pieces *d* and pieces *f*, and wheel guard-pieces *h*, all made of rolled channel steel and secured together in the manner specified, in combination with the brace pieces *a* secured to the framing pieces, as described and specified. 5th. A railway truck, constructed of the framing pieces *b*, *d*, *h* and *f*, all made of rolled channel steel and secured together, as described, in combination with the tie brace pieces *a*, swinging bolster *e* constructed as described, equalizers *m*, equalizing springs *n* and elliptic springs *o*, all arranged and described, as specified.

No. 25,236. Horse Collar. (*Collier de Cheval.*)

Patrick Sheehan, Monroe, Wis., U.S., 27th October, 1886; 5 years.

Claim—A horse collar, comprising two independent sections A, A', having loops *c* on their lower ends, and buckles *d*, *d'* on their upper ends, and the separate and independent neck-shield B, having the keeper straps *b*, *b'*, to receive the upper ends of the collar sections, and the strap *e*, secured between its ends to the upper side of the shield and engaging the buckles *d*, *d'*, substantially as set forth.

No. 25,237. Whiffletree. (*Palonnier.*)

Robert Davis and John W. Miller, Wyoming, Ont., 27th October 1886; 5 years.

Claim—The combination of centre plate with draught-hook shavo and draught chain attachment, substantially as and for the purpose hereinbefore set forth.

No. 25,238. Carpenter's Rule. (*Pied de Roi.*)

William H. Jones, Montreal, Que., 27th October, 1886; 5 years.

Claim—1st. A combined pocket rule or measure, and T-square, consisting of arms of equal length jointed together, one arm being provided with a hinge to adapt it to fold upon itself, and a second which is allowed to swing at freedom to any desired angle to former, substantially as described. 2nd. A pocket rule and T-square, consisting of a rule provided with two arms jointed together, one arm having an intermediate hinge to permit it to fold upon itself, and provided on its outer edge with a pivoted plate or clip to guide and support the hinge portion, and on its inner edge with a slide and a hinge, as B, whereby the arms may be locked at any desired angle by forcing the slide into engagement with one of the inlets formed on the periphery of the hinge, substantially as described.

No. 25,239. Meat Cutter. (*Hache-Viande.*)

Charles F. Leopold, Philadelphia, Penn., U.S., 27th October, 1886; 5 years.

Claim—1st. A meat-cutter, having a forcing screw, rotary cutter and stationary cutters, the rotary cutter being located between the stationary cutters, and formed of a blade having double cutting edges, said edges being on opposite sides of the blade, substantially as described. 2nd. A meat-cutter, having a casing provided with a forcing screw, and formed with an inner circumferential rib M, and spiral ribs N, substantially as described. 3rd. A meat-cutter, having a casing which is provided with a forcing screw, and formed on its interior at the end with a screw thread, and near the end with a shoulder, a stationary cutter resting against said shoulder, a perforated disc engaging with said thread, and a rotary cutter which is interposed between said stationary cutter and disc in contact therewith, and formed of a blade having cutting edges on opposite sides, substantially as stated. 4th. In a meat-cutter and casing A, having an inner rib, in combination with a forcing screw, a fixed cutter, a rotary cutter, the cutting edges of the knives of the cutters being in opposite directions, a detachable perforated disc, and a locking device for said disc, all substantially as described. 5th. A meat-cutter, having a detachable perforated disc, provided with a rim, having its periphery toothed and its casing provided with a pawl adapted to engage the said notched rim, substantially as described. 6th. The casing A, having circumferential rib M, spiral ribs N and shoulder E, in combination with forcing screw B, stationary cutter D, rotary cutter G, perforated disc C, with flange H having its periphery toothed, pawl K and wiper L, all substantially as and for the purpose set forth. 7th. A casing, with a forcing screw therein, having internally threaded ends in combination with a stuffing spout or cap formed with a thread, whereby it may be screwed to said case, and a corrugated or serrated rim, whereby by means of a pawl on the casing, the cap or spout may be locked in position, substantially as described.

No. 25,240. Plate or Element of Voltaic Battery. (*Lame ou Couple de Pile Voltaïque.*)

The Primary Battery Company (assignee of Desmond G. Fitzgerald), London, Eng., 27th October, 1886; 5 years.

Claim—1st. The herein described process of producing dense and coherent plates, masses or layers mainly composed of oxide of lead, which process consists in the admixture with the oxide of lead of a soluble salt, which, when brought by solution into chemical contact with the oxide of lead will become decomposed, and form, with the oxide of lead, an insoluble salt of this metal, and thus cause the material to "set" and acquire the required dense and coherent condition. 2nd. In the process of producing dense and coherent plates, or concreted masses or layers of oxide of lead, the combination, with a portion of the lead entering into the composition of such plates, masses or layers, of the acid radical of an ammonia salt, the salt being such that its radical will form with lead an insoluble, or nearly insoluble salt of that metal, the object of such combination being to cause the material of which the plate, mass or layer is formed, to set so that it will not disintegrate when subsequently immersed in water. 3rd. The herein described process of peroxidizing plates or masses of oxide of lead, which has been caused to "set," as herein described, by submitting them to the oxidizing action of chlorine in the presence of water, substantially as specified. 4th. The herein described process of peroxidizing plates or masses of oxide of lead, by submitting them to the oxidizing action of a hot aqueous solution of sodio or magnesio hypo-chlorite, substantially as specified.

No. 25,241. Farm Fence. (*Clôture de Ferme.*)

William F. Shedd, Grand Rapids, Mich., U.S., 27th October, 1886; 5 years.

Claim—1st. The combination of the crossed stakes A, A', B, B', rider D, supported in the upper crotch of said stakes, wire loops L, secured to said stakes below the crossing point thereof, S-shaped hooks crossing said loops, rails E, F, G, supported in said loops upon the hooks, wire loops C connecting the stakes above the crotch, braces J, K, notched at their upper ends, inserted in said loops, as described, and located respectively upon opposite sides of the fence panel, and clasp H uniting the lower crossed ends of said braces, and securing as a support for the lower rail G, substantially as described. 2nd. The combination with the crossed stakes and rails supported thereby, substantially as described, of the wire loops *c*, *c'*, inclined braces having notched upper ends engaging said loops, the clasp H uniting the lower crossed ends of said braces and supporting the lower rail, and the vertical brace secured to each rail and having an inclined lower end resting upon the brace K within the clasp, substantially as described.

No. 25,242. Traction Engine Driving Gear. (*Appareil Moteur de Machine Locomotive.*)

John Abell (Assignee of Francis M. Walker), Toronto, Ont., 27th October, 1886; 5 years.

Claim—1st. A traction engine, in which the traction gear is supported on an independent frame, pivoted at one end upon the axle of the main carrying wheels, and suitably connected at its other end to the boiler of the machine. 2nd. The frame N, pivoted on the axle C, and connected at its other end to the forward portion of the boiler A, in combination with the counter-shafts E, and F, journaled in bearing boxes M, adjustably connected to the frame N, substantially as and for the purpose specified. 3rd. The frame N, pivoted on the axle C and supporting the counter-shafts E and H, which carry the driving-gear, as specified, the crank-shaft P journaled in brackets S, attached to the boiler A and connected to the frame N by the links Q, in combination with the adjusting spindle S, arranged substantially as and for the purpose specified. 4th. A screwed spindle S, connected to and arranged to operate the crank-shaft P, in combination with the spring *r*, arranged substantially as and for the purpose specified.

No. 25,243. Band or Chain for the Transmission of Work. (*Courroie ou Chaîne de Transmission du Mouvement.*)

The Gasking Patent Driving Belt and Leather Company, London (Assignee of Alfred J. Gasking, Enfield, Eng., 27th October, 1886; 5 years.

Claim—1st. The improvements in bands or chains for the transmission of work, which are composed of steel or other metallic links, with groups of discs or blocks, etc., threaded upon transverse pins for driving on to special pulleys or laces, having hollows or recesses for receiving the same, substantially as herein set forth. 2nd. A belt for transmitting power, consisting of a metallic frame having transverse rods, in combination with pieces of leather or other frictional material, etc., arranged upon the said rods between the sides of the said frame and presenting the operative surface or surfaces to the wheels, substantially as herein set forth. 3rd. In driving belts or bands, the combination of pieces of leather having one hollow side and one straight side, secured together by transverse pins in combination with a metallic chain for taking the tension thereof, substantially as herein set forth. 4th. In combination with a metallic chain or links, a series of intermediate leather or other pieces, having serrated faces or edges, either longer or shorter, and threaded upon transverse rods to form a driving band, substantially as herein set forth.

No. 25,244. Dumping Waggon. (*Tombereau.*)

Joseph Cameron, Cynthiaua, John S. Judson and W. S. Judson, Springfield, Ohio, U.S., 27th October, 1886; 5 years.

Claim—1st. A series of dumping slats, arranged in pairs and hinged at the bottom of the bed, in combination with a series of rods and bars connected therewith and to a hand-lever, whereby the said slats are raised and lowered by a movement of the hand-lever, thus opening or closing the bottom of the bed, substantially as set forth. 2nd. The combination in a waggon bed of a series of transverse slats hinged at the bottom of said bed and arranged in pairs, one set of pairs being arranged on each side of the respective axles and provided with a covering over the joints between the said pairs, whereby a hood is formed above the said axles, while discharging the load, substantially as set forth. 3rd. The combination with a waggon, of a dumping bed having a series of dumping slats arranged in pairs, of an opening L in the sides of the bed between the slats and a hood H above said opening and slats, substantially as and for the purpose set forth. 4th. In a dumping bed, a longitudinal bar connected by suitable means to a pivoted hand-lever and hinged to the side of the bed by a series of parallel bars, in combination with a series of dumping slats arranged in pairs and connecting bars from each slat of the respective pairs to the said parallel bars, substantially as set forth. 5th. A series of dumpings, disposed in pairs and hinged within the sides of the bed, connected by carcass or other suitable material, which is elevated above the joints by a transverse rod, substantially as set forth.

No. 25,245. Plate or Element of Voltaic Batteries. (*Lame ou Couple de Pile Voltaïque.*)

The Primary Battery Company (Assignee of Thomas J. Jones and William H. Tasker), London, Eng., 27th October, 1886; 5 years.

Claim—1st. The herein described process of producing porous and coherent masses or plates, mainly composed of oxide of lead, which

process consists in mixing together an oxide of lead, preferably the monoxide litharge and one of the salts herein specified, whilst the said material are in a dry condition, and then steaming the dry mixture whilst in the mould, as and for the purpose specified. 2nd. The manufacture of porous and coherent masses or plates, mainly composed of oxide of lead, which process consists in mixing together monoxide of lead, litharge, peroxide of lead and one of the salts herein specified, whilst the said material are in a dry state, and then steaming the dry mixture whilst in the mould, as and for the purpose specified.

No. 25,246. Harvester. (*Moissonneuse.*)

The Massey Manufacturing Company, Toronto, Ont. (Assignee of William N. Whiteley and William Bayley, Springfield, Ohio, U.S.), 27th October, 1886; 5 years.

Claim.—1st. A main frame, surrounding and supported by a main wheel, a platform, cutting and binding apparatus attached to and supported by said frame in rear of the main wheel, and a forward extension of the inner side bar *r*, substantially as described, combined with a tongue *z*, pivoted to said forwardly-extended side bar, a diagonal brace *b* and a driver's seat and foot-board mounted on said diagonal brace, whereby the weight of the driver is supported by the tongue in advance of its joint-connection to the main frame, substantially as set forth. 2nd. The main frame *r*, *r*, surrounding and supported by the master-wheel *a*, a cutting apparatus, platform, and binding apparatus attached to and supported by said frame in rear of the main wheel, combined with the tongue *z*, jointed to a forward extension of the side bar *r*, the diagonal brace *b* and strap *Z*, whereby the outer end of the bolt *m* is supported. 3rd. A main frame surrounding and supported by the main wheel *a*, and the forward extension of the inner side bar *r* and the tongue *z* jointed to the main frame, the diagonal brace *b* rigidly secured to the tongue, just in advance of the end of the extended side bar *r*, and the lever *z* mounted upon the extended side bar *r*, at its extremity, and the link *b*, whereby said lever is jointed to said tongue, substantially as set forth.

No. 25,247. Certificate of Value.

(*Certificat de Valeur.*)

Thomas L. Devany, Charles Dowling, Francis J. Devany, Edward P. Runayne and Michael J. F. Quinn, Montreal, Que., 25th October, 1886; 5 years.

Claim.—The combinations is as follows: certificate of value of scales integral with the instrument, marked by numerals or characters, and indicating by their detachment the value of such certificate, all as herein set forth.

No. 25,248. Galvanic Battery and Electrode of Electrolytic Converting Tank or Trough. (*Batterie Galvanique et Electrode de Réservoir ou Auge de Transformation Electrolytique.*)

The Primary Battery Company (Assignee of William H. Tasker and Thomas J. Jones), London, Eng., 23th October, 1886; 5 years.

Claim.—In a support for the active material of a galvanic element, the herein described mode of attaching conductive strips of platinum or gold foil or leaf wires or ribbons to inoxidizable (or nearly inoxidizable) material, which consists in passing the strips to and fro, wholly or partially through the inoxidizable material, substantially as herein specified and represented in the drawings.

No. 25,249. Brake for Locomotives, etc.

(*Frein de Locomotive, etc.*)

The American Brake Company (Assignee of George H. Poor), St. Louis, Mo., U.S., 23th October, 1886; 5 years.

Claim.—1st. The combination, in a brake system, of link-suspended or floating brake-heads, and floating levers for actuating the brake-heads, said floating levers connected by pull-rods, arranged so that all the levers shall be levers of the third order, substantially as and for the purposes specified. 2nd. The combination, in a brake system, of suspended brake-heads, floating levers for actuating the brake-heads, and pull-rods for connecting the floating levers, said pull-rods so connected with the floating levers that the difference in length between the arms of the levers shall decrease gradually from the first to the last lever of the series, substantially as and for the purposes specified. 3rd. In a brake system, the combination, with the lever of wedge-shaped cross-section, of a brake-head having a wedge-shaped slot, the thickest edge of the lever arranged in the narrow portion of the slot, and a pin for connecting the two, so that the head can rock on the lever, substantially as and for the purposes specified. 4th. In a brake system, the combination of a series of floating levers, and suspended brake-heads loosely connected to one end of the said floating levers, and pull-rods, which connect the free end of one of the levers with the next lever of the series at a point between its two extremities, substantially as and for the purposes specified. 5th. In a brake system, the combination, with suspended brake-heads, of a series of floating levers for actuating the same, a series of pull-rods which successively connect the free ends of the levers with the next adjacent lever, a fulcrum bracket and a bell-crank lever for applying the power to the brake system, substantially as and for the purposes specified. 6th. The combination of two systems of brakes, one for the wheels of each side, each of said systems consisting of a series of floating levers, one end of each lever of the series connected with a suspended brake-head, while the free end of each lever is connected with the succeeding lever of the series at a point between its extremities, and the final levers of the two systems connected to a brake beam, which carries the brake-heads for the front wheels, substantially as and for the purposes specified.

No. 25,250. Process of Making Axle Skeins.

(*Procédé de Fabrication des Fustes d'Essieux.*)

James I. Kay (Assignee of Robert Gracey), Alleghany, Penn., U.S., 23th October, 1886; 5 years.

Claim.—1st. As steps in the manufacture of axle-skeins, swaging between suitable dies, a blank of tubular material, thereby elongating it and reducing its diameter, and then hammering its enlarged end to form a lip for securing the skein to the axle, substantially as set forth. 2nd. The process herein described of forming axle-skeins, consisting, essentially, in swaging between suitable dies a blank of tubular material, thereby elongating it and reducing its diameter, then hammering its enlarged end to form a lip for securing the skein to the axle, and finally securing on the skein the collar against which the wheel presses, substantially as set forth.

No. 25,251. Rotary Water Meter.

(*Compteur à Eau Rotatoire.*)

Frederick W. Tuorck, Syracuse, John Hunter, Sterling, and James C. Hunter, Syracuse, N.Y., U.S., 23th October, 1886; 5 years.

Claim.—1st. A meter, comprising in combination, a suitable shell, having an inlet and an outlet, a cylindrical piston within the said shell, having two wedge-shaped lateral flanges *r* and *r* opposite each other and arranged to be rotated by the pressure of liquid introduced through the said inlet, and suitable registering mechanism connected with the said piston to indicate the number of its revolutions, substantially as described. 2nd. A meter, comprising in combination, a suitable shell, having an inlet and an outlet, a piston within the said shell to be rotated by the pressure of water introduced through the said inlet, hinged partitions within the said shell engaging with the said piston, and forming with the latter in its rotation closed and intercommunicating chamber, and suitable registering mechanism connected with the said piston to register the number of its revolutions, substantially as described. 3rd. A meter, comprising in combination, the following elements, viz.: a shell A, having an inlet B and an outlet B₁, a recessed piston C, supported to rotate within journal-bearings at opposite ends of the said shell, hinged partitions D and D₁ within the said shell, and having a tendency to be in continual contact at their free edges with the surface of the said piston, and registering mechanism connected with the said piston to register the number of its revolutions, the whole being constructed and arranged to operate substantially as and for the purpose set forth. 4th. In a meter, the rotary piston C, provided on opposite sides with recessed flanges, substantially as and for the purpose set forth. 5th. A water meter, comprising, in combination, the following elements, viz.: a shell A, having an inlet B and an outlet B₁, and provided with a pocket C, to receive sand and other sediment, and capable of being opened and closed, a recessed piston C, supported to rotate within journal bearings at opposite ends of the said shell, hinged partitions D and D₁ within the said shell, and having a tendency to be in continual contact at their free edges with the surface of the said piston and registering mechanism connected with the said piston to register the number of its revolutions, the whole being constructed and arranged to operate substantially, as described.

No. 25,252. Elastic Rail Support.

(*Coussinet Elastique de Rail.*)

Carl Stuart, New York, N.Y., U.S. (Assignee of Fridolf Schauman, Copenhagen, Denmark), 23th October, 1886; 5 years.

Claim.—1st. A metallic plate A, adapted to be secured upon a railway sleeper, and provided with rail-supporting flaps *d*, having reverted edges to receive the rail-flanges for the purpose set forth. 2nd. A metallic plate A, having flaps or flanges *a*, adapted to be secured upon a railway sleeper, and inclined spring-flaps *d*, the said spring-flaps being provided with horizontal extensions *h*, having reverted edges *e*, to support and embrace the foot of the rail, substantially as and for the purpose specified. 3rd. A metallic plate A, having flaps or flanges *a* adapted to be secured upon a railway sleeper, and inclined spring-flaps *d* provided with reverted edges obliquely opposite to each other, to embrace opposite edges of the rail-foot, substantially as and for the purpose specified. 4th. A metallic plate A, having obliquely opposite lugs or flanges *a*, adapted to be secured upon a railway sleeper and adjacent to the said flanges rail supporting spring-flaps *d*, which have reverted edges and are separated from the flaps by a side-slit *c*, said spring flaps being arranged obliquely opposite to each other and directly opposite to the flanges *a*, substantially as and for the purpose specified. 5th. A metallic plate A, having fastenings, flanges *a* securable upon a railway sleeper, and spring-flaps *d* provided with reverted clamping edges, the said edges being arranged obliquely and the said flanges directly opposite to each other. 6th. A metallic plate A, securable upon a railway sleeper, and provided with rail-supporting spring-flaps *d*, having at opposite sides of the rail-foot upturned edges *e*, *e*, *e*, the said edges *e*, *e*, being reverted and the said edge *g* being intermediately opposite to the edges *e*, *e*, and provided with a set screw *i*, as and for the purpose specified.

No. 25,253. Regenerative Gas Lamp.

(*Lampe à Gaz Régénérative.*)

Charles M. Langron, New York, N.Y., U.S., 23th October, 1886; 5 years.

Claim.—1st. The combination of an annular inverted gas burner, having downwardly-directed orifices for the omission of gas at its lower end, an air-chamber surrounding the burner, said chamber having an outlet for air at its lower end and connected at its upper end to an air conduit leading to it from the outer air across the escape flue, an escape flue, the lower end of which surrounds the upper end of the air chamber, an enclosing globe and air inlets arranged between the outer edge of the globe and the escape flue, substantially as specified. 2nd. The combination of an inverted annular gas burner, having downwardly-directed orifices for the omission of gas

at its lower end, and a deflecting button beneath its lower end, an air chamber surrounding the burner, said chamber having an outlet for air at its lower end and connected at its upper end to an air conduit leading to it from the outer air across the escape flue, an escape flue, the lower end of which surrounds the upper part of the air chamber, an enclosing globe and air inlets arranged between the outer edge of the globe and the escape flue, substantially as specified. 3rd. The combination of an inverted annular gas burner, having downwardly-directed orifices for the emission of gas at its lower end, an air chamber surrounding the burner, said chamber having attached to its lower end a flame director, and being connected at its upper end to an air conduit leading to it from the outer air across the escape flue, an escape flue, the lower end of which surrounds the upper part of the air chamber, an enclosing globe and air inlets arranged between the outer edge of the globe and the escape flue, substantially as specified. 4th. The combination of an inverted annular gas burner, composed of a ring of tubes open at their lower ends for the emission of gas, an air chamber surrounding the burner, said chamber having an outlet for air at its lower end and being connected at its upper end to an air conduit leading to it from the outer air across the escape flue, the lower end of which surrounds the upper part of the air chamber, an enclosing globe and air inlets arranged between the outer edge of the globe and the escape flue, substantially as specified. 5th. The combination of an inverted burner, having openings for the emission of gas in a downward direction, an air chamber surrounding the burner, said chamber having an outlet for air at its lower end, and connected at its upper end to an air conduit leading to it from the outer air across the escape flue, an escape flue, the lower end of which surrounds the upper part of the air heating chamber, an enclosing globe and air passages admitting air, either into the top or bottom of the globe, or both.

No. 25,254 Machine for Rolling Screw Threads. (*Machine à Faire les Filets de Vis.*)

Hayward A. Harvey, Orange, N.J., U.S., 28th October, 1886; 5 years.

Claim.—1st. A rotating cylindrical die and a stationary curved die for forming the threads of screws, in which the working faces for impressing the thread upon the body of the blank present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, the lower portion of said faces inclined toward or gradually approaching each other, the said inclined portion of the faces provided with properly inclined ridges, whereby the said rib formed on the blank will be continued from the body of the blank down on to the pointed or contracted portion of the blank, substantially as described. 2nd. A rotating cylindrical die, and a stationary curved die for forming the threads of screws in which the working faces present parallel ridges at the proper angle of inclination with the plane of motion of the rotating die, a segment arranged in the lower portion of both the rotating and stationary dies, said segment presenting a face eccentric to the working face of said dies, and inclined to the vertical plane of the said face of the dies, said segments gradually approaching each other the said inclined portion of the faces provided with properly inclined ridges, whereby the rib formed on the blank will be continued from the body of the blank down on to the pointed or contracted portion of the blank, substantially as described. 3rd. A rotating cylindrical die and a stationary curved die forming the threads of screws, in which the working faces present parallel ridges at the proper angle of inclination, with the plane of motion of the rotating die, a segment arranged in a recess in the lower part of each of said dies, the said recess of greater depth than the thickness of the segment, the face of said segments gradually approaching each other, and having upon their faces properly inclined ridges, whereby the rib formed on the body of the blank will be continued from the body of the blank down on to the pointed or contracted portion of the blank, said segments made adjustable radially in said recesses, substantially as described. 4th. In a machine for rolling screw threads, two or more pairs of dies, each pair consisting of a rotating die and a stationary curved die, the respective pairs of dies having the ridges on their working faces at the proper angle of inclination with the plane of motion of the rotating die, one of said rotating dies made adjustable with relation to the next, substantially as described.

No. 25,255. Car Wheel. (*Roue de Char.*)

Joseph G. Hill, Flatbush, N.Y., U.S., 28th October, 1886; 5 years.

Claim.—1st. A railway car-wheel consisting of the rim 1, having the inwardly projecting annular flange 3 formed centrally on its inner face, the hub 4 formed with the central annular flange 5 and the web plates 6, each formed with annular curves semi-elliptic in cross section, said plates being secured at their inner edges directly to the opposite faces of the single central hub flange 5, and at their outer edges directly to the opposite faces of the single central rim flange 3, substantially as described. 2nd. A railway car-wheel consisting of the rim 1, provided with the exterior annular side flange 2, and having the single inwardly projecting annular flange 3 formed centrally on its inner face, the hub 4 formed with the single central annular flange 5, the web plates 6, each formed with annular curves semi-elliptic in cross-section, and their inner edges abutting directly against the opposite faces of the single central hub flange, and their outer edges abutting directly against the opposite faces of the single central rim flange, said bolts 10, each passing through both web plates and attaching them to said central flange, substantially as described.

No. 25,256. Show Window. (*Vitrine.*)

Charles D. Williams, Philadelphia, Penn., U.S., 28th October, 1886; 5 years.

Claim.—1st. A rotatable show window, divided horizontally into vertical sections which may be rotated independently or as one, substantially as described. 2nd. A rotatable show window formed of independent sections divided horizontally, having a common axis, and connected by a catch or bolt whereby they may be rotated as one, substantially as described. 3rd. A rotatable show window having a

rear chamber, substantially as described. 4th. A rotatable show window formed of independent sections, and provided with a catch or bolt for connecting the sections as one, substantially as described. 5th. A bulk or other window, in combination with a rotatable show window formed in sections, a catch or bolt for connecting the sections, and a catch or bolt for locking the show window to the bulk window, substantially as described. 6th. A rotatable show window having a platform connected therewith. 7th. A rotatable show window formed of independent sections, and a platform connected with one of the sections, substantially as described.

No. 25,257. Gate. (*Barrière.*)

George M. Bates, Tipton, Ind., U.S., 23th October, 1886; 5 years.

Claim.—1st. The combination of the post B, provided with the hooks *a*, *a*², projecting rearwardly and at an angle to the front face thereof, the staple or hook *l* in the post B above the gate *a* and on a vertical line in advance of the hooks *a*, *a*², the chain *b* attached to the hook *a*² or staple *l* and the top of the gate, the gate pivoted on the lower hook and resting between the upper hook *a*² and the post, substantially as and for the purpose set forth. 2nd. The combination, with the gate, supported by and tilting upon the hook *a*, and held by the hook *a*² on the rear post of the latch *d*, pivoted at its upper end to the front end of the gate and the catch *c* secured on the front post, substantially as and for the purpose set forth.

No. 25,258. Washing Machine. (*Machine à Laver.*)

William Near, Humberstone, Ont., 29th October, 1886; 5 years.

Claim.—The combination of the crank shaft B, beater C, C, spring standards D, D and washboard F, substantially as and for the purpose hereinbefore set forth.

No. 25,259. Pastry Cabinet. (*Buffet à Pâtisseries.*)

William H. Major, Aurora, Ont. (Assignee of Jonathan L. Beardon, Springfield, Mo., U.S.), 29th October, 1886; 5 years.

Claim.—The combination of the safe A, the drawers B, B, C, C, I, J, K, L the hinged lids E, E with the folding pastry board F, the trays G, G and guide pieces H, H, substantially as and for the purpose hereinbefore set forth.

No. 25,260. Potato Planter. (*Traceur Butteur.*)

Samuel H. Fish, Hinsdale, Ill., U.S., 29th October, 1886; 5 years.

Claim.—1st. The combination, with the lever, of the sleeve upon the shaft, said sleeve being provided with radially projecting arms linked to the shoe, the curved pieces for supporting the scrapers, and a cam connected by a lever with the sprocket wheel, whereby the shoe and scrapers may be raised and lowered and adjusted to plant potatoes at any desired depth, and the sprocket wheel thrown into and out of gear all by the same lever, substantially as described. 2nd. The combination, with the main lever connected with the sleeve upon the shaft, of the cam for operating the bell crank lever connected with the sprocket wheel, said cam being of the form shown and described, whereby the lever when drawn back brings the cam in position to cause the bell crank to throw the sprocket wheel out of gear, and when the lever is thrown forward brings said bell crank in position to throw the sprocket wheel in gear, substantially as shown and described. 3rd. The combination, with the scrapers pivoted on opposite sides of the frame of the machine, of the curved pieces operated by a lever, said lever and curved pieces being connected with a sleeve upon the main shaft, a cam also connected with said sleeve, and lever mechanism between the said cam and sprocket wheel, whereby the scrapers may be raised and lowered and the machine thrown into and out of gear, substantially as shown and described. 4th. The combination, with the main lever, of the sleeve and mechanism for linking the same to the shoe and cam mechanism, whereby the shoe may be raised and lowered and adjusted and the machine thrown into and out of gear, as described. 5th. The combination, with the cylinder provided with pockets, and mechanism for moving the same step by step, of pairs of forks, one pair for each pocket, and mechanism for opening and closing the forks, as described, and the hopper and receptacle for the potatoes placed above the cylinder, substantially as shown and described. 6th. The combination, with the forks carried upon the cylinder of said cylinder, provided with pockets and mechanism for driving the cylinder step by step, symmetrical fixed cams on opposite sides of the cylinder for closing and opening the forks to grasp and release the seeds, as described, and a receptacle for holding the potatoes above the cylinder as they come from the hopper above, whereby the potatoes may be fed to the pockets in the cylinder and held and carried forward and dropped, as described. 7th. The combination, with the cylinder, of the reciprocating slide and mechanism carried thereby, whereby the cylinder is moved at each backward stroke of the slide, and held at rest during the forward stroke of the slide and until said slide has begun its backward stroke, as specified. 8th. The combination, with the reciprocating slide, of the latch device carried thereon, the bell crank lever and the dog operated thereby, whereby the cylinder is held at rest and released as the slide reciprocates, as specified. 9th. The combination, with the latch device upon the reciprocating slide, of a spring for holding the latch down against its lower stop, a pivoted piece or bell crank with a lug or end adapted to be lifted by the latch as the latch is carried by the slide, substantially as specified. 10th. The combination, with the reciprocating slide, of an agitator carried thereby and containing in shape to the side of the hopper, whereby the potatoes in the hopper are prevented from clogging, substantially as and for the purpose specified. 11th. The combination, with the receptacle placed above the cylinder for holding a portion of the seed free from the weight of the mass contained in the hopper above, of the agitating mechanism operated by the reciprocating slide for preventing the potatoes in the receptacle from clogging, as described. 12th. The agitator or finger mounted upon a

slide, a pivoted lever connected therewith, and a cam in the reciprocating slide in which one end of said lever rests, whereby the fingers are moved gently against the inner side of the receptacle to prevent the potatoes from clogging. 13th. The combination, with the cylinder, provided with notches about its circumference, of a dog *k* in its guide or support, a loop upon said dog, and mechanism operated by the reciprocating slide, whereby the dog is held in a notch of the cylinder, and lifted therefrom to fall into the next notch, substantially as described. 14th. The combination, with the dog, of the bell crank lever *l* pivoted to the disk shaft, a spring connected therewith, the lug upon the upper end of said lever, and the latch mechanism carried by the reciprocating slide whereby the lever is moved against the force of said spring to raise said dog at intervals, substantially as described. 15th. The combination, with the lever *l*, of notches *r, s, t, u* for holding said lever in different positions, whereby the shoe and scrapers may be lifted up and adjusted at different heights, substantially as described.

No. 25,261. Refrigerator. (*Garde-Manger.*)

James H. Wickes, East Rochester, N. Y., U. S., 29th October, 1886; 5 years.

Claim.—1st. In a refrigerator, the combination, with the cooling chamber and the ice tanks arranged in its wider upper portion, of the wire grating arranged in the lower narrow portion, and the inclined deflecting aprons connecting the upper and lower portions, substantially as and for the purposes specified. 2nd. In a refrigerator, the combination, with the cooling chamber, of the overflow pans and opened bottom ice tanks resting in said pans, and arranged in the wider upper portion of the chamber, the wire gratings arranged in the narrow lower portion of the chamber, and the inclined deflecting aprons connecting the two portions, substantially as and for the purposes specified. 3rd. In a refrigerator, the cooling chamber, in combination with the overflow pans, and the ice tanks arranged in the wider upper portion thereof, the said tanks resting in the pans and each having its sides composed of woven metallic strips, the wire gratings arranged in the narrow lower portion of the chamber, and the inclined deflecting aprons connecting the upper and lower portions of the chamber, substantially as and for the purposes specified. 4th. In a refrigerator, the cooling chamber consisting of an upper portion B and a lower portion B₁, the latter of less width than the former, arranged centrally under the same and connected to it by the inclined deflecting aprons B₂, in combination with the ice tanks C arranged in the upper portion, and the wire grating G arranged in the lower portion, substantially as and for the purposes specified. 5th. In a refrigerator, the combination, with the cooling chamber consisting of an upper portion B and a contracted lower portion B₁, of the drip-pan arranged within the said contracted lower portion, and extending laterally beyond the same to the side of the car, substantially as and for the purposes specified. 6th. In a refrigerator, the combination, with the cooling chamber and the ice tanks arranged within the same, of the openings O formed in the side of the chamber and extending downward from the top of the ice tanks to an extent equal to half their length or more, substantially as and for the purposes specified. 7th. In a refrigerator, the combination, with the cooling chamber and the ice tanks arranged within the same, of one or more openings in the wall of the chamber to establish communication between the body of the refrigerator, and the ice tanks, and a covering of wire gauze or the like for said opening, substantially as and for the purposes specified. 8th. In a refrigerator, the combination, with the cooling chamber B and the ice tanks C arranged therein, of the openings O in the wall of said chamber on a level with the ice tanks, and the wire gauze screens O₁ covering said openings, substantially as and for the purposes specified. 9th. In a refrigerator, the cooling chamber consisting of a wider upper portion and a narrower lower portion arranged centrally under the same, the said chamber being provided with inlet openings in its sides near the top, provided with wire gauze screens, and outlet openings near the bottom, in combination with the ice tanks and overflow pans arranged in the upper part of the chamber, the wire gratings arranged in the lower part underneath the same, and the deflecting aprons arranged between the gratings and tanks, substantially as and for the purposes specified.

No. 25,262. Steam Boiler and Furnace.

(*Chaudière et Foyer à Vapeur*)

William S. Post, Boston, and Howard DeW. Sawyer, Revere, Mass., U. S., 29th October, 1886; 5 years.

Claim.—1st. The cylindrical boiler shell A, having fixed within one end of it the fire-box B of a generally cylindrical form but flattened at its top, as described, in combination with a depending water-leg secured to the top and sides of the fire-box, and with an oblique water grate, substantially as set forth. 2nd. The boiler A and fire-pot B, with water-walls H between them, in combination with an oblique grate, a depending water-leg and a series of stay-bolts L extending from front to rear of the water-leg, substantially as set forth. 3rd. In a down-draft heating apparatus, a depending water-leg, in combination with a multiple water-grate consisting of two or more distinct series of independent water-tubes, among and between which the ignited gases and carbon pass downwardly, whereby the heated current comes transversely into contact with the tubes of the several series successively, for the purpose set forth. 4th. The water-grate herein described, formed of two distinct series of parallel metallic tubes, arranged in a zigzag relation to each other so as to break joints, and having a free water circulation through them, substantially as set forth. 5th. The described multiple water-grate, consisting of the independent oblique tubes J, arranged in two or more distinct planes, to alternate vertically with each other, and each provided with the bend or elbow K, substantially as set forth. 6th. The shell A, fire-pot B, water-walls H, and water-leg F, with its foot G, in combination with the zigzag multiple water-grate extending obliquely across the fire-pot, with the tubes of its upper series arranged over the spaces between the tubes of the lower series, substantially as set forth. 7th. In a steam boiler or furnace having water-walls each side of the fire-pot, and a downward draft, the depending

water-leg and a water-grate connected thereto, in combination with air-tubes T extending rearwardly within the water-spaces H, and with a series of transverse tubes S opening from the air tubes T into the fire-pot along the sides of the fuel, substantially as set forth. 8th. In a steam boiler or furnace, the combination of a water-grate and depending water-leg separating the fuel chamber from the combustion, with a perforated air pipe U above the grate serving to introduce currents of fresh air at the rear of the fuel chamber, substantially as set forth. 9th. In a heating apparatus, the combination of a water-grate and depending water-leg separating the fuel chamber from the combustion chamber, with one or more air pipes V, W introduced laterally through the foot of the water leg below the grate, and with a series of short hollow bolts Z leading from said pipes into the combustion chamber, substantially as set forth. 10th. The combination of the boiler A, internal fore-box B, depending water-leg F and zigzag oblique water-grate J, with the perforated door Q, and unperforated door P located at the foot of said grate, substantially as set forth.

No. 25,263. Manufacture of Barrel Bodies from pulp, etc. (*Fabrication des Barils en Pâte à Papier, etc.*)

Samuel M. Hotchkiss, Hartford, Ct., U. S., 29th October, 1886; 5 years.

Claim.—1st. The combination of external side compressors for forming and compressing pulp, also chambered by heat ducts, with a core for forming the interior also chambered by heat ducts, substantially as described and for the purposes set forth. 2nd. The process of forming and drying articles of pulp, which consists in forming the pulp and expressing the water thereof at one operation and in one machine, and then in the same machine applying heat to the surfaces of the article still held under pressure, substantially as described and for the purpose set forth.

No. 25,264. Pump. (*Pompe.*)

Delphie Scotto, St. Jean d'Iberville, Que., 29th October, 1886. 5 years.

Claim.—1st. The vertical pipe or body of a water-pump, provided with an elastic and compressible chamber attached to its submerged end, operated by a weight placed on a hinged platform, substantially as herein shown and described. 2nd. A water-lifting apparatus, composed of the pipe A attached to a compressible chamber forced by the top *d*, belt E and bottom F, to which are attached the valve *g* and weight *h*, and the platform J hinged to the frame I, and connected with the said compressible chamber by the cords *k* which run over the pulleys *l*, substantially as herein specified.

No. 25,265. Sleigh. (*Traineau.*)

George E. Sly, Glencoe, Minn., U. S., 29th October, 1886; 5 years.

Claim.—1st. In a sleigh, the combination, with the runner thereof, of a shoe secured thereto, made wider at its bottom than at its top. 2nd. In combination with runner A and beam D, an A-shaped knee secured to the runner, a plate secured to the beam, and a U-shaped bolt F pivotally connecting the beam and plate with the knee, the horizontal arm of the bolt resting in the angle formed in the upper end of the knee by the meeting of the two inclined standards *c, c*, substantially as shown. 3rd. In combination with runner A and beam D, an A-shaped knee secured to the runner and provided with a rounded bearing face *d*, a plate E secured to the beam and provided with a socket to receive the bearing face, and a U shaped bolt pivotally connecting the beam and plate with the knee, the horizontal arm of the bolt being concentric with the bearing face and resting in the angle formed at the upper end of the knee by the meeting of the two inclined standards *c, c*, substantially as shown. 4th. In combination with runner A, knee C provided with rounded top *d* and lug *e*, beam D and plate E secured to the beam pivotally connected to the knee and provided with socket *m*, as and for the purpose set forth. 5th. In combination with runner A, knee C provided with recessed *A* at its upper end, a beam D, a plate E provided with a convex face to fit upon the knee, and a pivot bolt *k* connecting the knee and plate, all substantially as shown. 6th. In a sled or sleigh, the knee C provided with base plate *d*, depending flange *f*, uprights *c, c*, joined at their upper ends to form the curved bearing face *d*, and webs *l* connecting the uprights and the base plate, substantially as shown. 7th. In a sled, the skid hook G provided with arms *p* and *q*, and connecting web *r*, as and for the purpose set forth. 8th. In a sled or sleigh, in combination with the beam D, the plate E secured thereto, and provided with an upright flange J, skid hook G provided with arms *p* and *q*, and a bolt passing through the arm *q* and the flange *J*, as and for the purpose set forth.

No. 25,266. Combined Blackboard and Desk. (*Tableau Noir et Pupitre Combinés.*)

James G. Smith and Hiram E. Butler, Jamestown, N. Y., U. S., 29th October, 1886; 5 years.

Claim.—1st. A combined desk and blackboard consisting of the vertical desk body, the blackboard and desk C hinged at its lower end to the sides of the body to close the desk and form a blackboard and writing table, and a copy-holder pivoted between the upper ends of the sides of the desk body, and adapted to be inclined forwardly over the blackboard or held in the vertical plane of the desk body, substantially as set forth. 2nd. The combination, with the desk body having compartments *d* within it, of the combined blackboard, writing table, and desk lid C pivoted below the desk body, and the rocking copy-sheet carrying frame E having sheet-carrying rollers *m* and capable of adjustment to occupy a straight or inclined position in relation with the blackboard when closed, essentially as described.

No. 25,267. Manure Fork. (Fourche à Engrais.)

Melvin Jincks, Cynosus Centro, N. Y., U. S., 29th October, 1886; 5 years.

Claim.—1st. As a new article of manufacture, the within-described farm or stable implement consisting of handle C, ring e and fork A, said fork being formed integral with two extensions B, B', either of said extensions adapted to serve as a hook whether the fork is in line or at right angles to the angles, all as specified. 2nd. The combination of the handle C, ring e and the shank e driven into the tapered end of the handle, and having its outer end bifurcated with the fork A, having the two hook points B, B' made in one piece with it, and provided with the extension a which is pivoted in the bifurcation of the shank e, substantially as specified.

No. 25,268. Car-Coupling. (Attelage de Chars.)

Stephen Jones, Minnesota, Minn., U. S., October, 1886; 5 years.

Claim.—1st. The combination, with a draw-head, constructed as described, and provided with the yielding devices therein, of a coupling pin having a transverse notch in its rear side, a spring secured at one end and engaging the said notch and the slide engaging the free end of the spring, substantially as specified. 2nd. The combination, with the draw-head, of the notched coupling-pin, the spring engaging the notch, the slide engaging the free end of the spring, the pivoted lever connected with the coupling-pin, and the spring-pressed vertical rod connected with the said lever, substantially as specified.

No. 25,269. Construction of Buildings.

(Construction de Bâtimens.)

Samuel C. Burris, Victoria, B. C., 29th October, 1886; 5 years.

Claim.—1st. A wall, floor, ceiling or roof formed of a series of timbers A, grooved longitudinally on one or more of their edges, and provided in opposite sides thereof with grooves forming venting passages, substantially as herein shown and described. 2nd. A timber for constructing walls, floors, ceilings, or roofs, having formed upon one or more of its sides, longitudinal or transverse grooves for retaining mortar or cement, and having one or more of its sides a groove forming with the adjacent timber, a ventilating passage, substantially as herein shown and described. 3rd. A wall formed of timbers A, having in one or both edges longitudinal grooves, and transverse under-cut grooves provided in opposite and adjacent sides, with ventilating grooves c, and a boat B of cement or mortar applied to the groove surface of the timbers, substantially as herein shown and described. 4th. A wall formed of vertical timbers A, having grooved edges, and provided with ventilating grooves c and one or more plates C grooved in opposite edges, and having in opposite sides ventilating grooves d, substantially as herein shown and described.

No. 25,270. Telephone Receiver.

(Récepteur Téléphonique.)

Webster Gillett, New York, Cyrenius C. Fitzgerald, Brooklyn and Jerome Bradley, New York, N. Y., U. S., 29th October, 1886; 5 years.

Claim.—1st. In a telephone receiver, the combination, with a diaphragm, of a permanent magnet, an electromagnet having its core mounted upon one of the arms of the permanent magnet, and constituting a pole-piece extending past the other arm of the permanent magnet, and a magnetic contact piece secured to one of the arms of the permanent magnet, and in contact with the other arm thereof, substantially as specified. 2nd. In a telephone receiver, the combination with a diaphragm, of a horseshoe magnet, an electromagnet having its core mounted upon one of the arms of the horseshoe magnet, and constituting a pole-piece extending through the other arm of the horseshoe magnet, but not in contact therewith, and a magnetic contact piece secured to one of the arms of the magnet, and in contact with the other arm thereof, substantially as specified. 3rd. In a telephone receiver, the combination, with a diaphragm, of a horseshoe magnet, an electromagnet having its core mounted upon one of the arms of the horseshoe magnet, and constituting a pole-piece extending through the other arm of said magnet, and a resilient magnetic contact piece secured to one of the arms of the magnet, and in contact with the other of said arms, substantially as specified. 4th. In a telephone receiver, the combination, with a diaphragm, of a horseshoe magnet, an electromagnet having its core mounted upon one of the arms of said horseshoe magnet, and constituting a pole-piece extending through the other of said arms, a magnetic contact piece secured to one of the arms of the magnet in contact with the other arm thereof, and an adjusting device for varying the position of the electromagnet relatively to the diaphragm, substantially as specified. 5th. In a telephone transmitter, the combination, with a diaphragm, of carbon, a flexible case or covering enclosing the carbon, a follower and a rigid support for the follower, substantially as specified. 6th. The combination, with a telephone receiver, of an induction coil, a battery and a transmitter, all being in circuit, said transmitter comprising a diaphragm, granulated carbon, a flexible case or covering enclosing the carbon, a follower and a rigid support for the follower, substantially as specified.

No. 25,271. Car Spring. (Resort de Char.)

Kennet W. Blackwell, Montreal, Que. (Assignee of Charles T. Shoen, Philadelphia, Penn., U. S., in trust for the said Kennet W. Blackwell and Charles Scott, Philadelphia, Penn., U. S.), 30th October, 1886; 5 years.

Claim.—1st. A car-spring, in combination with top and bottom plate or plates, the top plate or plates being fulcrumed to the bottom plate, and the ends of the plate or plates being free so that they can move freely as their angles change by compression of the springs. 2nd. A car-spring, a lever or levers in combination with a bottom plate, the lever or levers being applied, substantially as set forth.

whereby the spiral or other spring shall be self-graduating relatively to the varying load or pressure.

No. 25,272. Nail Set and Reamer.

(Pointon Chasse-Clou.)

Hugh F. Hogan, Normal Park, and William H. Lopper, Englewood, Ill., U. S., 30th October, 1886; 5 years.

Claim.—The herein described nail set and reamer, comprising the larger and smaller *broaches*, connected near their heads and intersecting each other at right angles, substantially as specified.

No. 25,273. Method of Producing Water-lines or Watermarks on Paper.

(Mode du Réglage de Papier à l'Eau.)

Frederick Richter, Lille, France. (Assignee of Carl M. Schmidt Hegermühle, Prussia), 30th October, 1886; 5 years.

Claim.—1st. Producing waterlines or watermarks on paper, by means of a paper roller or impression plate, substantially as described. 2nd. The improved method of producing waterlines or watermarks on paper, substantially as described.

No. 25,274. Bouquet Holder. (Porte-Bouquet.)

Russell P. Lawrence and Arthur P. Roberts, Buffalo, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. In a bouquet holder, the combination, with a supporting bar or stem, of two spring jaws bent from a single piece of wire, and having their inner ends connected by a spiral spring D, substantially as set forth. 2d. In a bouquet-holder, the combination, with the bar or stem B, of the clamping jaws C, C', and spiral spring D, bent from a single piece of wire and connected to the bar or stem B, substantially as set forth. 3rd. In a bouquet holder, the combination, with the bar or stem B, provided with a pin A and hook a, of the clamping jaws C, C', connecting bars F, loops g and spring D formed of a single piece of wire and secured to the stem B, substantially as set forth.

No. 25,275. Manufacture of Iron and Steel.

(Fabrication du Fer et de l'Acier.)

John E. Sherman, London, Eng., 30th October, 1886; 5 years.

Claim.—The process of purifying iron and steel, consisting in subjecting iron and steel in a molten state to the action of volatilized mercury, in the manner and for the purpose above set forth.

No. 25,276. Mouth Tube for Dental and other Purposes. (Embouchure à l'Usage des Dentistes, etc.)

Thomas W. F. Bowney, Derby, Eng., 30th October, 1886; 5 years.

Claim.—In combination with two branches of a saliva-tube, a tongue depressor adjustable on either arm, substantially as set forth, so that it may be used on either side of the mouth, all as and for the purposes set forth.

No. 25,277. Railway Track.

(Voie de Chemin de Fer.)

Thomas H. Gibbon, Albany, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. A metallic sleeper, consisting of an oblong metallic box, opened at the top and bottom, and perforated, its sides and ends inclined inwardly and upwardly, and provided with horizontal external and internal flanges a and a', also having mortises a₁ and a₂ at the centre, and on each side near the end to receive transverse tie-rod E, a recess a₃ is provided at each end to receive tongue d of rail D, in combination with the plate F, which is adapted to slide through mortises a₁ to form a support and lock for rail D, said plate being also designed to secure the ends of transverse rods to the metallic sleeper A, as herein specified. 2nd. A transverse tie-rod, consisting of a flat bar of iron or steel, with notches so located as to engage in mortises a₁, and a₂ on each side of sleeper A, as herein specified. 3rd. The rail D, provided with fastening lugs C, having mortises d₁, as herein described, the said lugs being made independently of the rail and secured to the latter, substantially as specified. 4th. The combination, in a railway track, of a longitudinal metallic sleeper rail tie-rod and securing plate, as set forth.

No. 25,278. Dovetail Cutting Tool.

(Outil à Queue d'Arande.)

James H. Tyroll (Assignee of William Lamont), Ridgeway, Ont., 30th October, 1886; 5 years.

Claim.—The circular dovetail cutting tool B, having a series of diagonally disposed curved edges a, b formed on or attached to it, and carried on shank A, substantially as shown and specified and for the purpose set forth.

No. 25,279. Method of and Apparatus for Utilizing Aqua Ammonia as a Motive Power in Engines. (Mode et Appareil d'Utilisation de l'Ammoniaque Liquide Comme Pouvoir Moteur de Machines.)

Joseph H. Campbell, New York, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. The method, herein described, of utilizing in a vapor engine a fluid, the absorptive power of which decreases as the temperature increases, the same consisting in storing the vapor as it is generated therefrom in a liquid reservoir, the temperature of which

is lower than the temperature of the boiler. 2nd. In a vapor engine, the method, herein described, of utilizing the vapor of aqua ammonia the same consisting in vaporizing the liquid at a comparatively high temperature conveying the vapor into a storage chamber containing the same fluid as contained in the boiler at a lower temperature, and in which the vapor is superheated, and then conveying said superheated vapor to the cylinder of the engine, where it is used, and the exhaust vapor returned to the boiler by being absorbed in a current of the liquid at a low temperature, under pressure from the boiler. 3rd. In a vapor engine, the method herein described, of regulating the pressure in the generator and reservoir, the same consisting in transferring the fluid from the boiler to the reservoir, or from the reservoir to the boiler, as occasion may require. 4th. In a vapor engine, the method herein described of preparing and applying the liquid used for absorbing the exhaust vapor from the engine, the same consisting in heating the liquid, thereby reducing the absorptive power, then without breaking its continuity, but having it at all times under the pressure of the vapor in the boiler, cooling the same, thereby restoring its absorptive power, and bringing it under boiler pressure, in contact with the vapor exhausted from the cylinder, so as to produce an induced current in the direction of the absorber, the pump, or the dynamical reservoir. 5th. In a vapor engine, the method, herein described, of recovering and using the exhaust vapor from the engine, the same consisting in spraying under boiler pressure a stream of the cold solution from which the vapor is generated into a chamber receiving the exhaust vapor from the engine, whereby the vapor is absorbed by the solution, without surrendering its static heat, and is mechanically mixed by the force of the spray. 6th. In a vapor engine, the method, herein described, of securing the absorption of the vapor and the heat developed by the absorption to superheat the vapor in the reservoir, the same consisting in introducing the vapor generated in the boiler into the storage reservoir below the surface of the liquid contained in said reservoir. 7th. In a vapor engine, the method, herein described, of regulating the tension of vapor in both the boiler and reservoir, the same consisting in introducing the binary liquid into either by the pump, as set forth. 8th. In a vapor engine, the method, herein described, of heating the cylinder of the engine, so as to superheat the working vapor therein, the same consisting in combining the exhaust vapor from the cylinder with a cold weak solution of aqua ammonia under pressure in a chamber which surrounds the cylinder, as set forth. 9th. In a vapor engine, the method, herein described, of preventing back pressure on the piston of the engine, the same consisting in drawing from the chamber which surrounds the cylinder the vapor which is in excess of saturation by means of a stream or current of the cold, weak solution under pressure from the boiler, as set forth. 10th. A vapor engine, in which the vapor is worked expansively in the cylinder, the method, herein described, of disseminating the heat of absorption produced by the union of the cold, weak solution, and the exhaust vapor within the jacket of the cylinder, the same consisting in joining or combining the exhaust vapor from the cylinder, with a weak solution under boiler pressure in the jacket of the cylinder, thus neutralizing the effect of the expanded vapor within the cylinder, and the consequent fall of temperature resulting from such expansion. 11th. The method, herein described, of heating the cylinder and piston of a vapor engine, which consists in bringing a cold weak solution in contact with the cold expanded vapor within the cylinder of the engine, as set forth, whereby the cylinder and piston are heated to the proper working temperature by the heat of absorption. 12th. The method, herein described of heating the cylinder and piston of a vapor engine, the same consisting in injecting a cold, weak solution of aqua ammonia alternately at each end of the cylinder, said cold, weak solution being delivered under boiler pressure, as set forth. 13th. The method, herein described, of disseminating the heat of absorption, the same consisting in bringing the liquid and expanded vapour, when in the act of solution, in contact with the piston and working surface of the cylinder, and imparting its heat thereto. 14th. In an aqua ammonia engine, a boiler for generating the vapour, and a dynamical reservoir, such as described, for receiving the vapor from the boiler and applying it to the cylinder, said reservoir being partially filled with the solution of aqua ammonia, as set forth. 15th. In an aqua ammonia engine, a liquid reservoir such as described, adapted to receive the vapor from the boiler, said vapor being injected into the reservoir below the surface of the liquid contained therein, as set forth. 16th. In an aqua ammonia engine, a boiler for generating the vapor, a dynamical reservoir, such as described, for receiving the vapor, said reservoir being partly filled with aqua ammonia the boiler and reservoir being connected by a pipe *h*, whereby the quantity of liquid in either boiler or reservoir is regulated. 17th. In an aqua ammonia engine, a boiler for generating the vapor a dynamical reservoir, such as described, for receiving the vapor from the boiler, said reservoir being provided with a coiled pipe leading from the boiler, whereby the vapor in the reservoir is superheated, as set forth. 18th. In an aqua ammonia engine, a boiler for generating the vapor a dynamical reservoir for receiving the vapor from the boiler, said reservoir being provided with a coiled pipe leading from the boiler for superheating the vapor in the reservoir and a valve located in the path of the pipe leading to the boiler and connecting with the reservoir, whereby the supply of liquid passing through said pipe and the heat in the reservoir is automatically regulated, as set forth. 19th. In an ammonia engine boiler for generating the vapor, a dynamical reservoir for receiving the vapor from the boiler a pipe leading from the boiler through the reservoir to the exhaust from the cylinder, whereby the exhaust vapor from the cylinder is absorbed by the weak solution from the boiler under boiler pressure. 20th. In an ammonia engine, the cylinder of which is jacketed the exhaust vapor from the cylinder being brought into contact with and absorbed by a weak solution from the boiler, and introduced into the jacketed space of the cylinder, as described, whereby a proper working temperature is at all times maintained in the cylinder. 21st. In an ammonia engine, the cylinder of which is jacketed, as described, to receive the exhaust from the cylinder, a pipe leading from the top of the jacketed space to and communicating with the liquid pipe from the boiler, whereby an induced current is maintained to free the jacketed space of vapor and to prevent back pressure on the piston. 22nd. In an ammonia engine, a boiler for generating the vapor, a dynamical reservoir, such as do-

scribing, partially filled with aqua ammonia for receiving and superheating the vapor from the boiler, in combination with the pipe *M* and cylinder *D*, as set forth. 2rd. In an ammonia engine, the pipe *d* having a branch or *ev* pipe, connecting the bent portions of the pipe *d*, outside of the reservoir, in combination with the valve *d*, whereby a constant boiler pressure is maintained on the liquid, which absorbs the exhaust vapor from the cylinder when said valve *d* closes to cut off the passage of the liquid through the reservoir, substantially as set forth. 21th. The pipes *C* and *D*, provided with the valves *f* and *g*, in combination with the pump *F*, whereby the liquid can be directed into the boiler or reservoir, as set forth. 25th. The pipes *H* and *I* leading into each end of the cylinder from the pipe *d*, said pipes *H* and *I* being controlled by the valves *K* and *L* by means of the rods *m* and *N* and eccentric *N*, whereby the weak cooled solution is automatically injected into the cylinder, as set forth.

No. 25,280. Hand Plaiting Attachment for Sewing Machines (*Appareil à Plier à la Main pour Machines à Coudre.*)

Elizabeth M Young, Danville, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. The combination of the frame-plate having the side slot, the guide-rod connected at its ends to the frame-plate, the slide of the guide-rod, the blade carried by the slide, and the thumb-piece for reciprocating the slide, substantially as and for the purpose set forth. 2nd. The combination of the frame-plate, having the side slot, the guide-rod connected at its ends to the frame-plate, the slide reciprocating on the guide-rod, the blade carried by the slide and the adjustable gauge, substantially as and for the purpose set forth. 3rd. The combination of the frame-plate, the guide-rod connected at its ends to the frame-plate, the slide on the guide-rod having the strip *N* bearing upon the frame-plate *A*, its free end and the blade, substantially as and for the purpose set forth.

No. 25,281. Harvester. (*Moissonneuse*)

Jean R. Laporte and Hermas Larose, Verohères, Que., 30th October, 1886; 5 years.

Reclame.—1o. L'essieu *E* ayant des tourillons excentriques et muni du levier à main *g* pour faire mouvoir l'essieu tel que représenté et décrit. 2o. Le pignon *e* sur le tourillon du rouleau moteur du tablier ascenseur *A* et s'engageant avec la roue dentée *D* tel que représenté et décrit. 3o. L'axe de renvoi *F*, portant du pignon *d* engagé avec la roue *D* et la roue d'angle *e*, muo par la roue d'angle *f* qui est fixée sur l'extrémité du tourillon du rouleau moteur, du tablier latéral *B* tel que représenté et décrit. 4o. Le ressort d'arrêt *h* muni d'engoches *i* et fixé sur le cadre de la machine pour les fins et de la manière indiquées.

No. 25,282. Time Piece. (*Chronomètre.*)

Alexander McCulloch, Wales, Ont. (Assignee of Edwin W. Morton, White Plains, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. The combination, with the movement and hands of a time-piece and dials *D* and *E*, of the lever *K* operated by the said movement, substantially as shown and described for the purpose set forth. 2nd. In a time-piece, the combination, with the dial *D* and the under dial *E*, of the lever *K* having spring *L* and guide-block *M*, substantially as described for the purpose set forth. 3rd. In a time-piece, the combination, with the dials *D* and *E*, lever *K*, carrying spring *L* and guide block *M*, of the hook or pin *J*, substantially as shown and described.

No. 25,283. Door Spring and Check. (*Ressort Arrête-Porte.*)

Joseph Bardsley, Brooklyn, N. Y., U. S., 30th October, 1886; 5 years.

Claim.—1st. In combination, with a door, the pivot in connection therewith and carrying a segment, the sliding yokes whose sides are connected and inclose opposite sides of said pivot and segment, and are adapted to be alternately engaged by the said segment, a spring for returning the yoke after it has been moved by the rotation of the pivot and a stop for the spring, substantially as set forth. 2nd. In combination, with a door, the pivot in connection therewith and carrying a toothed segment, a sliding yoke having connected toothed sides which inclose opposite sides of the said pivot and segment, and are adapted to be alternately engaged by said toothed segment when the pivot is rotated, a spring for returning the yoke after it has been moved by the segment, and a stop for the spring, substantially as set forth. 3rd. In combination with a door, the casing, the pivot seated in the casing and engaging the door, the sliding yoke adapted to be engaged and moved by a rack on the pivot, the piston, piston-rod spring stop for the spring, and a fluid filling the casing, substantially as and for the purpose set forth. 4th. In combination with a door, the pivot engaging an aperture therein, and seated in a casing *D*, a sliding yoke arranged in the casing and inclosing opposite sides of the pivot, a rack on the pivot adapted to engage either side of the yoke, and to move the latter when turned, the piston and rod connected with the yoke, a spring encompassing the rod between the piston and a stop, and a fluid about filling the casing *D*, substantially as set forth. 5th. In combination with a door, the casing *D*, pivot *C* seated therein and engaging the door, the sliding yoke *P* having toothed arms *S*, the rack *U* on the pivot and arranged between the said arms, the piston *X*, piston *Y*, spring *e*, stop *Z* and a fluid about filling the casing, substantially as set forth. 6th. In combination, with a door, the pivot *C* engaging an aperture therein, the sliding yoke adapted to be moved by the pivot, the piston, piston-rod spring and stop, substantially as set forth. 7th. The liquid-tight casing having removable plugs *F* and cap *J*, in combination with the pivot *C*, having a rack or cam *O*, the yoke *P*, the piston piston-rod and spring, substantially as set forth. 8th. The door having the bar *L* and aperture *s*, in combination with the pivot *C* having a tapered upper end, and carrying the rack *O*, the sliding yoke engaging the

rack, the piston, piston-rod spring and stop, substantially as set forth. 9th. In combination with the door, the casing D, pivot C seated in the casing and engaging the door, the yoke adapted to be moved by the pivot, the piston, piston-rod, spring stop, grooves m and a fluid about filling the casing, substantially as set forth. 10th. In combination, with a door, the pivot in connection and mounted in a casing, a sliding rack arranged in the casing and adapted to be engaged and moved by the pivot when the door is opened, the spring, the piston, rod piston, a stop for the spring, a fluid about filling the casing, and a passage for the fluid from one side to the other of the piston, substantially as set forth.

No. 25,284. Post Hole Excavator.

(*Sonde à Clôture.*)

Crawford Mahon, Kirkton, Ont., 30th October, 1886. 5 years.

Claim.—In a post-hole excavator, the combination of the arms A, A, which cross each other and are pivoted together on a pivot P near their lower ends, and each of which arms has a hollow handle H and a conical and tapered blade B formed in one piece, substantially as and for the purpose hereinbefore set forth.

No. 25,285. Metallic Case for Brushes.

(*Enveloppe Métallique pour Brosses.*)

Daniel A. McDonald, Windsor, Ont., 30th October, 1886: 5 years.

Claim.—1st. A metallic case for brushes, so arranged that one portion of the case covers the sides and ends of the brush-block, and the rim of the case to which the ear a is secured resting upon the brush block, in such a way that it holds the covering designed for the back of the brush firmly in place, as shown in Fig. 1, as and for the purposes herein set forth. 2nd. A metallic case for brushes, so constructed that one end thereof forms a suitable receptacle for receiving a brush-block, said receptacle being provided with suitable projections for keeping the brush-block or dauber within said receptacle, as herein described. 3rd. A metallic case for brushes, so constructed that it can be removed from the brush-block, thus admitting of various kinds of finishing for the back of the brush such as photographs, advertisements, etc., all substantially as and for the purposes herein set forth.

No. 25,286. Copying Press. (*Presse à Copier.*)

Edward M. Haines, Dayton, Ohio, U. S., 30th October, 1886: 5 years.

Claim.—1st. The combination, in a copying-press, of the split spring-cylinder A and the copying-book B, the said cylinder being arranged to press outwardly against the book rolled upon it, substantially as here shown and described. 2nd. In a copying-press, the combination of the split spring-cylinder A, copying-book B and the elastic bands a, substantially as herein shown and described. 3rd. In a copying-press, the combination of the split spring-cylinder A, the book B and the elastic bands d, as herein shown and described. 4th. In a copying-press, the combination of the split spring-cylinder A, the book B having the back thereof a rod b, and means, substantially as described, for passing the book upon the cylinder A, as herein specified. 5th. In a copying-press, the combination of the split spring-cylinder A having grooves near the ends thereof, the elastic bands a and the book B, substantially as herein shown and described. 6th. In a copying-press, the combination of the split spring-cylinder A having grooves around the ends thereof, the elastic bands a, the book B having the rod b in the back thereof, and the elastic bands d, substantially as herein shown and described.

No. 25,287. Apparatus for, and Method of Making, Improving, and Utilizing Gas for Illuminating and Heating Purposes. (*Appareil et Mode de Production, d'Amélioration et d'Utilisation du Gaz d'Éclairage et de Chauffage.*)

Eugène de Beauharnais, Darby, Penn., U. S., 30th October, 1886, 5 years.

Claim.—1st. The method of manufacturing gas for heating and illuminating purposes, which method consists of mingling air, water and hydrocarbon oil at a temperature high enough to decompose and combine them, employing preferably the following proportions: say eighty per cent. of standard white petroleum, twenty per cent. of water, and about three cubic feet of air to every cubic foot of gas made from the combined oil and water, substantially as described. 2nd. The method of manufacturing heating and illuminating gas, which method consists of mingling air, water and hydrocarbon oil at a temperature high enough to decompose and combine them, employing preferably the following proportions: say eighty per cent. of standard white petroleum, twenty per cent. of water, and about three cubic feet of air to every cubic foot of gas made from the combined oil and water, substantially as described. 3rd. In an apparatus for the manufacture of heating and illuminating gas, the combination of a retort W, an air injecting pipe a, a water and oil injecting pipe Z extending within the said retort for the purpose of heating its contents before they are discharged, and means for subjecting said retort to heat both above and below, and a pipe Y, for conveying from said retort the combined gas, substantially as described. 4th. In an apparatus for the manufacture of heating and illuminating gas, an oil tank U and a water tank T, each provided with a regulating cock, a pipe Z into which said oil and water are discharged and commingled, combined with a heated retort W, a pipe a through which air is forced, and a pipe Y by means of which the resultant gas is led from said retort, substantially as described. 5th. In a gas-washing apparatus, the combination of an inlet and outlet pipe X and Y, a series of inverted comb-shaped partitions C and a vessel b in which they held containing water, substantially as described. 6th. The method hereinbefore described of improving heating and illuminating gas, which method consisting of passing said gas through a chamber C containing oil, for the purpose specified. 7th. In the

manufacture of heating and illuminating gas, a chamber C fitted with an inlet and an outlet pipe D and E, and containing between the same sponges or their equivalent combined with means for keeping said sponges saturated with oil, substantially as described. 8th. In the manufacture of heating and illuminating gas, a chamber C through which said gas is caused to flow, said chamber containing sponges G or their equivalent, and an inclined perforated plate H upon which oil drips a through which it flows to the sponges underneath, substantially as described. 9th. In a furnace heated by the combustion of gas the combination of an atomizer O for the purpose of injecting into said furnace a spray of water, substantially as described. 10th. In a furnace heated by the combustion of gas, the combination of a gas burner M with cakes of infusible material N, substantially as described. 11th. In a furnace heated by the combustion of gas pipes K, surrounded by external pipes L formed of infusible material containing water, substantially as described. 12th. In a furnace heated by the combustion of gas, the combination of an air injecting pipe P beneath the grate bar, an ash-pas Q containing water, gas burners M, cakes of infusible material N placed above said burners, an atomizer O for introducing on to the surface of said infusible cakes a jet of water in spray, substantially as described.

No. 25,288. Pitman Rod Connection for Mowers and Reapers. (*Barre d'Excentrique de Faucheuses Moissonneuses.*)

Robert H. Dixon, Chicago, Ill., U. S., 30th October, 1886. 5 years.

Claim.—1st. In combination with a stirrup having a cavity which is circular about an axial line, and having an axial opening into such cavity, said opening being incompletely circular about the axis of the cavity, the reciprocating bar having a sideward jutting stud provided with a pivot of which the cross-section has the form of the axial opening into the stirrup cavity, substantially as set forth. 2nd. In combination, with the stirrup having its pivot cavity provided with an opening thereto in the form of a segment of circle, the cutter bar having a sideward jutting stud provided with a ball pivot truncated by a plane parallel to its axis to fit the segmental opening in the stirrup cavity, substantially as set forth. 3rd. In combination, substantially as set forth, the wrist G, the thimble F having the ball swivel E cut away to form a key seat, the stirrup having the spherical cavity to receive the ball, and an opening thereto conformed in outline to the truncated circular outline of the ball, and the removable key bolt B intruding into the spherical cavity of the stirrup in the locality of the key seat on the ball when the latter is in working position, the outline of said opening being not coincident with the outline of the ball in working position.

No. 25,289. Electric Arc Lamp.

(*Lampe Électrique à Arc.*)

David B. Macdonald and Hannibal W. Woodman, Hamilton, Ont., 30th October, 1886: 5 years.

Claim.—1st. In an electric arc lamp, a body, as K, of any form and suitable material interposed between the points of the carbons for controlling the length of the arc at the points of the carbons, substantially as and for the purpose specified. 2nd. In an electric lamp, the body K of any form and suitable material cut in two, one half being inserted in the upper carbon, and the other inserted in the lower carbon, the two being separated sufficiently by arms d, d, and body K, or any other equivalent means to separate the halves of the body K, substantially as and for the purpose specified.

No. 25,290. Ventilator Wheel or Fan.

(*Ventilateur à Roue ou Éventail.*)

Edmund F. Kittoe, Ill., U. S., 30th October, 1886: 5 years.

Claim.—1st. The ventilator fan or wheel composed of the hub A and the wings a, the outer edges of the wings connected with each other, and describing the periphery of the rear face of the wheel in the plane of said face, and the wings being curved, substantially as shown, from said point to the hub with the longest curve on the receiving face, and the shortest on the rear face of the wheel, the inner ends of the blades being secured to the hub obliquely to the axis thereof, whereby the wings will project beyond the periphery of the rear face of the wheel and thereby increase the diameter of the wheel adjacent to such face, substantially as described. 2nd. The ventilating fan or wheel composed of the hub A and the wings a, the outer ends of the wings being connected with each other and describing the periphery of the rear face of the wheel in the plane of said face, and the wings being curved from a mid point to the hub and so used to the latter obliquely to the axis, the front edge of one wing overlapping the rear edge of the preceding wing to form a passing d from the periphery of the wheel to its hub decreasing in size from the front to the rear face of the wheel, substantially as described.

No. 25,291. Supporting Frame for Carriage Tops. (*Châssis de Couverture de Voiture.*)

Edward Carroll and Patrick Ryan, Guelph, Ont., 30th October, 1886. 5 years.

Claim.—1st. The combination, with a vehicle seat, of wear-plates formed with flanges 12, channel-irons 15 secured to the upper rear corners of the seat-box, and a spring frame supported by sliding irons arranged within the channel-irons, and sides that are arranged to be clamped to the wear-plates 11, substantially as described. 2nd. The combination, with a vehicle-seat, of channel-irons 15, sliding-irons 16 arranged with their ends 2 of said channel-irons, a sliding-frame supported by the sliding-irons, clamping-pieces 37, springs 33 connecting plates and nuts and forward pivotal connection as 14, substantially as described. 3rd. The forward pivotal connection for swinging vehicle-top frames, consisting of a wear-plate formed with a flange 12, a slide 22 formed with arms 23 and 24, and provided with a roller post or standard 21, and clamp 25, a plate 26 and a handed nut 27, substantially as shown and described. 4th. The combination, with a vehicle-seat to which are secured flanged wear-plates 11 and

channel-irons 15, said irons being provided with lugs or projections 35 of a swinging frame, sliding-irons 15 by which the rear portion of the frame is supported forward, pivotal and clamping connections 14, clamping-plates 37 formed with curved faced flanges 40 and curved-faced prongs 41 connected to the rear bar of the same, substantially as described. 5th. The combination, with a shifting or swinging frame carrying an adjustable clamp 31, of channel-irons 15 formed with projections 35, sliding-irons 16 between the jaws of which the arm of the frame is held, clamping plates 37 formed with flanges 40, springs 33 and curved-faced prongs 41, substantially as described.

No. 25,292. Flour Dressing Machine.

(Blutoir.)

John E. Wilson, Galt, Ont., 30th October, 1886; 5 years.

Claim.—1st. A flour dressing machine having within the bolt a reel formed by slats connected transversely in pairs, one radiating from the centre and the other adjoining the inner edge and running toward the outer edge of the next in the direction of the motion of the reel without touching, and forming a longitudinal slit near the apex of a pair of unconnected slats, substantially as shown and described. 2nd. The combination of the shaft E, bearings d, d', heads E, E', slats F and G, slit f, hopper H, hoppers I, J, rim e, and bolting cloth S, substantially as shown and described. 3rd. The combination of the head E, rim E', buckets E', arms e, e', plate e', partition 1, and hoppers I and J, substantially as shown and described. 4th. In combination with a flour bolt, a reel formed of the slats F and G with a space f, substantially as shown and described. 5th. The combination of the frame A, hopper B, conveyor chambers C, conveyor G', shaft D, heads E, E', hub f, arms e, rim e', annular channel e', silk S, rim E', pockets E', arms e', bearing d, d', tube H, hopper H, hoppers I and J, partitions 1, slats F, the direction of the cross-section of which radiates from the centre slots G connecting at the inner edge of F and sloping towards the upper edge of the next in the direction of the motion of the reel, and a slot f left at the apex between two slats, substantially as shown and described and for the purpose set forth.

No. 25,293. Wind Musical Instrument of the Organ Kind. (Instrument à Vent du Genre de l'Orgue.)

Frederick W. Rawstorn, Bradford, Eng., 30th October, 1886; 5 years

Claim.—1st. In a musical instrument of the organ kind, the combination, with a pallet or valve, of a moderator or plug, or moderators or plugs, operating substantially as hereinabove described for the purpose specified. 2nd. In a wind musical instrument of the organ kind, the combination of a pallet or valve, or pallets or valves, a moderator or plug, or moderators or plugs applied to said pallet or valve, or pallets or valves, suitable mechanism and key or keys for operating same, and a check or checks for checking the depression of said key or keys, substantially as described for the purpose specified.

No. 25,294. Combined Lock and Latch.

(Serrure et Loguet Combinés)

Simeon J. Hicks and John W. Hicks, Chicago, Ill., U. S., 30th October, 1886; 5 years.

Claim.—A The combination, with the lock case provided with a transverse cylindrical bearing at its rear end, and the bolt in the case having a rearward extension adapted to pass into the said bearing of the cylindrical plug in the bearing, a transverse recess to receive the rear end or extension of the bolt, a longitudinal key, slot spring, actuating locking pins extending into the slot and through the plug into the wall of the cylindrical bearing, substantially as set forth. 2nd. The combination, with the lock case, a bolt therein, a tumbler or yoke for operating the bolt, and the inner and outer knobs, of a sectional spindle connecting the knobs and tumbler, the outer section being longitudinally movable independent of the tumbler and knob and mechanism, substantially as described, extending from the inner knob to the said outer section of the spindle for moving said section away from the tumbler, whereby the outer knob may be dis-connected from the bolt and be thereby rendered inoperative, substantially as set forth. 3rd. The combination, with the case, a bolt therein, operating tumblers or yokes at opposite sides of the bolt, and the inner and outer knobs, of the spindle formed of two independent sections connecting the said tumblers and knobs, the outer section being longitudinally movable from the tumbler mechanism extending from the inner knob to the said movable section for disengaging it from its tumbler and a spring for returning said movable section to its normal position, substantially as set forth. 4th. The combination with a bolt and its case of a plug C arranged within said case, said plug being formed with a recess a, and with recesses in which pins e, e' are mounted recesses f, f' being formed in the case, and slots f being formed in the pins, the pins being arranged in connection with springs f, substantially as described. 5th. The combination with a lock provided with a spring-actuated bolt and tumblers engaging lugs on said bolt, of an inner knob provided with an apertured bar engaging one of said tumblers, and with a push-pin extending through said bar and the lock bolt, and means for holding the pin in the inner position, and of an outer knob provided with a spring-pressed sliding bar engaging with the tumbler and bearing against the said push-pin, and with a sliding locking-cylinder having a shank bearing against the said sliding-bar, substantially as described. 6th. The combination with a bolt and its case, the being bolt formed with a longitudinal slot e, of tumblers L, L', a bar l formed with a central bore, a push-button H formed with a stem o, a r and pin cylinder G and its pins e, all parts being arranged substantially as described. 7th. The combination, with a bolt and its case, of an outer knob having a section g and containing a pin, cylinder G formed to receive slotted pins a, a tumbler L, and a bar o connecting said knob and bolt, substantially as described.

No. 25,295. Button. (Bouton.)

Carl A. Pfenning, Barmon-Rittershausen, Germany, 30th October, 1886; 5 years.

Claim. 1st. A button consisting of an inner part composed of a cloth or stuff shank, as in Fig 6, a disc b and a ring a, and an outer part composed of the cloth o, stuff a and back plate m, the two parts being firmly connected by bonding the rim of the tube c over the back plate m, substantially as illustrated and described. 2nd. A stuff shank for buttons consisting of tube c, stuff disc pressed into the same and cap z, the inwardly bent rim of which gives secure connection to the whole.

No. 25,296. Grate for Stoves, Furnaces, etc.

(Grille pour Poêles, Calorifères, etc.)

David E. Bangs, Medford, Mass., U.S., 30th October, 1886; 5 years.

Claim.—1st. A grate for a fire-pot of a stove, etc. having vertical tubes or pipes M, each having elongated openings R in its sides, and open at top and bottom, for the purpose specified. 2nd. A grate for a fire-pot of a stove, etc. having a chambered side wall or walls provided with openings H and J, and having vertical pipes or tubes M, each having elongated openings R in its sides and open at its top and bottom, for the purpose specified. 3rd. A grate for a fire-pot of a stove, etc. consisting of a rectangular frame A having a chambered side wall or walls provided with elongated slots or openings H and J, and a section K putting and swivelling within the frame A, and provided with vertical tubes or pipes M having elongated slots in the sides and openings in the top and bottom, substantially as and for the purpose specified.

No. 25,297. Apparatus for the Reception of Coin and the Automatic Delivery of Goods in Exchange therefor. (Appareil de Réception de la Monnaie et de Livraison Automatique des Marchandises en retour.)

Charles H. Russell, London, Eng., 30th October, 1886; 5 years.

Claim.—1st. The combination, with a closed cabinet or casing, of a hopper for containing articles of like size, a reciprocating cut-off block having an aperture below said hopper, a slide bar actuating said block, pawls locking said slide bar, and a balance tray throwing the pawls off said tray being located beneath a shoot by which the coin is introduced, substantially as described. 2nd. The combination, with a sliding block B having aperture a, the inclined parts a, a above said block, projections b, b on the block adjacent to the lower ends of the parts a, a, a piece C below the block formed with aperture c and actuating lever D located to act on the block B and having springs d, substantially as described. 3rd. In an apparatus for the automatic delivery of articles, the combination of a hopper, a reciprocating cut-off block having an aperture below said hopper, a slide bar actuating said block, a pawl locking said slide bar cover-plate P arranged to move over the aperture e, bar K connected with said plate, and a ratchet wheel Q intermediate of said bar K and the slide bar and engaging with said parts, all substantially as and for the purposes set forth. 4th. The combination, with a closed cabinet or casing containing a hopper for the storage of articles of like size, having inclined vibrating flaps at its base, of a reciprocating cut-off block having an aperture below the said hopper, and provided with projections b, b actuating the said flaps at each reciprocation of the cut-off block, substantially as set forth. 5th. The combination, with a closed cabinet, and a hopper for the storage of articles of like size, having inclined vibrating flaps at its base, and reciprocating cut-off block, with an aperture below the said hopper, and provided with projections b, b of a slide bar actuating said block, and pawls locking the said slide bar, arranged substantially as and for the purposes set forth. 6th. The combination, with a sliding delivery device, a lever connected therewith, and a push-bar arranged to bear against said lever, of locking and releasing pawls H, J located to engage with said push-bar, a rod O having connection with said pawls, and a balance tray F connected with said bar, said balance tray adapted to overbalance by the weight of the coin and by its descent throw one locking pawl H out of gear, and the other pawl J into gear but on its return to normal position to maintain both out of gear, substantially as described. 7th. The combination, with a casing, a hopper with vibrating flaps and a sliding delivery device, of the divided push-bar E M having its adjacent ends made of a crescent shape, so that an introduced coin or coins will form the necessary connection between the parts E, M, substantially as herein set forth. 8th. The combination, with a divided push-bar having its adjacent ends made of a crescent shape, so that an introduced coin or coins will form the necessary connection between the parts E, M, and a lever O, pin o and plate m of a pawl N and projection n, all arranged and operating substantially as and for the purposes set forth.

No. 25,298. Valve Gear for Steam and other Engines. (Distribution par Tiroirs pour Machines à Vapeur et autres.)

Robert M. Bailey, Jr., Amberloy Road, Eng., 30th October, 1886; 5 years.

Claim.—1st. In an engine having main and expansion valves, a slot link connected with the expansion valve, said link being so applied, arranged and operating that its full gear end has a movement similar to that of the main or exhaust valve, but of different amplitude, and its other end has a movement opposite to that of the piston corresponding to lead opening only. 2nd. The combination, with the main and expansion valves of an engine, of a slot link, means for imparting motion thereto in such manner that its full gear end has a movement similar to that of the main or exhaust valve, but of greater amplitude, corresponding to latest cut off, whilst its other end has a movement opposite to that of the piston corresponding to lead opening only, a block capable of sliding in said link, said block

being connected to the expansion valve, and means for adjusting the position of the block in the link, substantially as described. 3rd. The combination, with the main and expansion valves of an engine, of a slot link, a block capable of sliding in said link and connected to the expansion valves, means for adjusting the position of the block in the link, a rocking swing arm or lever connected to the said link, and means for actuating said arm lever, so that its point of attachment with the link has a movement equal to the greatest travel of the expansion valve corresponding to latest cut-off, and means for imparting to the other end of the link a movement equal twice the linear advance of the expansion valve and opposite to that of the piston, substantially as hereinbefore described for the purpose set forth. 4th. The combination, with the main expansion valves of an engine, of a slot link, a block capable of sliding in said link and connected to the expansion valve, a rod for varying the position of the block in the link, a rocking or swinging arm or lever jointed to the said link at the point E, said arm or lever being operated from main valve eccentric through its connecting rod and rod S, and means for imparting movement to the other end of the link, the arrangement being such that the full gear end of the link has a movement equal to that of the greatest travel of the expansion valve corresponding to latest cut-off, and its other end a movement equal to twice the linear advance of the expansion valve and opposite in direction to that of the piston corresponding to lead opening only, substantially as hereinbefore described for the purpose set forth. 5th. The combination, with the main valve and expansion valve of an engine, of a slot link, a block capable of sliding in said link, rods connecting said block to the expansion valve, a rod for adjusting the position of the said block in the link, a rocking or swinging arm or lever pivoted at I, and jointed to the slot link at the point E, an eccentric A and rods for actuating the main slide valve, a rod S for actuating the slot link from the connecting rod of the eccentric A, and an eccentric B, with its connecting rod connected to the link at the point II, all substantially as hereinbefore described for the purpose set forth. 6th. In an engine, having separate admission and exhaust valves, a slot link so applied and arranged that its full gear end has a movement similar to that of the exhaust valves, but of smaller amplitude, and corresponding to latest out-off whilst its other end has a movement opposite to that of the piston, and equal to twice the linear advance of the admission valves corresponding to lead opening only. 7th. In an engine, having separate admission and exhaust valves, the combination with said valves, of a slot link, the full gear end of which has a movement similar to that of the exhaust valves, but of smaller amplitude and corresponding to latest cut-off, whilst its other end has a movement opposite to that of the piston, and equal to twice the linear advance of the admission valves corresponding to lead opening only, a block capable of sliding in said link, connection therefrom to the admission valves, and means for adjusting the position of said block in said link, substantially as hereinabove described for the purpose set forth. 8th. In an engine, having separate admission and exhaust valves, the combination, with said valves, of a slot link, a block capable of sliding in said link, connection from said block to admission valves, means for varying the position of the block in said link, a pivoted arm or lever connected to said link, at E, and connected at G to rods G for actuating the exhaust valves, an eccentric A on the crank shaft connected to the said arm or lever, and means for imparting to that end of the link not connected to said arm or lever movement, opposite in direction to that of the piston, and equal to twice the linear advance of the admission valves, substantially as hereinbefore described for the purpose set forth. 9th. In an engine, having separate admission and exhaust valves, the combination, with said valves and eccentrics A and B on the engine shaft, of an arm or lever working on a pivot or joint I, a rod operated by eccentric A and connected at F to said arm or lever, a slot link connected at E to said arm or lever, rods L connected to the admission valves, lifting rod K, a rod worked by eccentric B, and connected at H to said link, and rod G connected at G to the arm or lever and to the exhaust valves, all substantially as described and shown for the purpose specified.

No. 25,299. Fly-Catcher for Windows.*(Attrappe-Mouche pour Fenêtres.)*

Zach. F. Kovors, San Francisco, Cal., U. S. 30th October, 1886; 5 years.

Claim.—1st. A fly-catcher, formed of a trough, and means for supporting the inner wall of the trough in closed contact with the window glass, substantially as specified. 2nd. A fly-catcher, formed of the trough A, open at the top, closed at the ends, and provided with the notch A', and means for attachment to a window pane, wall, or other surface frequented by flies, substantially as specified. 3rd. A fly-catcher, formed of the trough A, having a flat inner wall so as to be held closely in contact with the surface, to which it is applied, and provided with a downwardly-inclined guard J, substantially as specified.

No. 25,300. Hay-Carrier. (Monte-Forn.)

Edwin L. Hall, Denvertown, Ohio, U. S., 30th October, 1886; 5 years.

Claim.—1st. In a hay-carrier, a two-part bell-shaped gravity catch *f, f*, having its upper end adapted to receive and catch the stem N of the hoisting pulley O, and having also upwardly-extending arms *k, k* adapted to be spread by a plate L, on the under side of the track A, substantially as described. 2nd. In a hay-carrier, a two-part bell-shaped gravity catch *f, f*, pivoted in the lower hollow extension or neck of the carrier-frame, and having upwardly-extending arms adapted to be opened by a plate L on the under side of the track A, combined with a gravity bolt M and with the inclined edges 3 at the upper opening of the carrier-neck, substantially as described. 3rd. In a hay-carrier, the combination, with the inclined edges 3 at the upper opening of the carrier-neck, of a gravity catch-bolt M adapted to be lifted by the incline *n* and to drop into the opening, substantially as described. 4th. The combination in a hay-carrier, a gravity-catch *f, f*, for the stem N of the hoisting pulley located within an opening in the carrier neck, and having upwardly-extending arms *k, k*, the said opening having an inclined upper edge, a gravity locking bolt M adapted to be lifted by the inclined edge of the opening, and a plate L on the under side of the track A, adapted to spread the arms *k, k* of the gravity catch *f, f*, and to release the stem N of the hoisting pulley, substantially as described. 5th. A locking bolt M, set in the track A and adapted to fall and project below the under surface thereof, in combination with a carrier having a central chamber, and a suitable catch for the stem of the hoisting pulley, said chamber being adapted to receive the locking bolt M, substantially as described. 6th. In a hay-carrier, the combination of a locking mechanism for the stem N, of the hoisting pulley, and inclined edges 3 at the upper opening of the carrier neck of the cut down portions 22, and a divided locking bolt M, substantially as described. 7th. In a hay-carrier, the bracket D forming a collar swivelled around the hollow neck of the carrier frame, whereby a reversible connection is formed between the lifting wheel E and rope attachment G and the carrier frame, substantially as described. 8th. In a hay-carrier, a turning device formed preferably like the bracket D, whereby a reversible connection is formed between the carrier and the lifting pulley E and rope attachment, so that said pulley and rope attachment may be reversed, so as to allow the carrier to run either way without reversing the carrier upon its track.

No. 25,301. Process of Refining Petroleum and other Substances Containing Sulphur or Phosphorus.*(Procédé d'Épuration du Pétrole et autres Matières Contenant du Soufre ou du Phosphore.)*

Martin J. Woodward, Petrolia, Ont., 30th October, 1886, 5 years.

Claim.—1st. The process of removing sulphur and similar impurities from the oils or hydro-carbons, by the use of oxide of lead or plumbic oxide or any other metallic oxide in alkaline solution. 2nd. The process of removing sulphur and similar impurities from oils or hydro-carbons, by the use of oxide of lead or plumbic oxide, or any other metallic oxide in alkaline solution, combined with subsequent distillation of the oil from the lead or other metallic compounds. 3rd. The process of removing sulphur and similar impurities from oils or hydro-carbons, by the use of oxide of lead or plumbic oxide, or any other metallic oxide in alkaline solution, followed by and in combination with separation or decantation, followed by and in combination with distillation of the purified oil from the alkaline solution and lead or other metallic compounds.

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

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| <p>704. A. MERNER, 2nd 5 years of No. 13,550, from the 19th day of October, 1886. Improvements on Iron Plough Beams, 1st October, 1886.</p> | <p>712. A. RUSSELL and A. JACKSON, 2nd and 3rd 5 years of No. 16,813, from the 5th day of May, 1881. Improvements on Fences, 15th October, 1886.</p> |
| <p>705. H. C. CROKER, 2nd 5 years of No. 13,709, from the 17th day of November, 1886. Improvements in Hermetically Sealed Paper Packages, 1st October, 1886.</p> | <p>713. W. GRAY and J. G. GRAY, 2nd 5 years of No. 14,034, from the 19th day of January, 1886. Improvements on Machines for Collecting Dust in Flour Mills, 18th October, 1886.</p> |
| <p>706. E. SMART and B. C. SHEPHERD, 2nd 5 years of No. 13,803, from the 5th day of December, 1886. Improvements on Lawn Mowers, 4th October, 1886.</p> | <p>714. C. TIDEY, 2nd 5 years of No. 13,554, from the 19th day of October, 1886. Improvements on Water Baths, 19th October, 1886.</p> |
| <p>707. E. SMART and B. C. SHEPHERD, 2nd 5 years of No. 13,624 from the 14th day of December, 1886. Improvements on Lawn Mowers, 4th October, 1886.</p> | <p>715. A. E. CHOQUETTE, 2nd 5 years of No. 13,587, from the 20th day of October, 1886. Improvements in Sewing Machines, 19th October, 1886.</p> |
| <p>708. J. S. STE. MARIE, 3rd 5 years of No. 6,640, from the 11th day of October, 1886. Improvements on Spittoons, 7th October, 1886.</p> | <p>716. H. KINGSFORD, 2nd 5 years of No. 13,665, from the 10th day of November, 1886. Improvements in Apparatus for Grappling Submarine Cables, 19th October, 1886.</p> |
| <p>709. L. COTE, 2nd and 3rd 5 years of No. 21,949, from the 2nd day of July, 1886. Improvements in Process and Machinery for Shaping Boot and Shoe Counters, 7th October, 1886.</p> | <p>717. L. H. TOURVILLE, 2nd 5 years of No. 13,566, from the 19th October, 1886. Waggon Axle Lubricator, 19th October, 1886.</p> |
| <p>710. J. ROY, 2nd 5 years of No. 13,617, from the 21st day of October, 1886. Improvements on Range Stoves, 7th October, 1886.</p> | <p>718. G. H. PHELPS, 2nd 5 years of No. 13,732, from the 13th November, 1886. Improvements on Shoulder and Back Bracing Suspenders, 22nd October, 1886.</p> |
| <p>711. H. A. DAVIES, 2nd 5 years of No. 13,596, from the 24th day of October, 1886. Improvements in Umbrellas, 13th October, 1886.</p> | <p>719. S. IDE, ELIZA IDE and ALFRED IDE, 2nd 5 years of No. 14,110, from the 21st day of January, 1887. Improvements in Door Hangers, 27th October, 1886.</p> |
| | <p>720. C. LIDSTONE (Administratrix), 2nd 5 years of No. 13,658, from the 10th day of November, 1886. Improvements on Steam Cookers, 27th October, 1886.</p> |

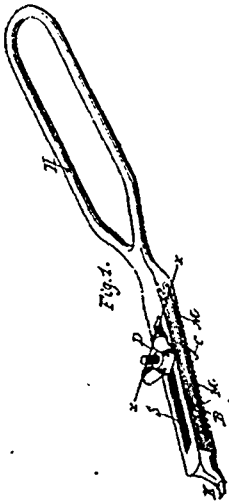
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

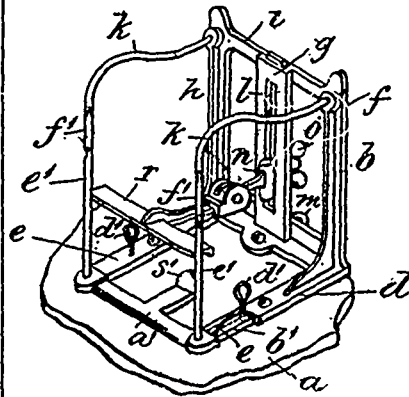
Vol. XIV.

NOVEMBER, 1886.

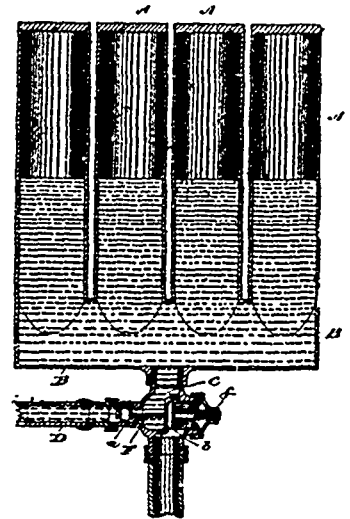
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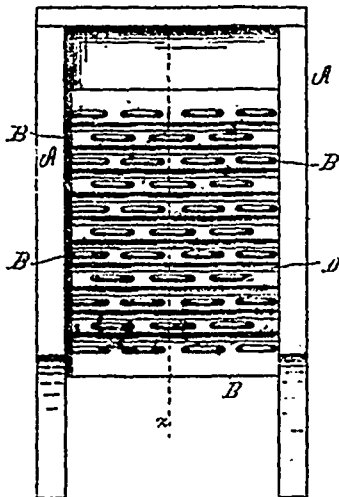
25074 Wakenan's Can Opener.



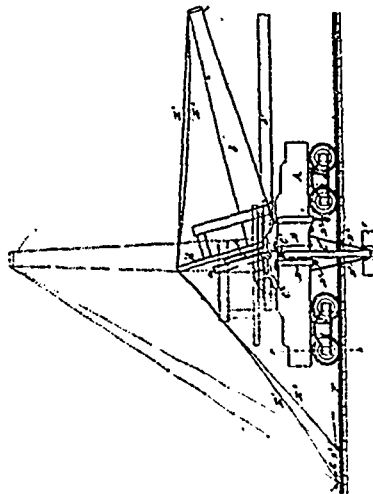
25075 Burnett's Paver Holder.



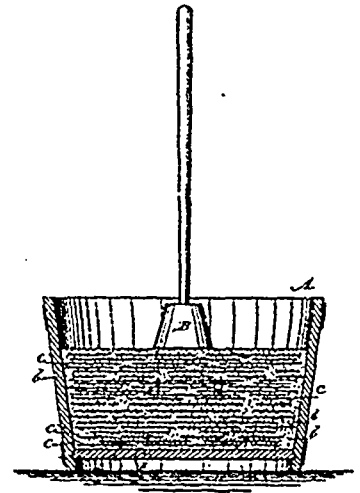
25076 Malcolm's Water Closet.



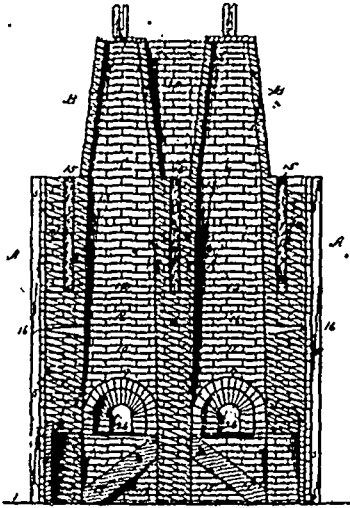
25077 Jincks' Wash Board.



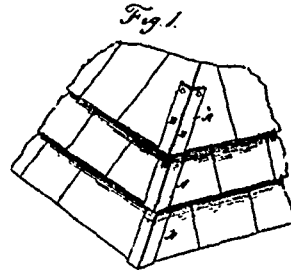
25079 Loring and Jowett's Railway Car.



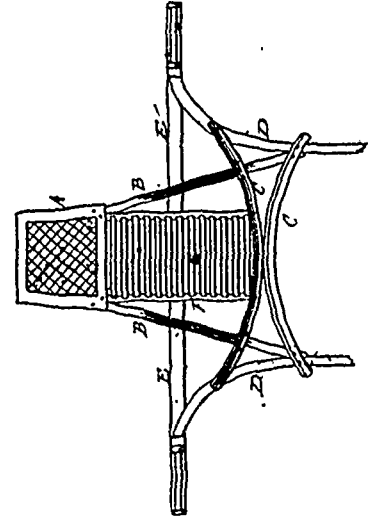
25080 Meyer's Method of Starching.



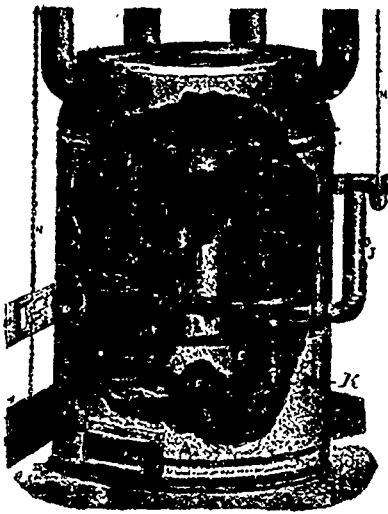
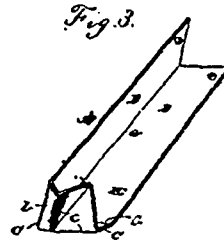
25081 Wingard's Lime Kiln.



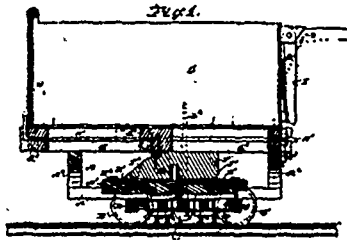
25082 Prentice's Metallic Hip Shingle.



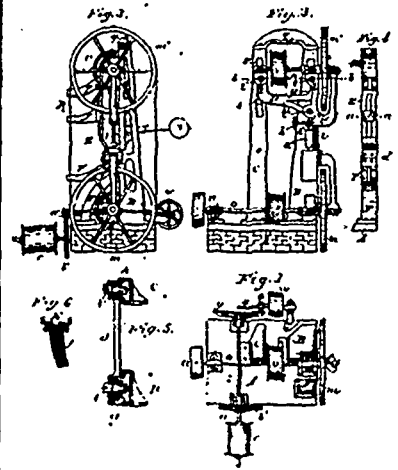
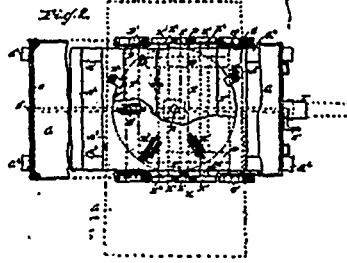
25084 Hawkey's Seat Spring for Bulkeys.



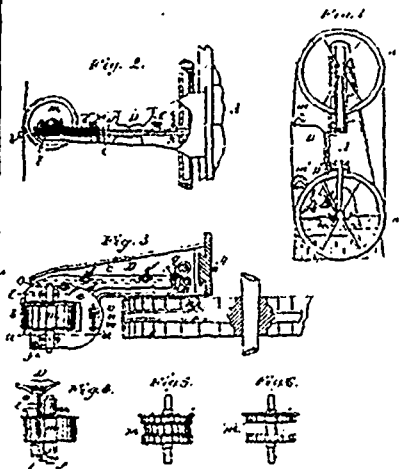
25085 Jacob's Hot Air Furnace.



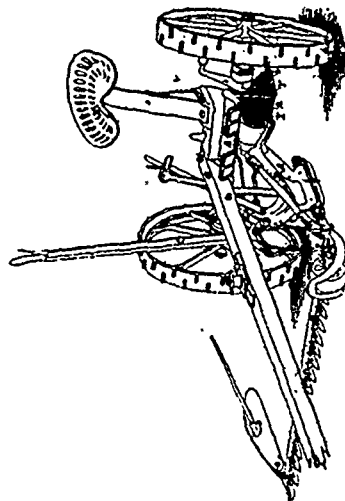
25086 Cook & Summers' Dumping Car.



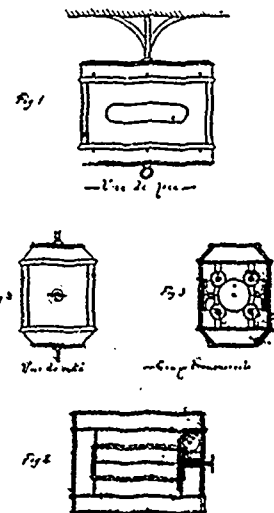
25087 Allington's Band Saw Machine.



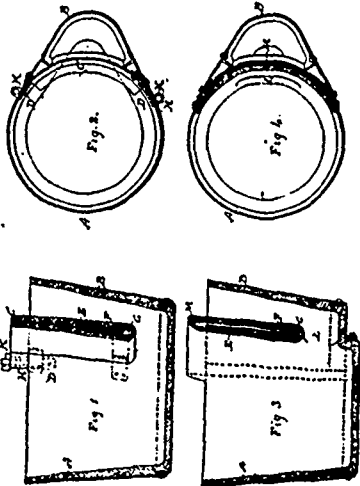
25088 Allington's Band Saw Guide.



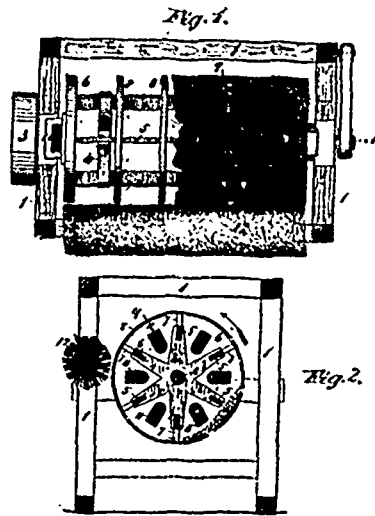
25030 Whittely's Beam for Harvester Frames.



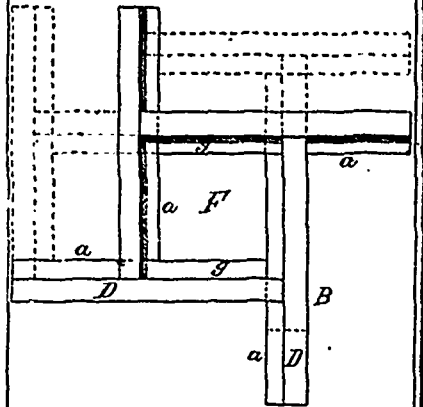
25091 Plante's Railway Station Indicator.



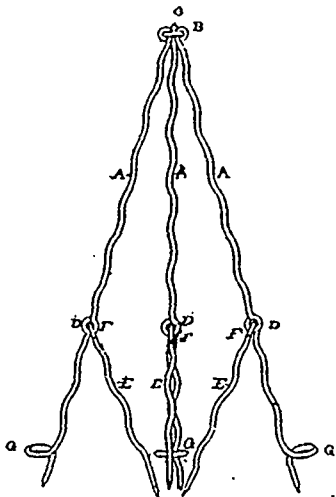
25092 Goodwin & Howo's Foundry Ladle



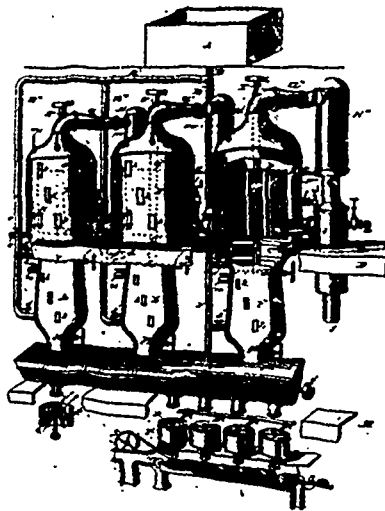
25093 Plowes' Flour Bolt.



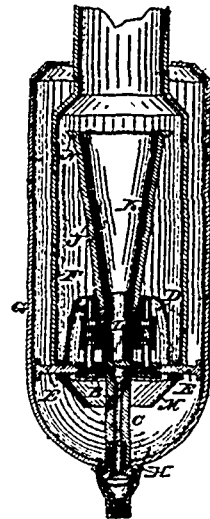
25094 Stuart's Window Screen Frame.



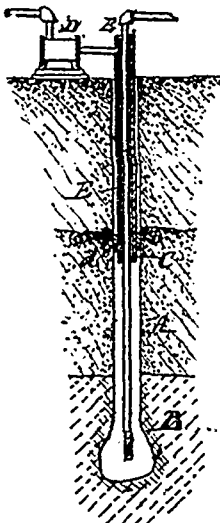
25095 Norr's Cop Trelle.



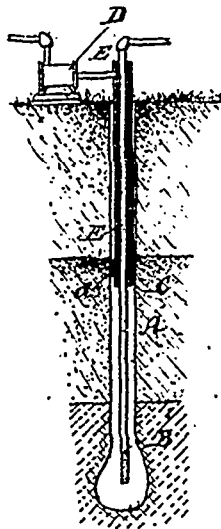
25097 Duncan's Manufacture of Salt.



25098 McClellan's Gas Burner.



25099 Peter's Method of Making and Raising Salt Brine from Deep Wells



25100 Peter's Apparatus for Making and Raising Salt Brine from Deep Wells

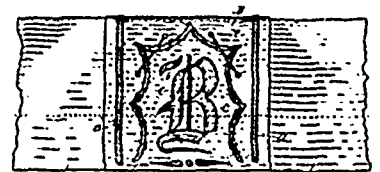


Fig. 1

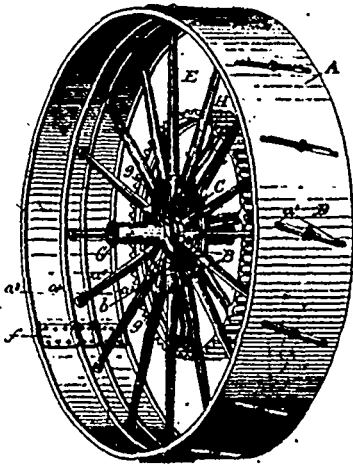


Fig. 2

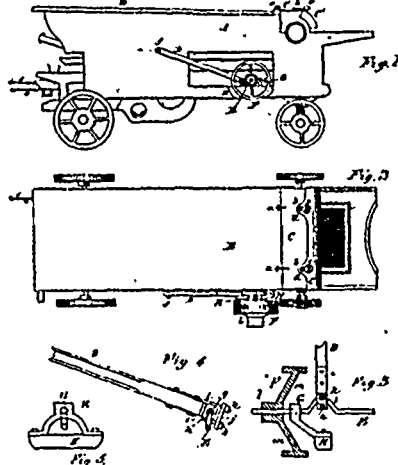


Fig. 3

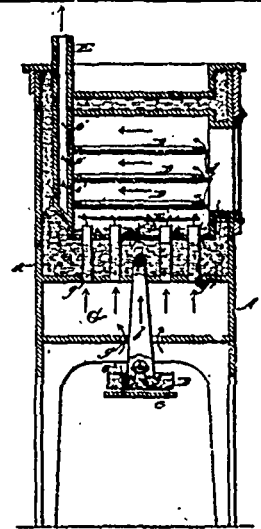
25101 Harrows & Knowles' Carriage Foot Pad



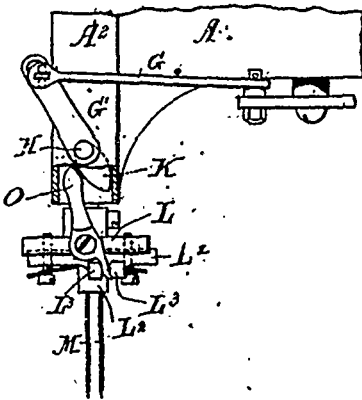
25102 Rosebrooks' Wheel.



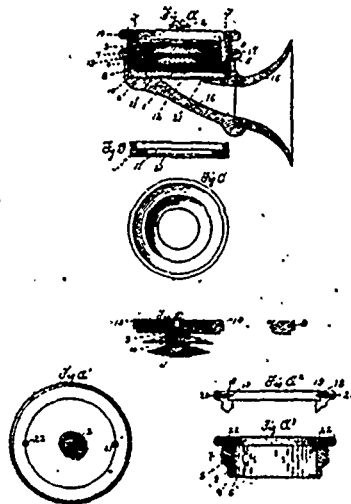
25103 Christie's Thrashing Machine.



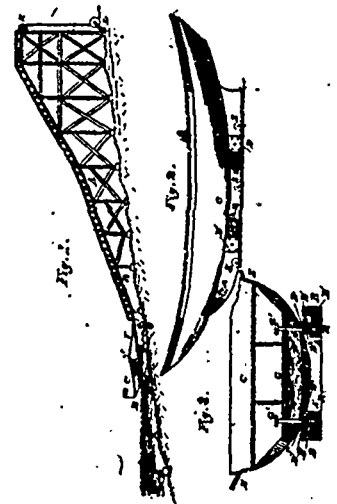
25104 Gray's Incubator.



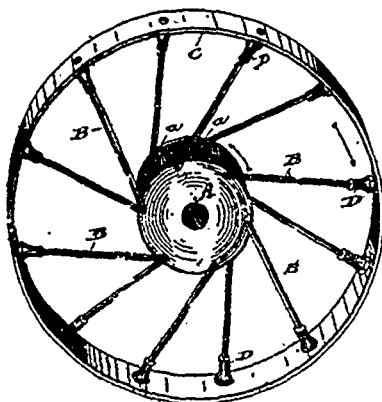
25105 Brodeur's Sewing Machine.



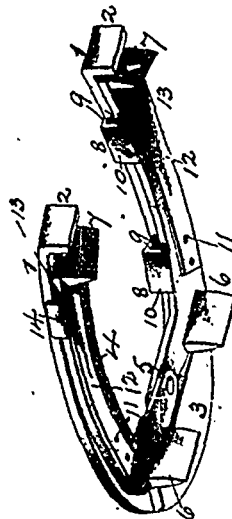
25106 Thoraberry's Telephone Transmitter.



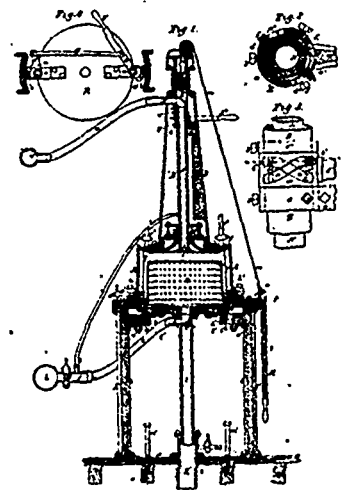
25107 Schaefer's Boat Slide.



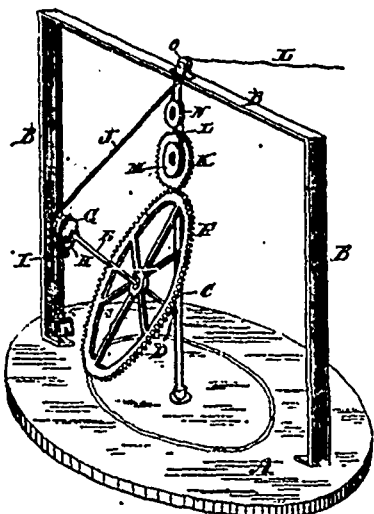
25108 Campbell's Pulley.



25109 Pitton's Horse Shoe.



25110 Keyes' Press for Palls.



25111 McIntosh's Mechanical Movement.

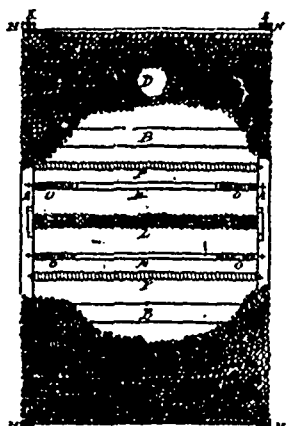
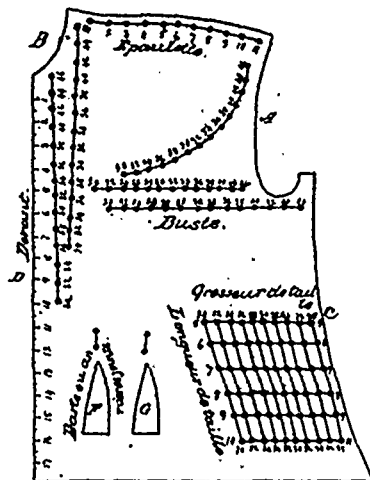


Fig. 1

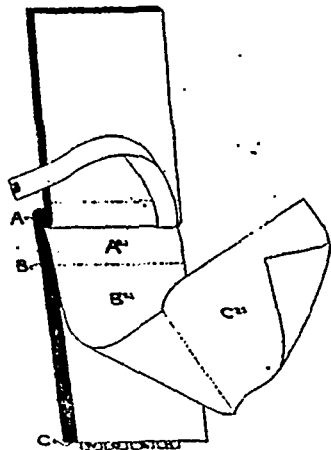
25112 Knowlton's Bed Bottom.



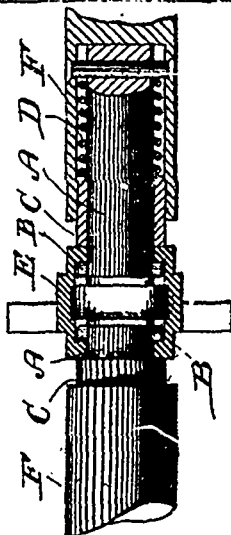
Fig. 2



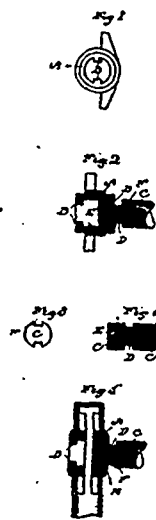
25113 Durocher a Dressmaker's Pattern.



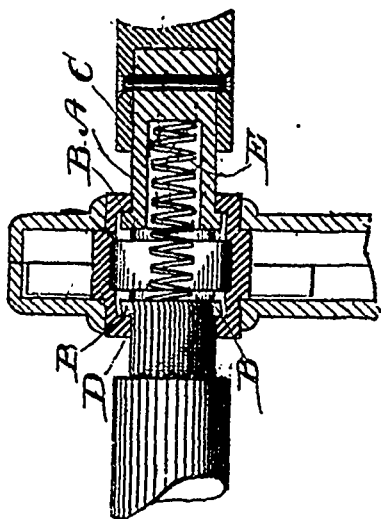
25114 Butterfield's Directory.



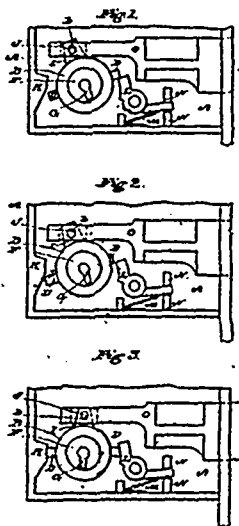
25116 Alvord's Knob Attachment.



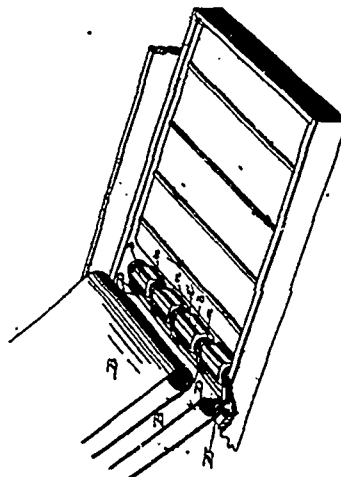
25117 Alvord's Knob Attachment.



25118 Alvord's Knob Attachment.



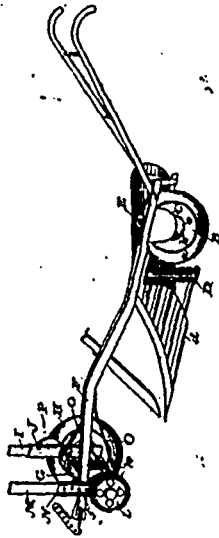
25119 Alvord's Lock and Latch.



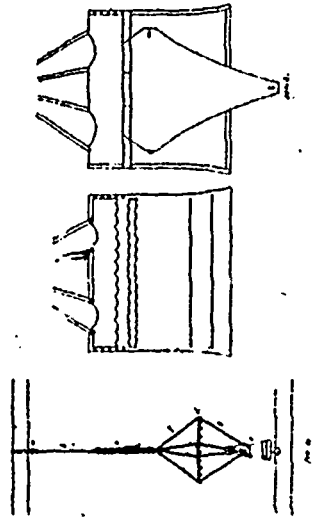
25120 Noxon's Harvester Binder.



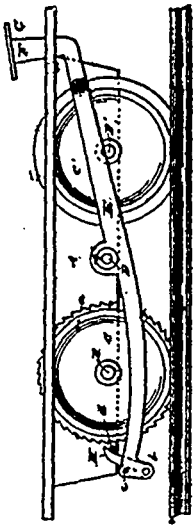
25121 Storm's Wagon, Carriage etc.



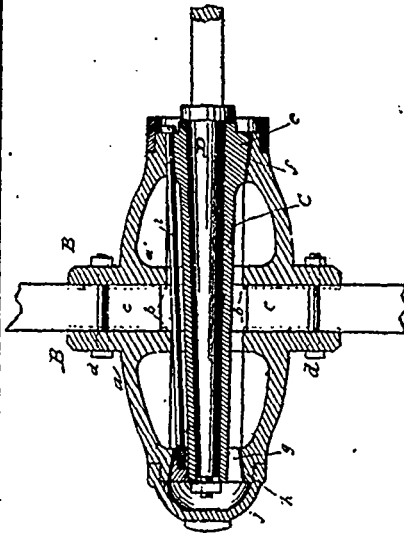
25122 Pettigrew's Plough.



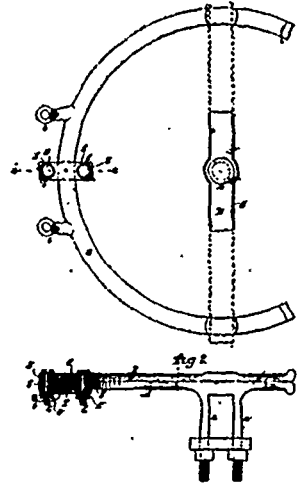
25123 Norman's Baby Jumper.



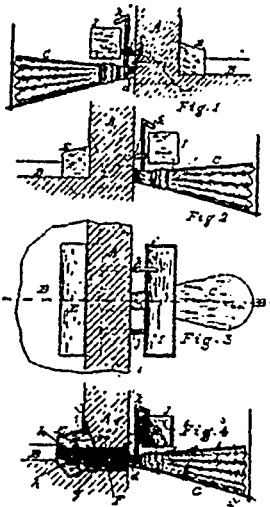
25124 Gercko's Car Starter.



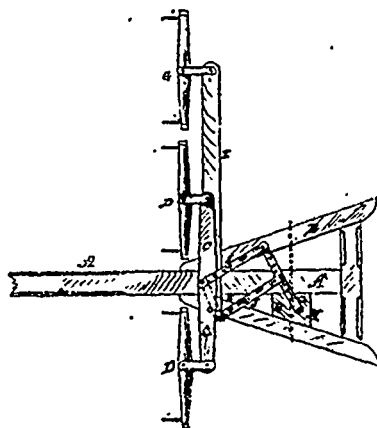
25125 Lane's Hub and Box Fastening.



25126 Storm's Fifth Wheel.



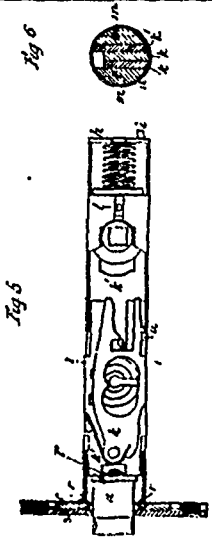
25127 Gadoury's Forge.



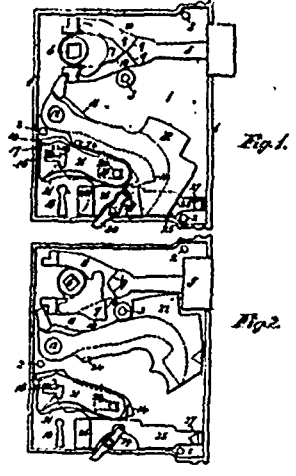
25128 Griswold's Draft Equalizer.



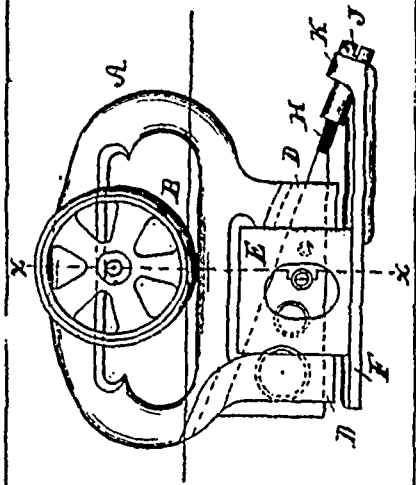
25129 Miller's Bed Bottom.



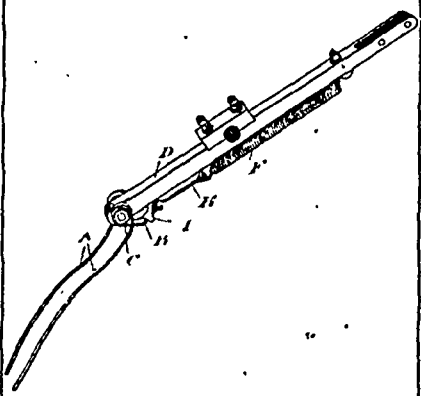
25130 Biggs' Lock and Latch.



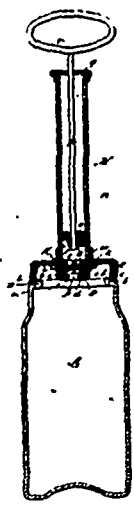
25131 Underwood's Lock and Latch.



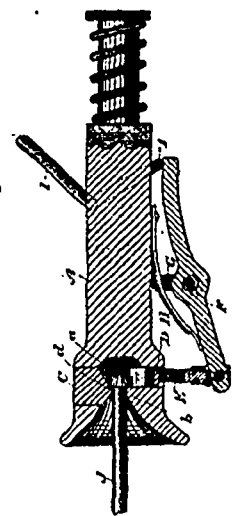
25133 Braun's Door Hanger.



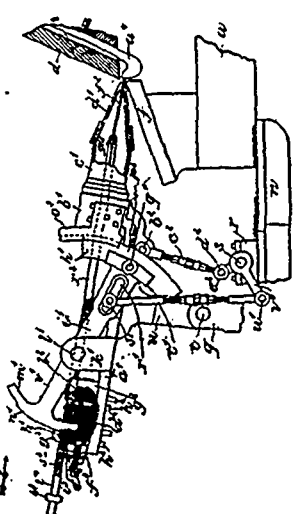
25134 Heath's Tedder.



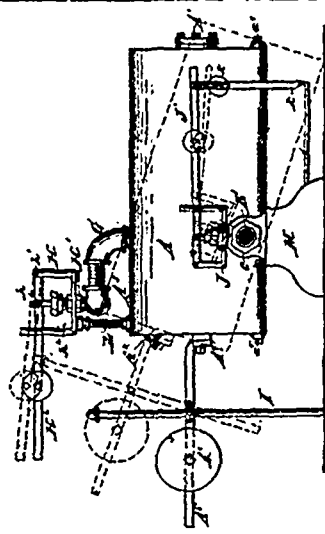
25135 Doherty's Jar Cover.



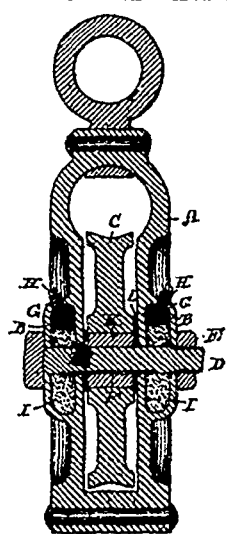
25136 Ripson's Car-Coupler.



25137 Harsey's Nail Plate Feeder.



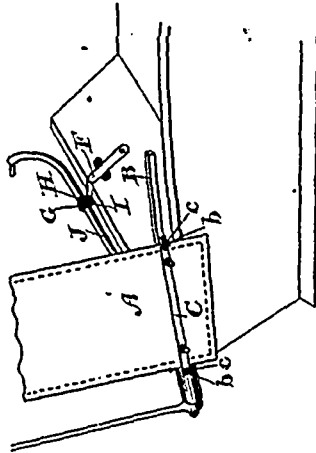
25138 Morehead's Steam Trap.



25139 Butters' Hoisting Pulley.



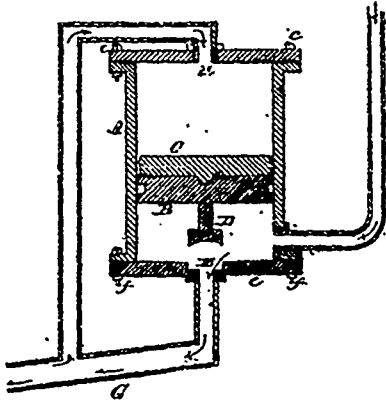
25140 Crompton's Woven Fabric.



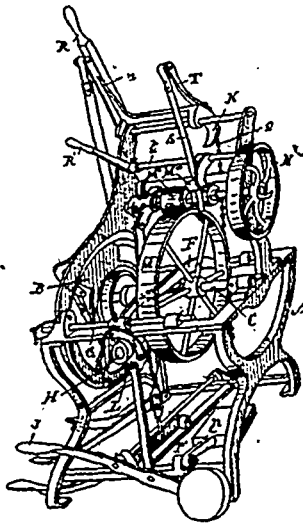
25141 Conboy's Buggy Top.



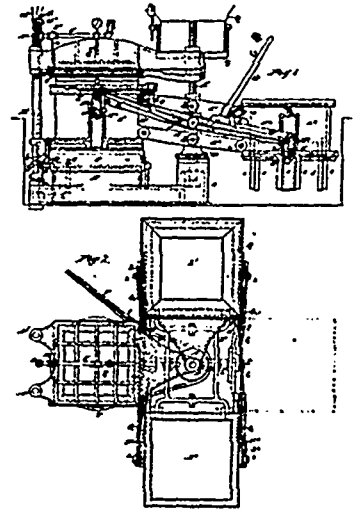
25142 Fauteux's Sash Fastener.



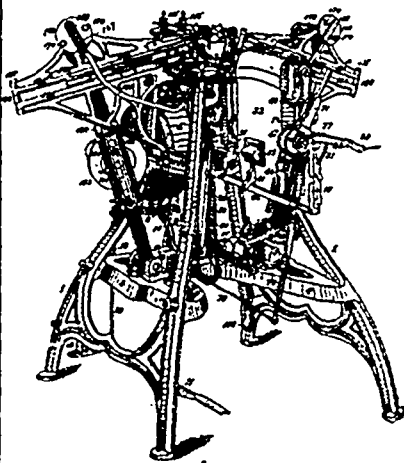
25143 Moody's Sewer Trap.



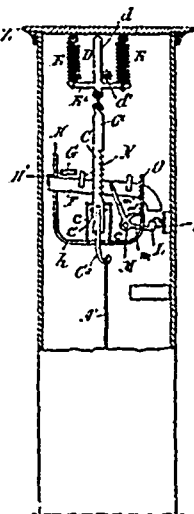
25144 Ward's Hoop Coller.



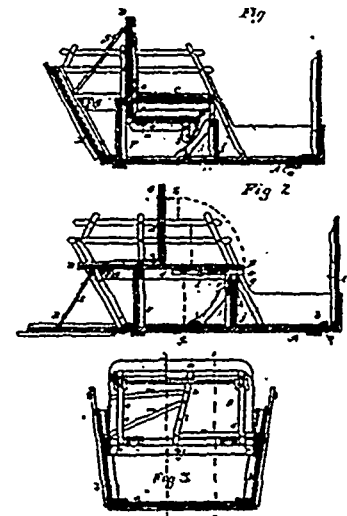
25145 Moore's Machine for Making Sand Moulds for Casting Metal.



25146 McCombs' Broom Sewing Machine.



25147 Favre's Weighing Machine.



25148 Steele's Vehicle Seat.

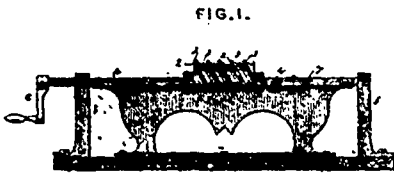


FIG. 1.

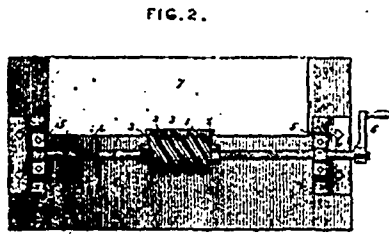
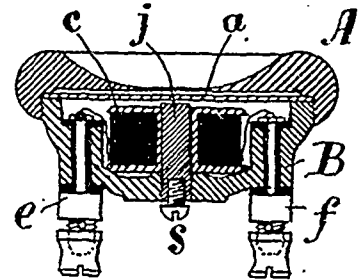


FIG. 2.

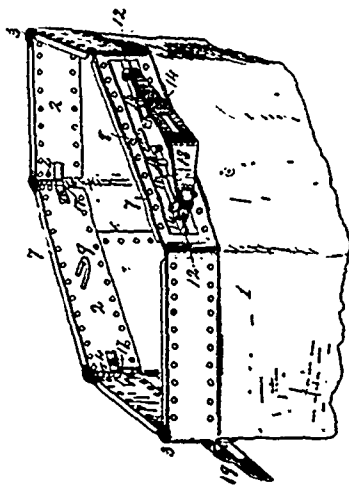
25149 Tucker's Saw Sharpening Device.



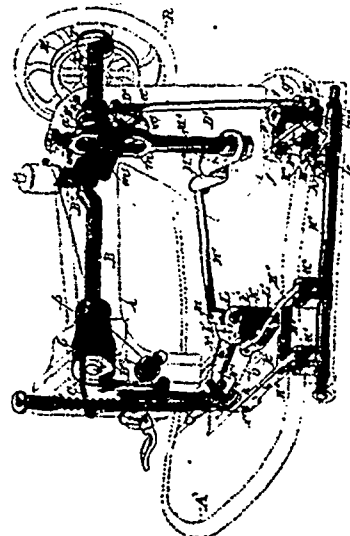
25150 Connett's Machine for Turfing Fabrics



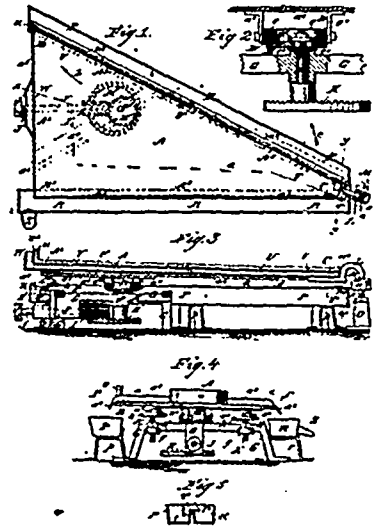
25151 Gilliland's Telephone.



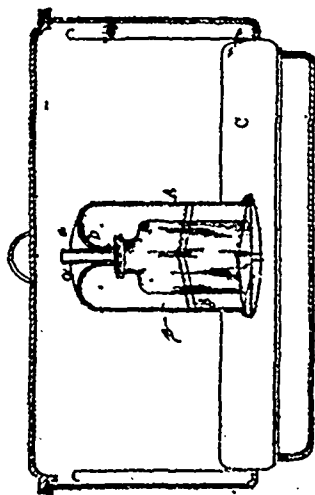
25152 Freeman's Mail Bag.



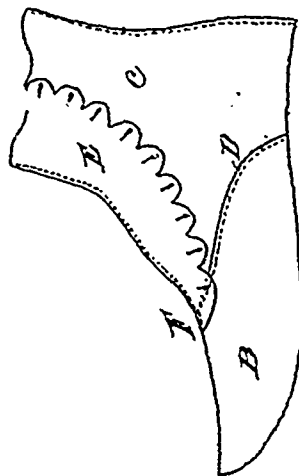
25153 Whitehill's Sewing Machine.



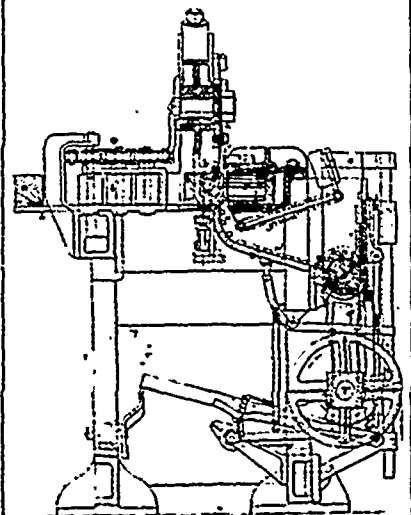
25154 Krause's Oro Separator.



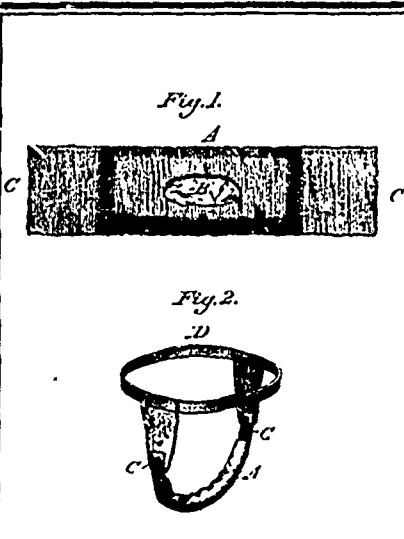
25155 Mudzo's Canning Apparatus.



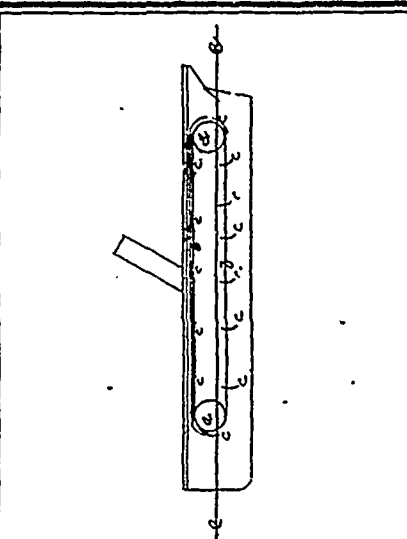
25156 Bolvin's Shoe Vamp.



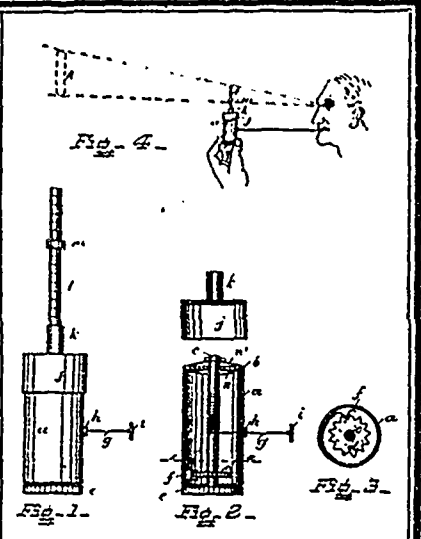
25157 Kingston's Machine for Cutting, etc., Firewood.



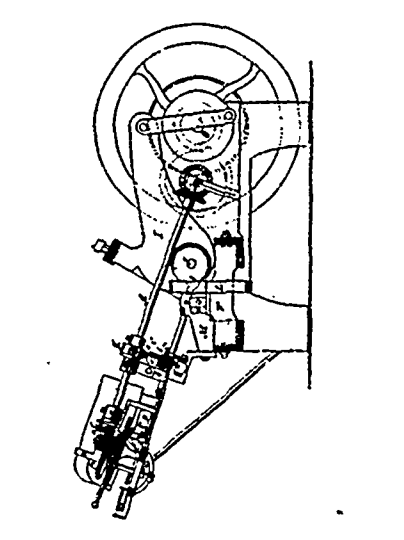
25158 Hughee's Catamental Sack.



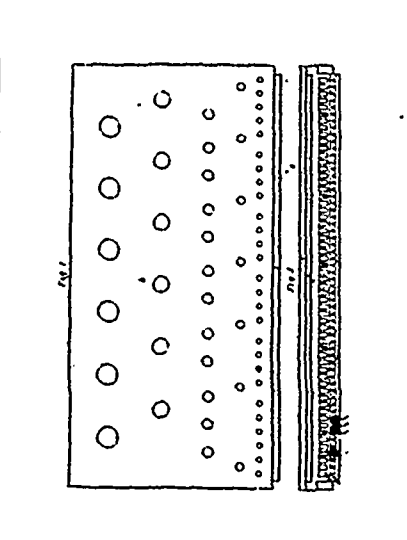
25159 McIvermid's Paddle.



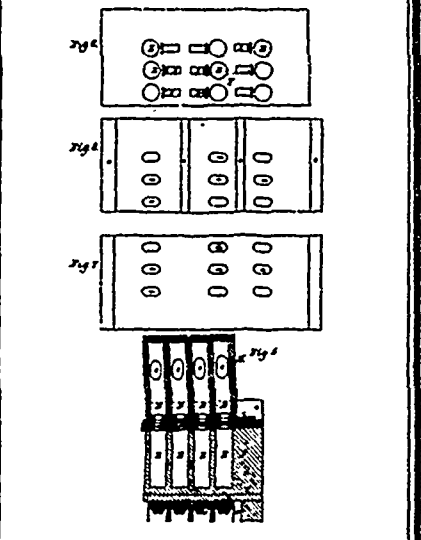
5160 Creasey's Apparatus for Perspective Drawing.



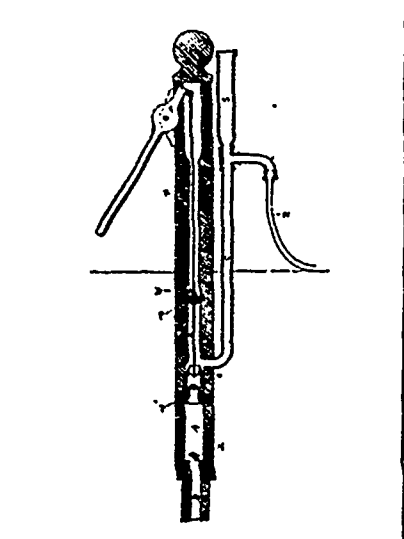
25161 Gleason's Nail Machine.



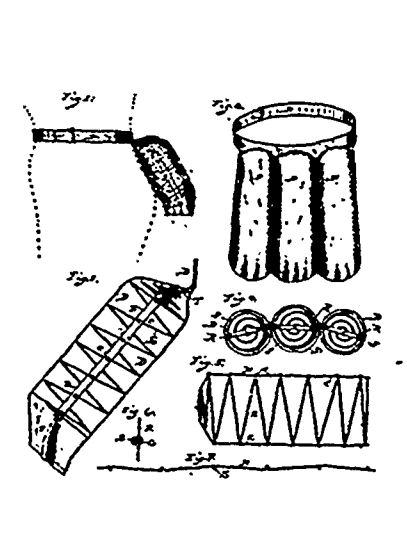
25162 Hamilton's Reed Organ.



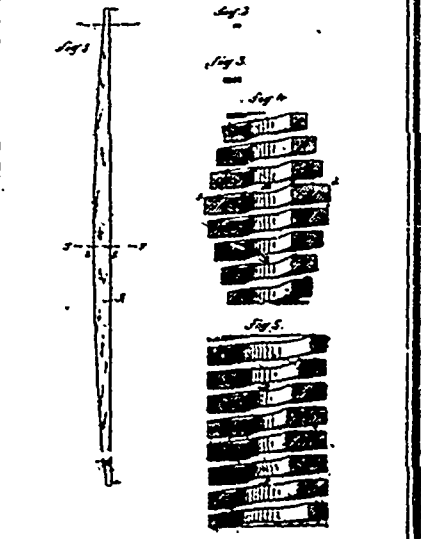
25163 Hamilton's Reed Organ.



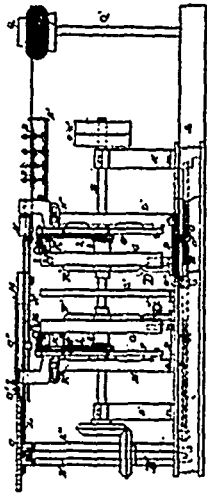
25164 Doyle's Force Pump.



25165 Randall's Bustle.



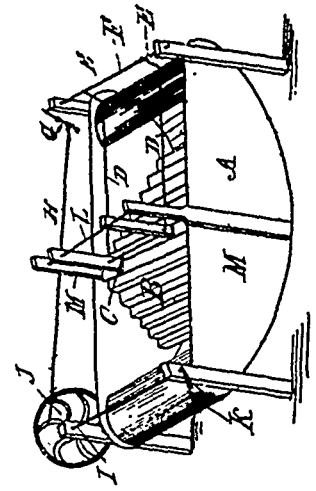
25166 Vose's Car Spring.



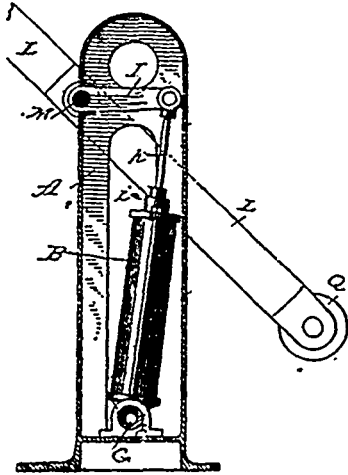
25167 Eckerson's Machine for Making Bale Ties.



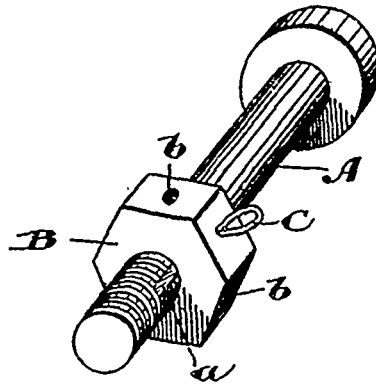
25168 Clarke's Electric Generator.



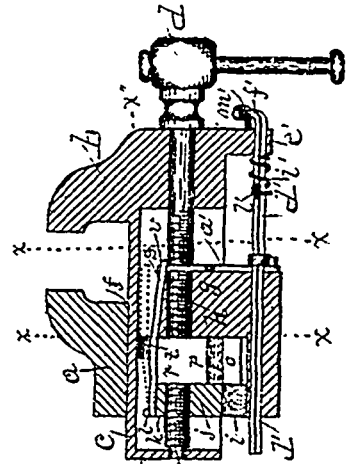
25169 Mirfield's Washing Machine.



25170 Lidback's Railway Gate.



25171 Matthews' Nut Lock.



25172 Ernst's Vise.

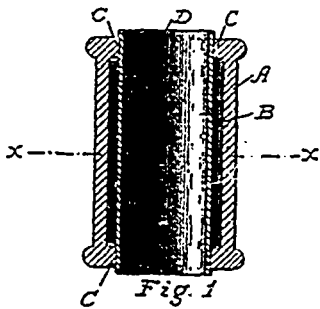


Fig. 1

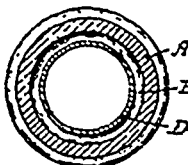
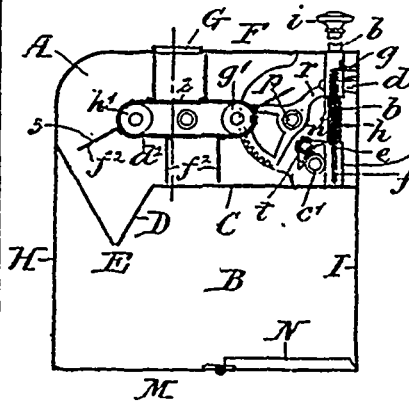
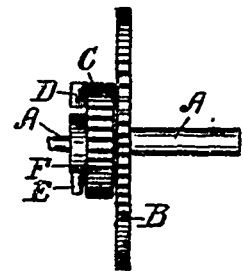


Fig. 2

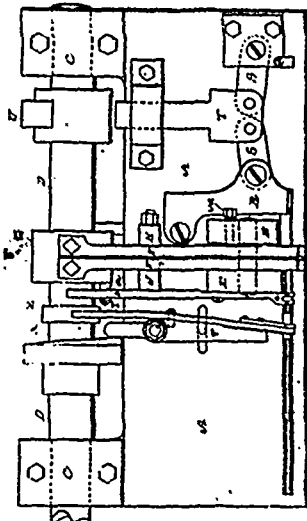
25173 Boyle's Pump.



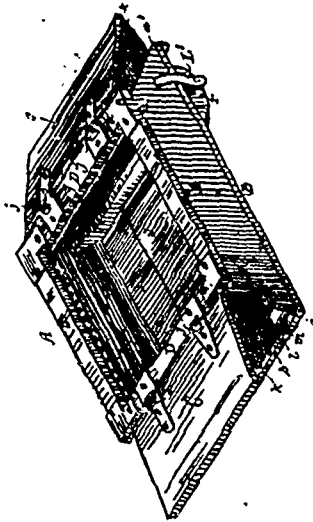
25174 Macdonald's Cash Collecting Lock Box.



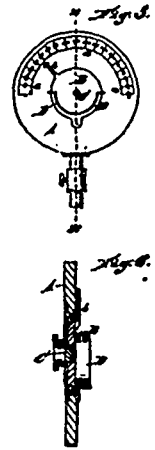
25175 Ferguson's Safety Pinion for Watches.



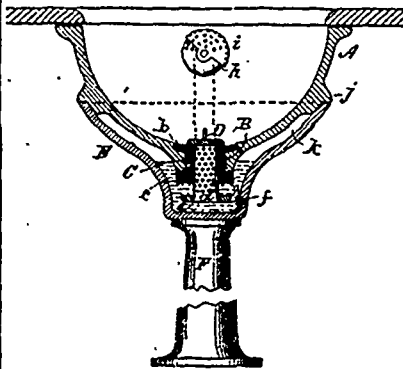
25176 Fowler's Wire Nail Machine.



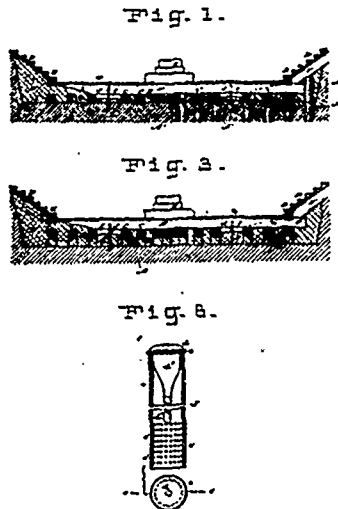
25177 Vaughn's Locomotive Safety Ash Pan.



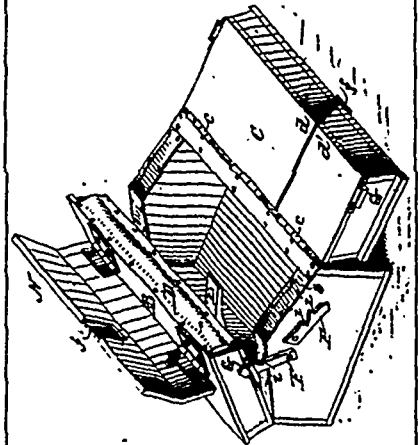
25178 Culbertson's Prismscope.



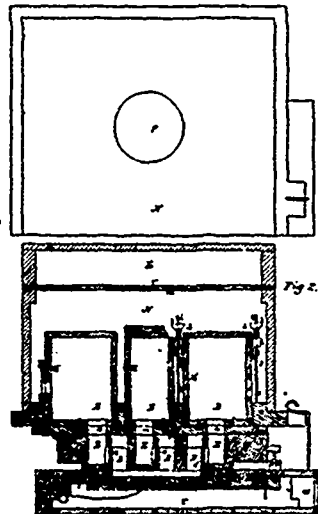
25179 Stead's Wash Basin.



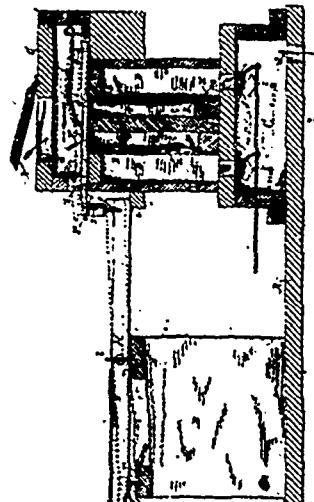
25180 Simpson's Dry Dock.



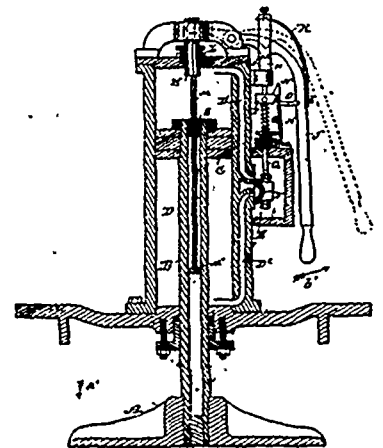
25181 Brown's Refrigerator for Fruit, etc.



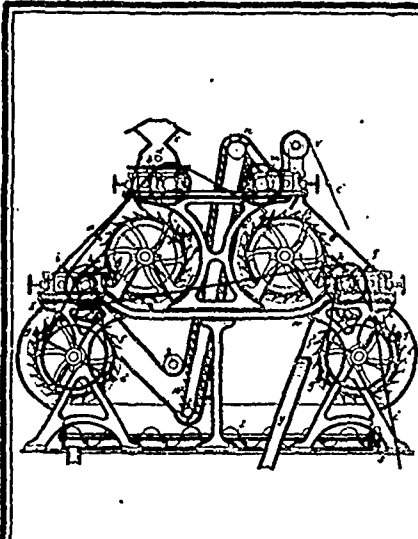
25182 Hamilton's Reed Organ.



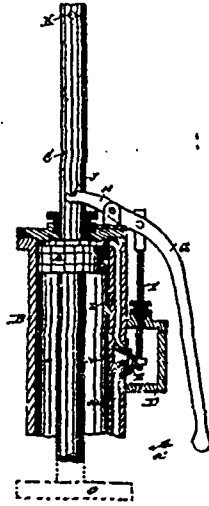
25183 Metcal's Reed Organ.



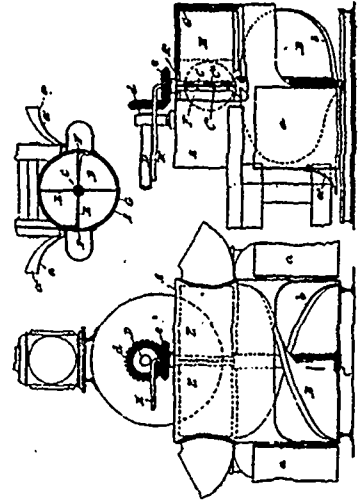
25184 Curtis' Press for Paper Pulp Mills.



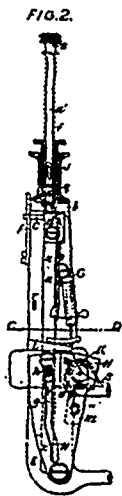
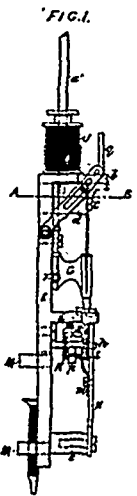
25185 Morroll's Roller Grinding Mill.



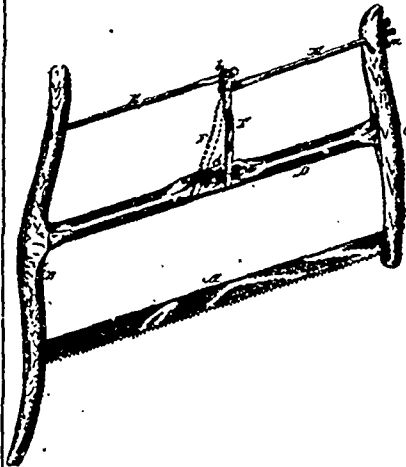
25186 Curtiss' Press for Paper Pulp Mills.



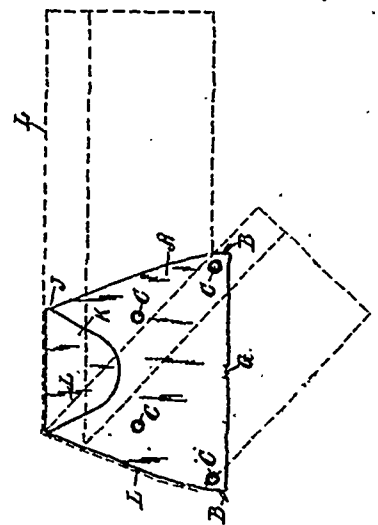
25187 McBao's Snow Clearer.



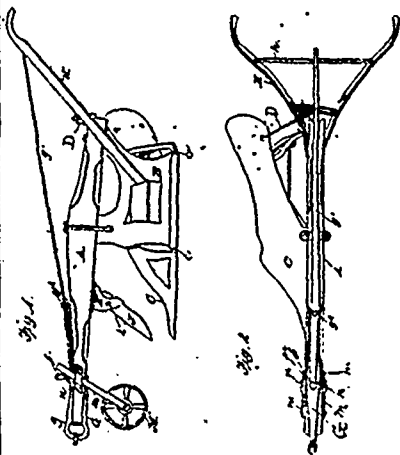
25189 Rosenthal's Pocket Sewing Machine.



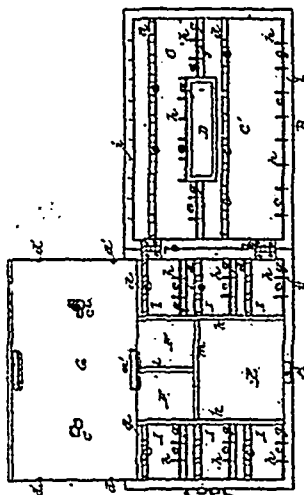
25191 Hale's Saw Frame.



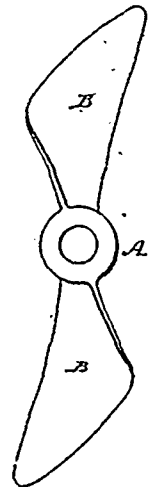
25192 Witham's Necktie Shield.



25193 Hubbell's Reversible Plough.



25194 Hutton's Medicine Chest.



25195 Wetherill's Propeller Wheel.

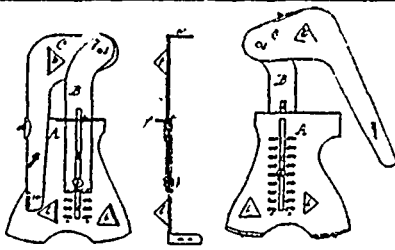


Fig 2 Fig 3 Fig 1

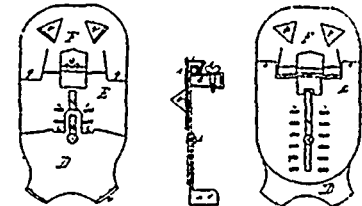
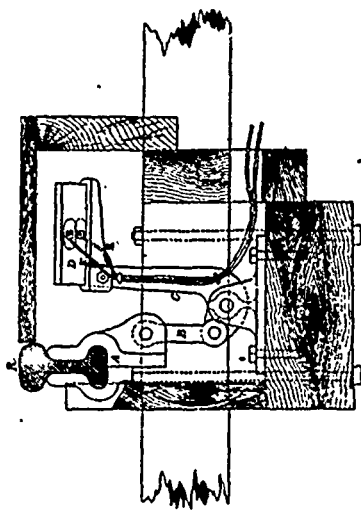
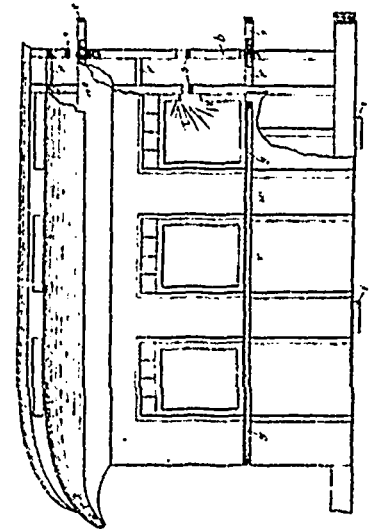


Fig 4 Fig 6 Fig 5

25197 Dutcher's Ice Creoper.



25198 Buck's Electrical Contact Apparatus.



25199 Wilson's Railway Car.

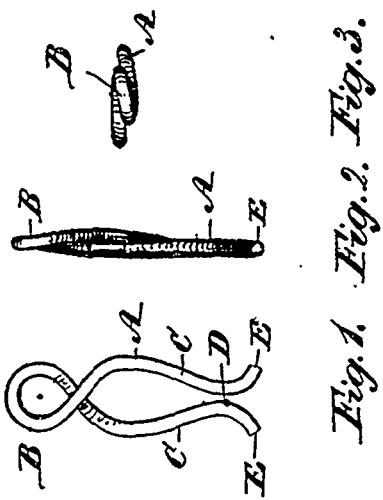
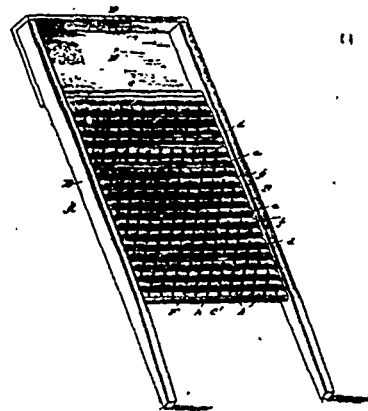
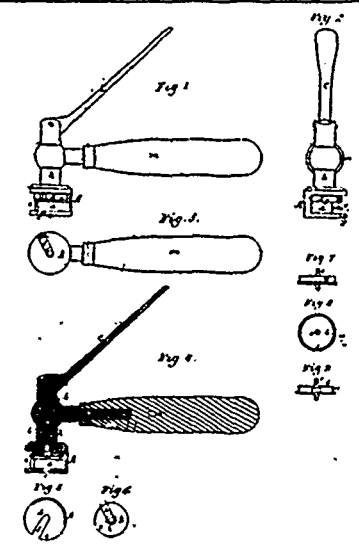


Fig. 1. Fig. 2. Fig. 3.

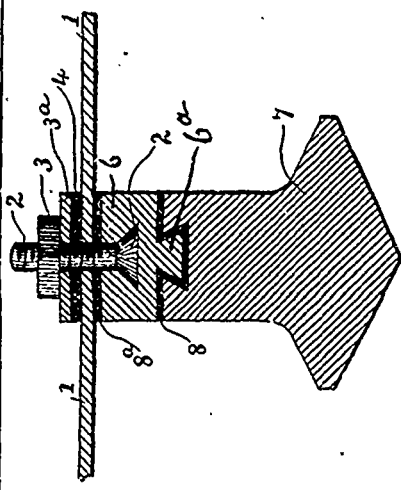
25200 Libby's Clothes Pin.



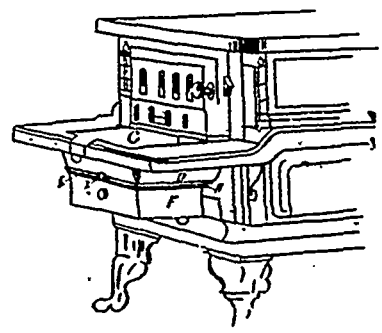
25202 Fuller's Wash Board



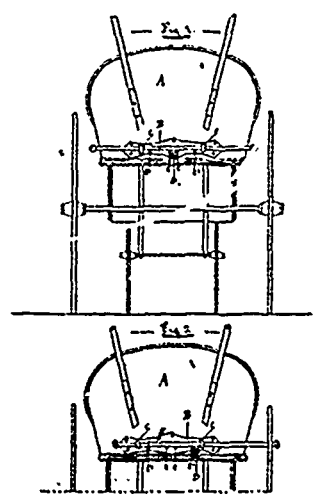
25203 Dudley's Watchmaker's Implement.



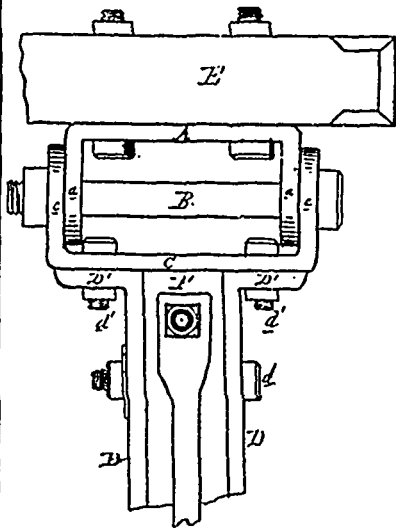
25204 Whitlock's Stove Door Handle.



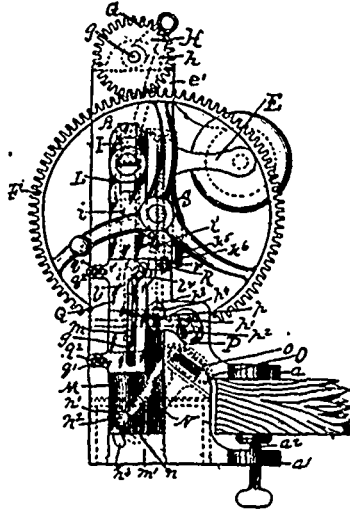
25205 Copp's Stove.



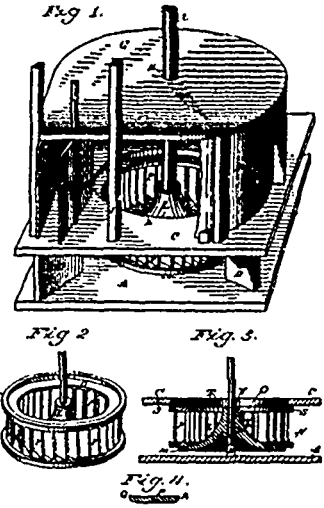
25206 Smith's Baby Carriage.



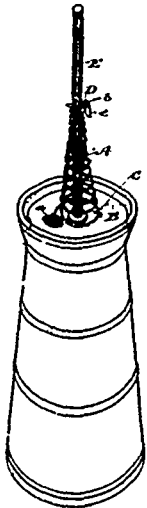
25207 Gardner's Hinged Sleigh Knee.



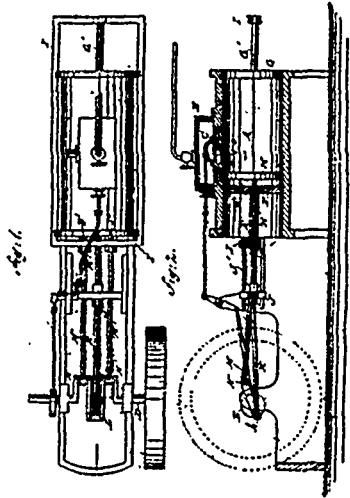
25208 Cookson's Sewing Machine.



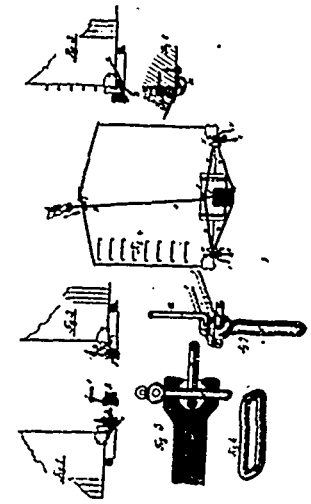
25209 Perley's Water Wheel.



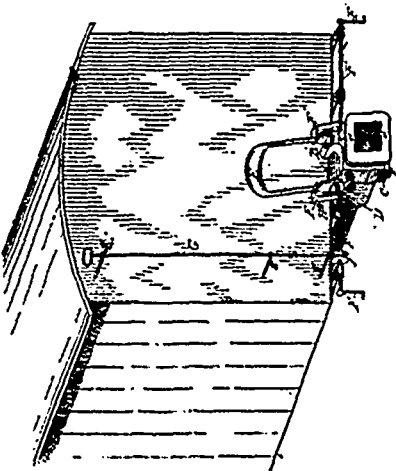
25210 Duggan's Churn.



25211 Morrison's Steam Engine.



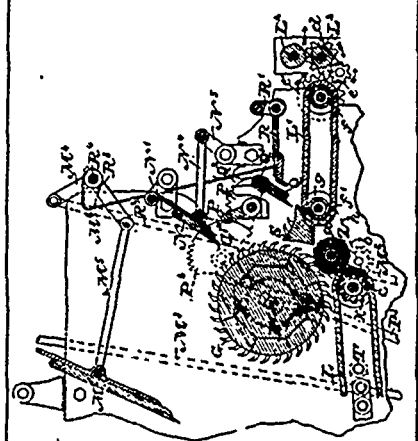
25212 Tyzick's Car-Coupler.



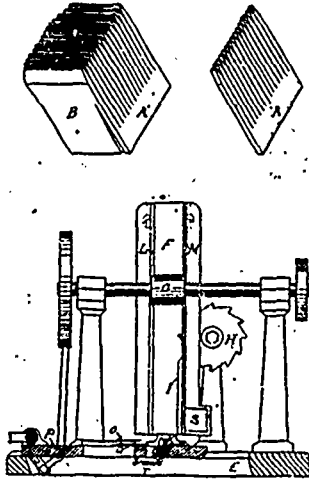
25213 Michaud's Car Coupling.



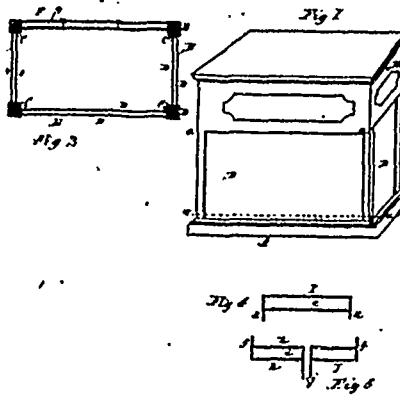
25214 Brown's Ox-Yoke.



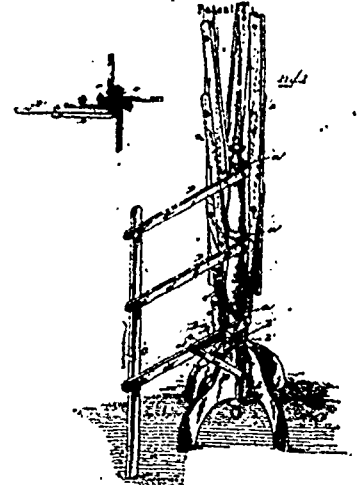
25215 Lemaitre's Feeding Mechanism for Carding Machines.



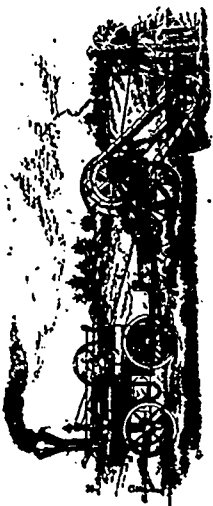
25216 Flewelling & Harris' Manufacture of Matches.



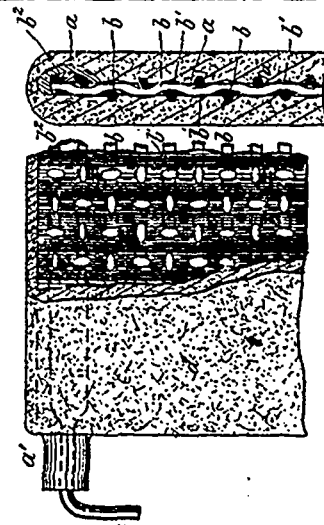
25217 Greenland's Refrigerator.



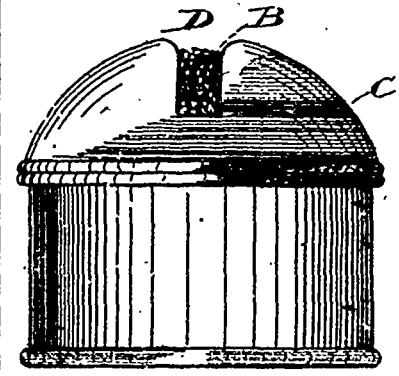
25218 Manley's Clothes Drier.



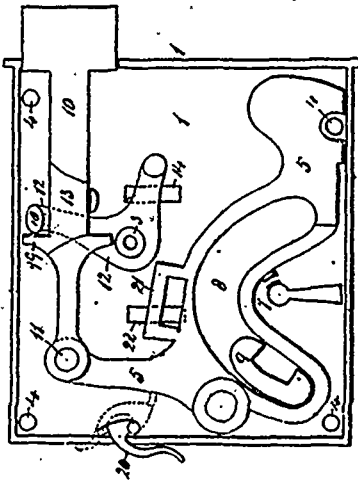
25219 Korsey's Ditching Machine.



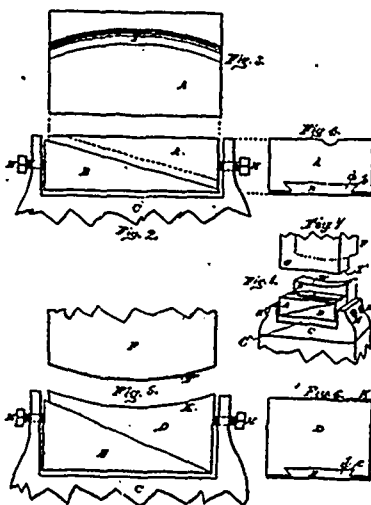
25220 Jones' Voltaic Battery.



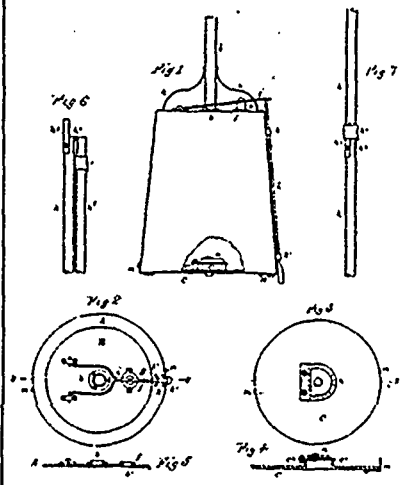
25222 Allin's Sponge Cup.



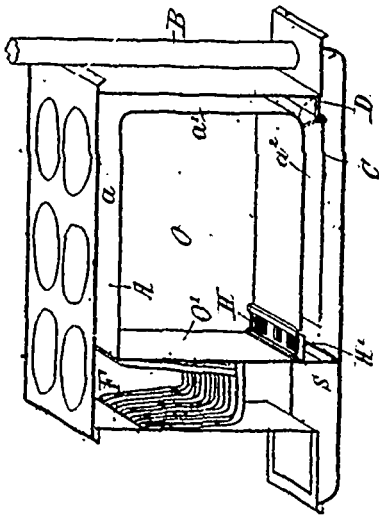
25223 Cralg's Latch and Lock.



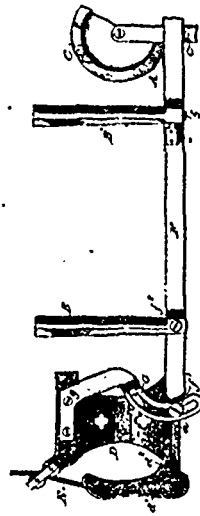
25224 Harrison's Apparatus for Welding Wheel Tires.



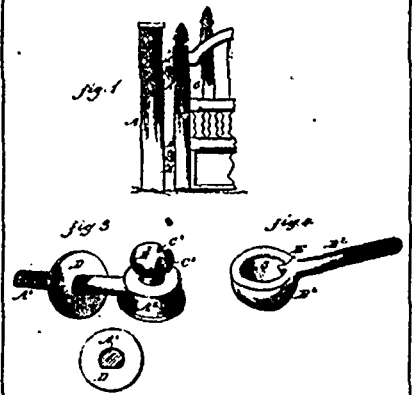
25225 Kibler's Device for Cleaning Cisterns.



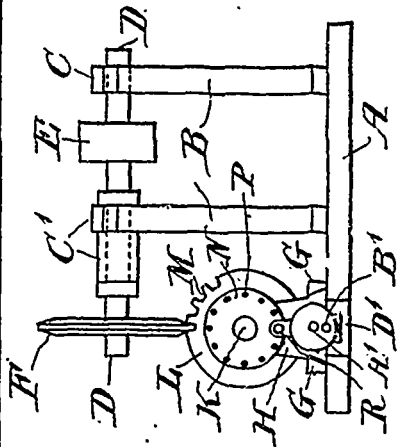
25226 Browning's Cooking Stove.



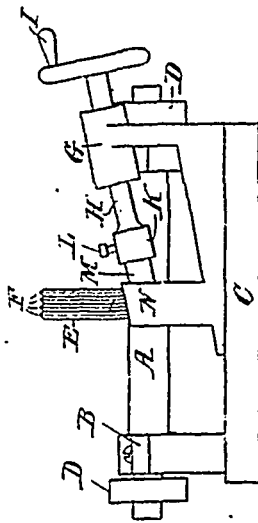
25227 Birge's Store Service Apparatus.



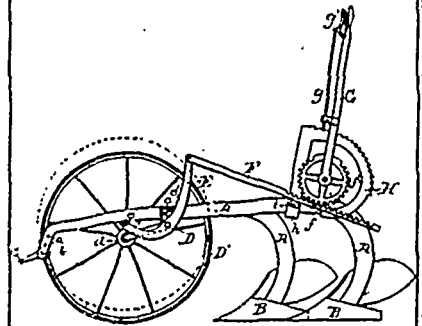
25228 Rockfellow's Ball and Socket Lock Hinge.



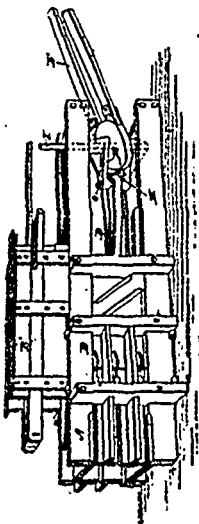
25229 Warren's Art of Forming Coar Teeth.



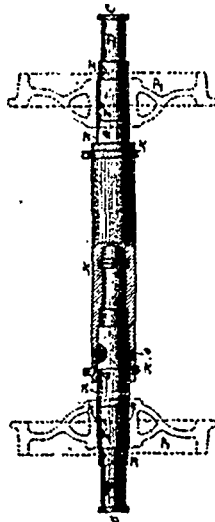
25230 Warren's Art of Forming Screws.



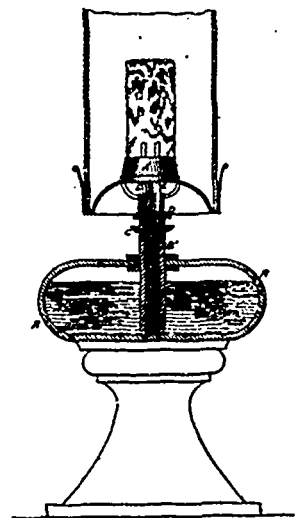
25231 Brown's Gang Plough.



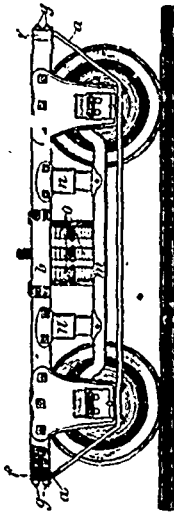
25232 Deverick's Balling Press.



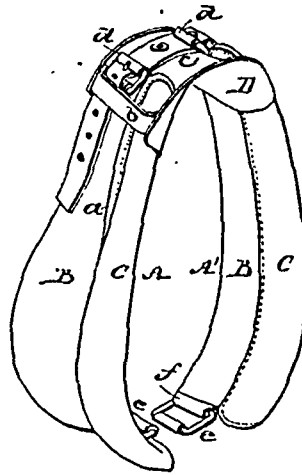
25233 Bourne's Car Axle.



25234 Forbes' Lamp for Burning Volatile Hydro-Carbon.



25235 Wilson's Railway Car Truck



25236 Sheehan's Horse Collar.

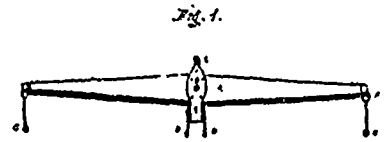
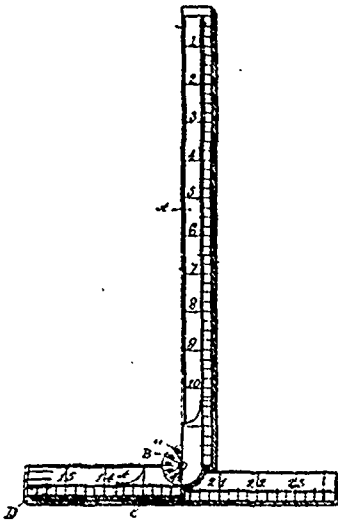


Fig. 1.

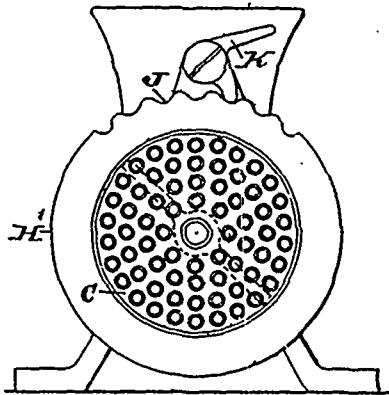


Fig. 2.

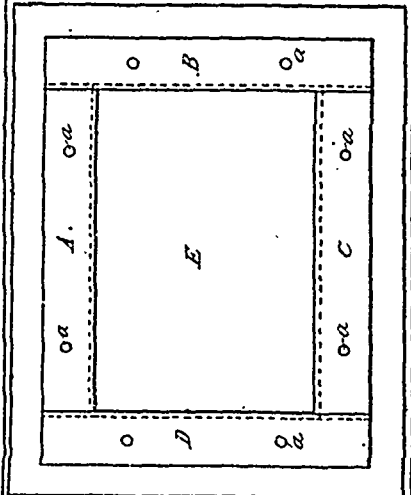
25237 Davis & Millar's Whiffletree.



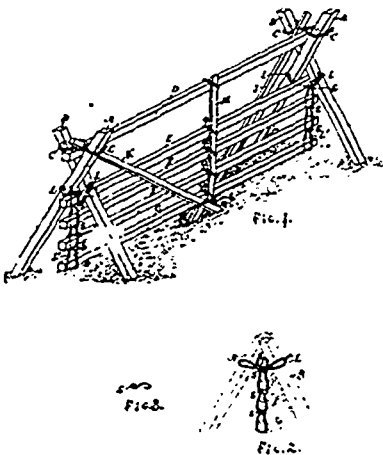
25238 Jones' Carpenter's Rule.



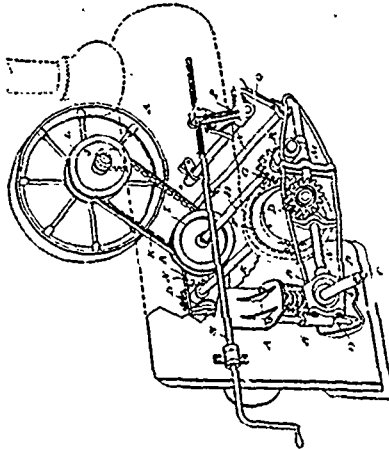
25239 Leopold's Meat Cutter.



25240 Fitzgerald's Manufacture of Plates or Elements for Voltaic Batteries.



25241 Shedd's Farm Fence.



25242 Walker's Traction Engine Driving Gear.

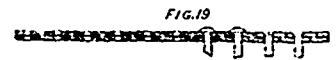


FIG. 19.



FIG. 20.

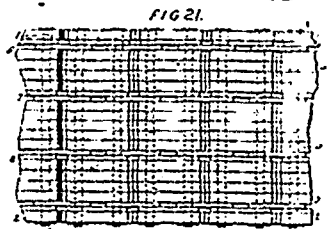


FIG. 21.

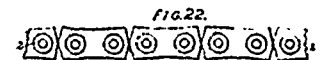
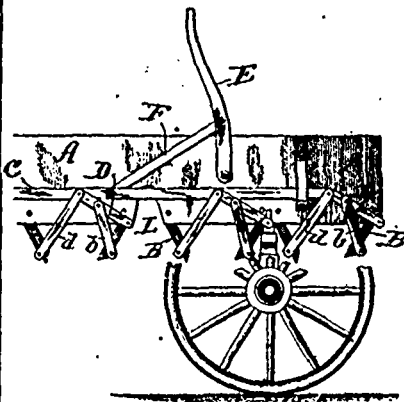
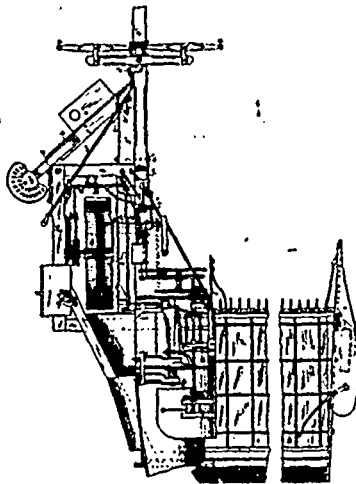


FIG. 22.

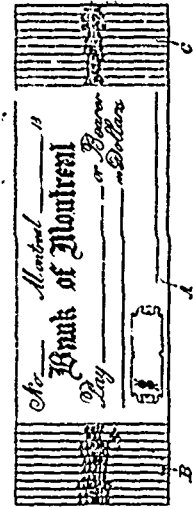
25243 Gasking's Band or Chain for the Transmission of Work.



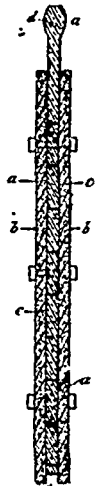
25244 Cameron's Dumping Waggon.



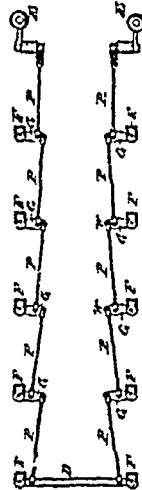
25246 Whiteley & Bayley's Harvester.



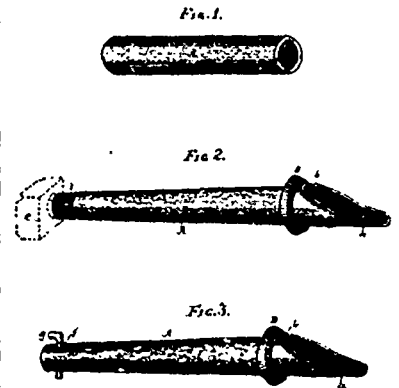
25247 Dovany's Certificate of Value.



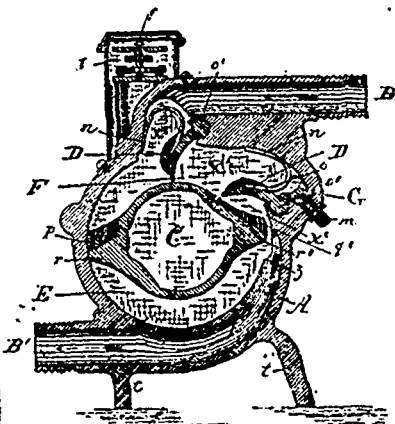
25248 Tasker & Jones' Galvanic Battery and Electrode of Electrolytic Converting Tank or Trough.



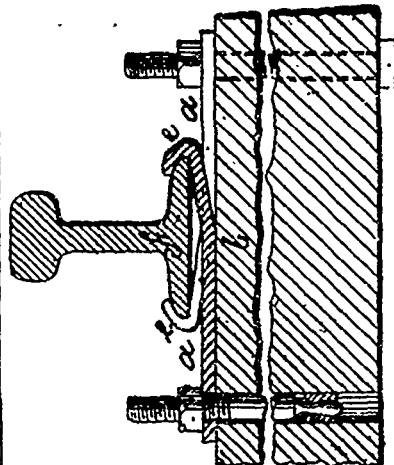
25249 Poor's Brake for Locomotives, etc.



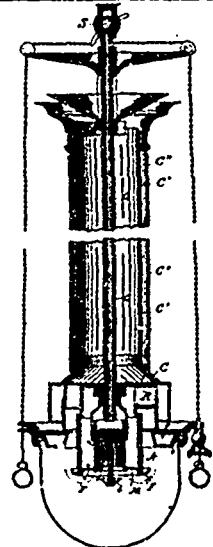
25250 Gracey's Process of Making Axle Skelns.



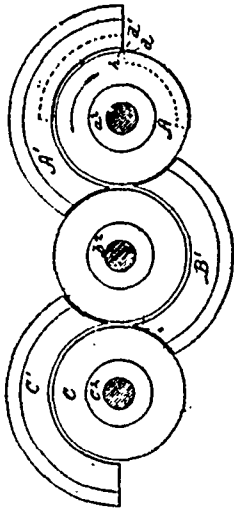
25251 Tuerk's Rotary Water Meter.



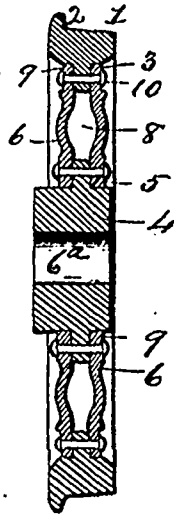
25252 Schauman's Elastic Rail Support.



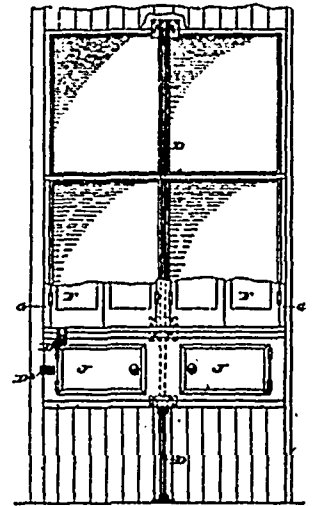
25253 Lungren's Regenerative Gas Lamp.



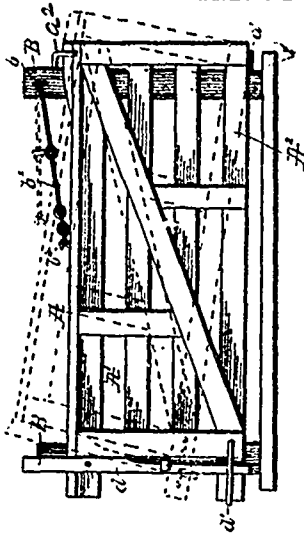
25254 Harvey's Machine for Rolling Screw Threads.



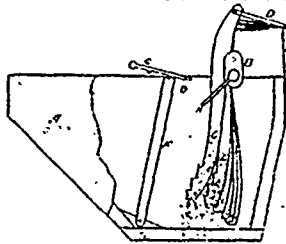
25255 Hill's Car Wheel.



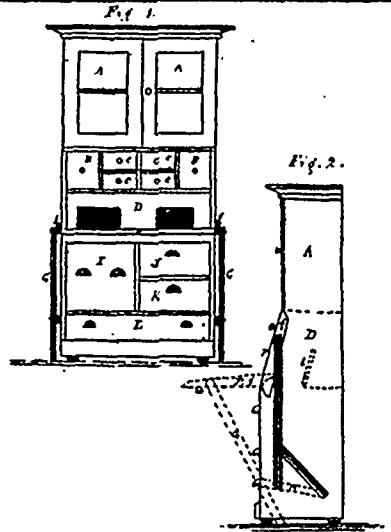
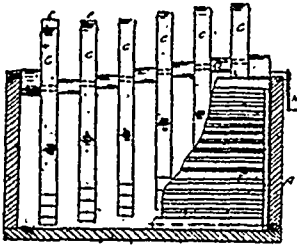
25256 William's Show Window.



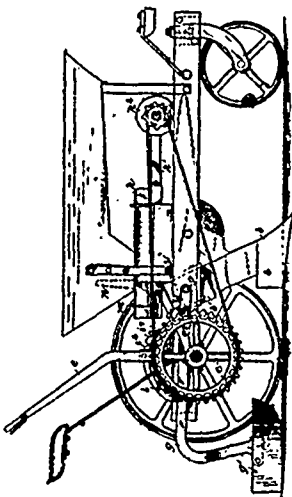
25257 Bates' Gate.



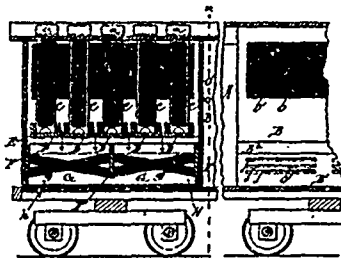
25258 Near's Washing Machine.



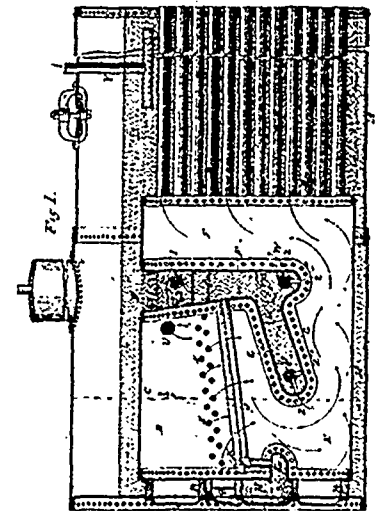
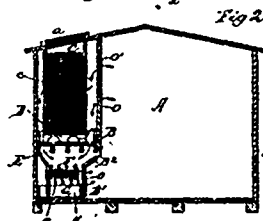
25259 Bearden's Pastry Cabinet.



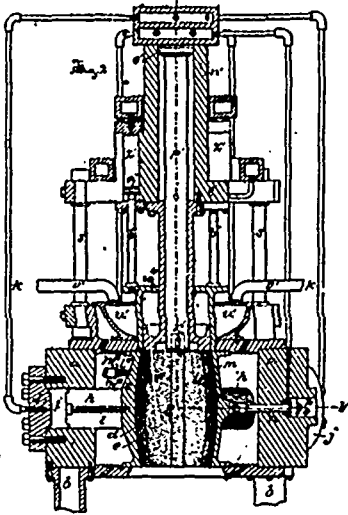
25260 Fish's Potato Planter.



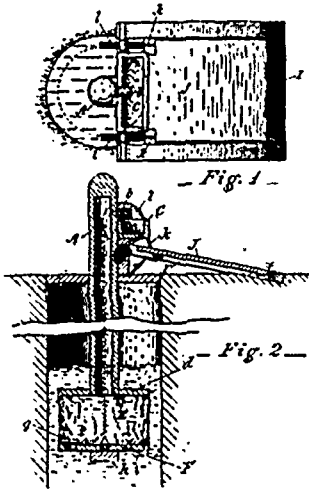
25261 Wickes' Refrigerator.



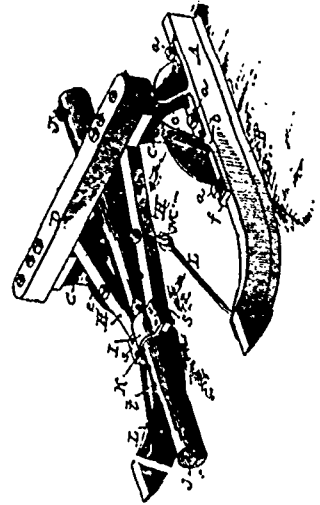
25262 Post & Sawyer's Steam Boiler and Furnace.



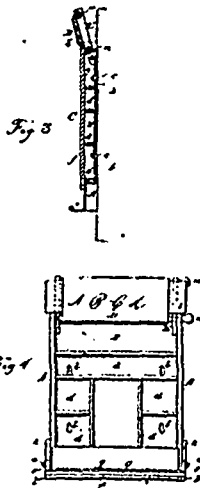
25263 Hotchkiss' Manufacture of Barrel Bodies from Pulp, and the Like.



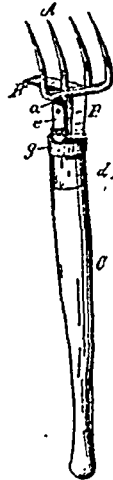
25264 Sicotte's Pump.



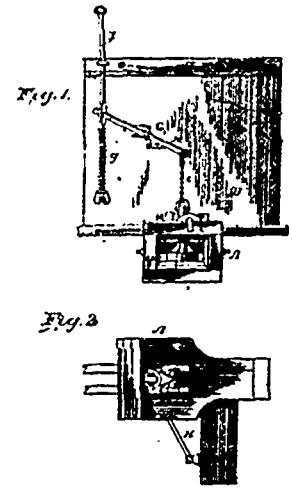
25265 Sly's Stielgh.



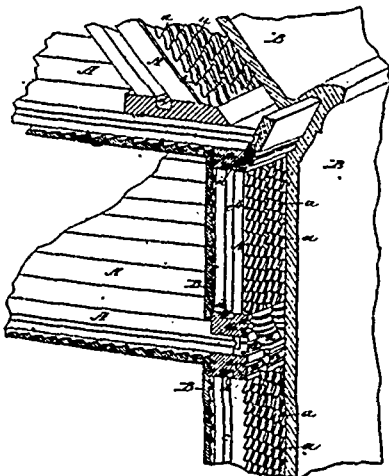
25266 Smith & Butler's Black Board and Desk.



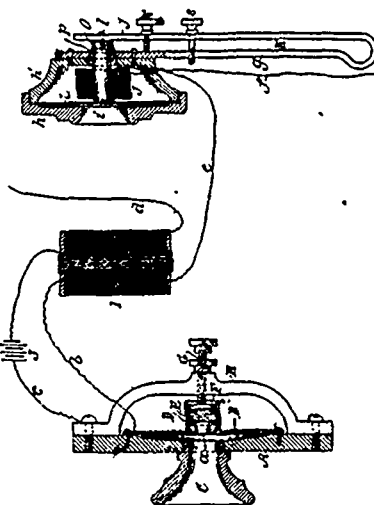
25267 Jluck's Manure Fork.



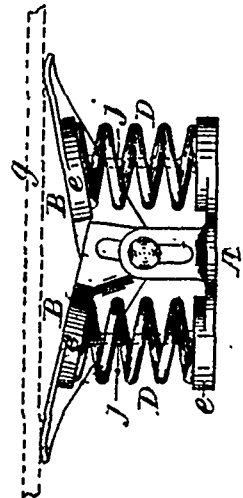
25268 Jones' Car-Coupling.



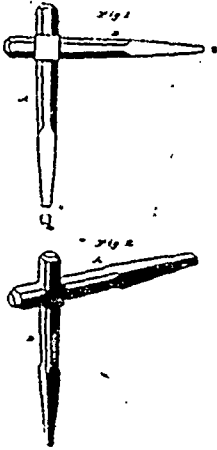
25269 Burris' Construction of Buildings.



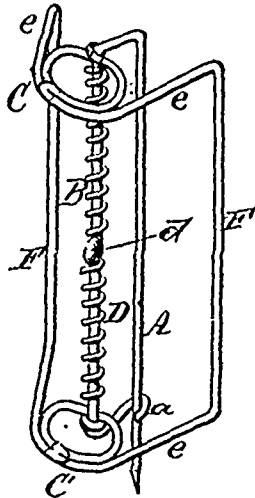
25270 Gillet's Telephone Receiver.



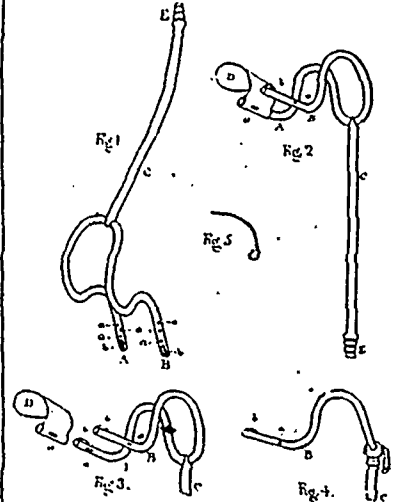
25271 Schoen's Car Spring.



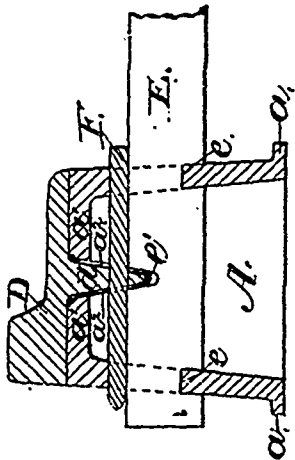
25272 - Hagan's Nail Set and Reamer



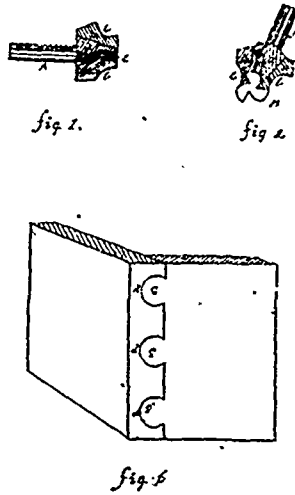
25274 Lawrence's Bouquet Holder



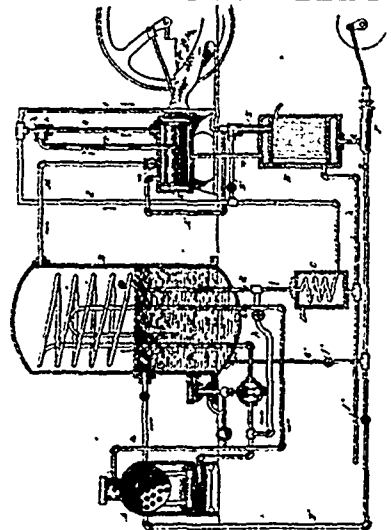
25276 Rowney's Mouth Tube for Saliva Ejectors for Dental and other Purposes



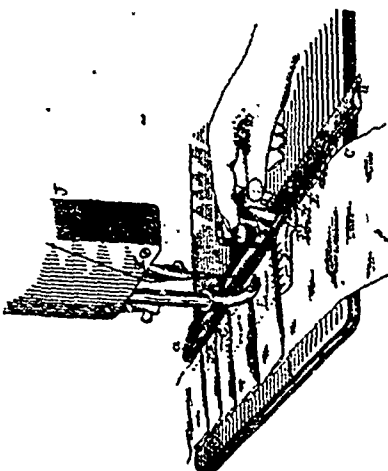
25277 Gibson's Construction of Railway Tracks.



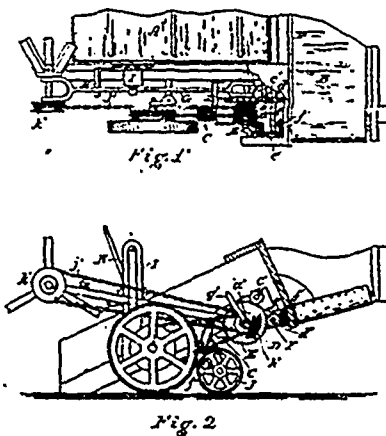
25278 Lamont's Dovetail Cutting Tool.



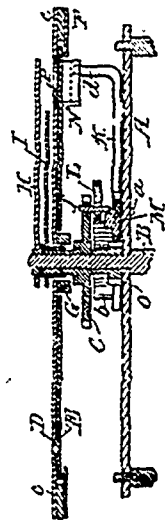
25279 Campbell's Method of and Apparatus for Utilizing Aqua Ammonia as a Motive Power.



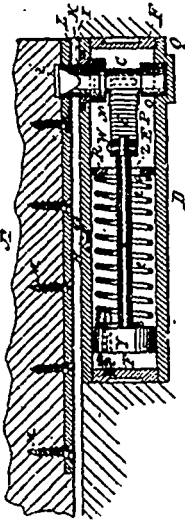
25280 Young's Hand Plaiting Attachment for Sewing Machines.



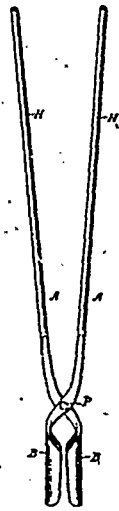
25281 Laporte & Larose's Harvester.



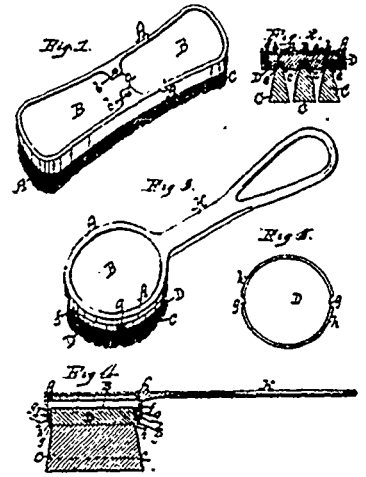
25282 Morton's Time-Piece.



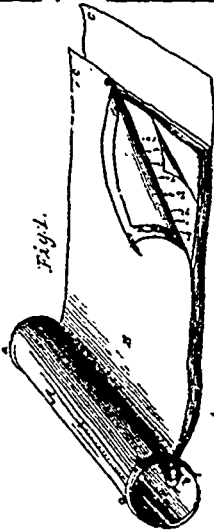
25283 Bardsley's Door Spring and Check.



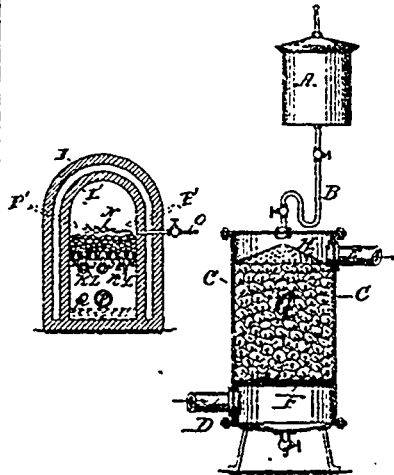
25284 Mahon's Post Hole Excavator.



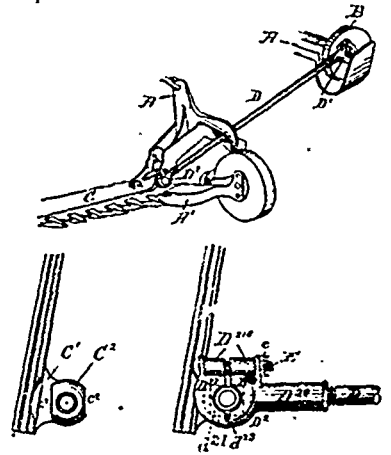
25285 McDonald's Metallic Case to be used in the Manufacture of Brushes.



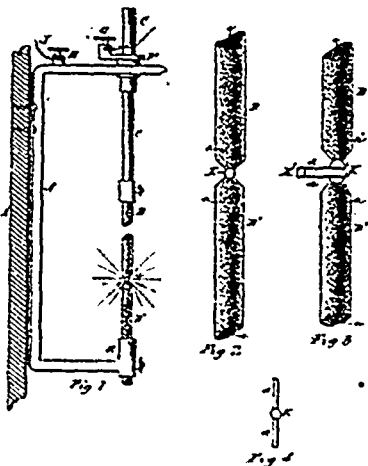
25286 Haines' Copying Press.



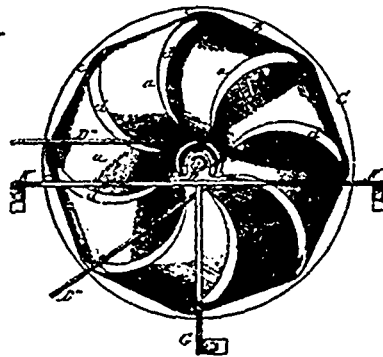
25287 Beaubarnal's Illuminating and Heating Gas Apparatus.



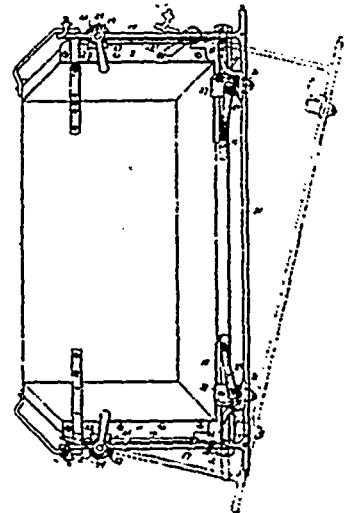
25288 Dixon's Pitman-Rod Connection for Mowers and Reapers.



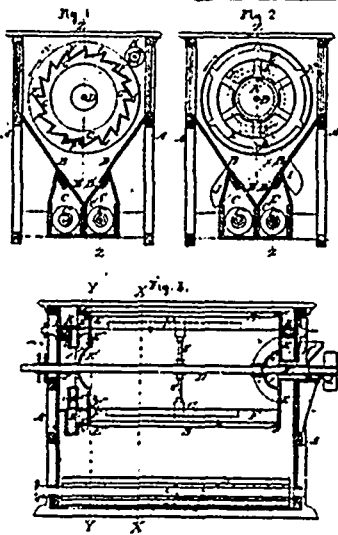
25289 Macdonald & Woodman's Electric Arc Lamp.



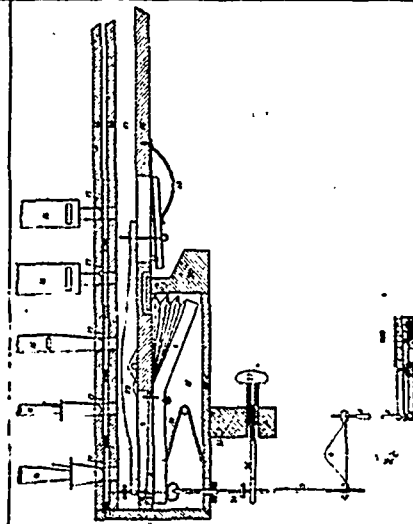
25290 Kiltwo's Ventilator Wheel or Fan.



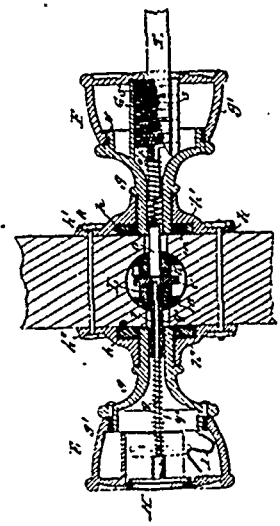
25291 Carroll & Ryan's Supporting Frame for Carriage Tops.



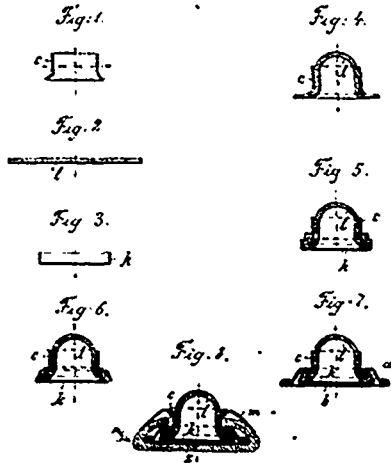
25292 Wilson's Flour Dressing Machine.



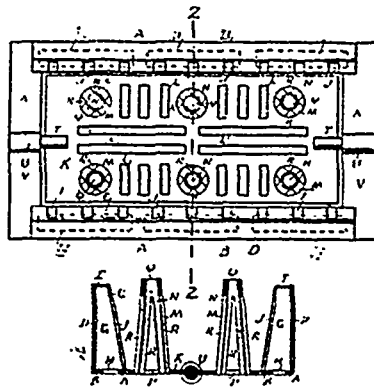
25293 Rawstron's Musical Instrument.



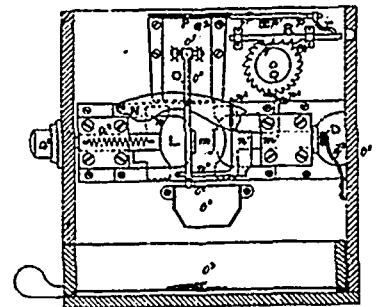
25294 Hicks' Lock and Latch.



25295 Pfening's Button.



25296 Bangs' Grate for Stoves, Furnaces, etc.



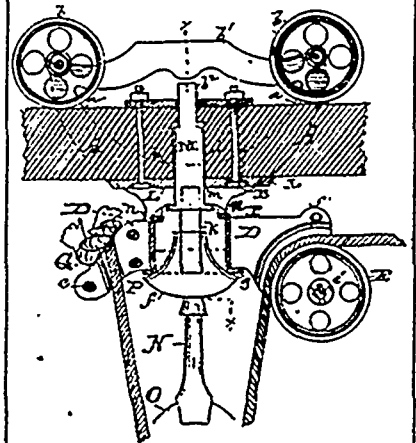
35297 Russell's Cash and Parcel Carrier.



25298 Balloys' Valve Gear for Steam and other Engines.



25299 Xovers' Fly-Catcher for Windows.



25300 Hall's Hay Carrier.