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INVENTIONS PATENTED.

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

No. 37,858. Nut Lock. (*Arrête-écrou.*)

Marcus B. Earnest and Adolph Burster, Fort Madison, Iowa, U. S. A., 1st December, 1891; 5 years.

Claim.—The combination, with the bolt having the threaded portion and terminating in the squared end, of the nut threaded on the bolt and having the rectangular body portion and cylindrical crown or hub, the latter provided with longitudinally disposed inclined ratchet teeth, the flat spring pawl engaging the teeth and twisted and bent to form the eye for engaging the square end of the bolt, and means for retaining the pawl on the bolt, substantially as specified.

No. 37,859. Automatic Railway Switch.

(*Aiguille de chemin de fer.*)

James McCarthy and Walter Elam Stratton, both of Marinette, Wisconsin, U.S.A., 1st December, 1891; 5 years.

Claim.—1st. In an automatic railway switch, the combination, with the pivoted switch rails and the bridle bar connecting the same, of a lever connecting said bridle bar with a lever mounted vertically in suitable stand provided with flanges at its upper end, a shifting block mounted slidably upon said flanges and having at its upper side a groove or slot formed with converging sides, and a roller mounted adjustably upon a locomotive to engage the said grooved shifting block, substantially as and for the purpose set forth. 2nd. In an automatic railway switch, the combination, with the pivoted switch rails and the connecting levers, of the shifting stands provided at their upper ends with flanges forming tracks, the shifting blocks mounted slidably upon the same and having in their upper sides grooves or slots provided with converging sides, a rack bar mounted slidably upon a locomotive and having a downwardly extending roller at its outer end and means for adjusting the said rack bar, substantially as and for the purpose set forth. 3rd. In an automatic railway switch of the class herein described, the combination, with the shifting block mounted slidably upon a suitable stand and having in its upper side a groove or slot provided with converging sides, of a transversely sliding rack bar mounted upon a locomotive and having a downwardly extending roller at its outer end, a shaft having at its front end a spur wheel engaging said rack bar and provided at its rear end, which is extended within reach of the engineer, with a hand wheel having suitable stops, and a pawl or catch adapted to engage the latter, substantially as and for the purposes set forth.

No. 37,860. Water Gas Furnaces and Devices Therefor. (*Fourneau à gaz pour l'eau et appareil pour cet objet.*)

William Stewart Hutchinson, Chicago, Illinois, U. S. A., 1st December, 1891; 5 years.

Claim.—1st. An injector for a furnace provided with a transverse centrally perforated diaphragm through which the air and steam pass into the furnace. 2nd. In a water gas furnace, a front wall having a transverse air passage or way with vertical air passages leading to it, and a steam pipe in the transverse passage and a series of air injectors connected with the steam pipe and projecting through the wall into the furnace. 3rd. A furnace wall consisting of a series of boxes, tubes or plates built up or constructed as shown so as to provide an upper transverse passage or box with lower vertical passages or boxes leading thereto so that the air is taken from the ash pit to the upper transverse box and thence discharged into the furnace. 4th. The combination with a locomotive furnace, of a steam pipe leading from it to the base of the smoke stack to produce the draft, pipes leading from the steam pipe to two or more

sides of the furnace, and injectors connected with such steam pipes and adapted to receive air and discharge into the furnace. 5th. A furnace front built up of plates and boxes in the proportions and substantially as shown and described. 6th. Making fluid fuel for furnaces by discharging into the furnace atmospheric oxygen and hydrogen with steam in such manner and in such proportions as with these gases combine with suitable quantities of carbon generated from the artificial fuel in the furnace to create what is known as water gas which then burns within the furnace.

No. 37,861. Wind Apparatus for Generating Electricity and Charging Secondary Batteries. (*Moulin à vent pour la génération de l'électricité et charger les piles secondaires.*)

James Madison Mitchell, Lawrenceville, Georgia, U. S. A., 1st December, 1891; 5 years.

Claim.—1st. In an apparatus for generating electricity, the combination, with a wind wheel, of a shaft journaled in a drum or casing, an armature mounted on said shaft, a field magnet arranged in said drum, a pivotal support for said drum, conductors arranged upon said support and contacting with conducting devices on the bearing for said pivotal support, a working circuit for the dynamo, a derived circuit for said dynamo, and an automatic device closing the working circuit when the dynamo generates a current of predetermined strength and breaking said circuit and making the derived circuit when the current falls below a given point, substantially as described. 2nd. In a mechanism for generating electric currents, the combination, with a dynamo, of a wind wheel upon the shaft on which the armature is mounted, a pivoted support for said parts, conductors connecting the poles of the dynamo to the poles of a storage battery, devices intermediate between the movable and the rigid members for the dynamo, and automatic means for closing the charging circuit and simultaneously breaking the derived circuit, and vice versa, substantially as described. 3rd. In a mechanism for generating electric currents, the combination, with a dynamo enclosed within a casing, a shaft journaled in said casing, a wind wheel on the shaft, a directing vane hinged or pivoted on the casing and centered by opposite springs, an electro-magnet mounted on said casing and when energized attracting an armature on the vane, a circuit for the dynamo connected with a secondary battery charged by the generated current, a derived circuit for the electro-magnet attracting the vane, an automatic device for making and breaking the charging circuit and the derived circuit for the dynamo, respectively, and an automatic circuit closer for the secondary circuit of the electro-magnet, substantially as described. 4th. In a mechanism for generating electric currents, the combination, with a dynamo arranged in a casing pivoted upon a tubular support, of a shaft having a wind wheel driving the armature of said dynamo, a pivotally mounted directing vane, springs centering the said vane, an electro-magnet attracting an armature on one side thereof, a working circuit for the dynamo, in which are interposed brackets mounted on the pivoted part of the support and having rolling contacts on annular conductors on the fixed part of said support, a storage battery charged by the working circuit a derived circuit for the dynamo, an electro-magnet and armature forming part of the working circuit and derived circuit for the dynamo, a secondary circuit for the electro-magnet attracting the vane and a second electro-magnet interposed in a separate secondary circuit, the armature of which magnet opens and closes the circuit of the electro-magnets attracting the armature on the vane, substantially as described. 5th. In an apparatus for generating electric currents, the combination, with a dynamo arranged in a pivotally supported casing, of a shaft carrying the armature of the dynamo, a wind wheel, driving the said shaft, a pivoted directing vane on the casing, springs centering the same, an electro-magnet attracting an armature on the vane when said magnet is energized to swing it to one side, a secondary or storage battery, a charging circuit for said battery, a battery circuit for the electro-magnet actuating the vane, an electro-magnet interposed in the charging circuit, an armature for said magnet having an insulated portion forming part of the charging circuit and a second insulated portion forming part of a separate circuit for the dynamo, and contacts, one in each of

circuit and one in the separate circuit, with which the said insulated parts of the armature are alternately in contact, substantially as described. 6th. In an apparatus for generating electric currents and charging storage batteries, the combination, with a dynamo arranged on a pivotal support, of a shaft carrying the armature of a dynamo, a wind wheel driving said shaft, a pivoted spring centered vane on the dynamo support, an electro-magnet mounted on the support and attracting an armature on the vane when energized to swing it to one side, a storage battery, a charging circuit for said battery, a battery circuit for the electro-magnet attracting the vane and a measuring instrument interposed in the circuit and provided with a contact traveling with the index and a contact fixed upon the dial, by which the circuit is completed and the vane swung when the battery is charged to a suitable tension, substantially as described. 7th. The combination, with the rigid and movable parts of the wind wheel support, of a guard casing rigidly mounted on the movable part or member and having a flange hooking under a flange or collar on the rigid member, the electrical connections being arranged within and covered and protected by said guard, substantially as described. 8th. In a mechanism for generating electric currents, the combination, with a wind wheel and a dynamo driven thereby, of a pivotal bearing for the operative parts, an upright support for the pivotal bearing, and arms projecting radially from the body of the upright support carrying the pivot, said arms having hinged members adapted to lie upon and be bolted to inclined posts on a tower, substantially as described.

No. 37,862. Braiding Machine.

(Machine à lacets.)

Joseph Thomas, New York, State of New York, U.S.A., 1st December, 1891; 5 years.

Claim.—1st. A braiding machine in which the axis of each revolving carrier head is inclined at a fixed angle towards the centre of the machine, substantially as shown and set forth. 2nd. A braiding machine in which the axis of each revolving carrier head is inclined towards a common center in a plane above the bed plate of the machine, substantially as shown and set forth. 3rd. A braiding machine in which the revolving carrier heads are so disposed that vertical lines drawn through the axis of each will converge at the point where the threads from the spools are interwoven or plaited to form the braid, substantially as shown and set forth. 4th. In a braiding machine, the combination of the ring shaped frame having inclined sides or bearings, and the revolving carrier heads journaled on spindles secured in and projecting at right angles from the inclined inner side of the frame, substantially as shown and set forth. 5th. In a braiding machine, the combination of the inclined ring shaped main frame, the revolving carrier heads journaled on spindles set in and projecting inwardly from said frame, and the intermeshing train of cog wheels whereby the carrier heads are simultaneously revolved in alternately opposite directions, substantially as shown and set forth. 6th. The combination, in a braiding machine, of the ring shaped frame having inclined sides, the series of carrier heads provided with automatic spring latches or switches for switching the spool carriers from one revolving head to another as they travel through the machine, and the drive mechanism for rotating the carrier heads in alternately opposite directions, substantially as shown and set forth. 7th. The combination, with the revolving carrier heads of a braiding machine, having seats adapted to receive and hold the spool carriers, of the yielding spring actuated latches or switches, adapted to grasp and interlock automatically with the carriers as these are transferred from one carrier head to another during their progress from one end of the machine to the other, and *vice versa*, substantially as shown and set forth. 8th. The combination, in a braiding machine, of the revolving carrier heads, the spring actuated switches, and the carriers having a recessed disk adapted to engage a hook upon the switch, substantially as shown and set forth. 9th. The combination, in a braiding machine, of the recessed carrier heads, the switches hinged in their appropriate recesses in the carrier heads and projecting therefrom with their free ends, and the spring actuated pins bearing against the free ends of the switches from the under side, substantially as shown and set forth. 10th. In a braiding machine, the combination of the ring shaped frame, the revolving carrier heads, the automatic latches or switches, the spool carriers, and the adjustable feed mechanism, all constructed and combined to operate substantially in the manner and for the purpose shown and set forth. 11th. In a braiding machine, a spool holder comprising a stem or spindle adapted to be screwed into the carrier, in combination with a hinged cage having a latch rod at its free end for locking it to the upper end of the spool spindle, substantially as shown and set forth. 12th. The combination, in a braiding machine, of the carriers, constructed as described, and the spool holder comprising a stem or spindle adapted to be inserted through the central bore in the spool, in combination with a hinged cage having a latch rod at its free end for locking it to the outer end of the spool spindle, and provided with a guard and tension device for regulating the tension on the thread as it is drawn from the spool in weaving or plaiting the braid, substantially as and for the purpose shown and set forth.

No. 37,863. Manufacture of Gas.

(Fabrication du gaz.)

David Harris Knapp, Norwich, New York, U.S.A., 1st December, 1891; 5 years.

Claim.—1st. The combination of the upright inner vaporizing retort, the outer decomposing retort and the furnace outside the latter of the oil pipe entering the inner retort, the upright pipe forming communication between the upper part of the said vaporizing retort and the lower part of said decomposing retort, and the outlet pipe at the upper part of the latter retort, substantially as and for the purpose set forth. 2nd. In an apparatus for manufacturing gas from oils, the combination of two retorts, one arranged within the other, a furnace outside of the outer retort, a pipe for the introduction of

oil to the inner retort, a communication between the inner and outer retorts for the passage from the inner to the outer, of vapor generated in the inner, and a gas outlet pipe from the outer one, substantially as set forth. 3rd. The combination of the upright inner vaporizing retort, the outer upright decomposing retort, and the furnace outside of the latter, the oil pipe entering the inner retort and an upright pipe connected with the inner retort at its lower end and opening into the outer retort, and having its open upper end extending into the inner retort, and an outlet pipe for gas, communicating with the outer retort, substantially as specified.

No. 37,864. Heel Stiffener Machine. (Machine à renforcer les talons de chaussures.)

Louis Coté, St. Hyacinthe, Quebec, Canada, 1st December, 1891; 5 years.

Claim.—1st. In a machine for shaping counter stiffeners for boots and shoes, the combination of a former approximating to the shape of the heel portion of a last and provided along the center of its tread surface with a downwardly projecting rib, leaving a recess on each side, a pair of moulds having their inner faces made to conform to the shape of the sides of said former and each provided with a lip to overlap or pass beneath a portion of the tread surface of said former, arranged one upon each side of said former and to be moved toward and from each other and said former, and a notched plate constructed and arranged to be reciprocated in the direction of the length of said former to turn the rear or heel portion of the flange of the stiffener while the side portions of said flange are turned by the lips on the moulds. 2nd. In a machine for shaping counter stiffeners for boots and shoes the combination of a former made in two parts pivoted together and to the table or bed of the machine at or near the center of the heel end and provided with a downwardly projecting rib extending from its pivotal connection towards its free or movable end, a pair of moulds arranged one upon each side of said former and mounted upon movable pivots, with their inner faces made to conform to the forward side portions of said former and each provided with a lip to project under the tread surface of said former to turn the side portions of the flange of the stiffener, springs for pressing said moulds toward the former, a reciprocating notched plate for turning the rear portion of the flange of the stiffener, a revolving wedge-like cam constructed and arranged to act upon the free or movable ends of the two parts of said former to separate them, and a spring to move said parts toward each other and said cam. 3rd. In a machine for shaping counter stiffeners for boots and shoes the combination with a divided former pivoted together and to a fixed part of the machine near one end a cam and spring for vibrating the two parts of said former toward and from each other and two moulds mounted upon movable fulcrums upon opposite sides of said former, of a notched flange turning plate, a carrier for said flange fitted to and movable in a suitable slide, a reciprocating rod passing through said carrier and provided with a notch to receive a locking latch, a locking latch lever pivoted to said carrier in position to engage with said notch when depressed, and a spring constructed and arranged to disengage said latch lever from said notch when the power that depresses it is removed. 4th. The combination of the former P, made in two parts pivoted together, the moulds O, Q, provided with the lips *e, e*, and mounted upon movable fulcrum pins on opposite sides of said former, the movable pistons N, N, carrying said fulcrum pins, the springs Q, Q, enclosed between said pistons, the plugs N', N', and the cam X, all constructed, arranged, and operated substantially as described. 5th. The combination of the divided and pivoted former P, provided with the ribs *f, f*, the pivoted and yielding moulds O, O, each provided with the lip *e, e*, the notched flange turner S, the carrier R, the latch lever *l*, pivoted to said carrier, the spring *m*, for raising said lever, the rod T, provided near one end with the notch *l*, to receive the latch lever *l*, when depressed, the yoke T, formed in or connected to said rod T, and provided with the slot *o*, the revolving shaft V, and the crank pin *p*, for reciprocating said rod, the cam X, for moving the free ends of the divided former away from each other, and the spring Y, all constructed, arranged, and operating substantially as described.

No. 37,865. Rut Cutter for Logging Roads.

(Coupe-ornière pour chemins de chantiers.)

Lucious Gamaliel Rose and Daniel S. Moers, both of Fort Ripley, Minnesota, U.S.A., 1st December, 1891; 5 years.

Claim.—1st. In a rut cutter for logging roads the combination with the runner of a sleigh of the frame A, of an elongated U-shaped frame pivoted to the said runner, a plow secured in said frame, between the two sides thereof, a point secured to the said plow, the box C, the shield D, attached to the said box, the side wings E, attached to said frame A, and means for raising or lowering the said frame, substantially as set forth. 2nd. In a rut cutter for logging roads the combination with the elongated U-shaped frame A, carrying the plow B, box C, shield D, and side wings E, of the standards F, F, and H, secured to the said frame A, the slotted guide plate G, carried by the said standards, the lever I, pivoted to the said standard H, a curved shoe or runner J, secured to the lower end of the said lever, the toothed segment K, and spring dog *h*, substantially as set forth.

No. 37,866. Fire Extinguishing Compound.

(Composé extincteur d'incendie.)

William Orme McRobie, Winnipeg, Manitoba, Canada, 1st December, 1891; 5 years.

Claim.—1st. A fire extinguishing compound, composed of chloride and nitrate of sodium, ammonium and potassium, and sulphate of sodium and potassium, in about the proportions stated. 2nd. A fire extinguishing fluid or liquid consisting of chloride and nitrate of sodium, ammonium and potassium, and sulphate of sodium and potassium, in about the proportions stated, dissolved in about two gallons of water.

No. 37,867. Medicinal Compound.*(Composition médicale.)*

George Fierheller, Markham, Ontario, Canada, 1st December, 1891; 5 years.

Claim.—The composition of cod liver oil and iron mixed together to form an emulsion with a preservative ingredient and flavoring extract, substantially in the proportion and in the manner hereinbefore explained.

No. 37,868. Foot Warmer. (Chaufferette.)

Emanuel Richards, Goodland, Kansas, U. S. A., 1st December, 1891; 5 years.

Claim.—1st. A foot-warmer, comprising a base, an arched flue connected at its ends to the base, a central lamp tube or chamber, perforated foot-rests on each side of the lamp tube forming flues between them and the base, which flues have communications at their outer ends with the lower ends of the said arched flue, a lamp in the lamp chamber having communication with the arched flue, and a deflector at the crest of the arched flue directly opposite the lamp, substantially as described, for the purposes specified. 2nd. A foot-warmer composed of a base, an arched flue connected at its ends with the base, a central lamp tube, perforated foot-rests on each side of the lamp tube forming flues G, G, which communicate at their ends with the ends of the arched flue, the lamp in the lamp tube, and racks sprung across the angles between the sides of the lamp tube and the arched flue to brace the structure and forming warm compartments, substantially as described.

No. 36,869. Rubber Boot.*(Chaussure de caoutchouc.)*

Emmett A. Saunders, Nangatuck, Connecticut, U.S.A., 1st December, 1891; 5 years.

Claim.—1st. An improved article of manufacture, a boot or shoe which comprises a foot portion made of materials such as usually employed in the manufacture of vulcanized rubber foot-wear, such, for example, as rubber compound, or cloth and rubber combined, a separate leg portion composed of a suitably strong and durable material containing no rubber, but at the same time possessing sufficient rigidity to maintain itself like the ordinary heavy rubber boot leg in an upright or distended condition when not in actual use, and means by which such separately and differently made foot and leg portions are united in a strong, durable, and water-tight manner, substantially as hereinbefore set forth. 2nd. In a boot or shoe, the foot portion of which is composed of materials such as usually employed in the manufacture of vulcanized rubber goods for foot-wear, and the separate upwardly-extending leg portion of which is composed of some suitably strong and stiff fabric that does not contain any rubber, the combination, with the overlapping adjacent edges of the said foot portion and the said leg portion, of a cement seam and also a supplemental and positive fastening device, the said supplemental fastening device operating to effect a strong and durable permanent union of the said foot and leg portions, while the cementation of the seam operates to render the joint between said parts water-tight, all substantially as specified.

No. 37,870. Harvester. (Moissonneuse.)

Alexander Brown, Toronto, and John Draper, Whitby, both in Ontario, Canada, 1st December, 1891; 5 years.

Claim.—1st. A cutter bar suitably journaled on a grain table and provided with mechanism by which the angle of the cutter bar may be adjusted at will, substantially as and for the purpose specified. 2nd. A cutter bar suitably journaled on a grain table, a crank fixed to the end of the cutter bar and arranged to engage with a horn suitably suspended from the frame of the machine, in combination with a foot lever and rod by which the horn is adjusted for the purpose of angling the cutter bar, substantially as and for the purpose specified. 3rd. A cutter bar C, fixed to the rod D, which is journaled on the grain table A, a crank E, fixed to the rod D, provided with a pin G, to fit into a slot made in the horn H, the notch, as O, P, a bar I, arranged to support the horn H, in combination with the rod K, crank rod L, and foot lever N, substantially as and for the purpose specified. 4th. A bar R, pivoted at one end to the finger Q, and having near its other end a slot to fit over the pin S, projecting from the bar T, substantially as and for the purpose specified.

No. 37,871. Water Wheel. (Roue hydraulique.)

Isaac Ives, Albany, Prince Edward Island, Canada, 1st December, 1891; 5 years.

Claim.—1st. The combination in a water wheel of a fixed circular case closed at bottom and open at top, to tank or water supply, and having its circumference provided with adjustable gates N, N, &c., opening outwards, and an annular horizontal wheel revolving about case and provided with buckets D, D, &c., corresponding to gates N, N, &c., in case, and fastened at centre of its bottom about shaft A, substantially as and for the purposes hereinbefore set forth. 2nd. The combination in a water wheel of the adjustable gates N, N, &c., with their gate gear adjusted in an inner fixed case connected with tank, and the buckets D, D, &c., fixed into the circumference of an annular wheel revolving horizontally around case and fastened to shaft A, substantially as and for the purposes hereinbefore set forth.

No. 37,872. Car Coupler. (Attelage de chars.)

Cyrus Franklin Johnson and Wilber J. Carothers, both of La Fayette, Kentucky, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. In a car-coupling, the combination, with the draw-head, eyes depending therefrom, a slide-rod moving in said eyes and

having a downward bend in its body, and a depending plate at the front end of the rod, of a link-lifting frame of inverted V-shaped side elevation and having eyes at its angles, screws pivotally connecting said eyes to the sides of the draw-head, the rear member of said frame engaging said bend and the front member moving over the mouth of the draw-head, and having an opening spanning the rod, and a link and pin, substantially as described. 2nd. In a car-coupling, the combination, with the draw-head, eyes depending therefrom, and a slide-rod moving in said eyes bent downwardly in front of the forward eye and having a vertically-enlarged end, of a link-lifting frame pivotally connected to the draw-head and comprising a rear member engaging said head and a front member adapted to move over the mouth of the draw-head, and a link and pin, substantially as described. 3rd. In a car-coupling, the combination, with the draw-head, a pin-supporting block moving longitudinally therein, a pin passing vertically through said draw-head, a link, eyes depending from the draw-head, and a slide-rod moving in said eyes bent downwardly in front of the forward eye, and having a vertically-enlarged front end, of a link-lifting frame pivotally connected to the draw-head and comprising a rear member engaging said bend and a front member adapted to move over the mouth of the draw-head, substantially as and for the purpose hereinbefore set forth.

No. 37,873. Dog for Saw Mills.*(Clameau de scierie.)*

Nelson Clemenson Buck and E. C. Atkins & Company, all of Indianapolis, Indiana, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. The combination, in a saw-mill dog, of a vertical frame-work a vertically-moving bar or bars mounted in ways on said frame-work, a horizontal stud-shaft on said frame-work, a horizontal pin on each of the vertically-moving bar or bars arranged in substantially the same vertical plane as said stud-shaft, and a handle or lever F mounted on said stud-shaft, and having a cam slot or slots which engage with said pin or pins on said vertically-moving bar or bars, which bar or bars carry the dog or dogs, substantially as set forth. 2nd. The combination, in a saw-mill dog, of a suitable frame, two vertical bars carrying the dogs proper, mounted in ways or bearings in said frame, and provided at their upper ends with horizontal studs or pins, a handle or lever mounted on a horizontal stud-shaft on a part of said frame and between said vertical bars, and provided with two cam slots, one upon each side of its bearing, which engage with the studs or pins on said vertical bars, whereby they are operated simultaneously, and the dogs forced toward or from each other, substantially as set forth. 3rd. The combination, in a saw-mill dog, of the vertical frame-work C, the two vertically-moving dog-carrying bars D and E, mounted in bearings in said frame-work, a horizontal stud-shaft upon the upper portion of said frame-work, horizontal pins or studs upon the upper ends of said vertically-moving dog-carrying bars, and a handle or lever F having a large flat head mounted centrally upon said horizontal stud-shaft, and provided with cam slots formed in its head upon opposite sides of the central hole forming the bearing for said stud-shaft and adapted to engage with the studs or pins on the bars, said several parts being arranged and operating, substantially as shown and described.

No. 37,874. Headed Bolt or Screw.*(Boulon et vis à tête.)*

The American Screw Company, assignees of Charles D. Rogers, all of Providence, Rhode Island, U.S.A., 2nd December, 1891; 15 years.

Claim.—1st. A rolled or swaged headed bolt or screw having a portion of its shank or stem screw-threaded and fluted, and having that part of the shank contiguous to and uniting the head and fluted portions plain or ungrooved, substantially as hereinbefore described. 2nd. A headed bolt or screw having its shank provided at its entering end with screw-threads, the portion of the shank extending rearwardly from the screw-threaded part provided with ribs and grooves to form flutings, and the portion between and uniting the head and said fluted part being plain or unfluted, the diameter of the shank being substantially uniform throughout its length.

No. 37,875. Die for Rolling Screw Threads.*(Coussinet pour fileter les vis.)*

American Screw Company, assignees of Charles D. Rogers, all of Providence, Rhode Island, U.S.A., 2nd December, 1891; 15 years.

Claim.—1st. A die for raising the threads of a rolled screw radially from a screw-blank by compressing the metal for the threads laterally between the converging sides of the ribs of the die, and having the faces of the ribs rounded to form a concave bottom of the grooves of a screw, said ribs being narrow at the end where they commence to form the thread, so that they may be forced at the commencement of their action into the metal to the depth required to form the body of the screw and increasing in width, not laterally upon the metal between the ribs, and force it into the grooves which at the end of the operation gives it the precise form required for the thread. 2nd. The die A, substantially as hereinbefore described, for raising the threads of a rolled screw radially from a screw-blank, the working surface of the die being provided with a series of obliquely arranged expanding or developing ribs having rounded faces and converging adjacent sides, each rib being narrow at the end where it commences to form the thread, and increasing in width transversely to the opposite end of the die.

No. 37,876. Game or Puzzle.*(Jeu de patience.)*

John James Erin, Winona, and Joseph W. Skinner, La Crosse, both of Minnesota, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. The combination, in a game-board, or puzzle adapted to be held in the hand, of a base having a continuous wall, a central

elevated angular stage thereupon having depressions, or cavities therein, inclined grooves or ways leading from the base to the top of said stage at the angles thereof, and a series of movable bodies within said inclosure, substantially as specified. 2nd. The combination, in a game-board or puzzle adapted to be held in the hand, of a rectangular base having a surrounding wall, a central elevated stage or similar form having its angles disposed alternately with reference to the angles of the base, inclined ways leading from the base to the top of the stage, the surface of said stage having depressions or cavities at or in front of the termination of said ways, and movable bodies within said inclosure adapted to pass in said ways and rest in said cavities, substantially as described. 3rd. The combination, in a game-board or puzzle adapted to be held in the hand, of a base having a surrounding wall, a central elevated rectangular stage thereupon, inclined grooves leading from the base to the top of said stage at the angles thereof, the said stage having cavities or depressions in its upper surface at the termination of three of the said grooves, and the remaining groove leading to a point between two of said cavities, and balls corresponding in number with said grooves, substantially as specified, whereby, when three of the balls are disposed in their respective cavities, the remaining ball is directed by its groove so as to rest upon the other three. 4th. The combination, in a game-board or puzzle adapted to be held in the hand and manipulated thereby, of a base having a surrounding wall and a set of four movable bodies therein, a central elevated stage of rectangular form thereupon, having two cavities or depressions therein at equal distances from the center of the stage in the line of one of the diagonals thereof, a third cavity in the line of the other diagonal, but at a greater distance from the center, and inclined grooves or ways leading from the edges of each of the cavities to the base at their respective angles of the stage, and from the center of the stage to the remaining angle, substantially as specified, whereby ways from base to stage are formed of varying degrees of inclination.

No. 37,877. Pendulum Bar Treadle.

(*Marche à pendule.*)

Edward Alexander Cochran, Oak Park, Illinois, and William M. Hazard and Eliza J. Beach, both of Pasadena, California, all in U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. In a treadle mechanism for operating machinery, the combination with a driving wheel, a cross head pivoted thereto and a pendulum treadle bar, of two anti-friction wheels journaled in one end of the said cross head so as to engage with one side of the treadle bar when the same is vibrated and one friction wheel journaled in the other end of the cross head to engage the other side of the treadle bar, the said arrangement of two wheels on one side and one on the other side of the treadle bar being for the purpose of securing a rigidity in the cross head and obviating any quivering or shaking of the same. 2nd. The combination of a driving wheel, a pendulum bar having a flanged rib, a cross head pivoted to the driving wheel two anti-friction wheels journaled in one end of the cross head and engaging one side of the pendulum bar rib and one anti-friction wheel or roller journaled in the other end of the cross head and engaging the other side of the rib, one of said rollers being provided with journals having an adjustable eccentric screw for taking up the wear. 3rd. In a treadle mechanism for operating machinery the combination of the driving wheel, a pivoted pendulum bar which carries the treadle, said bar having a rib B, with flanges b, b', the cross head E, pivoted to the driving wheel, the wheels C, and C', journaled in one end of the cross head and acting against one side of the rib B, and the wheel D, journaled in the other end of the cross head and acting against the other side of said wheel.

No. 37,878. Coupling for Electric Cars.

(*Attelage de chars électriques.*)

Louis Pfingst, Boston, Massachusetts, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. In a car coupler a spring cushioned draw bar, a supplemental draw bar pivoted to swing laterally thereon, a link comprising a rectangular box chambered to receive an end of said supplemental bar, and a pin for securing it thereto, substantially as described. 2nd. In a car coupler a spring box secured to the car body, a main draw bar fitted to slide in said box, a spring for cushioning said bar, a supplemental draw bar pivoted to said main bar, and a link comprising a box chambered to receive an end of said supplemental bar adapted to be secured therein by a coupling pin, substantially as described. 3rd. In a car coupling a link comprising a bar chambered longitudinally at each end to receive a draw bar and provided with openings for coupling pins, substantially as described. 4th. In a car coupling the link P, provided with chambers 17, for receiving a draw bar and openings extending across said chambers for the coupling pins, substantially as set forth. 5th. In a car coupling the combination of a box secured to the car body, a spring cushioned main draw bar sliding longitudinally therein, a supplemental draw bar detachably pivoted to the head of said main bar, a hanger on the car provided with a horizontal bottom for supporting said supplemental bar, and a link chambered to receive the outer end of said bar and provided with openings for a coupling pin whereby it may be secured therein, substantially as described. 6th. In a car coupling the combination of a spring cushioned draw bar sliding longitudinally on the car body, with a supplemental draw bar pivoted thereto and supported by a hanger on the car, a link comprising a box or bar chambered to receive an end of said supplemental bar and coupling pins for detachably securing said bar therein, the pin openings being arranged to prevent longitudinal play of the link and bar, substantially as described. 7th. In a car coupling the spring cushioned bar H, provided with the head E, in combination with the bar K, secured thereto by the pin 15, the hanger C, the link P, chambered at 17, and the pins 18, arranged to operate, substantially as described.

No. 37,879. Wood Working Machine.

(*Machine à travailler le bois.*)

William Edwards Taft, Dunmore, Pennsylvania, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. In combination with the cutters and frame work, frames H, having openings, the heads G, located within said openings and adapted to revolve, said heads having notched flanges g, and the latches N, carried by the frames and engaging said notches, substantially as described. 2nd. In combination with the frame work and cutters, the frames H, having the heads G, journaled therein, a latch N, on each end of the machine for engaging the heads G, and means for operating both latches simultaneously, consisting of the shaft O, and the lever W, substantially as described. 3rd. In combination, the frame, the cutters, the yokes I, supported on the frame and having vertical ways a, the movable frames H, guided in said ways, the heads carried thereby, and the adjusting screws K, above the frames and passing through the upper portions of the yokes, substantially as described. 4th. In combination, the heads, the frames H, for supporting the same, the yokes I, for the frames carrying means for vertically adjusting the frames, the plates J, with means for adjustably holding the yokes whereby they may be adjusted longitudinally of the machine, the main frame having lateral ways for the plates J, and means for adjusting said plates laterally of the machine on the said ways, substantially as described. 5th. In a wood working machine, the combination of the supporting frame, the cutters, the frame H, having an opening, and the ring head G, having clamping means and sealed to revolve within the opening of the frame H, said head having an annular flange projecting outside beyond the frame H, said flange being formed into a driving wheel for the head, substantially as described.

No. 37,880. Electric Meter. (*Electromètre.*)

Elihu Thomson, Lynn, Massachusetts, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. An electric meter having stationary coils in a main circuit, moving coils in a shunt circuit around the work, the moving coils forming an armature for the stationary coils and having no iron in its magnetic field combined with a retarding device consisting of a solid copper conductor moving in a permanent and constant magnetic field, and connected positively to the aforesaid armature, so as to cause the movement of the same to be proportional to the electric work that is to be measured. 2nd. An electric meter having stationary coils in a main circuit, movable coils in a shunt circuit around the work, and a supplemental resistance in said armature circuit, combined with a retarding device consisting of a closed conductor moving in a permanent and constant magnetic field, which is independent of and uninfluenced by the currents flowing in the aforesaid coils. 3rd. An electric meter having stationary coils in a main circuit, movable coils in the secondary circuit of a transformer, or in circuit with an independent source of electricity, so as to have a practically constant current flowing through it, in combination with a retarding device consisting of a closed conductor moving in a constant magnetic field. 4th. In an electric meter, the combination with a pivoted oscillating structure, of an electric coil or coils for oscillating the same, a circuit controller or commutator, and a magnetic damper or retarding device. 5th. The combination in an electric meter of an oscillating pivoted structure, fixed coils in a circuit in which current varies with the work, two coils carried by said structure in inductive relation to the first and in a separate circuit, and a circuit changer for throwing said coils alternately into circuit as the structure oscillates. 6th. The combination in an electric meter of a pivoted oscillating structure, with means for counting the oscillations, electro-dynamic coils, fixed and movable, one in the main circuit with the work, and the other in a derived circuit around the work, and a copper plate and magnet, one carried by the structure for retarding its oscillations under the dynamic effects of the coils. 7th. In an electric meter having a retarding device consisting of a closed conductor moving in a magnetic field, combined with devices responding to changes in temperature to automatically correct for variations in the strength of the said retarding device. 8th. In an electric meter having movable coils connected in shunt around the work, a commutator for supplying current to said coils, the brushes and segments of said commutator being made of pure silver for the purpose set forth. 9th. An electric meter consisting of a set of moving coils not having an iron core, a commutator or switching device for placing said coils successively in circuit, a connection from said commutator or switch across the main wires of constant potential, or to a battery or transformer and stationary coils without iron cores surrounding the moving set of coils and connected in the main circuit to the lights or other resistances the moving coils being positively geared to a disk or closed circuit conductor moving in a magnetic field of constant value, and a register or dial system operated by the moving coils to register their movements of oscillation. 10th. In an electric meter a moving device constructed without iron and having stationary coils traversed by the current to be measured acting on the moving coils placed in derived circuit to the consumption circuit and fed by a constant current, said moving coils being without iron, a commutator or switch device having a silver surface connected to the moving coils as described, and a retarding device consisting of a closed conductor rotated or moved in a constant magnetic field or a field uninfluenced by the first or moving set of the system or set of coils and with means for adjustment either of said latter field or of the current fed to the moving coils, and a register to count the movements of the moving parts.

No. 37,881. Furnace for Roasting, Calcining and Oxidizing Metals and their Compounds. (*Fourneau pour le grillage, calcination et oxydation des métaux et leurs composés.*)

Herman Frasch, Cleveland, Ohio, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. A furnace for calcining, roasting, oxidizing or otherwise treating metals or mineral substances, consisting of a vertical

structure divided into stories forming successive chambers, said chambers, or some of them, being furnished with revolving arms which stir up the substance under treatment, and openings communicating from story to story, through which the material under treatment is passed downwards and a current of air or other gas or volatile fluid passes upward, substantially as and for the purpose described. 2nd. A furnace for the purposes hereinbefore set forth, consisting of cylindrical structure divided into successive stories by horizontal partitions, openings through the partitions for the upward passage of air and the downward passage of material under treatment in one story near the circumference, and in the next adjoining story near the centre of the furnace, a revolving stirring arm or arms in the chambers so constructed substantially as described to agitate the material under treatment and push it towards or from the centre, as the case may be, into and down through the openings to the next lower chamber, as and for the purpose hereinbefore set forth. 3rd. A furnace for the purposes hereinbefore set forth, consisting of a vertical structure of fire brick or other refractory material divided into stories by horizontal partitions communicating with each other by vertical openings, a revolving stirring arm in the several chambers constructed substantially as described to agitate the material under treatment, a vertical central hollow shaft to which the several stirring arms are attached, and means substantially such as described for keeping the shaft and arms from being injuriously affected by the furnace heat, such as internal water cooling and external encasing with a layer of refractory material, either or both, substantially as described. 4th. In a furnace substantially such as described, having stirring arms, a revolving hollow vertical shaft to which the arms are attached, a water pipe placed within the shaft and extending to or towards its closed lower end, a water tank above the level of the top of the shaft and connecting pipes from the top of the tank to the top of the hollow shaft and from the bottom of the tank to the interior water pipe arranged substantially as and for the purpose described. 5th. In combination with a furnace constructed substantially as and for the purpose hereinbefore described one or more auxiliary furnaces or fire places, consisting of a fire chamber, having a door at the outer end, and connecting with the interior of the main furnace at the other end, and a perforated pipe entering the fire chamber through which is passed hydrocarbon liquid vapor or gas, substantially as and for the purpose described. 6th. In combination with a furnace constructed substantially as and for the purposes described, a chamber or series of chambers communicating with the outlet for the products of combustion and other fumes arising from the treatment of material in the furnace, said chamber or chambers being furnished with baffle plates, and communicating with the chimney or escape pipe, substantially as and for the purposes hereinbefore described. 7th. In a furnace for oxidizing molten lead or analogous purpose, a tank or vessel for holding the molten lead, a revolving skimmer placed centrally therein, and constructed substantially as described for discharging therefrom the scum or partially oxidized metal, substantially as described. 8th. In a furnace for oxidizing molten lead and analogous purposes, divided by horizontal partitions into a series of stories forming oxidizing chambers, communicating with each other for the passage downwards of the material undergoing oxidation and upwards of an oxidizing atmosphere and furnished with means for agitating the material, and causing it to pass downwards as described, and a fire chamber or chambers for heating the furnace, a tank for holding molten lead or other oxidizable metal, and a revolving skimmer therein for continuously removing the oxide or scum from the metal and discharging it into oxidizing chambers, substantially as described.

No. 37,882. Piano Action. (*Action de piano.*)

Frederick Koth, Toronto, Ontario, Canada, 2nd December, 1891; 5 years

Claim.—1st. In a piano-action, the jack provided with a spring connected to and maintaining it normally engaged with the hammer-butt, substantially as shown and described. 2nd. In a piano-action, the jack provided with a spring connected to and maintaining it normally engaged with the hammer-butt, and a rest thereon to engage a strip to support it on the main supporting bar, substantially as shown and described. 3rd. In a piano-action, the combination of the jack provided with a spring connected to and maintaining it normally engaged with the hammer-butt, and a rest on said jack to engage a strip to support it as specified, with the adjustable stop bar supported by the main supporting bar, and having adjustable stops therein, substantially as shown and described. 4th. In combination, the jack provided with a spring connected to and maintaining it normally engaged with the hammer-butt, with the adjustable stops therein, substantially as shown and described.

No. 37,883. Sash Fastener. (*Arrête croisée.*)

George Cassidy, Vancouver, British Columbia, Canada, 2nd December, 1891; 5 years.

Claim.—1st. In a sash fastener, the combination of a rod A having a handle *a* at one end and having its other end adapted to be secured to a sash rail, and a lock consisting of a casing B and eccentric cam B¹ pivoted therein, said rod passing through said casing so that the cam binds thereon by its downward pressure, and said lock secured to the meeting-rail of the lower sash, substantially as set forth. 2nd. In a sash fastener, the combination of a rod A having a handle *a* at one end and having its other end adapted to be secured to a sash rail, a lock casing B having a slide-way for the rod A and a cavity for a cam, and a cam B¹ pivoted in said cavity opposite the slide-way, and the two sashes of a window holding respectively the lock and the upper end of the rod, substantially as set forth. 3rd. In combination with sashes of a window, a rod A having its upper end secured to the top rail of the upper sash and connecting adjustably with an attachment secured to meeting rail of the lower sash, substantially as set forth.

No. 37,884. Process of Manufacturing Gun-powder from Nitrocellulose. (*Procédé de fabrication de poudre à canon de la nitrocellulose.*)

The Firm of Wolf & Co., assignees of Richard Von Freeden, all of Waustrade, Prussia, 2nd December, 1891; 15 years.

Claim.—1st. The process of gelatinizing and granulating nitrocellulose, or a compound thereof, with other substances, which consists in adding to the said nitrocellulose or compound a solvent of the former, kneading the mass until it has become plastic and the nitrocellulose thoroughly gelatinized, introducing thereto a liquid or vapor being incapable of dissolving or otherwise acting chemically on the constituents of the mass, and stirring the latter until complete granulation has been produced, substantially as described. 2nd. The process of treating grains composed of gelatinized nitrocellulose, or of a compound thereof, with other substances, and still containing the solvent employed for the purpose of gelatinization, the said process consisting in exposing the grains to a hot liquid or vapor being incapable of dissolving or otherwise acting chemically on the solid constituents of the said grains, in view of expelling the solvent, substantially as specified.

No. 37,885. Extension Ladder. (*Echelle à rallonge.*)

Isaac H. Odom, Oakesdale, Washington, U.S.A., 2nd December, 1891; 5 years.

Claim.—1st. An extension step-ladder comprising the circular platform 1, the bars 2, triangularly disposed on the lower face of the platform and arranged at intervals, the extension ladders composed of sections and hinged between the bars 2, and means for securing the sections in their adjustment, substantially as described. 2nd. An extension ladder comprising the circular platform, the bars secured to the lower face of the same, the extension ladders hinged to the bars and composed of an upper section provided with rack-bars, the lower section sliding on the upper section, shafts journaled in suitable bearings cog-wheels mounted on the shafts and arranged to engage the rack-bars, and the pawls and ratchets, substantially as described. 3rd. An extension step-ladder comprising the circular platform, the bars 2, secured to the lower face of the same, the extension ladders hinged to the bars and composed of an upper section provided with cleats arranged on its sides, and the lower section provided with hooks engaging the cleats, the rack-bars attached to the upper sections, the shafts journaled in suitable bearings of the lower sections, cog-wheels mounted on the shafts, and pawls and ratchets, substantially as described.

No. 37,886. Circular Knitting Machine. (*Machine à tricot circulaire.*)

Moritz Boas, St. Hyacinthe, Quebec, Canada, 2nd December, 1891; 5 years.

Claim.—A reversible knitting-machine having knitting and non-knitting needle cam-grooves and right and left-hand guiding gates located in proximity to the junctions of said grooves, substantially as and for the purpose specified.

No. 37,887. Pick. (*Pic.*)

William Wilson, Pine Grove, Nevada, U.S.A., 2nd December, 1891; 5 years.

Claim.—The combination of a socket having an opening extending entirely through the same, and having a loop extension of less width than the opening in the socket, the extension opening communicating with the said socket opening, the shoulders 1, 1, at the ends of the socket, projecting inward toward the loop extension to support the wedge, the pick and the wedge, substantially as described.

No. 37,888. Pocket Knife. (*Couteau de poche.*)

David W. Davis, Detroit, Michigan, U.S.A., 2nd December, 1891; 5 years.

Claim.—The improved pocket-knife herein described and shown, consisting of a handle, a spring in the back of the same, blades B pivoted in one end of the handle, and a wire outer pivoted in the opposite end of the handle and provided at its pivotal end with a cam bearing on the spring D, and having a convex outer edge and a concave inner cutting edge provided with projections or points E, substantially as described.

No. 37,889. Nut and Pipe Wrench. (*Clé à écrou et tuyau.*)

John P. Hunt and Edwin N. Hunt, both of London, Ontario, Canada, 2nd December, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a pivotal wrench jaw, formed with a socket, O, and opening, R, substantially as shown and described, and for the purpose specified. 2nd. As a new article of manufacture, a wrench having a pivotal jaw, P, formed with a socket, O, and opening, R, in combination with a screw, I, formed with a shank, J, and spherical end, I¹, and the moveable jaw, M, substantially as shown and described, and for the purpose specified. 3rd. In a wrench, the combination of a pivotal jaw, P, formed with a socket, O, and opening, R, a screw, I, formed with a shank, J, and spherical end, I¹, in combination with a moveable jaw, M, formed with a flange, F, a nut, N, formed with a groove, G, a stationary jaw, S, a bar, B, formed with notches, B¹, and the handle, H, substantially as shown and described, and for the purpose specified.

No. 37,890. Pneumatic Tire.*(Bandage pneumatique.)*

Pernelle La Force, assignee of Hippolyte Joseph La Force, both of Toronto, Ontario, Canada, 2nd December, 1891; 5 years.

Claim.—1st. In combination with a rubber tire, a covering provided with a strip attached to the edges of the said covering and fitted into a recess formed in the felloe of the wheel, substantially as and for the purpose specified. 2nd. In combination with a rubber tire, a cover, B, having a strip, C, fixed to each edge thereof to fit under the lips, a, formed around the felloe, D, substantially as and for the purpose specified.

No. 37,891. Water Wheel. (Roue hydraulique.)

Thomas A. McDonald, Durham, Nova Scotia, Canada, 2nd December, 1891; 5 years.

Claim.—1st. In a water-wheel, the combination, with a hub divided into vertical clutch-sections, of a series of wings or paddles constructed substantially as described, each paddle being provided with a contracted tongue-like extension at its inner end introduced between the clutch-sections, and bolts passed through the tongue-like extensions of the paddles and the clutch-sections of the hub, uniting the same, substantially as specified. 2nd. A paddle or wing for a water-wheel, having a body provided with one inclined or beveled side edge, a straight opposite side edge, and a straight outer end, and a flange projected upward from the straight side edge and from the straight end, which flanges are united to form a pocket having angular corners, substantially as shown and described. 3rd. A paddle or wing for a water-wheel, having a body provided with one inclined or beveled side edge, a straight opposite side edge, and a straight outer end, and a flange projected upward from the straight side edge and from the straight end, which flanges are united to form a pocket having angular corners, and a series of cross partitions attached to the upper face of each paddle or wing forming thereby several pockets on each paddle or wing having angular corners, substantially as shown and described. 4th. In a water-wheel, the combination, with a wheel consisting of a hub made in two sections, the opposed faces of which sections are provided with inclined planes, and a series of paddles or wings provided with an inclined or beveled side edge, a straight outer end, and a flange projected upward from the straight side edge and from the end, which flanges are united to form a pocket having angular corners, and a projection integral with the inner end of each wing or paddle, adapted to be attached to the inclined planes of the hub, of a shaft upon which the wheel is mounted, a weighted base frame or anchor comprising a series of longitudinal and transverse essentially U-shaped beams, and U-shaped standards projected upward from the said beams in which to journal the shaft, substantially as shown and described.

No. 37,892. Draft Device for Vehicles.*(Appareil de tirage pour voitures.)*

Thomas J. Wyatt and Clara E. Webster, assignee of Albert B. Webster, both of Manchester, New Hampshire, U. S. A., 2nd December, 1891; 5 years.

Claim.—1st. The combination with a vehicle cross-bar, of an elastic draft composed of two independent pieces or parts, each piece or part being made from a single bar of metal, and being bent between the ends in a U-shape, having one end firmly fastened to the shaft-iron or cross-bar, and its other end free and provided with a tug holder, and a non-metallic guard to limit the forward movement of the said draft to obviate rattle, substantially as described. 2nd. The combination with a vehicle cross-bar, of an elastic draft composed of two pieces or parts, secured to the said cross-bar, each piece or part being made from a single bar of steel, secured at one end to the cross-bar and having the other end free and provided with a tug holder and strap, constituting a guard or stop for the said elastic draft, substantially as described. 3rd. The combination with the shaft-iron or cross-bar of a vehicle, of an elastic draft, having one end inserted in a box and firmly fastened to the cross-bar or shaft-iron, the other end being free and provided with a tug holder, and the forward movement limited by a guard or stop, substantially as described. 4th. The combination with the cross-bar, of an elastic draft made of one continuous piece of metal, the centre thereof secured in a box upon a plate and pivotally connected to the under or upper side of the cross-bar, and the ends left free and provided with a tug holder, and limited by a strap, substantially as described. 5th. The combination with the cross-bar, of an elastic draft made in one continuous piece, the centre thereof rigidly secured to the cross-bar, the ends free and provided with a tug holder, and a guard or stop to limit the power of movement, substantially as described.

No. 37,893. Method of Manufacturing Metallic Lathing. (Mode de fabriquer le lattage métallique.)

The Metallic Roofing Company of Canada, Toronto, Ontario, Canada, assignees of George Hays, New York, State of New York, U. S. A., 2nd December, 1891; 5 years.

Claim.—1st. A machine containing dies and suitable moving mechanism therefor adapted for puncturing apertures through a sheet of sheet metal, at the same time turning outwardly and backwardly with a curve the edge metal, essentially as shown and described. 2nd. In a machine for manufacture of metallic lathing dies, having each cutting apex, cutting edges and convex faces, adapted to open and turn outwardly and backwardly with a curve the sheet metal, as and for the purpose herein set forth. 3rd. In a machine for forming the thengued apertures in sheet metal, the cutting dies H, each having its puncturing end formed with the cutting edge and convex faces connected to a reciprocating carriage provided with a moving mechanism and arranged over a grooved bed in such manner that the stroke of each die is received in a groove with the tongues

of metal forced downward by the puncturing movement, while the shoulders or raised portions of the bed between the grooves sustain the sheet, essentially as shown and described. 4th. As a device for puncturing sheet metal and turning outwardly and backwardly the edge metal into curved tongues, the cutting die herein set forth having cutting edge a', and the convex faces c, and d, essentially as shown and described. 5th. The combination of the grooving die M, with a reciprocating carriage E to form a groove by stamping or pressure over a matrix, essentially as shown and described. 6th. In combination with the dies M, and their matrices, the rollers O, the upper having a bend and lower having concavity whereby the grooving of sheet metal is effected, essentially as shown and described. 7th. The grooving of lower roller O, in line with groove of bed G, for passage of the raised tongues and lips to the sheet of sheet metal, essentially as shown and described. 8th. In a machine for puncturing sheet metal for lathing rolls formed with the rotary cutters N', for dividing the sheet metal, as herein set forth. 9th. The combination of rolls O, the upper having the intermediate rotary ribs or dies O' for corrugating, and the lower having grooves or matrices corresponding essentially as shown and for the purpose set forth.

No. 37,894. Globe Valve. (Soupape à boudet.)

Thomas McAvity, John A. McAvity, and George McAvity, assignees of William McShane, all of Saint John, New Brunswick, Canada, 3rd December, 1891; 5 years.

Claim.—1st. In a valve, the combination with a valve stem formed with an angular flange or collar upon its lower end and having a smooth bore or recess produced in the center of said lower end, of a valve disc having a central opening, and an open side socket concentric with said opening, and a spindle or pin adapted to be secured in the disc and enter the bore or recess in the end of the stem, substantially as shown and described. 2nd. In a valve, the combination with a stem, formed with an annular flange or collar at its lower end, and having a smooth bore or recess produced in the center of said lower end, of a valve disc having a central threaded aperture produced therein, and an open-sided socket arranged upon the upper side of the disc concentric to the threaded aperture and adapted to receive the annular flange or collar, and a spindle or pin having a threaded lower part and smooth shank or upper part adapted to be passed through the disc and into the smooth bore or recess, substantially as shown and described. 3rd. In a valve, the combination with a stem having an annular flange or collar formed upon its lower end, of a valve disc having an open-sided socket formed upon its upper face and a threaded protuberance upon its lower face, a nut secured upon the threaded protuberance, and provided with a plurality of depending guiding lugs adapted to operate substantially as shown and described.

No. 37,895. Metallic Lathing.*(Lattage métallique.)*

Longley Lewis Sagendorph, Philadelphia, Pennsylvania, and Charles N. Harder, Philmont, New York, both in U. S. A., 3rd December, 1891; 5 years.

Claim.—A corrugated lathing-sheet having loops or burrs A cut and forced outward from the concave surface of the corrugations B, substantially as set forth.

No. 37,896. Burner. (Brûleur.)

Edmund T. Wigg and Thomas H. Robinson, both of London, Ontario, Canada, 3rd December, 1891; 5 years.

Claim.—1st. A partition, K, closing the space between the retort, C, and the walls of the furnace chamber, and dividing the latter into two compartments, and a passage or passages, C', formed in the retort, C, and an opening or openings, K', formed in the partition, K, opposite said passage or passages, C', these openings, K', and passages, C', forming the only air passages between the two compartments into which the furnace chamber is divided by the partition wall, K, substantially as shown and described, and for the purposes specified. 2nd. A combined super-heater, and abutment, G, having a chamber or passage, G', formed therein, in which the vapor is super-heated, and the underside of which super-heater is solid and forms an abutment, substantially as shown and described, and for the purpose specified. 3rd. A super-heater, G, formed with the winding passage, G', the underside of which super-heater, G, is solid and forms an abutment, against which the burning vapor and air strike to thoroughly incorporate them together, a retort, C, formed with the passages, C', pipes, D, D', and the latter formed with the opening a', substantially as shown and described, and for the purpose specified. 4th. The shields, d', surrounding the pipes, D, and D', in combination with and situated between the retort, C, and the super-heater, G, substantially as shown and described, and for the purpose specified. 5th. A partition, K, closing the space between the retort and the furnace walls, and formed with the openings, K', the retort, C, being formed with passages, C', the lugs, C', and the flanges, C', to which retort the liquid hydro-carbon is piped by its own gravity from the tank, A, through pipe, B, the flow being regulated by the valve b', the pet cock, E, and the fire pan F, formed with the slotted standards f', in combination with the pipes, D, and D', the latter having openings, d', formed therein, the shields, d', surrounding the pipes, D, D', and the combined super-heater and abutment, G, having the super-heating chamber or passage, G', formed therein, substantially as shown and described, and for the purpose specified.

No. 37,897. Cut-off for Electric Machines.*(Débente de machine électrique.)*

James P. Woolley, Simcoe, and Ira N. Vail, of the Township of Woodhouse, and Thomas E. Vail, of the Township of Townsend, all in Ontario, Canada, 3rd December, 1891; 5 years.

Claim.—1st. A movable plate connected to one pole of an electric circuit in contact with a plate connected to the other pole of the cir-

cuit, an electro magnet supporting a weight connected to the movable plate in such a manner that it will break the contact between the two plates the instant the electro magnet is demagnetized, substantially as and for the purpose specified. 2nd. A revoluble spindle connected to the water gate or power cut-off, and having a weighted cord wound upon it, a pawl designed to engage with the ratchet teeth of a wheel fixed to the revoluble spindle in combination with an electro magnet, and weighted cut-off attached to the pawl, substantially as and for the purpose specified.

No. 37,898. Guide and Sign Board.

(*Enseigne et indicateur.*)

Austin D. Cable, Stewart Munn, Arthur Ross, and Henry William Raphael, all of Montreal, Quebec, Canada, 3rd December, 1891: 5 years.

Claim.—1st. A sign and guide board composed of suitable posts D, to which are secured any number of sides, E, forming the sides of any suitable polygone, the sides E having spaces e^1 , e^2 , and e^3 , for the inscription of the direction of roads, distances, County, Town and Township indications, and ones e^4 , e^5 , and e^6 , sub-divided up for advertising purposes, substantially as described and for the purposes set forth. 2nd. In a sign and guide board, the combination of the names of the County, Township, or Town, with the distance directory and advertising spaces e^1 , e^2 , and e^3 , substantially as described and for the purposes set forth.

No. 37,899. Blanket Muzzle. (*Muselière.*)

Nelson Gillespie and Chester Gillespie, both of Hoosick, New York, U.S.A., 3rd December, 1891: 5 years.

Claim.—1st. As an improved article of manufacture, a blanket muzzle consisting of a band or support provided with attaching mechanism for attaching the support to the head of the horse, and a link apron pendent from the rear portion of such support, and adapted to extend below the mouth of the horse when in use, substantially as described. 2nd. In a blanket muzzle, the combination with a nose-band, and detachable connections on such band for connecting the band with a head-stall, of an apron pendent from the rear portion of such band, and composed of a plurality of interconnected links, substantially as described.

No. 37,900. Low Water Alarms for Steam Generators. (*Indicateur d'eau pour générateurs de vapeur.*)

William Daniel McLaughlin and Austin Phillips, both of Corunna, Michigan, U.S.A., 3rd December, 1891: 5 years.

Claim.—1st. The combination with the shell A, nipple B, whistle C, of the float operated valve D, substantially as described. 2nd. The combination in a low water alarm, of the whistle, the valve D, controlling the communication thereto, and consisting of the casing D, the apertured partition E, the sliding stem G moving in guide bearings H and I, the spring L, the float lever N and float Q, substantially as described. 3rd. In a low water alarm, the combination of the whistle C, the valve D, controlling communication, and a float actuated lever controlling said valve and carried by the casing, substantially as described. 4th. The combination with the lever N journaled in the arm M, spring actuated valve controlled by said arm, the float Q having the screw threaded stem P and adjusting nuts Q', substantially as described.

No. 37,901. Fastening for Corsets and Analogous Purposes. (*Agrafe de corset, etc.*)

Covington Henry Littleton, Philadelphia, Pennsylvania, U.S.A., 3rd December, 1891: 5 years.

Claim.—1st. A fastening for garments comprising a folded tape, a series of hooks provided respectively with eyes, a bill, and shoulders ranging transversely of said bill, and clips or staples, said bills being inserted through the fold of the tape, and the clips or staples inserted through the tape and eyes of the respective hooks and clinched, substantially as shown and described. 2nd. An improved manufacture consisting of a fastening for garments, such as corsets and analogous purposes, comprising a folded tape thickened at the centre thereof, a series of hooks provided respectively with eyes, a bill, and shoulders ranging transversely of said bill, and clips or staples, said bills being inserted through the thickened portion of the tape, said shoulders being in contact with the interior of the fold, and the clips or staples being inserted through the tape and eyes of the respective hooks, and clinched, all substantially as described and for the purposes set forth.

No. 37,902. Can, Box and the Like.

(*Boîte métallique.*)

James Aytoun, Edinburgh, Scotland, 4th December, 1891: 5 years.

Claim.—A can, box or other metallic packing vessel provided with an endless exterior fold or corrugation, of a double thickness of metal having flat sides arranged substantially parallel and in close proximity to each other the said vessel being adapted to be opened by cutting transversely through the double thickness of the said fold between the outer edge and the can, substantially as set forth.

No. 37,903. Dish Washer. (*Laveuse de vaisselle.*)

William Hackly Church and Robert Taggart, both of Fenelon Falls, Ontario, Canada, 4th December, 1891: 5 years.

Claim.—In a dish washing machine, the combination with the suds pan A, or vessel, of the removable perforated tray B, setting within

said pan, said tray provided with a cover C, and having vertically a syringe D, affixed to the center of the tray and discharging downwardly, for agitating hot water amongst the dishes in the tray, as set forth.

No. 37,904. Fire Escape. (*Sauveteur d'incendie.*)

Stephen Taft, Millbury, Massachusetts, U.S.A., 4th December, 1891: 5 years.

Claim.—1st. In a fire escape, the combination with a clutch adapted to be secured to a building, having two downwardly depending legs, and loops and friction sleeves, of a strip of webbing passed through said loops and doubled upon itself, forming two strands, one of which is provided with a hook, and a hand hold consisting of a flexible tube embracing said strands, substantially as described. 2nd. In a fire escape the combination with the clutch having two downwardly depending legs and loops and friction sleeves, a flange having a curved recess, and a spring actuated eccentric lever, of a strip of webbing passed through said loops and doubled upon itself, forming two strands, one of which is provided with a hook, and a hand hold consisting of a flexible tube embracing said strands, substantially as described. 3rd. A suspension device for a fire escape comprising a body portion having a flange with a curved recess, two depending legs with loops and friction sleeves, and a pivoted extension lever, said lever and body portion having a plurality of pivot holes, substantially as described. 4th. In a fire escape the combination with a suspension device and a strip of webbing or other material connected therewith, of a belt adapted to be connected with said webbing having end plates with loops and a securing bolt for engaging with said loops and provided with a securing bolt and a cord or tape connected therewith, substantially as described. 5th. A securing belt for a fire escape, having end plates with loops engaging with each other, an outwardly extending strip on one of said plates forming a guide, a retaining bolt having an attached cord or tape, and loops or rings pivoted to said plates and adapted to be connected with a lowering strip or rope, substantially as described. 6th. The combination with a fire escape clutch secured to a building of the sheave 38, and cord 39, passing therethrough, one end of said cord being connected with the clutch, substantially as and for the purpose set forth.

No. 37,905. Method of producing Weather Proof Artificial Enamel Stones Indifferent Against Acids.

(*Mode de produire des pierres émaillées et artificielles à l'épreuve du temps et des acides.*)

Baron Arnold Von Solemacher Antweiler, Schlofs Wachendorf, near Satzvey, Prussia, 4th December, 1891: 5 years.

Claim.—The manufacture of bricks and plates or tiles by mixing together silicic acid, fluor spar, felspar, soda, tin ash, alum earth, red lead, talc and cryolite in or about the proportions stated, melting the same in a suitable furnace such as a regenerative glass melting furnace and casting the resulting fluid mass with or without the addition of suitable coloring agents in moulds into the form of bricks or plates or tiles of the desired shape and size with projecting border and interrupted transverse ribs or projections at the back.

No. 37,906. Waggon Rack. (*Rtelier de wagon.*)

Alexander Chisholm, Toronto, Ontario, Canada, 4th December, 1891: 5 years.

Claim.—As a general purpose waggon rack, two sides and two ends made independent of each other, the uprights of which having shanks capable of fitting into vertical or angular mortises made in the bottom frame of the rack, substantially as and for the purpose specified.

No. 37,907. Wrench. (*Cle à écrou.*)

John Orren Cottrell, Riverside, California, U.S.A., 4th December, 1891: 5 years.

Claim.—1st. In a wrench of the class described, the combination, with the handle terminating at its front end in a head and beyond the same in a plate provided with a cylindrical bearing-opening, a peripheral flange, and upon its upper face in front of the head with a block in the same plane as the flange and below that of the head and reduced at opposite sides to form recesses, of a removable plate mounted upon the block and flange and provided with bearing-openings, a ratchet provided at opposite sides with bearing-hubs mounted in the openings of the plates and provided with a nut-receiving opening, opposite pawls pivoted in the recesses, and means for maintaining the pawls in engagement with the ratchet and for throwing either or both out of such engagement, substantially as specified. 2nd. In a wrench of the class described, the combination with the stock provided with opposite bearing-openings and an internal block having a transverse bore and upon its upper face a transverse groove and a recess communicating with the groove, of a ratchet having a nut-receiving opening mounted in the bearings in the opposite sides of the stock, opposite pawls mounted in opposite recesses of the stock, a spring located in the bore of the block and connected with the pawls, a bolt mounted in the groove and provided with a central offset extending into the recess, and a key extending beyond the stock, terminating in a head disposed at a right angle to the bolt, and having an offset interlocking with that of the bolt, substantially as specified. 3rd. In a wrench of the class described, the combination, with the stock comprising opposite plates having bearing-openings, and an internal block forming opposite recesses at the sides of the stock, said block being provided with a transverse bore, above the same with a transverse groove, and in rear of the groove with a shallow recess of a pair of pawls pivoted in the recesses at the sides of the stock, a ratchet mounted in the bearing-

openings of the plates, a coiled spring mounted in the bore of the block and connected at its ends to the pawls, a bolt mounted in the groove and having its ends inwardly bent into continuations of the grooves formed in the sides of the block and provided at its center with a rearwardly-disposed bend or offset, and a key journaled in bearings disposed at a right angle to the bolt, terminating at its outer end in a head, and provided below the same with a lateral offset or bend for engaging that of the bolt, said offset of the bolt being provided upon its inner sides and at each side of its bend with shallow depressions for engaging the end of the offset of the key, substantially as specified.

No. 37,908. Lock. (*Serrure.*)

Henry Platz, Rogers City, Michigan, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. In a lock, the combination with the casing, having key-holes upon opposite sides thereof, of transverse guide rods upon both sides of said holes, and a guard plate slidingly secured on said rods in the path of the key, substantially as described. 2nd. In a lock, the combination with the casing having holes upon opposite sides, the guide flanges K, formed on the interior of the casing, the guide rods N, the plate J, the guide bearing M, formed therein and the heel K, on said plate, substantially as described. 3rd. In a lock, the combination with the bolt, having pins formed integral therewith of the arm H, and the latch B, having the shoulder G, adapted to operate, substantially as and for the purpose described.

No. 37,909. Currycomb. (*Etrille.*)

George W. Neuls, Kane, Pennsylvania, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. As an improved article of manufacture, a currycomb the body and the teeth of which are constructed of wood, substantially as described. 2nd. A currycomb the body and comb sections whereof are constructed of wood and constitute integral portions of the comb, as and for the purpose specified. 3rd. A currycomb the body and comb portions whereof are constructed of wood, the teeth of the comb having their lower ends beveled at their sides in direction of the center, as and for the purpose specified. 4th. A currycomb the body and comb sections whereof are constructed of wood, the outer teeth having curved outer edges and pointed lower extremities and the intermediate teeth being straight and pointed at their extremities, as and for the purpose specified. 5th. A currycomb the body and comb sections whereof are constructed of wood, and the body section being provided with buffers at opposite sides, substantially as described. 6th. A currycomb the body and teeth of which are constructed of wood, and the body being provided in its upper face with a dove-tail channel to receive a handle, as and for the purpose set forth. 7th. In a currycomb, the combination, with a body of wood, the said body being provided with an integral comb section also of wood, the said comb section forming a portion of its under face, the body also being provided with a dove-tail channel in its upper face, of a handle having a foot section provided with a dove-tail rib adapted to enter the dove-tail channel or recess in the body of the comb, as and for the purpose specified. 8th. In a currycomb, the combination, with a body portion of wood and a comb section comprising a series of teeth and also made of wood, the extremities of the teeth being beveled from their sides to their centers, and the said body being also provided upon its upper face with a dove-tail channel and buffing surfaces of elastic material at opposite side edges, of a handle the lower portion of which is provided with a rib dove-tail in cross section and adapted to enter and to be secured within the dove-tail recess of the body, as and for the purpose set forth.

No. 37,910. Steam Actuated Valve for Steam Engines and Pumps.

(*Valve actionnée par la vapeur pour machines et pompes à vapeur.*)

Benjamin Raymond Patten, Yarmouth, Nova Scotia, Canada, 4th December, 1891; 5 years.

Claim.—1st. In a steam actuated valve, the combination with the cylinder A, having piston B, rod C, steam ports S, S, exhaust E', and D, valve H, of the cylinder G, having pistons J, J, connected to each other and to the said valve H, by the two arms I, and bridge t, the pillar T, steam inlet V, steam space k, the steam chest L, connected with the said steam space k, auxiliary valve N, valve stem O, collars P, arms R, steam ports s, s, connected with the spaces g, g, and exhaust e, substantially as set forth. 2nd. In a steam actuated valve the combination with the main valve H, of the pistons J, J, suitably secured to the said valve H, the cylinder G, steam ports s, s, and exhaust ports e, steam chest L, and auxiliary valve N, substantially as set forth. 3rd. In a steam actuated valve, the combination with the steam actuated valve H, in the cylinder G, and piston J, J, connected by the bridge t, of the pillar T, arms R, secured to the stem O, substantially as and for the purpose set forth. 4th. In a steam actuated valve, the combination with the auxiliary valve N, having exhaust chamber u, and lugs o, of the collars P, valve stem O, and arms R, formed integrally with the said collars P, substantially as set forth.

No. 37,911. Rail Joint. (*Joint de rail.*)

Louis Dubé and Luke Messier, both of Albany, New York, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. In a rail joint, the combination, with a bolt, of a key provided at or near its tail end with a detent, and a contiguous retaining surface for engaging the detent, all substantially as described. 2nd. In a key for a rail joint, consisting of a wedge shaped body portion having a detent as d, near its rear end, and a tail as d', substantially as described. 3rd. In a rail joint, the combination with a

bolt, of a key provided with a retaining surface for engaging the detent, all substantially as described. 4th. In a rail joint, the combination, with bolts, of a separate key for each bolt, said key having a detent, a fish plate, and a locking plate provided with serrations for engaging the detent of the key, all substantially as described. 5th. In a rail joint, the combination with a bolt of a key provided with a detent, a fish plate, and a locking plate provided with an oblique series of serrations, all substantially as described. 6th. A rail joint comprising the following combination: two abutting rails, two connecting fish plates, a number of bolts passing through perforations in the webs of the rails and the fish plates, obliquely set retaining keys provided with detents one key for each bolt, and contiguous oblique retaining surfaces for engaging the detents, all substantially as set forth. 7th. In a rail joint, the combination of a bolt and a key having an inclined or wedge shaped portion and a detent at or near its butt-end, substantially as described. 8th. A driving tool consisting of a stem or main body portion provided with a recess at its head formed by two cheeks, a bottom shoulder and an upright driving shoulder, all substantially as described. 9th. A driving tool consisting of a stem or main body portion provided at its head with an upright driving shoulder and a bottom wedge shaped shoulder, all substantially as described.

No. 37,912. Sliding Shell Pump.

(*Garniture à coulisse de pompe.*)

John Glasford, Hamilton, Ontario, Canada, 4th December, 1891; 5 years.

Claim.—1st. In a sliding shell double acting pump the rigid tubes A, A, each having at their lower ends the check valves B, and at their upper ends the branch C, with pipe D, and the lugs O, in combination with the sliding shells F, with their check valves G, the lugs I, and the forked connecting rods H, with rods K, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a sliding shell double acting pump with the tubes A, and valves B, the branch C, the pipe D, the lugs O, the shells F, the valves G, the lugs I, the forked connecting rods H, the connecting rods K, the oscillating shaft L, the cranks J, framework M, and the pendulum N, substantially as and for the purpose hereinbefore set forth.

No. 37,913. Apparatus for Discharging Steam Condensation. (*Appareil de décharge de vapeur condensée.*)

George Walker, Levis, and Michael Hurly, Quebec, both in the Province of Quebec, Canada, 4th December, 1891; 5 years.

Claim.—1st. The combination of a part of an interchangeable steam link B, secured to the end of a flexible tube at the end of a railway carriage, a part of an interchangeable steam link B', secured to a regulating valve, the regulating valve C, having a part of an interchangeable steam link attached to the inlet end and a tube to the exit end, the discharge tube D, secured to said valve and provided with an elbow, the collar D', secured to said tube and a suspending chain E, fastened to said collar to the end of the carriage, substantially as set forth. 2nd. The combination of a part of an interchangeable steam link B', secured to a valve, the regulating valve C, having a part of an interchangeable steam link secured to the inlet and a pipe to the exit nipple, the pipe D, secured to the exit nipple of the valve and having an elbow at the other, a collar with eye secured to said pipe and the suspending chain E, secured to said collar, substantially as set forth.

No. 37,914. Process of and Apparatus for Manufacturing Gas. (*Procédé et appareil de fabrication du gaz.*)

Burdett Loomis, Hartford, Connecticut, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. The process of manufacturing gas which consists in heating a body of fuel to incandescence by drafts of air drawn downward into the fuel and by drawing off the gaseous products by an exhauster, whereby the fuel may be better fed, inspected and arranged in the generator during the operation of heating up, then shutting off the air draft and decomposing steam in contact with the fuel, thereby producing water-gas. 2nd. The process of manufacturing gas which consists in heating a body of fuel to incandescence by downward drafts of air, and by means of the resulting gaseous products heating a superheating-chamber and drawing off the products by an exhauster, whereby the furnace may be charged and cleaned during the operation of the exhauster, then shutting off the air drafts and superheating steam by passage through the superheating-chamber and decomposing it by passage through the incandescent fuel, thereby producing water-gas. 3rd. The process of producing fixed combustible gas which consists in forming a bed of incandescent fuel in a generating-chamber, supplying fresh fuel at suitable intervals to the top of said bed of fuel, admitting atmospheric air to the generating-chamber above the fuel and drawing or exhausting it downward into said fuel, drawing or exhausting the oily and tarry vapors and products of combustion down into and through the incandescent fuel, and drawing or exhausting the resulting fixed gaseous products out of the generating-chamber at or near its bottom, as described. 4th. In combination with a gas generating cupola or furnace, and air-supply pipe or opening connecting with the top above the fuel, means for controlling the supply of air through such pipe or opening, and an outlet for gaseous products leading from the bottom, and an exhauster connecting with such outlet-pipe for drawing off gaseous products from the bottom of the generator, as described. 5th. In combination with the gas-generating furnace, a tubular air-heater and gas-cooler having an air-inlet and pipe connecting it with the top of the generator, and exhaust-pipe for gaseous products leading from the bottom of the generator and connecting with the tubes of the heater, and a connected ex-

hauser for drawing off the gaseous products through the tubes and drawing air through the chamber around the tubes and down into the fuel, whereby the gas is cooled by the circulating air and the latter is heated as it flows to the generator. 6th. In a cupola gas-generating furnace, the fuel-chamber arranged above and the super-heating and fixing chamber below, in combination with the valve take-off pipe F, leading from the superheating-chamber, outlet pipe G, leading from the fuel chamber, valve pipe H, connecting pipe I with pipe F, and escape-pipe O, having a closing cap or valve leading from pipe H, for the purpose described. 7th. In a cupola gas-generating furnace, the two fuel-chambers and the two superheating and fixing chambers, in combination with valve pipes F, F', pipes G, G', connecting pipes H, H', having valves h, h', cross-pipe g, connecting the pipes H, H', between the valves, and pipe L, leading from pipe g, to the seal-box, as and for the purpose described.

No. 37,915. Brush Drawing Machine.

(Appareil pour poser les soies des brosses.)

Walter Lewis and George Tryon Turner, both of Philadelphia, Pennsylvania, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. The combination in a brush drawing machine, of a block holder and a hollow needle through which the drawing wire is passed without confinement, whereby on projecting the needle through an opening in the brush block a projecting loop of wire will be formed for the reception of the knot of bristles, which loop is not disturbed on the retraction of the needle, substantially as specified. 2nd. The combination in a brush drawing machine, of a block holder and a hollow needle with a flexible suspending device for said needle, whereby the latter is free to move in all directions in respect to the block, substantially as described. 3rd. The combination in a brush drawing machine, of a block holder, a hollow needle, and a spring support for the latter, substantially as specified. 4th. The combination in a brush drawing machine, of a block holder, a hollow needle, a spring support for the latter, and a retracting spring therefor, substantially as specified. 5th. The combination in a brush drawing machine, of a block holder, a looping needle, a movable vise for the draw wire, and a treadle connected to said vise, substantially as specified. 6th. The combination in a brush drawing machine, of a block holder, a looping needle, a movable vise for the draw wire, a treadle for operating said vise, and a treadle strap connected to the fixed plate of the vise and having a bearing upon the movable plate of the same, whereby on the depression of the treadle the vise is first closed and then moved bodily on its guides, substantially as described. 7th. The combination, in a brush drawing machine, of the looping needle with a brush block holder consisting of a vertically adjustable bar and a slide movable transversely thereon and having clamps for the brush block, substantially as specified. 8th. The combination in a brush drawing machine, of the looping needle with a block carrier having vertical clamps with flanges for embracing the opposite ends of the brush block, said flanges being adjustable laterally in respect to each other, substantially as specified. 9th. The combination in a brush drawing machine, of a brush block holder, means for drawing knots of bristles into the same, a movable carrier for the holder, and a pair of shears mounted beyond the block holder, but in line with the movement of the same, substantially as specified. 10th. The combination of the slide carrying the clamps for the brush block, a bar on which said slide is mounted, a rock shaft having arms for acting on said bar to raise and lower the same, depending guided legs on the bar, and a retaining bolt engaging with notches in one of said legs to retain the bar in desired vertical position, substantially as specified.

No. 37,916. Saw Handle. (Manche de scie.)

James Murphy, Renovo, and William J. Pyle, Philadelphia, (assignees of Allison M. Roscoe, Du Bois), all in Pennsylvania, U.S.A., 4th December, 1891; 5 years.

Claim.—1st. The combination, with the socket D, having a slot through its sides to receive the saw and having its upper end internally threaded, of the socket A, having the exteriorly threaded portion *a*, to screw into the socket D, and the disk G, interposed between the upper edge of the saw and the lower end of the socket A, and having stud *g*, which enters the lower end of the said socket A, and forms a positive connection between the said disk and the aforesaid socket A, substantially as described. 2nd. The combination of the socket D, tapering at its lower end and having its upper end internally threaded and having slot *d*, in its side, the saw having its end thrust through the said slot *d*, the socket A, having externally threaded portion *a*, to screw into the socket D, the handle C, fastened in socket A, and the disk G, placed against the end of socket A, and having stud *g*, which forms a positive connection and journal between the aforesaid socket A, and the disk, substantially as and for the purpose described.

No. 37,917. Ventilating Device for Railways. (Appareil de ventilation pour les chars.)

Albert Minnick, Colton, and Mrs. Myra Blanchard, San Bernadine, both in California, U.S.A., 5th December, 1891; 5 years.

Claim.—1st. The combination with the vertical wall of a car having an opening at the top and bottom, of a pair of vertical rods C, C', secured to the wall of the car at points above and below the openings and offsetting from the car wall, two vertically sliding doors arranged between the rods and the side wall of the car and guided on the rods by eyes or staples a horizontal windlass E, arranged in bearings between the top and bottom openings and cord or chains extending from the windlass in opposite directions and connected to the doors for adjusting the same, substantially as shown and described. 2nd. The combination with a car having ventilating openings at both top and bottom of different sizes and sliding doors to

correspond, of a differential windlass or winding shaft with winding surfaces of different diameters, and chain or cords for giving a different throw to the two or more doors, substantially as shown and described. 3rd. The combination with the windlass shaft, of the articulated crank handle F, provided with means for locking it to the sides of the car, substantially as shown and described.

No. 37,918. Trap for Water Basins, etc.

(Trappe pour bassins à eau, etc.)

Delehanty Manufacturing Company, (assignees of William Edward Delehanty), all of Albany, New York, U.S.A., 5th December, 1891; 5 years.

Claim.—In a trap having a valve chamber and a rising and falling valve, a bent or curved limiting device passing wholly or partly across the valve chamber, and in configuration forming substantially an inverted arch, that the rise of the valve in the chamber may be limited and the limiting device present an upwardly inclined surface to substance passing into the eduction pipes of the trap, substantially as and for the purposes hereinbefore set forth.

No. 37,919. Trap for Bath Tubs, etc.

(Trappe pour baignoires, etc.)

Delehanty Manufacturing Company, (assignees of William Edward Delehanty), all of Albany, New York, U.S.A., 5th December, 1891; 5 years.

Claim.—1st. A trap for the purposes described having its body practically globular in form and having an oblong chamber therein said chamber projecting out beyond the body of the trap, said chamber having an opening in it and a valve arranged to open and close the opening and an eduction opening from said trap. 2nd. A trap for the purposes described having its body practically globular in form and having an oblong horizontal chamber therein, said chamber projecting out beyond the body of said trap and having an opening in said chamber arranged to be opened and closed by a valve, the induction pipe to said trap being connected with the oblong chamber and forming a slip joint therewith, said trap having an eduction opening for the purposes described. 3rd. A trap for the purposes described having a body practically globular in form and having a main chamber therein and a second chamber therein, said second chamber projecting out beyond the body of the trap and having an opening in its roof closed by a rising and falling valve, the outlet opening from the main chamber being raised high enough above the roof of the second chamber and the valve therein so that said roof and said valve will be covered by water when the trap is not being flushed, said valve having a guide arranged to prevent the water lying over the roof of said chamber keeping the valve from regaining its seat after the trap has been flushed, for the purposes described.

No. 37,920. Stove Pipe Ventilator.

(Ventilateur de tuyau de poêle.)

William Robertson Macaulay, Windsor, Ontario, Canada, and Helder B. White, Detroit, Michigan, U.S.A., 5th December, 1891; 5 years.

Claim.—1st. A ventilator, consisting of a stove-pipe having perforations therein, a sliding collar having corresponding perforations, and a flaring hood covering said collar, substantially as described. 2nd. As an improved article of manufacture, a ventilator consisting of a perforated stove-pipe, a sliding collar having perforations corresponding with those in the pipe, a hood covering said collar, a handle attached to said collar, and a staple attached to the stove-pipe to form a gage to indicate the position of the collar, substantially as shown and described.

No. 37,921. Churn. (Barratte.)

Moses N. Ward, Butler, Indiana, U.S.A., and David Fisher, Township of Colborne, Ontario, Canada, 5th December, 1891; 5 years.

Claim.—The dasher constructed as above described, with the socket and cross-bar, and the combination of the gear with the cover and dasher shaft, all substantially as set forth, and for the purposes hereinbefore mentioned.

No. 37,922. Valve Mechanism for Engines.

(Mécanisme de soupape pour machines à vapeur.)

Harry Ball, Stamford, and Frederick Lenggenhager, Glenbrook, both in Connecticut, U.S.A., 5th December, 1891; 5 years.

Claim.—1st. The combination with a steam chest, an auxiliary piston and a valve carried thereby, of an automatic slide valve lying longitudinally of the auxiliary piston and provided with steam passages whereby steam is admitted from the center of the steam chest to the ends thereof to drive the auxiliary piston and the valve. 2nd. The combination with a steam chest having adjustable stops 33 at its ends, and an auxiliary piston moving therein, said auxiliary piston having recesses 13 in its heads, of an automatic slide valve lying longitudinally of the auxiliary piston and provided with steam passages whereby when said automatic slide valve engages either of the stops, the continued movement of the auxiliary piston will uncover the steam passages and admit steam to the recesses 13 to drive the auxiliary piston in the opposite direction. 3rd. In a mechanism of the class described, the auxiliary piston having heads 12, provided with recesses 13 in their outer ends and beveled recesses 26 in their inner ends, in combination with an auxiliary piston socketed in the heads and provided with steam passages through which steam passes to said recesses, and a central sleeve 27 beveled to engage recesses 26, substantially as described. 4th. In a mechanism of the class described, the auxiliary piston having heads 12

provided with recesses 13, in combination with an auxiliary piston socketed in the heads and provided with steam passages through which steam passes to said recesses, and a friction spring 31 engaging said automatic slide valve, whereby it is retained in any position in which it is placed. 5th. The combination with the steam chest, auxiliary piston and valve 15, of the cylinder having steam passages 17, and an exhaust passage 18, and the piston, said exhaust passage having an elongated opening 22 leading into the cylinder, so that steam is permitted to exhaust directly from the cylinder during the last portion of the stroke in either direction, and back pressure upon the piston is prevented at the instant the forward movement commences. 6th. The cylinder having steam passages 17 and an exhaust, in combination with a steam chest, a valve having an opening in its under side adapted to connect one of the steam passages with the exhaust, and a plate lying under the steam chest and valve, and having openings corresponding with the exhaust opening and steam passages 17, so that when said plate is moved in either direction steam is admitted at that end of the cylinder more quickly to drive the piston in the opposite direction, and at the opposite end of the cylinder the admission of steam is retarded, as and for the purpose set forth. 7th. In combination, the cylinder, the steam chest, the valve, steam passages 17 and 23, and the exhaust, and an adjusting plate having openings 35 corresponding with steam passages 17 and the exhaust opening, said plate being provided with slots so as to permit adjustment of openings 35 more or less out of alignment with steam passages 17 and the exhaust.

No. 37,923. Bread Knife. (*Couteau à pain.*)

Francis Hayes and Fred. J. Lewis, both of London, Ontario, Canada. 7th December, 1891; 5 years.

Claim.—As an article of manufacture, a handle H, in combination with a blade, B, sharpened on one side, and having notches, n, formed at intervals apart, in the cutting edge thereof, and portions, e, of the cutting edge between said notches, n, the sides of which notches are sharpened and form breasts or angular cutting edges, s, and the grooves, p, formed in one side of the blade only, and on a line with the notches, n, and extending back a short distance from the cutting edge of said blade, substantially as shown and described, and for the purpose specified.

No. 37,924. Barrel Hoop. (*Cercle de barril.*)

James Martin Conway, Spring Garden, Virginia, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. A barrel-hoop consisting of a single piece of wire doubled to form a loop and bent around the barrel, and having the ends of the wire engaging the loop and secured by twisting them upon themselves, substantially as described. 2nd. A hoop for vessels, consisting of a doubled or bent wire having a loop, the ends of said wire being bent around said loop upon themselves and twisted around their immediate attached portions, substantially as and for the purpose set forth. 3rd. A hoop for vessels, consisting of a doubled or bent wire having a loop, double twists E, and a single twist F, made by bending the ends around said loop and winding them around their immediate attached portions, and then twisting them upon each other, substantially as and for the purpose set forth.

No. 37,925. Soot Pan. (*Casserole à suie.*)

Patrick Queenan, Oklahoma, Territory of Oklahoma, U. S. A., 7th December, 1891; 5 years.

Claim.—A soot-pan composed of a bottom, parallel sides and an enlarged front, and having its rear or inner end open, combined with the rectangular tumbler snugly fitting the pan, substantially as described.

No. 37,926. Vegetable Reducer.

(*Coupe-légumes.*)

Thomas Walsh, Montreal, Quebec, Canada, 7th December, 1891, 5 years.

Claim.—1st. A reducer formed of a thin metallic sheet having inclined projecting cutters struck out of said sheet, substantially as described. 2nd. A reducer formed of a thin metallic sheet having inclined projections or cutters b, and depressions c, struck out of said sheet, substantially as described. 3rd. A reducer formed of a thin metallic sheet having inclined projections or cutters b, struck out of said sheet and having the cutting edges of said cutters swaged, with or without the depressions c, the whole substantially as described.

No. 37,927. Surgical Splint.

(*Eclisse de chirurgie.*)

Erastus Ranney Ellis, Detroit, Michigan, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. Surgical splints consisting of perforated thin metal plates with conical-shaped flanges B, surrounding the apertures, substantially as described. 2nd. Surgical splints consisting of perforated thin metal plates, with conical-shaped flanges B around the apertures, and a marginal ridge or flange struck up from the metal of the plate, substantially as described. 3rd. Surgical splints consisting of curved thin metal plates with a ridge or flange around the edge struck up from the metal of the plate or splint, a series of perforations on the plate encompassed by conical-shaped flanges, and a brace-rod having its ends curved downwardly and rigidly secured to the outer face of the plate and arranged lengthwise thereof, substantially as described.

No. 37,928. Machine for Making Rivets.

(*Appareil pour faire les rivets.*)

Frank Danks, Troy, New York, U.S.A., 7th December, 1891; 5 years.

Claim.—1st. In a machine for making rivets, the combination with a die wheel operated at each movement to make a quarter turn with alternating periods of rest, of die-stocks arranged in the perimeter thereof so as to be diametrically opposite, sinks made in the die-stocks constructed to receive the rivet blanks, said sinks being provided with a shoulder against which the inner ends of the blanks abut, and a tubular passage way opening out from said sinks back of the shoulder therein, a header reciprocatingly operated to descend onto the rivet blanks where projecting from said sinks, and a plunger provided with pins adapted to enter the tubular passages of the die-stocks where back of the sinks, constructed and operated to push the rivets from the sinks, substantially in the manner as and for the purposes set forth. 2nd. In a machine for making rivets, the combination with the stocks d^2 , made with sinks d^3 , shoulders h^1 , and tube-form passages d^5 , said sinks being constructed and arranged to receive rivet blanks, with the inner ends thereof abutting against said shoulders while being headed, of the plunger I, made with pins adapted to enter said passages, and operated by said plunger to force the rivets from out said sinks, substantially in the manner as and for the purposes set forth. 3rd. The combination, with the die-wheel W, constructed and arranged to be operated substantially as described, of the stocks d^2 , made with the sinks d^3 , shoulders h^1 , and tubular passage ways d^5 , said stocks being arranged in the perimeter of said die-wheel, the recesses i^2 made in said die-wheel, the plungers I arranged in said recesses, constructed to move therein and provided with pins p^1 to enter the passages in said die-stocks, and the cam K arranged on each of the inner faces of the machine frame, adapted to engage with said plungers, substantially in the manner as and for the purposes set forth. 4th. The combination, with the die-wheel W, constructed with the die-stocks d^2 , having sinks d^3 , made with shoulders h^1 , and tube-form passages d^5 , said die-wheel being operated to make a quarter revolution, with alternating periods of rest at each rotation of the driving-shaft, substantially as described, of the header H, adapted to move in slides in the machine frame and made with a series of sinks v on its lower end, and the cam C² on the driving shaft, arranged to operate said header while the die-wheel is at rest, substantially in the manner as and for the purposes set forth. 5th. The combination, with the die-wheel W, constructed with die-stocks d^2 , having sinks d^3 , made with shoulders h^1 , and tube-form passages d^5 , said die-wheel being operated to make a quarter turn at each revolution of the driving shaft, substantially as described, of the header H, having a series of sinks v in its lower end and made with a recess r^1 in its rear face, the lever f^1 pivoted to the machine frame at p^1 and having an arm a^1 , adapted to enter the recess in the back of said header, and a spring S⁶ connected the lower end of said lever with the machine frame, substantially in the manner as and for the purposes set forth. 6th. The combination, with the die-wheel W, made with lugs l and having rivet-form die-sinks in its perimeter, said wheel being constructed and operated to make a quarter turn, with regular intermittent periods of rest at each revolution of the driving shaft, substantially as described, of the rollers R² and R³, made with annular grooves g^1 , that are vertically in line in both rollers, said rollers being operated to rotate when the die-wheel is at rest and to cease rotating when the die-wheel is moving, and a blade B operated to engage with the lugs l of the die-wheel to rise vertically, and when such engagement with the die-wheel ceases to fall by gravity, substantially in the manner as and for the purposes set forth. 7th. The combination, with the die-wheel W, having rivet-form dies in its perimeter, said die-wheel being constructed and operated to make a quarter turn, with regular alternating periods of rest at each rotation of the driving shaft, substantially as described, of the rollers R² and R³, made with the encircling grooves g^1 and operated to rotate while the die-wheel is at rest and to cease rotating when the die-wheel is moving, substantially in the manner as and for the purposes set forth. 8th. The combination, with the die-wheel W, made with the lugs l and having rivet-form sinks in its perimeter, said die-wheel being constructed and arranged to make a quarter turn, with alternating periods of rest at each revolution of the driving shaft, substantially as described, of the rollers R² and R³, made with the encircling grooves g^1 and operated to rotate while the die-wheel is at rest and to cease rotating when the die-wheel is moving, the blade B, constructed with vertical slides and operated to engage with the die-wheel, substantially as described, and the header H made with the sinks v in its lower end and constructed to be operated by the driving shaft while the die-wheel is at rest, substantially in the manner as and for the purpose set forth.

No. 37,929. Pen. (*Plume.*)

William Henry Bristol, Hoboken, New Jersey, U.S.A., 9th December, 1891; 5 years.

Claim.—1st. A pen provided with a sharpened edge to serve as an eraser, substantially as described. 2nd. A pen provided with an integral projecting portion having a sharp-edged edge to form an eraser, substantially as described.

No. 37,930. Apparatus for Blowing Sand from Railway Track Rails.

(*Appareil de soufflage du sable des rails de chemin de fer.*)

Emma Shepherd Briscoe, Toronto, Ontario, Canada, assignee of John F. Bevin, Indianapolis, Indiana, U. S. A., 9th December, 1891; 5 years.

Claim.—1st. The combination of a railway-track, a locomotive, an ordinary sanding device on said locomotive, an air-pumping apparatus also on said locomotive, and pipes connected with said air-pumping apparatus and leading to points above the track-rails in

the rear of the driving wheels of the locomotive, whereby an air-blast may be directed upon said rails at these points and sand and dirt thus removed, substantially as set forth. 2nd. The combination with an air-pumping apparatus on a locomotive, of pipes leading to points above the railway-rails to the rear of the driving wheels of said locomotive and there terminating in nozzles, the orifices of which nozzles are narrow slits and arranged diagonally to the railway tracks, substantially as set forth. 3rd. The combination of an air-pumping apparatus on a locomotive and pipes leading from said air-pumping apparatus to points near to the rails at the rear of the driving wheels of said locomotive, where said pipes are provided with discharging orifices or nozzles arranged to one side of and quartering to said rails, substantially as and for the purpose set forth.

No. 37,931. Device for Feeding Thread to Knitting Machines. (*Appareil d'alimentation pour machines à tricots.*)

The S. B. Wilkins Company, Rockford, Illinois, assignee of John R. Bridges, Findlay, Ohio, both in U.S.A., 9th December, 1891; 5 years.

Claim.—1st. In a thread-feeding mechanism for knitting machines, the combination of guide-eyes for two threads, an interposed trough or bearing for the threads, and an arm provided with means for nipping one of the threads, and having an end interposed between the two threads, substantially as specified. 2nd. The combination of guide-eyes for two threads, a trough interposed between said guide-eyes, and a pivoted arm having a cutting-knife, and a guide-eye for one of the threads, all substantially as specified. 3rd. The combination of guide-eyes for two threads, an interposed trough or bearing for said threads, and a lever having an arm carrying a guide for one of said threads, and a cutting or nipping blade for the other thread, and a second arm whereby said lever is operated, all substantially as specified.

No. 37,932. Hydrant Valve.

(*Souape de borne fontaine.*)

Edward Lewis, assignee of William Errington, both of Salisbury Buildings, Bourke Street, Melbourne, Victoria, Australia. 9th December, 1891; 5 years.

Claim.—1st. My improved valve for hydrants having a screwed spindle or rod by means of which the valve is opened or closed substantially as herein described and as illustrated in my drawings. 2nd. The combination of valve A, spindle B, coupling nut D, and the nut and casing C' and C'', as and for the purposes described and as illustrated in my drawings.

No. 37,933. Plow Riding Attachment.

(*Siège de charrue.*)

William Erwin Stafford, Southwold, and Wesley A. Stafford, Shedden, both in Ontario, Canada, 9th December, 1891; 5 years.

Claim.—1st. The combination of an ordinary walking plough and a "plough riding attachment" secured to the plough-beam with clamps or other mechanism which will not effect the utility of the plough when used without the attachment, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a "plough riding attachment" of an adjustable land or carrying wheel, with an adjustable guide wheel, substantially as and for the purpose hereinbefore set forth. 3rd. The combination in a "plough riding attachment" of a driver's seat and an operating lever so arranged that the operating levers may be placed on either side of the seat, substantially as and for the purpose hereinbefore set forth.

No. 37,934. Brush for Liquid Blacking.

(*Brosse à souliers.*)

George Sigfried Wolff, Philadelphia, Pennsylvania, U.S.A., 9th December, 1891; 5 years.

Claim.—1st. The within described swab or brush for bottles containing alcoholic blacking compounds, said swab or brush having a suspending wire provided with a coating insoluble in alcohol, substantially as specified. 2nd. The within described swab or brush for bottles containing alcoholic blacking compounds, said swab or brush having a suspending wire provided with a coating of glue, substantially as specified. 3rd. The within described swab or brush for bottles containing alcoholic blacking compounds, said swab or brush having a wire suspended from the cork and provided with a coating insoluble in alcohol and extending continuously over both the wire and the bottom of the cork, substantially as specified.

No. 37,935. Axle Bearing. (*Coussinet d'essieu.*)

Samuel Stephen Arnold, Toronto, Ontario, Canada, 9th December, 1891; 5 years.

Claim.—1st. A collar B, formed on the axle A, and cupped or recessed to receive the hub D, formed on the end of the journal box C, hard balls E, placed in the annular recess formed in the hub D, in combination with a cupped nut G, screwed onto the end of the axle A, and having a projection a, to complete the annular closed recess formed between the cupped end of the journal box C, and the said nut into which recess the hard balls F are inserted, substantially as and for the purpose specified. 2d. A journal box C, having a cupped end close to the cupped nut G, the annular closed recess formed between the two being filled with hard balls F, in combination with a cap H, screwed onto the end of the axle A, to overlap the end of the journal box C, and butt against the nut G, substantially as and for the purpose specified. 3rd. A journal box having its end cut, a nut screwed onto the axle of the said journal box

and cut to form with the cupped end of the journal box, an annular recess for the reception of hard balls by which the end of the journal box is supported, a washer fitting onto the screwed end of the axle so that it cannot revolve thereof, and a nut or cap designed to jamb the washer against the inner cupped nut, substantially as and for the purpose specified.

No. 37,936. Washing Machine.

(*Machine à blanchir.*)

Samuel Hawkins, St. Louis, Missouri, U.S.A., 9th December, 1891; 5 years.

Claim.—1st. In a washing-machine, the combination, with a body, of a flexible bottom, cleats on said flexible bottom, and a rocking rubber mounted in the body, substantially as set forth. 2nd. In a washing-machine, the combination, with a body, of a flexible bottom composed of a series of corrugated strips held together by means of flexible straps, cleats on the under side of the corrugated strips, and a rocking rubber mounted in the body, substantially as set forth.

No. 37,937. Horse Collar. (*Collier de cheval.*)

Charles Henry Nix, Uxbridge, Ontario, Canada, 10th December, 1891; 5 years.

Claim.—1st. In a horse collar, the combination with the leather collar A, of the continuous metal rod B secured to the front edge of the collar A by the strip of leather E, the said collar being provided with a suitable lining and means for securing the upper edges, substantially as set forth. 2nd. A stiffening rod for horse collars consisting of upwardly converging sides, connected at their lower ends by a segmental curve, a loop or bulge formed in the centre or lowest portion of this curve, and the upper ends of the converging sides being bent rearwardly, substantially as set forth.

No. 37,938. Boot for Treating Contracted Feet in Horses. (*Botte pour le traitement des pieds de chevaux.*)

Edward Charles Crevier, Peterborough, Ontario, Canada, 10th December, 1891; 5 years.

Claim.—1st. The convex metal shoe A, substantially as and for the purpose hereinbefore set forth. 2nd. The combination with the metal shoe A of the boot D, substantially as and for the purpose hereinbefore set forth.

No. 37,939. Signal Apparatus.

(*Appareil de signal*)

Michael Campbell, Boston, Massachusetts, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. The case, the double bellows E, E', the elbow-levers attached thereto and connected at their lower ends, the eccentric intermediate said levers to actuate them alternately, the shaft F, and the storage-bellows, combined with the horn, substantially as described. 2nd. The case, the bellows E, E', its actuating devices, and the storage-bellows B, combined with the fog-horn having one end perforated, an air-inlet and a cut-off valve in said horn adjacent to the air-inlet and perforated end, movement of the valve beyond the inlet allowing the air to escape through the perforations, and opposite movement of said valve permitting the horn to emit sound, substantially as described. 3rd. The case, the double bellows E, E', and actuating devices, the elbow-levers e, e', pivotally attached to said bellows at one end and connected at their lower ends, the actuating-shaft, the self-oiling eccentric fast thereon, composed of the disks, and the ring held between and of less diameter than the disks, the levers e, e' being extended between said disks on opposite sides of and bearing against the ring, combined with the storage-bellows and the attached horn, substantially as described.

No. 37,940. Portable Box for Shattling.

(*Botte portative pour arbres de couche*)

Enoch Sawyer and Hyrum Sawyer, both of Granite, Montana, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. The combination of the seat or pillow-block having a semi-cylindrical recess concentric with the shaft to be supported, the semi-cylindrical boxing fitted entirely within and having complete bearing in said recess and capable of being rotated therein around the axis of the shaft supported in said boxing without removing the shaft, a cover secured to the seat or pillow-block and forming a bearing for the upper half of the shaft, and set-screws in the side walls of the pillow-block adapted to engage the recesses in the sides of the boxing and lock the latter against rotation, whereby the weight of the boxing and shaft is distributed to the seat or pillow-block and is not borne by the set-screws, substantially as and for the purpose set forth. 2nd. The combination of the pillow-block having a segmental recess and provided with vertical slots extending through the uprights forming part of the side walls of said recess, the boxing mounted in the latter and provided with recesses at its upper inner edges, the box-cover having downwardly-extending flanges to fit in said recesses and provided with outwardly-extending wings having vertical perforations, and the connecting-bolts mounted pivotally in the base of the pillow-block and extending upwardly in the latter and through the wings of the box-top, substantially as and for the purpose herein set forth. 3rd. The combination of the base or pillow-block having a semi-cylindrical recess and provided with vertical slots extending through uprights forming part of the side walls of said recess, the yoke the arms of which are extended transversely through said slots and through the eyes of bolts seated therein, the split keys mounted in slots at the outer ends of the arms of said yoke, the boxing seated in the recesses of the pillow-block, and the boxing having slots for the passage of the upper ends of the connecting-bolts, substantially as and for the purpose herein set forth.

No. 37,941. Door Securer. (Arrête-porte.)

Henry W. Chase, Wittenburg, Wisconsin, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. A door-securer comprising a plate provided at its lower end with a lip adapted to fit in the crack at the bottom of the door, a lever having one end fulcrumed on the plate, and a brace having its outer end adapted to engage the floor and having its inner end pivoted to the lever, substantially as described. 2nd. A door-securer comprising a plate provided at one end with a lip and having longitudinal flanges, a lever having a longitudinal opening and having one end pivoted between said flanges, and a brace adapted to engage the floor and having one end pivoted in the opening of the lever, substantially as described.

No. 37,942. Machine for Holding Lasts.

(Machine pour tenir les formes.)

John Grant, Windsor, Ontario, Canada, 10th December, 1891; 5 years.

Claim.—1st. An improvement in machines for supporting lasts, consisting of the heel supporting arm K, the adjustable toe supporter, and the spring strained holding strap, operating together to hold the last firmly as described. 2nd. In combination with a last support, a removable block of wood K, to which the upper of the shoe may be temporarily fastened as described.

No. 37,943. Horse Shoe. (Fer à cheval.)

Arthur Bissonnette, Montreal, Quebec, Canada, 10th December, 1891; 5 years.

Revené.—1o. Dans un fer chirurgical, le ressort d'expansion A, B, C, tel que décrit et pour les fins indiquées. 2o. Dans un fer chirurgical le mode d'insertion et de fixation de ce ressort entre le sabot et le fer en e, f, et retenu par les points B, C, dans la corne du sabot tel que décrit et pour les fins indiquées.

No. 37,944. Combined Grading, Separating and Dust Collecting Machine.

(Appareil de régatage, émolteur et aspirateur de poussière combinés.)

Barnard and Leas Manufacturing Company, (assignees of Charles A. Barnard), all of Moline, Illinois, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. The combination of the hopper, the vertical air trunk beside the same, the dust chamber below the trunk, the settling chamber above and to one side thereof communicating with the dust chamber through said trunk, and the fan chamber communicating with the settling and dust chambers, a trough in the dust chamber for receiving the material falling through the trunk, and a fan, all substantially as specified. 2nd. The combination of the air trunk, the dust chamber below the same communicating therewith, a settling chamber communicating with said trunk and having a receiving bin at its end opposite the trunk, and a regulating valve at top of said bin, and a fan chamber and fan for creating an endless air current through the dust chamber, trunk, and settling chamber, substantially as described. 3rd. The combination of the settling chamber, the bin below the bottom thereof, the traveling brushes in the bottom of the chamber, and the series of regulating valves in the mouth of the bin forming part of the floor of the chamber, with the dust chamber, fan chamber, fan and air trunk, substantially as described. 4th. The combination of the hopper, the vertical air trunk beside the same, the dust settling chamber below the trunk, the settling chamber above and to one side thereof communicating with the dust chamber through said trunk, a receiving bin at the end of said settling chamber, a valve at the top thereof, a second dust chamber below the settling chamber, a fan chamber communicating with both dust chambers, and means for removing the matters collected in the chambers and bin, substantially as specified. 5th. In a combined grader separator and dust collector, the vertical air trunk, a dust chamber below the same, a trough in said chamber adapted to receive material falling through said trunk, a settling chamber above and to one side of the trunk, communicating therewith, a receiving bin below said chamber, the valves in the top thereof forming part of the floor of said chamber, a second dust chamber below said bin communicating with the settling chamber, a fan chamber communicating with both dust chambers, and a fan therein, substantially as set forth. 6th. In a combined purifier, grader and dust collector, the hopper, separating trunk beside the same, the dust chamber below the trunk, the receiving trough therein, the settling chamber above and to one side of said trunk, a pair of bins at the opposite end of and below said settling chamber and receiving material deposited therein, the valves for said bins, a second dust collecting chamber below said bins communicating with said settling chamber, the fan chamber communicating with both dust chambers, the fan, and means for removing deposited matters from the chambers, bins and trough, all substantially as and for the purpose described.

No. 37,945. Combined Separating, Grading and Dust Collecting Machine.

(Appareil de régatage, émolteur et aspirateur de poussière combinés.)

Barnard and Leas Manufacturing Company, (assignees of Herman A. Barnard and Charles A. Barnard), all of Moline, Illinois, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. In a combined middlings purifier, grader and dust collector, the combination of a separating device having a series of air passages across which the material must pass, means for dis-

charging the purified material collected in it, a settling chamber for collecting the lighter middlings blown out in the process of purifying, and two dust settling chambers each provided with devices for discharging the material deposited therein, with a fan and mechanism for imparting motion thereto, substantially as described. 2nd. The combination in a separator and dust collector combined of an air blast separating device and two dust chambers communicating with said device, for collecting the dust drawn up by the air current with a secondary air passage connecting the two dust chambers, and means for creating a circulation of air in said passages whereby a part of the dust laden air can be returned to the first dust chamber and made to pass through both chambers again, substantially as described. 3rd. The combination of the hopper, inclined boards below the same upon which the material delivered from the hopper falls, and a receiving trough for the material, a deposit chamber above the said boards, two dust collecting chambers below said deposit chamber and hopper respectively, a fan chamber communicating with said dust chamber, and a fan, whereby a continuous air current is created through the said chambers and between said boards, with conveyors for removing the material from the said receiving trough, deposit chamber, and dust chambers, substantially as described. 4th. The combination in a combined purifier, separator, and dust collector, of two dust collecting chambers, a fan chamber communicating with said chambers, a series of air blast passages above one dust chamber through which the material is passed to be cleaned, a deposit chamber above said passages communicating with the other chamber, and a fan for creating a continuous current through said chambers and passages, substantially as described, with an air passage leading from one dust chamber to the other, whereby a second air current is created in the large dust chamber below the fan, substantially as described. 5th. In a combined purifying, separating and dust collecting machine, the combination of a hopper, inclined boards e, C, below the hopper, the trough H, and conveyor H, the dust collecting chamber F, below said boards and trough, the brushes a, in chamber F, the deposit chamber D, at top of the machine communicating with chamber F, the conveyor trough J, and conveyor J, and brushes b, and the dust collecting chamber E, below chamber D, and communicating therewith and extending under chamber F, and communicating therewith through its bottom, and the trough and fan chamber communicating with chambers F, and E, and adapted to create continuous air currents through the machine, and the deflecting partition O, in chamber E, substantially as specified. 6th. In an endless air current separating machine, having a continuous air passage, a separating device, a fan chamber, one or more settling chambers, each chamber being flat bottomed and provided with both a scraper for continuously cleaning the bottom and a conveyor for removing the material collected by the scrapers, in combination with a fan and mechanism for imparting motion to said fan, scrapers and conveyors, whereby larger settling chambers are obtained, the dust more effectually settled, and the air in said air passage made more free of dust before it again enters the separating device. 7th. In a separator and dust collector the combination of an air blast separating device, a flat bottomed settling chamber below the same, a second flat bottomed settling chamber indirectly communicating with the first chamber through said air blast device and through a fan chamber, with the conveyors for removing collected materials from said chambers and traveling scrapers or brushes for sweeping the collected matters off the bottoms of said settling chambers to the conveyors, substantially as described. 8th. In an endless closed air current dust collecting machine, the combination of a fan chamber and fan, and a dust chamber having substantially vertical walls and large flat surfaced bottom, with traveling scrapers or brushes adapted to sweep the collected material off the bottom of the dust chamber, and mechanism substantially as described for laterally moving said scrapers or brushes over the bottom of the dust chamber, substantially as set forth.

No. 37,946. Current Indicator.

(Indicateur de courant.)

Reliance Electric Manufacturing Company, Waterford, Ontario, Canada, (assignees of Frank Bankson Rae, Detroit, Michigan, U.S.A.,) 10th December, 1891; 5 years.

Claim.—1st. A current indicator consisting of a magnet, the coils of which are included in the circuit to be measured, a tapering core piece for the magnet, and a pivoted armature embracing the tapering core piece and carrying a pointer, substantially as described. 2nd. A current indicator consisting of an electro-magnet, the coils of which are included in the circuit to be measured, a semi-circular core piece for said magnet, tapering toward its extremity, and an armature having a ring embracing the tapering core piece and carrying an indicating point, substantially as described. 3rd. A current indicator consisting of an electro-magnet, the coils of which are included in the circuit to be measured, a semi-circular core-piece tapering from its base to its free end, a plate connected to the base and extending toward the free end of the core piece, an armature pivoted to the plate and carrying a ring shaped piece of soft iron embracing the core piece, and an indicator attached thereto, substantially as described. 4th. A current indicator consisting of an electro-magnet, the coils of which are in the circuit to be measured, a semi-circular core piece gradually tapering toward its free end, a soft iron plate secured to the base of the core, adjacent to the coils, an armature pivoted in said soft iron plate, a ring of soft iron secured to the armature and embracing the free end of the core, a pointer secured to the ring, and a segmental scale for the pointer, substantially as described.

No. 37,947. Hand Harrow or Rake.

(Herse à main ou rateau.)

Harry Daniel McConn, Fort Madison, Iowa, U.S.A., 10th December, 1891; 5 years.

Claim.—1st. A rake or hand harrow consisting of a handle carrying a cross bar, pivoted levers carried upon the cross bar and adapt-

ed to be clamped in any desired position, and teeth secured to said levers, substantially as described. 2nd. In combination with the handle and cross bar of a rake or hand barrow, curved or semi-circular levers pivoted upon said cross bar and teeth rigidly secured thereto, and means for adjustably securing the free ends of the levers, substantially as described. 3rd. In combination, the cross bar, the curved or angular brace pivoted thereto carrying the shank for the handle, curved levers pivoted upon the cross bar having their free ends adjustably connected to the cross bar, and teeth rigidly secured to the levers, substantially as described. 4th. In combination with the handle and cross bar, the curved levers pivoted upon said cross bar having teeth rigidly secured thereon, means for adjustably connecting the free ends of the levers with the cross bar, consisting of a series of holes in the levers aligning with openings in the cross bar, and bolts passing through the aligning openings and provided with a thumb nut, substantially as described.

No. 37,948. Wrench. (*Clé à écrou.*)

James Wilkes and Edward Albert Robinson, both of South St. Paul, Minnesota, U.S.A., 11th December, 1891; 5 years.

Claim.—1st. The combination, with a wrench having a fixed and movable jaw and a screw for operating the movable jaw, having a transversely perforated head, of a holder by which the wrench is attached to a bench or other support, and a removable pin adapted to turn said screw, substantially as and for the purposes set forth. 2nd. The combination, with a monkey wrench, the adjusting screw of which has a transverse hole or socket, of a holder for attaching the wrench to a bench or other support, and a pin adapted to be inserted in the hole or socket in said screw, substantially as and for the purposes set forth. 3rd. The combination, with a wrench having a movable jaw, a screw for operating said jaw, having a transverse aperture for the reception of a pin or handle, of a holder formed with two ears to receive the fixed jaw of the wrench between them, and a clamp for attaching said holder to a bench or other suitable support, one of said ears being provided with a screw for securing the wrench in said holder, substantially as and for the purposes set forth.

No. 37,949. Axle Lubricator. (*Boîte à graisse.*)

James J. Stever, Owosso, Michigan, U. S. A., 11th December, 1891, 5 years.

Claim.—1st. In a car axle oiler, the combination with the frame, of a spring actuated arm hinged thereto, a bearing plate pivoted on said arm and wicking on said plate, substantially as described. 2nd. In a car axle oiler, the combination with the frame, of a spring actuated arm hinged thereto at one end, the upward extension at the other end, a bearing plate on said arm and wicking on said plate, substantially as described. 3rd. In a car axle oiler, the combination with the frame, of a spring actuated arm hinged thereto at one end, the upward extension at the other end, a bearing plate centrally pivoted to said arm and the wicking on said plate, substantially as described. 4th. In a car axle lubricator, independent frames located on opposite sides of the axle carrying spring actuated arms, and held in position by the arms and bearings on the arms, substantially as described. 5th. In a car axle oiler, a bearing plate provided with wick supporting wearing faces adapted to bear against the journal, and passing through the wicking, substantially as described. 6th. In a car axle oiler, the combination with the frame, of a spring actuating arm hinged thereto, a bearing plate on said arm, wearing faces on and between the edges of said bearing adapted to bear against the journal, and the wicking on said bearing plate, substantially as described. 7th. In a car axle oiler, the combination with a bearing plate carrying the wicking, of a side lug or lugs bearing against the journal to limit the spread of the oil, substantially as described. 8th. In a car axle oiler, the combination with spring actuated bearing plate carrying the wicking of the curved lugs, H^1 , on each side thereof, bearing against the journal to limit the spread of the oil, substantially as described. 9th. In a car axle oiler, the combination with the flat frame, of lesser width than the axle box, of a curved spring arm arranged above and hinged thereto, and carrying a detachable bearing plate and a wicking, the two parts adapted to be folded together, substantially as described. 10th. In a car axle lubricator, independent frames located on opposite sides of the axle carrying spring actuated arms and curved bearings pivoted on the arms, substantially as described.

No. 37,950. Shingle Jointing Machine.

(*Machine à dresser le bardeau.*)

John Fisher, Woodstock, and Frederic P. Thompson, Frederickton, both in New Brunswick, Canada, 12th December, 1891; 5 years.

Claim.—The combination in a shingle jointing machine, of the saw arbor C, provided with a friction wheel E, and the driving shaft F, preferably at right angles to said arbor, and carrying a belt pulley H, and a friction wheel J, engaging with the friction wheel E.

No. 37,951. Cash Indicator and Register.

(*Indicateur et registre de monnaie.*)

John Sharpe and Robert Harrison Reid, both of Toronto, Ontario, Canada, 12th December, 1891; 5 years.

Claim.—1st. The combination of the registering discs, the ratchet sleeves geared thereto, the finger keys and ratchet bars to partly rotate the sleeves on one stroke of the ratchet bars and the vertical rods containing the tablets Y, at their upper ends supported in their normal position in guide bars and designed to be moved upwardly by the upward throw of the ratchet bars operated from the finger keys, as and for the purpose specified. 2nd. The combination of the

ratchet sleeves, the finger keys and ratchet bars to partly rotate the sleeves on one stroke of the ratchet bars, the vertical rods containing the tablets Y, at their upper ends supported in their normal position in guide bars and designed to be moved upwardly by the upper throw of the ratchet bars operated from the finger keys, the pins secured in each ratchet bar and extending rearwardly from the same, the detent secured to the rod R, and designed to come in contact with the swinging dog z^2 , and thereby throw the swinging frame Z, clear in order to permit of the passage of each pin J^3 , as and for the purpose specified. 3rd. The combination of the ratchet bars operated as described, the vertical rods containing the tablets on the same and having pins J^3 , the detent J, on the shaft R, designed to engage with the swinging spring dog z^2 , rigidly held against the shoulder z^3 , so that the rearward movement of the detent J, will bring the frame Z, with its cross bar z^2 , rearwardly, as and for the purpose specified. 4th. The combination of the ratchet bars operated as described, and supporting the vertical rod containing the pin J^3 , the cross bar z^2 , of the frame Z, supporting the said pin and the spring z^1 , designed to bring the swinging frame Z, and consequently the cross bar z^2 , forwardly beneath the pin J^3 , as and for the purpose specified. 5th. The combination of the registering discs, the ratchet sleeves geared thereto, the finger keys and ratchet bars to partly rotate the sleeves on one stroke of the ratchet bars, the carrying plate loosely supported on the shaft and held in position by the jaw-shaped end of the goose-neck arm of the lever c, between each adjacent ratchet sleeve and the upper notch of the spring catch, which is pivoted on the intermediate standard plate, and the spring dog E, pivoted on the carrying plate and designed to move the adjacent carrying sleeve forward the space of one tooth, as and for the purpose specified. 6th. The combination of the registering discs, the ratchet sleeve geared thereto, the finger keys and ratchet bars to partly rotate the sleeves on one stroke of the ratchet bars, the carrying plate loosely supported on the shaft and held in position by the jaw-shaped end of the goose-neck arm of the lever c, between each adjacent ratchet, the upper notch of the spring catch, which is pivoted on the intermediate standard plate, the spring dog E, pivoted on the carrying plate and designed to move the adjacent carrying sleeve forward the space of one tooth, the pins b^2 , on the gear wheel adjacent to the carrying plate designed to engage with the pin b^1 , on the catch b, and in passing it to raise the said catch, and the spiral spring d, attached to the lower end of the lever c, and designed to bring the goose-neck arm of the lever rearwardly and throw the dog-shaped end a^2 , into the lower notch of the catch b^2 , and the dog E, rearwardly, so as to engage with the next succeeding tooth, substantially as and for the purpose specified. 7th. The combination of the registering discs, the ratchet sleeves geared thereto, the finger keys and ratchet bars, to partly rotate the sleeves on one stroke of the ratchet bars, the carrying plate loosely supported on the shaft and held in position by the jaw-shaped end of the goose-neck arm of the lever c, between each adjacent ratchet sleeve the upper notch of the spring catch, which is pivoted on the intermediate standard plate, the spring dog E, pivoted on the carrying plate and designed to move the adjacent carrying sleeve forward the space of one tooth, the pins b^2 , on the gear wheel adjacent to the carrying plate designed to engage with the pin b^1 , on the catch b, and in passing it to raise the said catch, and the spiral spring d, attached to the lower end of the lever c, and designed to bring the goose-neck arm of the lever rearwardly and throw the dog-shaped end a^2 , into the lower notch of the catch b^2 , and the dog E, rearwardly so as to engage with the next succeeding tooth, the swinging dog pivoted on the lower end of one of the strips of the lever c, and provided with a stop c^1 , so as to enable its corresponding engaging arm extending from the shaft R, and receiving its upward movement from the tension of the spring r^2 , attached to the arm r^1 , on the outer end of the shaft R, to engage with the end of the swinging dog, and in passing it to throw the lower end of the lever forwardly so as to bring the carrying plate and dog to their normal positions, and the adjacent sleeve forward the space of one tooth, as and for the purpose specified. 8th. The combination of the carrying device, consisting of the carrying plate and catch b, and their operating mechanism of the pin a^2 , extending upwardly from the spindle a , and designed to be held by the spring V, attached at one end to the curved arm a^1 , of the arm a , and at the other end to the standard plates, so as to hold the pin a^2 , against the upper spindle a^3 , of the lever c, when the lid is open, and thereby hold the lever c, and the carrying plate A, stationary, as and for the purpose specified. 9th. The combination with the finger keys attached to and operating the ratchet bars and pivoted on the shaft P, supported in bearings in the outer standard plates, of the bar O, attached its outer end to the brackets o, secured to the shaft P, and having the upper end o^1 , against which the bottom ends of the levers Q, abut, the upper end of the levers Q, having a quadrant q, formed on them designed to engage with the quadrant r, on the shaft R, which has arms r^1 , extending rearwardly the rear end of the said arms being connected by the spiral springs r^2 , to the bottom of the standard plates, as and for the purpose specified. 10th. The combination with the finger keys attached to and operating the ratchet bars, and pivoted on the shaft P, supported in bearings in the outer standard plates, the bar O, attached at its outer ends to the brackets o, secured to the shaft P, and the pin t, at the outer end of one of the brackets, of the pivoted lever S, having a toe s, designed to be thrown above the pin t, by the bell crank T, which is tilted on its pivot by the engagement of the lower arm of the lever U, caused by the upward throw of its arm u^1 , by the spring V, when the lid is open, as and for the purpose specified. 11th. The combination with the finger keys of each bank having the rear arms I, of each finger key with a vertically elongated end I¹, of the discs X, supported in brackets on the downward projection fingers w, of the frame W, and the stop pins x, x^1 , at the outer end of the disc, as and for the purpose specified. 12th. The combination with the finger keys, the bracket o, pivoted lever Q, provided at its upper end with the quadrant q, to mesh with the quadrant r, on the shaft R, of the arm N¹, extending beneath and abutting the pin I¹, secured in the rearwardly projecting end of the stop arm I, rigidly secured to the shaft H¹, of the stop arms 8¹, 9¹, 10¹, 11¹, 13¹, and 14¹, also secured to the shaft H¹, all of the stop arms engaging with the projections 8, 9, 10, 11, 12, 13, and 14, on the discs 1, 2, 3, 4, 5, 6, 7, as and for the purpose speci-

fed. 13th. The combination with the finger keys, the brackets *o*, the pivoted lever *Q*, provided at its upper end with the quadrant *q*, arranged to mesh with the quadrant *r*, on the shaft *R*, the arm *N*, extending beneath and abutting the pin *l*, and the pin *l*², both of which are secured in the rearwardly projecting end of the stop arm *l*¹, rigidly secured to the shaft *H*, of the stop arms *8*¹, *9*¹, *10*¹, *11*¹, *13*¹, and *14*¹, also secured to the shaft *H*¹, all of the stop arms engaging with the projections *8*, *9*, *10*, *11*, *12*, *13*, and *14*, on the discs *1*, *2*, *3*, *4*, *5*, *6*, *7*, as and for the purpose specified. 14th. The combination with the stop arms *8*¹, *9*¹, *10*¹, *11*¹, *13*¹, and *14*¹, operated as described, and having enlarged ends *j*¹, designed to fill up the space between two succeeding projections *8*, *9*, *10*, *11*, *13*, and *14*, on the discs *1*, *2*, *3*, *4*, *6*, and *7*, of the stop arms *12*¹, loosely journaled on the shaft *H*¹, and having an enlarged end *j*¹, designed to fill up the space between two succeeding projections *12*, on the disc *5*, and pin *j*⁴, over which extends an arm *o*², projecting forwardly from the shaft *H*¹, as and for the purpose specified. 15th. The combination with the registering discs *1*, *2*, *3*, and *4*, of each bank connected to and operated from the finger keys by means of the ratchet bars, ratchet sleeves and trains of gearing as described, and the discs *5*, *6*, *7*, connected to and operated from the disc *4*, of the stop arms for holding the said discs in alignment, of the spiral spring *l*¹, connected to the shaft *H*¹, at one end and at the other to the shaft *J*, as and for the purpose specified. 16th. The combination with the registering discs *1*, *2*, *3*, and *4*, operated from the finger keys by means of two succeeding projections in each disc as described, of the stop arms *8*¹, *9*¹, *10*¹, *11*¹, having enlarged ends *J*¹, to fit between two succeeding projections in each disc and the downwardly projecting supplemental arms *J*², attached to or forming part of the said arms, and arranged as and for the purpose specified. 17th. The combination with the discs *1*, *2*, *3*, and *4*, operated as described, and having projections *8*, *9*, *10*, and *11*, of the stop arms *8*¹, *9*¹, *10*¹, *11*¹, and the disc *5*, having a stop arm *l*², secured loosely on the shaft *H*¹, and the projecting arm *o*², extending over the pin *j*⁴, as and for the purpose specified. 18th. The registering disc *5*, provided with projections *12*, in combination with the stop arm *l*², with the end *J*¹, and tail *l*², and the pin *J*⁴, extending beneath the projecting arm *o*², secured on the shaft *H*¹, as and for the purpose specified. 19th. The combination with the disc *4*, operated as described, of the disc *5*, having a series of ten pins projecting from its face next the disc *4*, and the catch *m*¹, pivoted on the face of the disc *4*, held in position by the spring *m*², and designed to rotate over the periphery of the disc *M*¹, which has a notch *m*, cut out of its periphery, as and for the purpose specified. 20th. The combination with the disc *4*, operated from the finger key through the train of gearing as described, the catch *m*¹, secured and pivoted on the face of the disc *4*, held in position by the spring *m*², and designed to engage with the pin *N*³, during the period the said catch is in the notch *m*, of the disc *M*¹, secured to the shaft *D*, of the discs *5*, *6*, and *7*, connected by the pins *N*³, and catch *m*¹, and operating successively in the order in which they are placed on the shaft, as and for the purpose specified. 21st. The discs *M*¹, secured in the hollow shaft *D*, in proximity to the faces of the discs *4*, *5*, and *6*, and provided with notches *m*, in combination with the quadrants *m*³, secured in the spindle *m*⁴, which extends through the hollow shaft *D*, to the outer end of the disc and has a turning knob *n*², secured at its outer end, as and for the purpose specified. 22nd. The discs *M*¹, secured to the hollow shaft *D*, in proximity to the faces of the discs *4*, *5*, and *6*, and provided with notches *m*, in combination with the quadrants *m*³, secured in the spindle *m*⁴, the turning knob *n*², the slot *n*⁶, made in the end of the spindle *m*⁴, and the pin *n*⁵, extending through the slot *n*⁶, and turning knob *n*², and the pin *n*⁵, designed to extend into the pin *n*⁵, in the end of the hollow shaft *D*, as and for the purpose specified. 23rd. The shaft *D*, provided with a turning knob *E*, a series of discs *1*, *2*, *3*, *4*, *5*, *6*, and *7*, having spring pins *f*, extending into a longitudinal groove *G*, cut in the shaft *D*, one side of which groove is radial and the other bevelled off to the shaft, as and for the purpose specified. 24th. The shaft *D*, provided with a turning knob *E*, a series of discs *1*, *2*, *3*, *4*, *5*, *6*, and *7*, having spring pins *f*, extending into a longitudinal groove *G*, cut in the shaft *D*, in combination with the supplemental groove or recess *g*¹, situated in the path of the spring pin *f*, and the disc *7*, designed to form a stop for the pin *f*, and thereby permit the disc *7*, to be only brought to the 9th digit, as and for the purpose specified. 25th. The shaft *D*, provided with a turning knob *E*, a series of discs *1*, *2*, *3*, *4*, *5*, *6*, and *7*, having spring pins *f*, extending into a longitudinal groove *G*, cut in the shaft *D*, in combination with the knob *E*, having a recess *E*², made in its hub designed to receive the engaging end of a spring catch *E*¹, pivoted on the standard plate, substantially as and for the purpose specified. 26th. The shaft *D*, provided with the turning knob *E*, a series of discs *1*, *2*, *3*, *4*, *5*, *6*, and *7*, having spring pins *f*, extending into a longitudinal groove *G*, cut in the shaft *D*, in combination with the turning knob *E*, secured in the end of the shaft *D*, and the bell crank *P*², the forward end of which is depressed by the lever *P*¹, so as to raise the arm *r*¹, and thereby relieve the arm *N*¹, on the shaft *R*, from its contact with the pin *l*¹, on the rearwardly projecting end *l*¹, as and for the purpose specified. 27th. The turning knob *n*², adjustably secured on the end of the shaft *m*⁴, by the pin *n*⁵, passing through the slot *n*⁶, the pin *n*⁵, designed to fit into the hole *n*⁶, in the end of the hollow shaft *D*, in combination with the arm *r*¹, projecting from the hub of the turning knob *n*², as and for the purpose specified. 28th. The discs *2* and *4*, provided with projections *9* and *11*, and supported on the shaft *D*, and operated as specified, in combination with the rocking detents *Z*² and *Z*³, held in their normal position by the spring *Z*¹, and designed to be brought into the path of the projections *9* and *11*, respectively by the arms *Z*² and *Z*³, extending from the shaft *R*, on the finger keys returning to their normal position, as and for the purpose specified. 29th. The turning knob *E*, secured in the end of the shaft *D*, the gear wheels *S*¹ and *S*², the pinions *T*¹ and *T*², and pin *O*, also secured to the shaft *D*, on the inner side of the standard plate, in combination with the gear wheels *Q*¹ and *Q*², and *Q*³, provided with spring tops *V*¹, and the registering discs *Q*⁴, *Q*⁵, and *Q*⁶, arranged adjacent to the gear wheels *Q*¹, *Q*², *Q*³, respectively on the supplemental shaft *R*¹, as and for the purpose specified. 30th. In combination with the registering discs *Q*¹, operated as specified, of the pin *W*², extending from the face of the registering disc *Q*¹, and designed to come into contact with the pin *W*¹, extending from the supplemental shaft *R*¹, as and

for the purpose specified. 31st. The registering disc *Q*¹, the pin *W*², extending from the face of the registering disc and the pin *W*¹, extending from the shaft *R*¹, in combination with the cap *Y*¹, designed to be secured on the end of the supplemental shaft *R*¹, which completely encloses the face of the registering disc, as and for the purpose specified.

No. 37,952. Medical and Surgical Case. (Trousse.)

William Bonnar, Mono Mills, Ontario, Canada, 12th December, 1891; 5 years.

Claim.—1st. The combination of the right-angled T-shaped lid *l*¹, *l*², *l*³, and the medical portion *6*, *6*¹, *9*, *10*, *12*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the right-angled T-shaped lid *l*¹, *l*², *l*³, and the surgical side *7*, *11*, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the central drawer *4*, *5*, with the medical and surgical divisions substantially as and for the purpose hereinbefore set forth.

No. 37,953. Electric Clock Winder. (Appareil pour monter les horloges électriques.)

James William Du Laney and Charles Franklyn Du Laney, both of Canton, Ohio, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. The combination, with an insulated escapement pallet, of an escapement wheel provided with a contact tooth arranged out of line with the rest of its teeth and included in the circuit with the said pallet, the remaining teeth of the escapement wheel being insulated from the pallet so that the circuit can only be completed through the said contact tooth, substantially as and for the purpose set forth. 2nd. The combination, with an insulated escapement pallet, of an escapement wheel provided with a contact tooth arranged out of line with the rest of its teeth, and insulating material interposed between the said contact tooth and the pallet, and permitting the said contact tooth to make the connection periodically with one end of the pallet, substantially as and for the purpose set forth. 3rd. The combination, with the winding-barrel shaft, and the ratchet wheel secured thereon, of the radius link, the pawl pivoted to the radius link, the check pawl, the electro magnet, the armature carried by a pivoted lever, the link pivoted to the said lever and to the said radius link, a battery, and a circuit making and breaking device attached to the escapement and operating periodically, substantially as and for the purpose set forth.

No. 37,954. Organ Action. (Jeu d'orgue.)

William Doherty, Clinton, Ontario, Canada, 12th December, 1891; 5 years.

Claim.—1st. An organ having swells hinged at the bottom, substantially as and for the purpose specified. 2nd. The swells, *A*, *B*, hinged at their bottom and provided each with an arm, *C*, in combination with the crank rod, *D*, rod *E*, and springs, substantially as and for the purpose specified. 3rd. The pin, *G*, connected at its lower end to the octave-coupler, and the lever, *H*, pivoted at *a*, and lying on top of the pin, *G*, in combination with the link *J*, pivoted to the lever, *H*, and to the stop, *I*, substantially as and for the purpose specified. 4th. The grand-organ swell, *P*, provided with an arm, *O*, which rests on the crank, *N*, formed on the rod, *M*, in combination with the rod, *K*, operated by a knee swell and connected to the crank, *L*, formed on the rod, *M*, substantially as and for the purpose specified. 5th. A pivoted lever, *R*, connected to the valve *V*, and arranged so that its lower end shall lie in contact with the spindle of the fan, *V*, in combination with the rod, *T*, and stop, *Q*, substantially as and for the purpose specified.

No. 37,955. Automatic Draft Regulator. (Régulateur du tirage automatique.)

Charles Dezag Howard, Syracuse, New York, U.S.A., 12th December, 1891; 5 years.

Claim.—In an automatic draft regulator, a thermometric bar having different expansible properties pivotally suspended in the room desired to be heated, in combination with intermediate connections between it and the draft regulating pistons, the draft regulating pistons, and an indicator hung loosely, connected to the thermometric bar, and pivoted upon and secured in the position at which it is set by the thumb-screw through it.

No. 37,956. Electrode for Storage Batteries. (Electrode pour les accumulateurs.)

Joseph Young Bradbury and Frank Julian Stone, both of Lowell, Massachusetts, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. An electrode for secondary batteries, comprising a plate of supporting material having lateral perforations and openings at intervals from said perforations through the faces of said plate, said perforations and openings being adapted for the reception of active material, and the faces of said plate being unbroken except by said openings, said openings and the closed spaces in each face alternating with each other like the different colored squares of a checker board, as and for the purpose specified. 2nd. An electrode for secondary batteries, comprising a plate of supporting material having lateral perforations and openings at intervals leading from said perforations through the opposite faces of said plate, said openings alternating with each other on the opposite faces of said plate, and said perforations and openings being for the reception of active material, as and for the purpose specified. 3rd. An electrode for secondary batteries, comprising a plate of supporting material having its opposite faces formed into alternate projections and de-

pressions for the receptino of active material, two opposite sides of each of said depressions being open, the laterally adjacent depressions opening into each other, as and for the purpose specified. 4th. An electrode for secondary batteries, comprising a plate consisting of strips of supporting material arranged edge to edge and each offset alternately in opposite directions for the reception of active material, as and for the purpose specified. 5th. An electrode for secondary batteries, consisting of a plate of supporting material having its opposite faces formed into alternate projections and depressions, two opposite sides of each of said depressions being open, the laterally adjacent depressions opening into each other, and pencils or bars of active material inserted in said depressions, as and for the purpose specified. 6th. An electrode for secondary batteries consisting of a plate made up of strips of supporting material arranged edge to edge and each offset alternately in opposite directions, and pencils or bars of active material inserted in said offsets, as and for the purpose specified.

No. 37,957. Vehicle Spring. (*Ressort de voiture.*)

Harry Rhule Raudenbush, Vicksburg, Pennsylvania, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. In a spring attachment for vehicles, transverse spring-carrying bars adapted to be placed on the upper sides of the axles and provided at each end with boxes, a series of posts within each box, coiled springs adapted to be placed over each post, perforated plates adapted to be placed over said springs and upon said posts, and body-supporting bars working in slots in said boxes and connecting the said perforated plates in pairs, substantially as set forth. 2nd. In a spring attachment for vehicles, transverse spring-carrying bars adapted to be placed on the upper sides of both axles of the vehicle and provided at each end with boxes, a series of circular posts mounted within said boxes, coiled springs adapted to be placed over said posts, perforated plates working over said springs and upon said posts, tops detachably secured over each box, and body-supporting bars working slots in each box and connecting the said perforated plates therein in pairs, substantially as set forth.

No. 37,958. Railway Frog Guard.

(*Garde rail de croisement de chemin de fer.*)

Alfred G. Campbell, Sherbrooke, Quebec, Canada, 12th December, 1891; 5 years.

Claim.—1st. As a new article of manufacture, the foot guard for railway frogs G, consisting of a piece or pieces of metal or other material fashioned to any required shape, and having a flat curved or warped surface, in combination with a truss or trusses so made as to fit in between and be held in position by the flanges of the rails, substantially as and for the purpose hereinbefore set forth. 2nd. The foot guard for railway frogs consisting of a piece or pieces of metal or other suitable material of required shape, and having a flat curved or warped surface, in combination with a truss or trusses so made and adapted as to fit in and be wedged between, and held in position by the rails or the flanges thereof, and in combination with the rails, substantially as and for the purpose hereinbefore set forth. 3rd. A bar or bars of metal or other suitable material U-shaped or perforated, in combination with a truss or trusses, and the rails and ties, as shown and described, substantially as and for the purpose hereinbefore set forth. 4th. A truss or trusses of metal or other suitable material so made and fashioned as to fit in and be wedged between and held in position by the rails and the flanges thereof, and to allow space for the free passage over said truss or trusses, or foot guard, of the car or engine wheels, and the flanges thereof, in combination with a piece of metal or other suitable material fashioned to any required shape and having a flat curved or warped surface, the whole as shown and described, substantially as and for the purpose hereinbefore set forth. 5th. A truss or trusses of metal or other suitable material made of any required thickness, connected or fastened together, if necessary, by any means, as an ordinary rod, bar or bolts, and having the upper surface or edges thereof so fashioned as to render it impossible for the foot of a person to be caught or held between the rails or the flanges thereof, and to allow free passage of the car or engine wheels and the flanges thereof, in combination with the rails, as described, substantially as and for the purpose hereinbefore set forth.

No. 37,959. Hydraulic Gravitating Mangers. (*Mangeoire hydrolique à gravitation.*)

Ethebert Wareham, Winnipeg, Manitoba, Canada, 12th December, 1891; 5 years.

Claim.—1st. The combination of lid B, lever H, chain F and pail E, as and for the purpose hereinbefore set forth. 2nd. The combination of tank N and tap M, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of tank N, bin P, and division G, substantially as and for the purpose hereinbefore set forth.

No. 37,960. Automatic Frisket for Hand Presses. (*Frisquette automatique pour presses à main.*)

Lorenzo Dow Clark, Fort Jones, California, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. The combination with a bed, of a tympan hinged thereto and provided at its hinged and distal ends with parallel gripper carrying shafts, connections between said shafts and an actuating mechanism connecting the lower or inner gripper shaft with the bed for automatically operating both gripper shafts by the single actuating mechanism by the movement of the tympan, substantially as set forth. 2nd. The combination with a bed, of the tympan

hinged thereto, parallel rocking gripper carrying shafts mounted on the distal and hinged ends of the tympan and connected together, a spring acting to close the grippers, and a crank and sliding link connection between the lower gripper shaft and the bed, for opening the grippers against the action of the spring, substantially as set forth. 3rd. In a device of the character described, the combination, with a bed and a shoe attached to the bed and provided with a cam surface, of a tympan hinged to the bed, an upper and a lower shaft journaled on the tympan, rods connecting the said shafts, a crank disk secured to the lower shaft and provided with a wrist pin adapted to engage the cam surface of the shoe, a link attached to the wrist pin and held to slide in the shoe, grippers attached to the shafts, a crank arm secured to the upper tympan shaft, and a spring attached to the tympan and connected with the said crank arm, substantially as and for the purpose set forth. 4th. In a device of the character described, the combination, with a bed, an adjustable shoe provided with a cam surface and attached to the bed, and a tympan hinged to the bed, of an upper and lower shaft journaled upon the inner face of the tympan, grippers attached to each shaft, head blocks attached to corresponding ends of the shafts, connecting rods uniting the said head blocks, a disk attached to one end of the lower shafts, a wrist pin carried by the disk and engaging with the cam surface of the shoe, a link attached to the wrist pin and having movement at one end in the shoe, a crank arm attached to the upper shaft, and a spring secured at one end to the tympan, the free end of which spring is connected with the crank arm, as and for the purpose set forth. 5th. The combination with the bed and the hinged tympan, of a rocking gripper shaft mounted on the tympan parallel with its axis, and provided with a crank and wrist pin, a cam on the bed in the path of the wrist pin, and a link pivotally connected at one end with the wrist pin and having a sliding connection at its free end with the bed, substantially as set forth. 6th. The combination with the bed and the hinged tympan, of two gripper carrying shafts mounted on the tympan parallel with its axis, and an actuating mechanism connecting the grippers and bed and automatically operated by the movement of the tympan, substantially as set forth.

No. 37,961. Process of Making Moyashi Koji, Moto and Fermented Alcoholic Liquors. (*Procédé de fabrication de moyashi koji, moto et de liqueurs alcooliques fermentées.*)

Jokiochi Takamine, Chicago, Illinois, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. The hereinbefore described composition of matter, to be used as an artificial food and fertilizer, of Moyashi or ferment cells consisting of ammonium salts, potassium salts, magnesium salts, calcium salts and phosphates in the proportions specified, all substantially as set forth. 2nd. The hereinbefore described composition of matter to be used as an artificial food and fertilizer of Moyashi or ferment cells, consisting of ammonium salts, potassium salts, magnesium salts, and phosphates combined in such proportions as to contain their principal components in about the following quantities, viz:—

25 to 35 parts of potassium oxide	(K g O)
10 to 30 parts of calcium oxide	(Ca O)
10 to 30 parts of magnesium oxide	(M g O)
50 to 70 parts of phosphoric acid	(P g O 5)
2 to 10 parts of ammonia or nitrogen	(N H 3 or N)

all substantially as set forth. 3rd. The process of growing or developing Moyashi or ferment cells with artificial supplies of its proper food which consists (1) in impregnating or saturating the natural grain with an artificial supply of the proper food of Moyashi or ferment cells (2) scattering or planting the spores of Moyashi or ferment cells upon the grain thus impregnated or saturated, (3) subjecting the grain and spores thus treated to the proper and even temperature for the growth and development of said Moyashi or ferment cells, until the grains are covered with said Moyashi or ferment cells, and the latter have reached their maturity, (4) drying said grain and coating of Moyashi or ferment cells, and removing and separating the Moyashi or ferment cells from the grain by agitation and sifting, all substantially as set forth. 4th. The process of growing or developing Moyashi or ferment cells with artificial supplies of its proper food which consists (1) in impregnating or saturating the natural grain with an artificial supply of a proper food composed as follows: Ammonium salts, potassium salts, magnesium salts, calcium salts and phosphates, said ingredients being combined in such proportions as to contain their principal components in about the following quantities:

25 to 35 parts of potassium oxide	(K 20)
10 to 30 parts of calcium oxide	(Ca O)
10 to 30 parts of magnesium oxide	(M g O)
50 to 70 parts of phosphoric acid	(P 2 O 5)
2 to 10 parts of ammonia or nitrogen	(N H 3 or N)

(2) scattering or planting spores of Moyashi or ferment cells upon the grain thus impregnated or saturated, (3) subjecting said grain and spores thus treated to a proper and even temperature for the growth and development of Moyashi or ferment cells until the grains are covered with said Moyashi or ferment cells and the latter have reached their maturity, (4) drying said grain and its growth of Moyashi or ferment cells, and removing and separating the latter from said grain by agitation and sifting, substantially as described. 5th. The process of growing or developing Moyashi or ferment cells with artificial supplies of its proper food which consists (1) in the impregnating or saturating of the natural grain with an artificial supply of the proper food of Moyashi or ferment cells, (2) scattering or planting the spores of Moyashi or ferment cells upon the grain thus impregnated or saturated, (3) subjecting said grain and spores thus treated to a proper and even temperature for the growth and development of said Moyashi or ferment cells until the grains are covered with said Moyashi or ferment cells, and the latter have

reached their maturity, (4) drying said grain and coating of *Moyashi* or ferment cells and removing and separating the *Moyashi* or ferment cells from the grain by agitation and sifting, then again drying the *Moyashi* or ferment cells and mixing with it an inert hygroscopic substance and sealing it in air tight vessels, all substantially as described. 6th. The process of preserving *Moyashi* or ferment cells which consists in thoroughly drying the same after they have been separated from the grain into a fine powder, mixing the same with any inert hygroscopic substance, and sealing in air tight vessels, all substantially as described. 7th. As an article of commerce, *Moyashi* or ferment cells in the form of a dry green powder composed of dormant ferment cells, substantially as described. 8th. As an article of commerce, *Moyashi* or ferment cells in the form of a dry powder composed of dormant vital cells mixed with an inert hygroscopic material, and sealed in air tight vessels, all substantially as described. 9th. The process of producing *Moto*, which consists in mixing and combining *Koji* with gelatinized starch, or gelatinized starch and sugars, or with malt, gelatinized starch, or malt, gelatinized starch and sugars, or with malt, or with malt and sugars; or with any combination of one or all of said ingredients, then grinding or crushing said ingredients into a homogenous soft paste, with the addition of water or malt extract, and completing the mixing of the ingredients, and agitation of the mixture by stirring until the whole has been thoroughly and repeatedly in all its parts exposed to the air, then placing the mass in a temperature of from about 25° to 40° Centigrade and agitating the same by frequent stirrings until it acquires a proper condition of maturity, all substantially as described. 10th. The process of producing *Moto* which consists, (1) in mixing with a mass of broken and comminuted grain or starch containing substances which has been steamed until the starchy matter has been gelatinized by the breaking of the starch cells, about one fifty thousandth part in weight of pure *Moyashi*, and then thoroughly mixing the same throughout the mass of comminuted grain, then placing and keeping the mass in a temperature of about 20° to 40° Centigrade until the *Koji* ferment cells is matured, (2) mixing this mass containing the matured *Koji* ferment cells with gelatinized starch, or with malt, gelatinized starch and sugars, or with malt, or with malt and sugars, or with any combination of these ingredients in the proportions of two parts of the mass containing the *Koji* ferment cells to three, four or five parts of the other ingredients or the mixture of the other ingredients by weight, then grinding or crushing the mass into a homogenous soft paste with the addition of water or malt extract, and completing the mixing of the ingredients and the agitation of the mass by stirring until the whole of its parts have been thoroughly and repeatedly exposed to the air, then placing and keeping the same in a temperature of from about 20° to 40° Centigrade and agitating the same by frequent stirring until it acquires a proper condition of maturity, all substantially as described. 11th. As an article of commerce, *Moto*—a paste or liquid composed of water and alcohol with some residuum of gelatinized starch, sugars and fibre, and containing uniformly and fully throughout its entire mass active ferment cells, all substantially as described. 12th. As an article of commerce, *Moto*—a paste or liquid composed of water and alcohol with some residuum of gelatinized starch, sugars and fibre, and containing active ferment cells, said *Moto* being prepared from gelatinized starch, or gelatinized starch and sugar, or malt and gelatinized starch, or malt, gelatinized starch and sugars, or from any combination of one or all of said ingredients mixed with a mass of comminuted particles of grain or starchy substances in a gelatinized state, said mass of comminuted particles being first supplied with *Moyashi* and treated until it is permeated with fully developed *Koji* ferment cells, all substantially as described. 13th. The process of preparing and producing *Koji* which consists in mixing with a mass of broken and comminuted grain or starch-containing substances, which has been steamed until the starchy matter has been gelatinized by the breaking of the starch cells about one-fifty-thousandth part in weight of pure *Moyashi*, thoroughly mixing the same throughout the mass of comminuted grains then placing and keeping the mass in a temperature of about 20° to 40° Centigrade until the *Koji* ferment cells mature, all substantially as described. 14th. As an article of commerce, *Koji*—composed of comminuted particles of grain or starchy substances in a gelatinized state, the mass being covered and permeated with the *Koji* ferment cells growing upon and adhering to the surfaces of the comminuted particles, all substantially as described. 15th. The process of preparing and producing pure *Koji* which consists first in mixing with a mass of broken and comminuted grain or starch-containing substances which has been steamed until the starchy matter has been gelatinized by the breaking of the starch cells about one fifty-thousandth part in weight of pure *Moyashi* thoroughly mixing the same throughout the mass of comminuted grains, then placing and keeping the mass in a temperature of about 20° to 40° Centigrade until the *Koji* ferment cells are matured, (2) steeping this mass of comminuted particles with their *Koji* ferment cells in water for from three to twelve hours, according to the nature of the grain employed for its production at a temperature of not over 20° Centigrade, the proportion of water being about twice to three times the weight of the *Koji* mass employed, stirring the mass mechanically in the water until by attrition the *Koji* ferment cells are freed from the comminuted particles of grain and float and are carried in the water, then drawing off the water containing the pure *Koji* ferment cells, all substantially as described. 16th. As an article of commerce, a thin liquid paste consisting of water holding in suspension throughout all its parts *Koji* ferment cells, said water also holding in solution a slight percentage of gelatinized starch, all substantially as described. 17th. The process of making a fermentable wash or liquor, which consists in adding *Koji* to a liquor containing gelatinized starch and sugars, or gelatinized starch alone, whereby the starch is converted into sugar, all substantially as described. 18th. The process of making a fermentable wash or liquor which consists in adding *Koji* to a liquor containing gelatinized starch and sugars or gelatinized starch alone, to which malt and small grains have also been added, whereby the starch is converted into sugar, all substantially as described. 19th. The process of making a fermented liquor which consists in fermenting a fermentable wash or liquor by the addition of *moto*, or *moto* and yeast, or yeast, all substantially as described. 20th. The process of making a fermented liquor which con-

sists in adding a fermentable liquor prepared by the introduction of *Koji* to a ferment-containing liquor prepared by the introduction of *moto*, or *moto* and yeast, or yeast, the addition being made fractionally as the fermentation proceeds in order to keep the solution at the desired strength, all substantially as described. 21st. The process of making alcoholic liquor which consists in fermenting a fermentable wash or liquor by the introduction of *moto*, or *moto* and yeast or yeast and distilling the product, all substantially as described. 22nd. The process of making alcoholic liquor which consists in fermenting a fermentable wash or liquor prepared by the introduction of *Koji*, by adding it fractionally to a ferment-containing wash or liquor prepared by the introduction into a wash or liquor of *moto* or *moto* and yeast, or yeast, said addition to the ferment-containing liquor being made fractionally as the fermentation proceeds in order to keep the solution up to the desired strength, and distilling the product, all substantially as described. 23rd. The process of making a fermented liquor which consists in fermenting a fermentable wash or liquor which has been treated by the introduction of hops, scroched grain or similar material, by the addition thereto of *moto*, or *moto* and yeast, or yeast, then diluting the same to the required strength, all substantially as described.

No. 37,962. Composition for Artificial Food, etc. (*Composé pour aliments artificiels, etc.*)

Jokichi Takamine, Chicago, Illinois, U.S.A., 12th December, 1891; 5 years.

Claim.—1st. The process of growing, preparing and developing a fungus possessing diastic and fermenting properties or either of said properties, which consists (1) in impregnating or saturating the natural grain or other substances employed with an artificial supply of proper food for the growth of the fungus, composed as follows: 1. Ammonium salts, such as ammonium tartrate or ammonium acetate, or nitrogenous substances such as albumen or gelatine; 2. Potassium salts, preferably potassium sulphate or potassium phosphate; 3. Magnesium salts, preferably magnesium sulphate; 4. Calcium salts, preferably calcium sulphate or calcium phosphate; 5. Phosphates, preferably calcium or potassium phosphates; 6. Alkaline carbonate, preferably potassium carbonate. In the proportions specified; (2) steaming said rice or other substances either before or after the impregnation or saturation as above; (3) sowing or planting the seed of said fungus upon the grain or other substances thus impregnated or saturated; (4) subjecting said mass thus prepared and treated to a proper and even temperature and to manipulation for the growth and development of the fungus until the same has reached its maturity, substantially as and for the purpose set forth. 2nd. The process of preserving the matured seed of a fungus possessing diastic and fermenting properties or either of said properties, which consists in thoroughly drying the mass: (*Taka-Moyashi*), separating the matured seed therefrom by any means, such as sifting, again drying the seed, mixing said seed with an inert or with an inert and hygroscopic substance, and sealing in air tight vessels, substantially as and for the purpose set forth. 3rd. As an article of commerce, the seed of a fungus possessing the properties of producing diastic and fermenting properties or either of said properties when sown on suitable nourishing substances in the form of a dry yellowish green powder containing dormant vital ferment cells, substantially as and for the purpose set forth. 4th. As an article of commerce: *Taka-Moyashi* in the form of a mass of comminuted grain or other substance that has been impregnated or saturated with: 1. Ammonium salts, such as ammonium tartrate, ammonium acetate, or nitrogenous substances such as albumen or gelatine; 2. Potassium salts, preferably potassium sulphate or potassium phosphate; 3. Magnesium salts, preferably magnesium sulphate; 4. Calcium salts, preferably calcium sulphate or calcium phosphate; 5. Phosphates, preferably calcium or potassium phosphates; 6. Alkaline carbonate, preferably potassium carbonate, in the proportions specified, and which is thoroughly permeated with a growth of the matured fungus containing diastic and fermenting properties, or either of said properties, substantially as and for the purpose set forth. 5th. The herein described composition of matter to be used for fertilizing the cereals and other substances upon which mycelial fungi (mould fungi or hyphomycetes fungi) having the properties of producing disatase and ferment cells, or either of these properties alone, is grown and developed, consisting of: 1. Ammonium salts, such as ammonium tartrate, ammonium acetate, or nitrogenous substances such as albumen or gelatine; 2. Potassium salts, preferably potassium sulphate or potassium phosphate; 3rd. Magnesium salts, preferably magnesium sulphate; 4. Calcium salts, preferably calcium sulphate or calcium phosphate; 5. Phosphates, preferably calcium or potassium phosphates; 6. Alkaline carbonate, preferably potassium carbonate; in substantially the proportions specified. 6th. The process of preparing and making *Taka-Koji*, which consists in providing a mass of broken and comminuted grain or starch containing substances, or substances possessing the necessary ingredients for the growth of the fungus, steaming and heating the mass until the starchy matter present is gelatinized or the mass sterilized (unless the material employed in the mass has been previously sterilized), adding to the mass in proportion to the weight about one fifty-thousandth part in weight of the pure *Taka-Moyashi* or one thousandth part of the *Taka-Moyashi* or *Tane-Koji*, mixing the same thoroughly and subjecting the mass to the temperature and manipulations until the fungus properly develops and is cooled, substantially as shown. 7th. The process of preparing and making *Taka-Koji*, which consists in providing a mass of broken and comminuted grain, or a starch-containing substance, and substances possessing the necessary ingredients for the growth of the fungus, steaming and heating the mass until the starchy matter present has been gelatinized and the mass sterilized, adding to the mass in proportion to its weight about one fifty thousandth part in weight of pure *Taka-Moyashi*, or one thousandth part in weight of *Taka-Moyashi* or *Tane-Koji*, thoroughly mixing the entire mass and bedding up the same in a temperature not exceeding 40° C., after six hours again thoroughly mixing and bedding up the mass, at the

expiration of about ten to eighteen hours, during which the temperature should not be permitted to rise above 40° C., which is done by frequent turnings of the mass, dividing the mass into small portions, in which condition it remains for about five hours, when it is spread out into thin layers in a temperature not to exceed 40° C., for from twenty to sixty hours, until the fungus develops to a proper stage, then cooling down the mass to a temperature not exceeding 20° C., all substantially as shown. 8th. The process of preparing and making Taka-Koji, which consists in providing a mass of broken and comminuted grain or starch containing substances or substances containing the necessary ingredients for the growth of the fungus, steaming and heating the mass until the starchy matter present is gelatinized and the mass sterilized, adding to the mass in proportion to its weight about one fifty thousandth part in weight of pure Taka-Moyashi, or one, one thousandth part in weight of Taka-Moyashi or Tane-Koji, thoroughly mixing the entire mass and bedding up the same in a temperature not exceeding 40° C., after six hours again thoroughly mixing and bedding up the mass, at the expiration of about ten to eighteen hours spreading the mass on a preferably connected floor such as is used in growing malt, turning the mass over every two to four hours, and gradually thinning it out until it reaches a thickness of about two to four inches, taking care not to permit the temperature of the mass to rise above 40° C., and continuing this turning and thinning for from twenty to sixty hours until the fungus grows to a proper stage, all substantially as described. 9th. The process of preparing and making Taka-Koji, which consists in providing a mass of broken and comminuted grain or starch-containing substances, or substances possessing the necessary ingredients for the growth of the fungus, steaming and heating the mass until the starchy matter present is gelatinized and the mass sterilized (unless the material employed in the mass has been previously gelatinized or sterilized), adding to the mass in proportion to its weight about one fifty thousandth part in weight of pure Taka-Moyashi, or one, one thousandth part in weight of Taka-Moyashi or Tane-Koji, thoroughly mixing the entire mass, and subjecting it to the temperatures and manipulations until the fungus develops to its proper stage and is cooled down, then separating the seed or ferment cells of the fungus from the mass, or separating the ferment cells and diastase from the mass together, or separating the diastase and ferment cells from each other by filtration, all substantially as shown. 10th. As an article of commerce, Taka-Koji, consisting of a mass of broken and comminuted grain or starchy matter or other substances possessing the necessary ingredients for the growth of the fungus, having diastase or fermenting properties or both of these properties, the starchy matter, if any present, gelatinized and the mass sterilized, said mass being covered and permeated with the growth of said fungus or fungi growing upon and adhering to the surfaces of the comminuted particles of said mass, all substantially as shown. 11th. As an article of commerce, Taka-Koji, consisting of a mass of broken and comminuted grain or starchy matter or other substances possessing the necessary ingredients for the growth of a fungus having diastase or ferment properties, or both of said properties, the starchy matter, if any present, gelatinized and the mass sterilized, said mass being permeated with the diastase from the growth of the fungus, the seeds thereof being removed therefrom, all substantially as shown. 12th. As an article of commerce, Taka-Koji, a fine dry powder composed of the seeds or spores possessing fermenting power of fungi, possessing diastase or fermenting properties or both of said properties, being the product of said fungi grown upon cereals, starchy matter or other substances possessing the necessary ingredients for their growth, all substantially as described. 13th. The process of preparing and making Moto, which consists in adding to and mixing with any fermentable solution in the proportion of one hundred parts of sugar and twenty parts of Taka-Koji, or five parts of the ferment portion of Taka-Koji, and keeping the same at a temperature below 30° C., until the fermentation has changed the flavor of the mixture to an alcoholic taste, and the development and multiplication of the ferment cells have been effected, all substantially as described. 14th. The process of preparing and making Moto, which consists in (1) adding to a mash of cereals starch-containing substances, or other substances capable of conversion into sugars, cooked in about twice their own weight of water under pressure until the starch cells are opened and gelatinized, and then cooled down to about from 60° to 70° C., from five percentum to twenty percentum in weight of the cereals, &c. of the Taka-Koji either ground or unground, or of the diastase portion of the Taka-Koji alone either in a solid or liquid state, or of the ordinary Koji, ground or unground, and then thoroughly stirring the same for about one hour and until there is a thorough and complete conversion of starch into sugars, (2) continuing the agitation by stirring until the temperature of the mass is reduced to about 19° C., then adding thereto about the same proportion of Taka-Koji or ordinary Koji, ground or unground, or of the ferment portion of the Taka-Koji in solid or liquid state that was previously added, then allowing the mass to stand at a proper temperature until the flavor of the mass acquires an alcoholic taste and the development and multiplication of the ferment cells are effected, all substantially as described. 15th. The process of preparing and making Moto, which consists in (1) treating a mash of ground cereals, starch containing materials or other substances capable of conversion into sugars, cooked until the matter capable of being converted into sugars has been gelatinized, adding to the mass at a temperature of from 65° to 70° C. from five to twenty percentum in weight of the cooked mass of Taka-Koji, ground or unground, or of the diastase portion of the Taka-Koji in a solid or liquid state, or of ordinary Koji ground or unground, then stirring the mass for about one hour and until there is a thorough conversion of the starchy matter present into sugars, (2) continuing the agitation by stirring until the temperature is reduced to about 19° C., then again adding about the same proportion of Taka-Koji, or Koji ground or unground, in a solid or liquid form that was first added, then allowing the mass to stand at a proper temperature until the fermentation gives the mass an alcoholic flavor and the development and multiplication of the ferment cells are effected, all substantially as described. 16th. As an article of commerce, Moto, a liquid or thin paste composed principally of water and alcohol, with some slight residuum or traces of gelatinized starch sugars and fibre, and containing fully and uniformly

throughout its mass the active ferment cells possessing ferment properties or both ferment and diastase properties, all substantially as described. 17th. As an article of commerce, Moto, a liquid or thin paste composed principally of water and alcohol, with some slight residuum or traces of gelatinized starch sugars and fibre, and containing throughout its mass the active ferment cells first grown on aerobiotic fungi and other substances containing the required nutrient, and, secondly, developed and multiplied as anaerobiotic ferment cells in sugar solutions, all substantially as described. 18th. The process of making a fermentable wash or liquor which consists in adding to the mass or material to be converted in the proportions specified, the diastase portion of the Taka-Koji or of the ordinary Koji, at the temperature specified, and agitating the same, whereby the convertible material present is converted into sugar, substantially as described. 19th. The process of making a fermented liquor which consists in fermenting a fermentable wash or liquor by adding thereto in the proportions specified, Moto, or Moto and yeast, or yeast, whereby the fermentable material present is dissociated into alcohol and gas, all substantially as described. 20th. The process of making a fermented liquor which consists in adding a fermentable wash or liquor prepared by the introduction in the proportions specified of Taka-Koji or the diastase portion of the Taka-Koji, or of Koji, to a ferment containing wash or liquor prepared by the introduction in the proportions specified of Moto, or Moto and yeast, or yeast, said addition being made fractionally as the fermentation proceeds in order to keep the solution at the desired strength, whereby the fermentable material present is dissociated into alcohol and gas, all substantially as described. 21st. The process of making alcoholic liquor which consists in fermenting a fermentable wash or liquor by the introduction of Moto, or Moto and yeast, or yeast, in the proportions specified, and distilling the product, all substantially as described. 22nd. The process of making a fermented liquor which consists in adding a fermentable wash or liquor prepared by the introduction in the proportions specified of Taka-Koji or of the diastase portion of the Taka-Koji or of Tane-Koji, to a ferment containing wash or liquor prepared by the introduction in the proportions specified of Moto or Moto and yeast, or yeast, said addition being made fractionally as the fermentation proceeds in order to keep the solution at the desired strength, whereby the fermentable material present is dissociated into alcohol and gas, and distilling the product, all substantially as described. 23rd. The process of making a fermented liquor which consists in fermenting a fermentable wash or liquor that has been treated by the introduction of hops, scorched grain or similar material, by adding thereto in the proportions specified, Moto, or Moto and yeast, or yeast, and then diluting the same to the required alcoholic strength, all substantially as described.

No. 37,963. Method of and Apparatus for Drying Timber. (*Mode et appareil pour sécher le bois.*)

Richard Arthur Shapland, Barnstaple, Devon, England, 15th December, 1891; 5 years.

Claim.—1st. An apparatus for drying timber consisting of the following parts arranged in continuation, viz., an air heating apparatus of any suitable form, an ante-chamber with appliance for admitting steam thereto, and into which the heated air from the air heating apparatus is admitted and collected, a closed drying room wherein the timber is stacked with suitable intervals, and into which the heated fluid is evenly admitted from the ante-chamber through numerous apertures, and a fan at the exit end for producing the draught, substantially as and for the purpose set forth. 2nd. An air heating apparatus in combination with an air collecting chamber B, provided with steam jet pipes I, a drying room C, with perforated end walls and with bottom heating pipes K, an exit chamber D, and a fan G, substantially as and for the purpose set forth.

No. 37,964. Apparatus for and Process of Saturating Fluids with Sterilized Air and Other Gas. (*Appareil pour et procédé de saturation des fluides d'air stérilisé ou d'autres gaz.*)

Axel Bergh, Copenhagen, Denmark, 15th December, 1891; 5 years.

Claim.—1st. The method of subjecting juices and elutriated substances to a sterile centrifugal action ailing which consists in that these juices are introduced into an air-tight centrifugal apparatus in which during the centrifugal action they come in contact only with sterilized air, which method can be employed more especially for water, wine, spirituous liquors, milk, blood, oil and yeast, substantially as above described. 2nd. The method of preparing juices containing carbonic acid or other gases, which consists in that the juice to be saturated with carbonic acid is introduced into a closed centrifugal apparatus to which only carbonic acid or the desired gas is to be admitted, and in which the intense mixing is effected. 3rd. The employment, for the purposes stated in the first and second claims, of a closed soap centrifugal apparatus, substantially as shown and as above described.

No. 37,965. Car Coupler. (*Attelage de chars.*)

Henry Niemann, Denver, Colorado, U.S.A., 15th December, 1891; 5 years.

Claim.—1st. The combination of the draw head provided with the ordinary link recess and an aperture for the ordinary coupling pin, a pin 4, adapted to turn freely within the draw head and projecting on either side thereof, a coupling bar 6, rigidly secured to one extremity of said pin and a cam 18, at the opposite extremity taking beneath the co-acting coupling bar 6, of the adjacent draw head, and means of uncoupling both coupling bars 6, from pin 4, substantially as described. 2nd. The combination of a draw head having a coupling

bar 6, pivoted to the exterior thereof, said bar having an undercut outwardly deflected hook end 7, and the pin 4, one extremity of which is turned at 11, and engages on the outside of its draw head to the hook end of the coupling bar of the opposite draw head, substantially as described. 3rd. The combination of a solid coupling head, substantially as described, a pin 4, adapted to turn freely therein, a coupling bar 6, rigidly secured to one extremity and a cam 18 at the opposite extremity thereof, said cam taking beneath the co-acting coupling bar of the opposite draw head and means of uncoupling the cars by simultaneously disengaging both coupling bars, substantially as described. 4th. The combination of a solid coupling head, substantially as described, a pin 4, projecting through the draw head on either side, and turning freely therein, a coupling bar 6 rigidly secured to one extremity thereof and a cam 18 at the opposite extremity and engaging the coupling bar of the opposite draw head when the cars are coupled and means of uncoupling the cars by simultaneously disengaging both coupling bars, said means consisting of a suitable crank secured to the car and connected with the bar by means of a suitable chain or its equivalent, substantially as described. 5th. The combination with a draw head, of a coupling bar 6 pivoted to the outside of the draw head and provided with a hook end 7, a pin 4 secured to the opposite draw head and adapted to engage the hook end of the coupling bar, and suitable means of disengaging the coupling bar from said pin, substantially as described. 6th. The combination with a draw head of a coupling bar 6 pivoted to the outside of the draw head and provided with a hooked end 7 and a shallow recess 35, a pin 4 provided with cams 18 and suitable means of raising cams 18 and disengaging the coupling bars from pin 4, said cams being adapted to engage recess 35 and maintain the connecting parts in the upraised position, substantially as described. 7th. The combination with a draw head of a pin 4 adapted to turn freely therein, a coupling bar secured thereto, and lugs 14 and 15 secured to the draw head and adapted to control the backward and downward movement of the coupling bar when the cars are uncoupled, substantially as described. 8th. The combination with the draw heads suitably connected and having a space between their adjacent extremities, of a plug 30 conveniently secured to the end of the car and adapted to fit within the space between the draw heads, substantially as and for the purpose set forth.

No. 37,966. Band Cutter and Feeder.

(*Coupe-hart et alimentateur.*)

William Holliday, Sanborn, North Dakota, U.S.A., 15th December, 1891; 5 years.

Claim.—1st. The combination of a trough or casing, uprights near the ends of the same, horizontal strands or wires connecting the said uprights, a longitudinal reciprocating slide, means for operating said slide, and rakes mounted pivotally upon the latter, the tines of said rakes being extended between the strands or wires and adapted to convey bundles of grain longitudinally through the casing, substantially as set forth. 2nd. The combination of a trough or casing, a longitudinally reciprocating slide, means for operating the latter, the rakes connected pivotally with said slide, the longitudinal strands of wire forming guards between which the teeth of the rakes project, and mechanism for vibrating the said rakes at the ends of the movement of said slide, substantially as set forth. 3rd. The combination of a trough or casing, the uprights at the front and rear of the same, the horizontal strands or wires connecting said uprights the longitudinal reciprocating slides, means for operating said slides, the rakes connected pivotally with the latter, the tines of said rakes being extended between said strands or wires, and mechanism for vibrating said rakes at the ends of the movement of said slide, substantially as and for the purpose set forth. 4th. The combination with the trough or casing, the longitudinally reciprocating slides having inwardly extending brackets means for operating said slides, the shanks pivoted to said brackets and having rake heads at their inner ends, the latch arms connected pivotally with the outer ends of said shanks and with the slides, the links connecting said latch arms, and the beveled catches arranged to engage the said latch arms, substantially as and for the purpose set forth. 5th. The combination of the trough or casing having the central longitudinal partition, the fences arranged longitudinally in the compartments thus formed, the longitudinally reciprocating slides arranged in the outer sub-compartments, means for operating said slides, the rakes connected pivotally with the said slides and having tines extending between the strands of the fences, and mechanism, substantially as described, for vibrating said rakes at the ends of the movement of the carrying slides, substantially as set forth. 6th. The combination with the longitudinally reciprocating slides having inwardly extending brackets, and means for operating said slides, of the shanks pivoted to said brackets and having the rake heads, the latch arms connected pivotally with the slides and with the outer ends of the shanks and provided with upwardly extending lugs to engage the said shanks, and the links connecting the said latch arms, substantially as and for the purpose set forth. 7th. The combination with the longitudinally reciprocating slides carrying the grain feeding devices, and having laterally extending brackets, of the pitmen connecting said brackets, with pins extending laterally from the links of endless chains, and suitable operating mechanism, substantially as and for the purpose set forth. 8th. The combination of a pair of crank shafts, arms pivotally connecting the corresponding wrists or cranks of said shafts and having downwardly extending band cutting knives, a transverse shaft having pivoted arms, the feeding rods connected pivotally with said arms and with the cranks or wrists of the rear crank shaft, and suitable operating mechanism substantially as set forth. 9th. In a band cutting device, the combination with the band cutting knives, of a yielding floor adapted to support the bundles of grain while being subjected to the action of the band cutters, said floor being composed of pivoted sections having their meeting ends flexibly connected and supported by means of springs, substantially as set forth. 10th. The combination of the frame, the yielding floor composed of pivoted sections having their meeting ends flexibly connected, a transverse brace having prongs extending upwardly between the meeting ends of said pivoted floor sections, springs interposed between the said brace and the meeting

ends of the floor sections, the band cutting knives, and mechanism for forcing the bundles of grain downwardly upon the yielding floor sections while being subjected to the action of the band cutting knives, substantially as and for the purpose set forth. 11th. The combination of the frame having the yielding floor sections flexibly connected at their meeting ends, the transverse brace having upwardly extending prongs, the springs interposed between the said brace and the meeting ends of the pivoted floor sections, the crank shafts, the arms pivotally connecting corresponding cranks or wrists of the latter, and having downwardly extending band cutting knives, a transverse shaft, arms mounted pivotally upon the latter, and feeding rods connected pivotally with said arms and with the cranks of the rear crank shaft, substantially as and for the purpose set forth.

No. 37,967. Method of and Apparatus for Decolorizing Vegetable Oils.

(*Mode et appareil pour clarifier les huiles végétales.*)

Walter Noel Hartley, Dublin, Ireland, and William Edmund Brentford Blenkinson, Wandsworth Commou, England, 15th December, 1891; 5 years.

Claim.—1st. The process for decolorizing vegetable oils by mixing the oil with a suitable proportion of a manganese soap, or a fatty acid salt of manganese soluble in oil or mixture of such salts dissolved in oil, turpentine or other suitable solvent, and blowing a current of air or oxygen into the mixture, substantially as described. 2nd. The process for decolorizing vegetable oils, by mixing the oil with a suitable proportion of manganese linoleate, and blowing a current of air or oxygen into the mixture, substantially as described.

No. 37,968. Running Gear for Waggon.

(*Train de voiture.*)

Hans James Goulberg, Cambridge, Minnesota, U.S.A., 16th December, 1891; 5 years.

Claim.—1st. In a waggon, the combination with the axles thereof, of reversible spindles adapted to be secured thereto by screwing one of the tips of the spindle into a threaded opening in said axle, whereby the spindle is held rigidly in place and adapted to carry a wheel upon its outer end, substantially as and for the purposes set forth. 2nd. In a waggon, the combination with the axle formed of two elliptically curved members, of blocks rigidly secured between their meeting ends, having openings therethrough registering with each other, cross bars between said axle members having screw threaded openings registering with the openings in said blocks, double or reversible spindles removably arranged in the openings in said blocks and with their threaded tips screwed into the openings in said cross bars, substantially as described. 3rd. In a waggon, the combination of the curved axle members 2 and 3, the blocks 4, secured between their adjacent ends having openings therethrough in line with the axis of the axle, standards 6, secured between the members 2 and 3, and having screw threaded openings in line with said axle, reversible spindles 5, removably inserted in the openings in said blocks with their tips screwed into said standards, and set nuts 7 screwed upon the tips projecting through the standard 6, substantially as described. 4th. In a waggon, the combination with the axle thereof, of a tubular metallic reach composed of telescoping members, the outer member having universal joint connection with the forward axle and the inner member being rigidly secured to the rear axle and extending forward within the outer member, braces extending forward from the rear axle to said reach, a collar uniting the forward ends of said braces and surrounding the outer member of said reach, and a set screw carried by said collar and engaging said outer member, substantially as and for the purposes set forth. 5th. In a waggon, the combination with its axles of a telescoping tubular reach, the outer member being connected by a universal joint to the forward axle, and the inner member rigidly connected to the rear axle braces from said rear axle to said reach, a collar connecting said braces and surrounding said reach, a block carried by said collar and having freedom of circumferential movement, and a set screw threaded in said block and bearing upon the outer member of said reach, substantially as described. 6th. A metallic waggon running gear comprising in combination a skeleton or frame made up of flanged or ribbed bars a tubular telescoping reach, and reversible spindles rigidly but removably secured to the axles, substantially as and for the purposes set forth. 7th. A waggon axle comprising in combination a pair of oppositely arched or elliptically curved T steel bars, with the cross-web of the bar forming the inner concave side, blocks rigidly connecting the adjacent ends of the bars, axle openings therethrough, fixed cross bars between the axle members having axial threaded openings therethrough, and reversible spindles arranged in the openings in said block, and with their tips screwed into said cross bars, substantially as described.

No. 37,969. Guard or Finger for Mowing and Reaping Machines.

(*Garde de faucheuse moissonneuse.*)

John Edward Greaves, Berdiansk, South Russia, 16th December, 1891; 5 years.

Claim.—1st. A finger or guard for mowing and reaping machines, having teeth or projections adjacent to the edges of the slot through which the knife reciprocates, substantially as and for the purpose described. 2nd. A finger or guard for mowing or reaping machines having upon the edges of its bottom side or its top side or of both its bottom and top sides teeth or projections arranged substantially in the manner hereinbefore described. 3rd. A finger or guard for mowing or reaping machines having teeth or projections formed upon the edges of the plate forming the facing of the slot upon which the knife reciprocates, substantially as described.

No. 37,970. Wire Fence Machine.*(Machine à clôture de fil de fer.)*

Abel Land, Hudson, Michigan, U.S.A., 16th December, 1891; 5 years.

Claim.—1st. In combination with the co-operating mechanism of a wire fence machine, the longitudinally slotted pinion E, supported to rotate in its bearings and adapted to hold the warp wire while the woof wire is being strung thereon, and the needle D, having the eye d^2 , upon the end of same, substantially as described and for the purpose set forth. 2nd. In combination with the co-operating mechanism of a wire fence machine, the needle D, provided upon the end with an eye through which the woof wire is threaded, substantially as described and for the purpose set forth. 3rd. In combination with the co-operating mechanism of a wire fence machine, the sliding frame C, located upon the bar B, and comprising the parts 1 and 2, the bar B, secured across the top and near the center of the frame of the machine, the longitudinally slotted pinion located in the journal box c^2 , of the sliding frame C, the spur lever F, mounted upon the projecting axle c^1 , of the frame C, and the needle D, secured to said slotted pinion, substantially as described and for the purpose set forth. 4th. In combination with the co-operating mechanism of a wire fence machine, the taking up drum K, composed of the inwardly beveled edge staves 15, and the outwardly beveled edged and wedged-shaped staves 16, substantially as described and for the purpose set forth. 5th. In combination with the co-operating mechanism of a wire fence machine, the taking up drum K, having bearings upon the posts a , of the frame of the machine, the wheel 10, mounted upon a projecting axle 11, and having the idle wheel 12, formed integrally therewith, the rod 7, located in bearings 8, and having upon each end the spur wheels 9, and the bevel wheel 6, in the center thereof, and the crank lever 3, journaled through a projecting arm 4, secured to the center of the cross bar a^1 , of the frame, substantially as described and for the purpose set forth. 6th. In combination with the co-operating mechanism of a wire fence machine, the beam L, extending horizontally across the frame of the machine, and having upon its top surface the reduced portions l , the angular toothed crimping bars M, M, located upon each side of said beam, the mechanism whereby said crimping bars are simultaneously operated, the co-operating crimping bar S, having suitable bearings in the cap U, and the casing T, whereby the same co-operates with the crimping bars M, M, as described, and the mechanism whereby the crimping bar S, is operated, substantially as set forth. 7th. In combination with the co-operating mechanism of a wire fence machine, the beam L, extending horizontally across the frame of the machine, and having upon its top surface the reduced portions l , the angular toothed crimping bars M, M, located upon each side of said beam, the mechanism whereby said crimping bars are simultaneously operated, and the crimping bars S, located above and co-operating with said bars, substantially as set forth. 8th. In a wire fence machine, the longitudinally slotted trundle or pinion in combination with the needle D, provided near the center thereof with a projecting portion having thereon a spool or bobbin upon which is located the woof wire, substantially as described and for the purpose set forth.

No. 37,971. Tunneling and Mining Machine.*(Machine pour mines et tunnels.)*

Reginald Stanley, Nuneaton, Warwick, England, 16th December, 1891; 5 years.

Claim.—1st. In a tunneling or mining machine, the combination of a frame carried on central tandom wheels working on the floor of the tunnel, a central threaded shaft carried by such frame, a driving wheel working on such shaft, radial arms and horizontal arms at one end of said shaft, and provided with cutters and scrapers adapted for forming an annular groove around the face of the tunnel, the said frame carrying engines and gearing for actuating the above-named devices, and a spur wheel with threaded boss or bush working on the threaded portion of the said shaft, bearing against the frame, driven by gearing from the engine or engines, serving the purpose either of actuating the central shaft and its arms and cutters while the said frame, its engines and gearing are held stationary in the tunnel, or of actuating the frame and its engine and gearing while the shaft and arms are held stationary, substantially as described. 2nd. In a tunneling or mining machine, the combination of a cutter, a cutter frame or support, the bed frame, means for fastening said bed frame in place when the cutter frame is advancing, the engine, means connecting the engine to the cutters for rotating them, and the two-part feeding mechanism, one part of which is secured to the bed and the other secured to the cutter frame, and both of which are adapted to be actuated by the aforesaid engine to advance the said frames alternately, substantially as set forth. 3rd. In a tunneling or mining machine, the combination of the cutters, the cutter frame, the frame or bed, a rotatable nut on one of said frames, the rotatable threaded shaft on the other of said frames and engaging with the nut, an engine and two sets of gearing, one connecting said engine with said nut, substantially as set forth. 4th. In a tunneling or mining machine, the combination of the cutters, the cutter frame or carrier, having a revolving shaft as at C, the engine, the gearing connecting the machine to said shaft as set forth, whereby said shaft advances relatively to the gearing, the nut engaging with said shaft, the second set of gearing connecting said engine with said nut, means for disconnecting said engine from said nut, and means for fastening the nut stationary, substantially as set forth. 5th. The combination with the stationary frame or bed, and the cutter frame adapted to advance relatively to said bed, of the engine, the power shaft, means connecting said shaft with the cutting apparatus, means for disconnecting said shaft from said cutting apparatus, a threaded shaft which rotates when the cutters are operating, a nut engaging therewith, means for holding said nut stationary, and means connecting said nut with the aforesaid power shaft when the said power shaft is disconnected from the cutting apparatus, whereby it can be rotated, substantially as set forth. 6th.

In a tunneling or mining machine, the combination of a main frame or bed frame, adapted to be made stationary, a cutting apparatus, an advancing support or frame for said cutting apparatus mounted on said stationary frame, means for making said cutter support or frame stationary, the engine on the stationary bed frame, and means operated by said engine, for advancing the bed frame relatively to the cutter frame, substantially as set forth. 7th. In a tunneling or mining machine, the combination of the bed frame, the advancing cutter frame, the vertically rotating cutters on said frame, the engine on the main frame, the gearing interposed between the engine and the cutters, and means for disconnecting said gearing from said cutters, substantially as set forth. 8th. The combination with the main frame, the cutters, the engine on the main frame, the gearing interposed between the engine and the cutters, and means for disconnecting said gearing from said cutters, substantially as set forth. 9th. The combination with the main frame, the cutters, and the cutter carrier, of the threaded feed shaft and nut, gear for rotating said nut, a clutch for throwing said gearing out of action, and means for locking the nut, substantially as set forth. 10th. In a tunneling or mining machine, the combination of the cutting apparatus, the main frame or bed frame, and the supporting wheels, all arranged on the vertical central plane of the main frame, substantially as set forth. 11th. In a tunneling or mining machine, the combination with the cutters, the cutter carrier or frame, and the main frame or bed frame, of the supporting wheels for the main frame situated in the central longitudinal plane thereof, and means for adjusting horizontally or laterally the upper part of said main frame, substantially as set forth. 12th. The combination with the main frame and the cutter frame, of the two or more supporting wheels resting on the bottom or floor and the two or more wheels pressing against the roof, all of said wheels being in substantially the central longitudinal vertical plane of the machine, as described. 13th. The combination with the cutters, the cutter frame and the main frame, of means, substantially as described, for advancing the main frame relatively to the cutter frame, and an automatic trip which throws the advancing mechanism out of action. 14th. In a tunneling or mining machine, the combination of the bed frame, the cutters, the cutter frame, the supporting wheels on the central longitudinal planes of the machine, the fastening pins or arms x^1 , x^2 , hinged to the side of the main frame, and the screw pins Z, Z, engaging with the roof, substantially as set forth. 15th. In a tunneling or mining machine, the combination with the main frame or bed frame, the supporting wheels therefor, on the central longitudinal planes of the machine, and cutting apparatus in front of the bed frame, of the carrier for removing the cuttings mounted at the side of the machine outside of the plane of the said supporting wheels, substantially as set forth. 16th. In a tunneling or mining machine, the combination of the bed frame, the cutting apparatus in front of the bed frame, the rotary shaft as at C, connected with the cutting apparatus, the carrier or conveyor for removing the cuttings, and a wheel on the said shaft C, connected to the said carrier or conveyor whereby the cutters and conveyor are operated together by said shaft, substantially as set forth. 17th. The combination with the cutters, and the conveyor or carrier for taking the cuttings to the rear of the machine, of a supplemental conveyor arranged to advance with the cutters and bring the cuttings back to the carrier, substantially as set forth. 18th. The combination with the cutting apparatus, and means for advancing said apparatus, of a conveyor which is extensible along lines parallel to the path of advance of the cutters, substantially as set forth. 19th. The combination with the cutting apparatus, a shaft for driving the cutters, the conveyor or carrier for taking the cuttings back, an intermediate shaft between the cutter driving shaft and the carrier, and the chains which connect the carrier to the intermediate shaft and the latter to the cutter driving shaft, substantially as set forth. 20th. The combination with the main frame and the cutting apparatus, of the carrier or conveyor at one side of the main frame, and adapted to advance with the cutting apparatus, of means secured to the cutting apparatus, and adapted to carry the material laterally and deliver it to the said carrier, substantially as set forth. 21st. The combination with the main frame, and the cutting apparatus, of the conveyor or carrier, and the supports therefor, loosely connected to a guide on the main frame, whereby the carrier can advance into the cutting apparatus, substantially as set forth. 22nd. The combination with the bed frame, and the cutting apparatus, of the carrier or conveyor movable relatively to the main frame, and one or more supporting wheels below the carrier or conveyor, substantially as set forth. 23rd. In a tunneling or mining machine, the combination with the bed, the cutter frame, and the threaded feed shaft, of wheel a , and a threaded bush b , surrounding said shaft, and fitted centrally within said wheel a , substantially as set forth. 24th. The combination with the cutter carrier of cutters, substantially such as described and illustrated in Figs. 10-11. 25th. In a tunneling or mining machine, the combination with a bed frame of two independent sets of cutters, an engine on said bed, and means for connecting the said cutters independently of each other with the said engine and disconnecting them therefrom, substantially as set forth. 26th. In a tunneling or mining machine, the combination of two independent sets of cutters, the bed or main frame, the two independent cutter carriers mounted upon said bed, the two independent trains of gearing for advancing the said cutter carriers, and means, substantially as set forth, for rotating said cutters, as described. 27th. In a tunneling or mining machine, the combination of the two independent sets of cutters, the bed or main frame, two independent cutter carriers mounted upon the said bed, two independent trains of gearing for rotating the said two cutter carriers, and means, substantially as set forth, for moving the cutter carriers relatively to the bed, as described. 28th. In a tunneling or mining machine, the combination of two independent sets of cutters, two advancing and receding carriers for said sets of cutters, respectively, a bed frame comprising two parts, each of which supports one of the aforesaid carriers, a train of cutter actuating gear on each of said parts of the bed, a train of cutter advancing gear on each part of said bed, and an engine on each part of said bed adapted to be independent of that on the other part, substantially as set forth. 29th. In a tunneling or mining machine, the combination of the two independent sets of cutters, the two independent outer

carriers, the two independent sets of cutter actuating gears, and the bed or main frame, formed in two parts, each part having secured to it one of the said cutter carriers and trains of gearing, and adjustable connecting bars or braces for joining the two parts of the said bed or main frame, substantially as set forth. 30th. In a tunneling or mining machine, the combination of the two adjacent sets of independent cutters which form two horizontal cylindrical kerfs, the cutter carriers adapted to be advanced independently of each other, and the main frame having the two parts or sections respectively supporting the said cutter carriers, said sections of the bed, and said cutter carriers being adapted to pass into the said kerfs, and means, substantially as described, for connecting together the two parts of the bed or frame which support the cutter carriers. 31st. In a tunneling or mining machine, the combination of the two sets of cutters, the separate cutter carriers, and the bed frame which supports the said cutters and cutters formed in two parts, adapted to be adjustably connected together, substantially as set forth, whereby one can be moved longitudinally forward or back relatively to the other, as described. 32nd. In a tunneling or mining machine, the combination of the two sets of cutters, the separate cutter carriers, and the bed frame which supports both the said sets of cutters and said cutter carriers, and is formed in two parts, adapted to be adjustably connected together at their upper ends, as described. 33rd. In a tunneling or mining machine, the combination of two sets of cutters, the separate cutter carriers, and the bed frame, which supports the said cutters and cutter carriers, and which is formed in two parts, adapted to be adjustably connected together at the bottom, substantially as set forth. 34th. In a tunneling or mining machine, the combination with the two independent sets of cutters, the two carriers for said sets of cutters, the two sets of gearing for rotating said carriers, the two sets of gearing for advancing said carriers, the independent engines for driving the said sets of cutters, and the frame or bed connected to both the said cutter carriers, and having two parts adjustable in relation to each other, substantially as set forth. 35th. In a tunneling or mining machine, the combination with the bed or main frame of two independent cutter carriers, thereon adapted to advance and recede relatively to the bed, and mounted in substantially the same horizontal plane, and two sets of cutters supported by the said carriers and arranged to form horizontal cylindrical kerfs adjacent to each other, as described. 36th. In a tunneling or mining machine, the combination of a bed or main frame, two independently rotating and advancing cutter carriers in the same horizontal planes, two cutter arms adapted to overlap each other while in rotation, and to cut two cylindrical kerfs of vertical dimension greater than that of the said bed or main frame, whereby the latter can be advanced into the said kerf, substantially as set forth. 37th. In a tunneling or mining machine, the combination of the vertically revolving cutter moving around an axis longitudinal of the bed, the engines, the train of gear for rotating the cutter, the train of gear advancing the cutter carrier, and the adjustable wheel driven by the engine and adapted to engage alternately with the two said trains of gear, substantially as set forth. 38th. In a tunneling or mining machine, the combination of two independent sets of cutters, the bed or main frame, the engine, and the two trains of gearing for rotating the two sets of cutters respectively, and two adjustable connecting mechanisms for throwing one or both of said trains of cutter actuating gearing out of connection with the engine, substantially as set forth. 39th. In a tunneling or mining machine, the combination of the bed, the engine thereon, the cutter driving gear, and two independently rotating and advancing sets of vertically revolving cutters adapted to form two circular kerfs, of a vertical dimension equal to or greater than that of the machine, the two supporting wheels or sets of wheels, one on the bottom of each said kerf, and the bed or frame extending from one kerf center to the other, substantially as set forth. 40th. In a tunneling or mining machine, the combination of the bed or main frame, the engine, the two cutters or sets of cutters, and the two clutches whereby the engines can be connected with both of the cutters or either one, separately, substantially as set forth.

No. 37,972. Method of Treating Solutions which have been Boiled to the Granular State. (*Mode de traiter les solutions qui ont été bouillies à l'état granulaire.*)

The Maschinenfabrik Grevenbroich, Grevenbroich, Prussia, German Empire, assignees of Ludwig Wulff, Schwerin, Germany, 16th December, 1891; 5 years.

Claim.—1st. A process for crystallizing granulated liquors by refrigeration, consisting of the following points:—*a*, the syrup separated in the centrifugal machine from the liquor arising from the previous boiling is run into the vacuum at the end of the granulation; *b*, the mixture so obtained is cooled and crystallized in barrels or in coolers provided with stirrers; *c*, the surplus syrup, after the subsidence of the fine crystals or crystal meal, is drawn off from the granulating vessels. 2nd. A process for crystallizing by refrigeration of liquors that have been granulated, consisting of the following points:—*a*, the boiled liquor, after the granulation is finished, is diluted with thick juice, such as is subjected to granulation, or with clear boiled liquor in the vacuum; and *b*, then treated as in 1b and 1c.

No. 37,973. Vehicle. (*Voiture.*)

John Reese Parsons and Deforest Alfred Wilcox, both of Earlville, New York, U.S.A., 17th December, 1891; 5 years.

Claim.—1st. The combination, with the front running gear, of the body formed with the depressed central portion B¹, springs mounted diagonally on the axle and converging rearward therefrom, a frame formed with side bars parallel with said springs and mounted thereon, and said frame pivoted at its rear end to the body, as set forth and shown. 2nd. The combination of the body formed with

the dropped portion B¹, extending lengthwise of the body between the running gears, elliptic springs *a*, *a*, mounted diagonally on the front axle and in rearwardly converging lines, the frame *b*, formed with side bars parallel with the aforesaid springs and mounted thereon, the king-bolt *c*, passing through the rear end of said frame, the fifth-wheel segment *d*, secured to the top of the front portion of the frame *b*, the segment *d*, secured to the underside of the body and projecting at the front thereof, and the brace *e*, attached to the front of the body and to the segment *d*, and embracing the underlying segment *d*, substantially as described and shown.

No. 37,974. Architectural Column.

(*Colonne architecturale.*)

Joseph McMaisters Larimer, Chicago, Illinois, U.S.A., 17th December, 1891; 5 years.

Claim.—1st. An architectural column composed of steel beams or bars having heads or flanges and their webs bent to convex form, an interposed core or fillet to provide bearings for the bent portions of said webs, and bolts or rivets connecting the beams through the core or fillet, substantially as described. 2nd. In combination with a column having peripheral supporting flanges and centrally connected webs, a ring angular in cross section and adapted to form a base, a bracket, or a part of the top connection, substantially as described.

No. 37,975. Watch. (*Montre.*)

Ernest Max Fasoldt, Albany, New York, U.S.A., 18th December, 1891; 5 years.

Claim.—The combination of a spring barrel and its arbor, and a main-spring having attached to its outer end a friction-spring, whose length is at least one and one-eighth times the circumference of the bore of said spring barrel, the overlapping end of said friction-spring being retained and pressed between the coil of the latter and the interior of said barrel, substantially as described.

No. 37,976. Bath Tub. (*Baignoire*)

George Booth, Toronto, Ontario, Canada, 18th December, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a bath tub composed of a sheet metal casing having a lining of copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing. 2nd. As a new article of manufacture, a bath tub composed of a sheet metal casing made in three sections and having a lining of copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing. 3rd. As a new article of manufacture, a bath tub composed of a sheet metal casing having a lining of copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing, the cross section of the bath tub being in the form of a semi-ellipse. 4th. As a new article of manufacture, a bath tub composed of a sheet metal casing made in three sections, each section being lined with copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing. 5th. As a new article of manufacture, a bath tub composed of a sheet metal casing made in three sections, lined with copper aluminum or other light flexible metal, hammered, rolled, or pressed into close contact with its outer casing, each section of the lined casing having an outwardly projecting flange formed on it to correspond with the flange on the section against which it butts. 6th. As a new article of manufacture, a bath tub composed of a sheet metal casing made in three sections, lined with copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing, each section of the lined casing having an outwardly projecting flange formed on it to correspond with the flange on the section against which it butts and is bolted to, the joints between the flanges being sealed by solder or its equivalent. 7th. As a new article of manufacture, a bath tub composed of three flanged sheet metal sections, lined with copper aluminum or other light flexible metal hammered, rolled, or pressed into close contact with its outer casing, and secured thereto by punching the lining through holes made in the flanges of the outer casing. 8th. The combination, with a bath tub made in sections, of feet having legs extending over and secured to the bath tub immediately over each seam, substantially as and for the purpose specified.

No. 37,977. Stiffening Device for Floor Rugs, or Mats. (*Renfort pour les tapis et nattes de plancher.*)

Marshall Lincoln, Boston, Massachusetts, U.S.A., 18th December, 1891; 5 years.

Claim.—1st. A spreading or stiffening device for floor mats comprising a band of rigid or flexible material attachable to a face of the mat and projecting from the corner thereof towards the center, substantially as and for the purpose set forth. 2nd. A stiffening or spreading device for floor mats, a band of flexible or rigid material provided at one end with a triangular head for conforming to the corner of the mat, and openings for securing said band to the surface of said mat, substantially as described. 3rd. The mat A, in combination with the spring metal band B, provided with the head *g*, and openings *h*, said bands being secured to a face of said mat at the corner and projecting inwardly towards the center thereof, substantially as described. 4th. A floor mat in combination with a band of metal secured to the under face thereof at the corner, substantially as and for the purpose set forth.

No. 37,978. Bottle Stopper.*(Bouchon de bouteille.)*

Michael J. McHugh, Jersey City, New Jersey, U.S.A., 18th December, 1891; 5 years.

Claim.—The improved bottle stopper herein described, consisting of the body part or main section having in its lower end a socket or opening B, and provided at the upper end of said socket with an enlarged opening or socket, and the pack-section having the disk F, and stem G, the stem G being of even diameter throughout and of greater diameter than the socket B, whereby when the stem is forced in the said socket B, it will expand in the enlarged opening above the said socket, substantially as set forth.

No. 37,979. Device for Spreading Gum Paste and like Liquids and for Closing or Stopping the Bottles Containing such Liquids. (Machine à gommer et bouchon de bouteille.)

Adolph Bühler, Reichenhall, Bavaria, Germany, 18th December, 1891; 5 years.

Claim.—1st. The combination with a vessel or bottle containing adhesive or other liquid, of a stopper or plug with a hole therein through which is passed a rigid suction tube which is scraped or cleaned automatically each time it is removed from the stopper or plug and which serves both for spreading the liquid and for stopping the bottle. 2nd. Impregnating the perforated stoppers or plugs of vessels containing adhesive and other liquids and having movable suction tubes therein with grease or fat, or the use of a body of fatty substances in connection with the said plug, or the use of a perforated plug made entirely from a fatty substance, substantially as hereinbefore described. 3rd. The combination with a suction tube adapted to be used for the purpose herein described, of a brush sponge, india rubber tongue, cap or roller which is regularly fed with liquid contained within the tube through side or end perforations made in the tube itself, or through a separate feed tube, substantially as herein described. 4th. The combination of a bottle *d*, containing adhesive or other liquid, a fatty stopper *c*, a tube *a*, passing through said stopper, and elastic packing ring *k*, and a screw cover, substantially as set forth. 5th. The combination of a tube *a*, ferrule *i*, and bulb cap *b*, substantially as set forth.

No. 37,980. Cleaner for Tobacco Pipes.*(Nettoyeur de pipe.)*

Frank William Carpenter, High Point, North Carolina, U.S.A., 18th December, 1891; 5 years.

Claim.—1st. A tobacco pipe cleaner consisting of a short tube or mouth piece adapted to fit against the bowl of a pipe and provided with a perforated partition substantially as described. 2nd. A tobacco pipe cleaner consisting of a short tube or mouth piece adapted to fit against the top of a pipe bowl and having an elastic rim to contact with the pipe and a perforated or reticulated partition, substantially as described.

No. 37,981. Lead Pipe Joint.*(Joint de tuyau de plomb.)*

George Hilton Smith, Manchester, England, 18th December, 1891; 5 years.

Claim.—1st. In lead pipe joints, forming a thread onto the lead pipe end *a*, by expanding the same in a thread die *d*, substantially as and for the purpose set forth. 2nd. A lead pipe joint consisting of a white metal coupling *b*, the interior of which is threaded and receives the lead pipe ends *a*, which are formed with a thread by expanding the same in a threaded die *d*, substantially as set forth.

No. 37,982. Carriage. (Voiture.)

Edward N. Heney, Montreal, Quebec, Canada, (assignee of Joseph Trus Clarkson, Amesbury, Massachusetts, U.S.A.), 21st December, 1891; 5 years.

Claim.—1st. The combination of a front seat, an elevated back for said seat, and a rear seat arranged to be turned up and form a continuation downwards of said elevated back, from thence to said front seat, substantially as specified. 2nd. The combination with front seat *d*, of rear seat *g*, hinged at a point in rear of its front edge and so that when turned down it forms with seat *d*, a continuous plane, and when turned up to serve as a back for the front seat its edge extends below the top of the front seat, and space is provided between the top of *g*, and rear edge of *d*, for the thickness of cushion *k*, substantially as specified. 3rd. The combination with back *m*, supported above the seats, of rear seat *g*, hinged and arranged to be turned up beneath said back to co-operate therewith in forming a full height back, and the tailboard pivotally connected with and arranged to actuate said rear seat, substantially as specified.

No. 37,983. Sash Fastener. (Arrête-croisée.)

Philip J. Shaeffer and Leon Landauer, both of Philadelphia, Pennsylvania, U. S. A., 21st December, 1891; 5 years.

Claim.—1st. The within described sash balance and lock, consisting of two spring actuated cog-wheels F, F', each enclosed within pairs of brackets E, E', and adapted to turn on separate journals having bearings within said brackets, said journals being axially eccentric respectively to each other, each cog-wheel provided with a

spring controlled bolt to be independently withdrawn outwardly, to permit each cog-wheel to revolve, without interference with the other, the outer end of each bolt provided with projection to mesh with a cam or detent whereby to stop and lock the respective cog-wheel at any stage of its revolution, all in combination with rack attached to the outer side of the sash, substantially as described. 2nd. A window sash balance, of the character described, having two spring actuated cog-wheels located within suitable frame work of window casing both at the same side, each cog-wheel arranged to revolve on its separate journal the axial points of said journals being respectively eccentric to each other, whereby the peripheral cog of one wheel will extend outwardly beyond the circumferential area of the companion one, each wheel provided with an independent propellable bolt having a torsion spring within the casing, and an outward thumb-piece *c*, adapted to mesh upon a cam H, in combination with rack on the side of each section of the window sash which will engage its controlling cog-wheel but freely move vertically without intermeshing or actuating the cog-wheel adjusted to lock and release the opposite section of sash, substantially as described.

No. 37,984. Pneumatic Tool.*(Outil pneumatique.)*

The Thomson Electric Welding Company, (assignees of William M. Wood), all of Boston, Massachusetts, U.S.A., 21st December, 1891; 5 years.

Claim.—1st. The combination, in a pneumatic tool, of two or more plungers operating on lines meeting at a common point or center and each bearing or actuating a hammer or equivalent device, as described, a source of air, gas, steam or other fluid under pressure, and a valve common to said plungers for controlling the passage of the steam or other fluid, so as to operate the plungers simultaneously. 2nd. In a pneumatic tool, the combination, with two actuating plungers operating on converging or meeting lines, of a valve movement independent of the motion of the plungers for controlling the air, gas, steam or other fluid pressure which actuates them. 3rd. The combination, with the three hammer or die carrying plungers working on converging lines, of a stop or gage adapted to rest on the work for adjusting the hammers or tools to different sizes of work, as and for the purpose described. 4th. The combination, with the tool actuating plunger, of a valve movement controlling the air, gas, steam or other fluid pressure that actuates such plunger, and a catch for engaging with the valve movement, so as to hold the same in position to permit the air or fluid pressure to keep the plunger lifted. 5th. In a pneumatic tool, three or more plungers working on converging lines and each carrying a hammer or die at its inner side, and a flexible pipe or connection K', for conveying air, gas, steam or other fluid under pressure to operate said plungers and to permit the same to be moved circumferentially around the work. 6th. The combination, with the tool-carrying plunger, of the two reciprocating piston-valves, each controlling in its movement the exhaust and inlet for the other, so as to keep the said pistons or valves in continued movement while air, gas, steam, or other fluid under pressure is supplied to them, and connections from opposite sides of the said tool-carrying plunger to chambers or spaces of the valve system where pressure and exhaust exist alternately, as and for the purpose described. 7th. In a pneumatic tool, three tool-carrying plungers H, H', H'', working on lines converging toward a common center and all having pipes or passages leading from opposite sides of the plungers and connecting each with a common source of air, gas, steam, or other fluid under pressure. 8th. The combination, in a pneumatic tool, of two or more plungers working toward and from a common center, a hammer or other tool carried by each and adapted to engage with the work directly, a source of air, gas, steam or other fluid under pressure common to said plungers, and an automatic valve mechanism operated by the pressure of the fluid and controlling the controlling ports leading to the plunger cylinders. 9th. The combination, with the parallel double-acting pistons, of two pairs of ports connecting the chambers in which said pistons reciprocate, each pair being controlled by one of said pistons and forming alternately inlet and exhaust ports for the other. 10th. The combination, substantially as described, of a piston B, B', and a piston A, controlling the inlet ports, whereby air, gas, steam, or other fluid is admitted to actuate the pistons B, and ports *a*, *a'*, which are alternately covered and uncovered by piston B, so as to admit air or gas under pressure to opposite sides of piston A alternately. 11th. The combination, substantially as described, of a double-acting piston A, actuated by pressure applied upon its opposite ends alternately, a piston B, B', actuated by pressure applied alternately through ports controlled by the piston A, and ports or openings which are alternately uncovered by the piston B, so as to place such ports in communication with the pressure spaces or chambers of piston B, so as to admit fluid under pressure for the operation of piston A. 12th. The combination, substantially as described, of two parallel pistons A, B, having their chambers connected by lateral ports with which said pistons co-act, as described, so as to each control the exhaust and inlet of the other, as and for the purpose described. 13th. The combination, substantially as described, of two reciprocating double-acting pistons, ports or passages *b*, *b'*, placed in communication alternately by one of said pistons with a source of air, gas, steam, or other fluid under pressure and leading to the pressure-spaces for actuating the second piston, and ports or passages *a*, *a'*, communicating with the pressure-spaces of the first piston and alternately connected with the pressure-spaces of the second piston by movement of the latter. 14th. The combination of the double-acting piston B, B', having heads connected by a rod passing through a diaphragm and working in cylinders or chambers open at their outer ends, a piston A, A', working in a chamber closed at its outer ends, ports *b*, *b'*, controlled by the piston A, and forming alternately inlet and exhaust ports for the piston B, B', and ports *a*, *a'*, controlled by piston B, B', and forming alternately inlet and exhaust ports for the piston A, A', as well as part of the exhaust-passages for the piston B, B'. 15th. In a pneumatic tool, the combination, with shaping tools or instruments operating in the same line and on opposite sides of the work, of adjustable supports, for each tool and means for moving said tools to and from one

another simultaneously. 16th. The combination in a pneumatic tool, of the two swages or other instruments S, S applied to the work at opposite sides thereof, the two strikers M, M, carried by reciprocating pistons or plungers, and an actuating right and left hand screw P, P, for moving the parts of the apparatus simultaneously to and from the work, as and for the purpose described. 17th. The combination in a pneumatic tool, of a swaging or shaping instrument S, an actuating-piston therefor operated by air, gas, steam, or other fluid under pressure and mounted on an adjustable support, and swaging or forming tool S, mounted on an adjustable support at the opposite side of the work, and means for moving the two swages or forming-instruments away from or toward the work simultaneously.

No. 37,985. Pneumatic Tool.

(*Outil pneumatique.*)

The Thomson Electric Welding Company, assignees of William M. Wood, all of Boston, Massachusetts, U.S.A., 21st December, 1891; 5 years.

Claim.—1st. The combination, substantially as described, of a plurality of hammers, dies or similar devices working on converging lines and mounted upon two arms or supports adapted to be swung or moved apart so that the instrument may be applied to or removed from the work, as and for the purpose described. 2nd. In a pneumatic tool, the combination, substantially as described, of two arms or supports A, B, jointed or hinged together, and each carrying one or more tool-operating plungers, as and for the purpose described. 3rd. The combination, substantially as described, of the two hinged arms A, B, each carrying two or more tool-operating plungers working in lines converging toward a common center. 4th. In a pneumatic tool, the combination, substantially as described, of tool-operating plungers mounted on hinged supports jointed or hinged to one another and having a cut-off located in the hinge, as described, so as to be opened and closed as the arms are moved for the purpose of applying or removing the tool. 5th. The combination, substantially as described, of the two arms or supports A, B, each carrying one or more plungers, a source of fluid under pressure for operating said plungers, and a cut-off connected with the two arms A, B, so as to be shut when the arms are separated. 6th. The combination, substantially as described, of tool arms or supports hinged together and each carrying one or more tool-operating plungers, and a valve movement mounted in the plug or pin which connects the two parts of the hinge. 7th. The combination, substantially as described, of the arms hinged together and carrying the tool-operating plungers, passages connected with the cylinders for said plungers and leading to ports in the hinge, a plug or pin V connecting the two parts of the hinge and carrying a controlling-valve mechanism, and passages in the plug leading from such valve mechanism to the ports in the two sides of the hinge. 8th. In a pneumatic tool, the combination with the tool-operating plungers carried on two arms or supports, of a hinge or joint connecting the arms and an automatic valve for the plungers mounted in the connecting-pin for the hinge. 9th. The combination, substantially as described, with the automatic-valve movement having two pistons and connecting-ports, of the passages K, L extending through the plug and connecting with ports in the two sides of the hinge. 10th. In a pneumatic tool, the combination with the arms hinged together and carrying the tool-operating plungers, of a valve movement mounted in the pin for the hinge, and passages K, L extending through the pin to ports connecting with passages in the arms, the passages in the pin including ports or passages for the valve mechanism wherein pressure and exhaust alternately occur. 11th. The combination, substantially as described, of the two arms A, B, each carrying one or more tool-operating plungers, a joint or hinge connecting the same, and a cut-off, one member of which is carried by the joint-pin moving with one arm, while the other is carried by the other arm of the instrument. 12th. The combination, substantially as described, of the arms A, B, having ports or passages I, i, a pin or plug V, by which the two arms are hinged together, pistons D, C, working in said plug or pin, and passages K, L extending transversely through the pin between the two pistons, said passages at their ends connecting respectively with ports or passages in the two arms.

No. 37,986. Wooden Tobacco Box.

(*Boite en bois pour tabac.*)

Joseph Martin Baker, Louisville, Kentucky, U.S.A., 21st December, 1891; 5 years.

Claim.—1st. A packing-box having its heads or ends C each composed of two or more rectangular pieces d and e, arranged with the grain crossing and with the ends of one piece parallel with and projecting beyond the side of the other, all substantially as shown and described, whereby only the ends of the respective pieces shall touch the sides of the box, and cleats D, applied to the outer faces of the heads. 2nd. A packing-box having the sides formed of two or more pieces a, b, arranged with the grain crossing, the heads or ends C, fitting with the sides and also formed of two or more rectangular pieces d, e, arranged with the grain crossing, and with the ends of one piece parallel with and projecting beyond the sides of the other piece, and the cleats D, applied to the outer faces of the heads or ends. 3rd. A packing-box having the double sides and double ends or heads C, united by nails c and f, passing through the outer pieces of the sides and into the inner pieces of the said sides and ends, the pieces forming the ends or heads having their grain crossing. 4th. A packing-box having the sides B each formed of two pieces a, b, united by glue or cement with the grain crossing, the pieces a being tenoned and mortised at their meeting edges, and nails e, driven through the outer piece a of each side into the inner piece b of the contiguous side. 5th. As a new article of manufacture, the rectangular packing-box head consisting of two rectangular pieces d and e, secured together with the grain crossing and with the ends of one piece projecting beyond the sides of the other, substantially as and for the purpose set forth.

No. 37,987. Shaft for Vehicles.

(*Limonière pour voitures.*)

George Everett Banfield and Robert Irvine, both of Toronto, Ontario, 23rd December, 1891; 5 years.

Claim.—1st. A pair of shafts, A, adjustably connected together, substantially as specified. 2nd. A pair of shafts, A, each shaft being provided with an arm or bar, B, secured to it by a clip, the said arm or bar being braced to the shaft, A, by a stay, D, in combination with a cross-bar, I, adjustably connected to the arm or bar, B, by means of the clips, H, substantially as specified. 3rd. A plate, J, fixed to the cross-bar, I, and the plate, K, fixed to the whiffletree, L, the two plates being fitted together as described, in combination with the clip, M, arranged substantially as specified.

No. 37,988. Electrical Attachments for Railway Switches. (*Appareil électrique pour aiguilles de chemin de fer.*)

Arthur Wellesley Berne and Frank Roder, both of New Orleans, Louisiana, U. S. A., 23rd December, 1891; 5 years.

Claim.—1st. In an electrical attachment for railway switches such as described, two contact plates resting under rail of main track, whereby circuit is closed when rail is displaced, as set forth. 2nd. In an electrical attachment for railway switches such as described, the combination of an insulated bar, battery, line wire, contact plates, rail and switch, for opening or closing a circuit, as set forth. 3rd. In an electrical attachment for railway switches such as described, the combination of an insulated bar adjusted on one side of track, with a disconnected bar on the opposite side of track for opening and closing a circuit, as set forth. 4th. In an electrical attachment for railway switches such as described, the combination with the heel of the cross arm of a locomotive, of brushes for closing a circuit and ringing a bell in cab of locomotive, as set forth. 5th. In an electrical attachment for railway switches such as described, brushes attached to the heel of the cross arm of a locomotive, for closing a circuit and ringing bell in cab of locomotive, in combination with disconnected bars placed on opposite side of track, battery, line wire, and contact plates resting under rail of main track, for the purpose set forth.

No. 37,989. Cultivating and Seeding Machine. (*Scarificateur et semoir.*)

J. O. Wisner, Son & Co., assignees of Wareham Sheldon Wisner and James Samuel Heath, all of Brantford, Ontario, Canada, 23rd December, 1891; 5 years.

Claim.—1st. A pivoted lever engaging with a notched quadrant, a plate located between them and means for operating the plate so as to disengage the lever from the notched quadrant, substantially as and for the purpose specified. 2nd. A pivoted lever engaging with a notched quadrant, a pivoted plate located between them and having a horn projecting behind its pivot, substantially as and for the purpose specified. 3rd. A pivoted lever engaging with a notched quadrant, a pivoted plate located between them and having a horn projecting from it in front of the notched quadrant, substantially as and for the purpose specified. 4th. The pressure bar lever, a plate pivoted between the said lever and its quadrant in combination with a cam fixed to a spindle and located behind the pivoted plate, and means for operating the same, substantially as and for the purpose specified. 5th. The pressure bar lever, a plate pivoted between the said lever and its quadrant in combination with a cam fixed to a spindle and located behind the pivoted plate, and a rod connecting a crank on the cam spindle to a crank on the lifting roller, substantially as and for the purpose specified. 6th. A lever connected to the lifting roller in combination with a hook fixed to one of the tooth sections and designed to engage with the lifting lever, substantially as and for the purpose specified. 7th. The combination with a curved spring tooth, of a curved plate held on the tooth by the bolt which secures the tooth to its seat, substantially as and for the purpose specified.

No. 37,990. Tramway. (*Tramway.*)

John F. Vinton and Joseph S. Ham, both of Spokane Falls, Washington, U.S.A., 23rd December, 1891; 5 years.

Claim.—1st. In a tramway, the track composed of tubes and cables, the cables passing through lateral openings in the tubes and at the ends of the same, substantially as described. 2nd. In a tramway, the track composed of tubes and cables, the tubes having openings in the sides and having their ends thin as shown, and the cables being made to extend through the lateral and end openings of the tubes, substantially as described. 3rd. In a tramway, the combination, with vertical supports having projecting arms, of tubes supported upon the arms and provided with lateral and end openings, and cables extending through the openings of the tubes and having their ends secured to vertical supports, substantially as described. 4th. In a tramway, the combination of the vertical supports, the spring-pressed side arms thereon, and the track supported in the arms, substantially as described. 5th. In a tramway, the combination, with the vertical supports having projecting arms, of the track composed of tubes having side and end openings, and cables extending through the tubes and having their ends connected to the vertical supports, the cables being crossed at the points where the tubes curve and connected by plates, substantially as described. 6th. The combination, with the vertical supports and the tubular track having elongated openings therein, of the arms secured to the supports and having flattened heads to enter the openings of the tubular track, substantially as described. 7th. In a tramway of the character described, the trolley comprising a wheel, a carriage pivoted to the wheel and having a hook at its lower end, a frame hinged to the carriage and having a wheel fixed therein aligning with the pivoted wheel, and a spring connection between the frame and the lower

portion of the carriage, substantially as described. 8th. In a tramway of the character described, a trolley comprising a wheel adapted to travel upon a track, a bar doubled over the wheel and pivoted thereto, the lower end of the bar being formed into a hook, a U-shaped frame pivoted to the bar and extending rearwardly around the wheel, a frame hinged to the U-shaped frame, a wheel fixed in the hinged frame and adapted to fit the tramway track, and a spring connection between the frame and the hooked bar, substantially as described. 9th. The trolley comprising a wheel to run on the tramway track, a bar pivoted to the wheel and having its upper end extending over the wheel and its lower end formed into a hook, a U-shaped frame pivoted to the bar and wheel, a frame hinged to the U-shaped frame and provided with a wheel to run upon the track, and a spring fast to the U-shaped frame and extending over the wheel and beneath the main bar, said spring having its end formed into a shoe to fit the trolley wheel, substantially as described. 10th. The combination, with the trolley wheel, the hooked bar doubled over the wheel and pivoted thereto, and the U-shaped frame pivoted to the bar and wheel and embracing the latter, of a frame hinged to the U-shaped frame and provided with a wheel adapted to rest upon the track, and a spring fixed to the U-shaped frame and extending over the wheel and beneath the hooked bar, said spring having its end formed into a brake shoe, substantially as described. 11th. The combination, with the frame carrying the fixed wheel, said frame being connected with the main trolley bar, as described, of a spring-pressed guide bar pivoted to the frame and extending downward therefrom, substantially as described. 12th. The combination, with the trolley hook, of a sack open at top and bottom, said sack having its upper end provided with loops to engage the hook and its lower end provided with a flap terminating in a loop, substantially as described. 13th. A sack having an opening at top and bottom, its upper end having loops pivoted to opposite side faces thereof and its lower end being reinforced and formed into a flap terminating in a loop and having a strip for a handle fastened thereto, substantially as described.

No. 37,991. Collar and Necktie Holder.

(*Fut de col et cravate.*)

George F. Carruthers, Winnipeg, Manitoba, Canada, 24th December, 1891; 5 years.

Claim.—As an improved article of manufacture, a collar and necktie holder comprising a base plate provided with a button at its upper end, a safety pin at its lower end, and a downwardly projecting and curved spring-tongue between the button and safety pin, said tongue being struck up from the material of the plate, substantially as set forth.

No. 37,992. Puzzle. (*Jeu de patience.*)

Alice N. Burbank, Napoli, New York, U.S.A., 24th December, 1891; 5 years.

Claim.—In a game apparatus or puzzle, the combination, with an outer raceway B, of the radial tracks C, leading from said raceway to the central portion of the board E, the outer raceway being provided with the stalls J, and the central portion having the depressions e, arranged opposite the inner ends of the radial tracks, all substantially as and for the purpose set forth.

No. 37,993. Cutter for Cheese.

(*Coupe-fromage.*)

John Gibson and John Cameron, both of Glasgow, Scotland, 24th December, 1891; 5 years.

Claim.—A cutter for cheese and the like, consisting of a handle with projecting spring arms, hooked at their outer ends, to which is fitted a cutting wire having knobs at each end to retain it in place in the hooks on the arms, substantially as herein set forth.

No. 37,994. Wire Reel. (*Dévidoir pour fil de fer.*)

James L. Hodson, Denova, Iowa, U.S.A., 24th December, 1891; 5 years.

Claim.—1st. The combination with a truck, a pair of uprights rising therefrom, a spindle through said uprights, and a wire-holding reel upon one end of said spindle, of a rod through the uprights above the spindle, braces mounted on said rod and having clevises at their other ends, whereby they may be staked to the ground, two levers pivoted on said rod, each having a short chain with a hook at its free end, and each also having a hook in its body, and a short chain secured to one of the braces and adapted to engage the hooks in the bodies of the levers, all as and for the purpose hereinbefore set forth. 2nd. The combination with a truck, uprights rising therefrom, a spindle through said uprights, and a wire-holding reel upon one end of said spindle, of a rod through the uprights, braces mounted on said rod, two levers pivoted on said rod, each having a short chain provided with a hook, and a short chain secured to one of the braces and adapted to engage hooks in the bodies of the levers, all as and for the purpose set forth.

No. 37,995. Camera. (*Chambre photographique*)

Chancy Roberts Jenne, Fort Wayne, Indiana, U.S.A., 24th December, 1891; 5 years.

Claim.—1st. In a camera, the combination of a casing having an opening in one end and studs, one on each side of said opening, with a board having an opening aligning with the opening of the casing, and slots for engaging the said studs on the casing, substantially as described. 2nd. In a camera, the combination with the mirror for

receiving the image, the reflecting mirror and the condensing lens for condensing the light upon any obscure part of the photograph, for the purpose described. 3rd. In a camera, the combination of a casing, a board or plate for supporting the casing, and a series of boards or strips adjacent to said board for shutting out the light. 4th. In a camera, the combination of the casing having an opening on each side, the inclined mirror secured in one end of the casing, the tube in the other end of the casing, the adjustable lenses in the tube, the bars pivoted in the casing, the support or standard adapted to be connected to the bars, and the single mirror adjustably connected to the support, as described. 5th. In a camera, the combination of a casing having an opening on each side, and a slot to hold the picture, a single mirror secured in one end of the casing at an incline, adjustable lenses in the other end of the casing, bars having one end pivoted in the casing, a support pivotally connected to one of the bars, and a single mirror adjustably connected to the support, as described. 6th. In a mirror, the combination of a casing having an opening on each side, strips for supporting the casing in position, a single mirror secured in one end of the casing, adjustable lenses in the other end of the casing, and an adjustable mirror carried by the casing, substantially as described. 7th. A camera, consisting of a rectangular casing having an opening on each side, a mirror secured in one end of the casing, adjustable lenses in the other end of the casing, a yoke or bail connected to the lens tube for adjusting the lenses, strips or plates for supporting the casing in position and shutting out the light, and the adjustable mirror arranged outside of and connected with the casing, as described.

No. 37,996. Seeding Machine. (*Semoir.*)

James Noxon, Woodstock, Ontario, Canada, 24th December, 1891; 5 years.

Claim.—1st. The pivoted frame D, to which the drag bars 6, are connected, in combination with the rock shaft I, connected to the frame D, and operated by the lever S, substantially as and for the purpose specified. 2nd. The tongue E, braced by the diagonal braces H, the journal boxes J, for the rock shaft I, the arms K, and links L, connecting the rock shaft I, to the frame D, in combination with the T-crank M, fixed to the rock shaft I, and connected to the lever S, by the rod O, and horn P, substantially as and for the purpose specified. 3rd. A series of pivoted loops 5, projecting below the frame D, each loop supporting an independent drag bar, in combination with mechanism arranged to rock the said loops in such a manner as to zig-zag the hoes or teeth connected to the drag bars, substantially as and for the purpose specified. 4th. A series of independently pivoted loops 5, each loop having a pair of drag bars 6, attached to it, and each loop independently connected by a bar 4, to a short arm Z, on the shaft Y, the said arms projecting alternately from opposite sides of the said shaft, in combination with the lever T, arranged to roll the shaft Y, substantially as and for the purpose specified.

No. 37,997. Propelling Power.

(*Appareil de propulsion.*)

Thomas Henry Allen, Alfred W. Singer, and Albert Singer, all of Toronto, Ontario, Canada, 24th December, 1891; 5 years.

Claim.—1st. A shaft supported in suitable bearings in the bottom of a boat, and having a propeller wheel fixed to its end which projects through the end of the said boat, and a screw formed on the portion of the shaft within the boat, in combination with a pivoted dog carried in a suitable cross-head and operated by a rod or handle in such a manner that the dog is thrown into engagement with the screw formed in the shaft, substantially as and for the purpose specified. 2nd. A shaft supported in suitable bearings in the bottom of a boat, and having a propeller wheel fixed to its end which projects through the end of the said boat, and having a right and left hand screw formed on the portion of the shaft within the boat, in combination with a two-tailed dog pivoted in the cross-head supported in suitable guides, a swivel joint being formed between the two-tailed portion of the dog and its pivoted body, the said dog being operated by a rod or handle, substantially as and for the purpose specified.

No. 37,998. Wire Nail Making and Nailing Machinery. (*Machine à faire le clou.*)

Henry Campbell, 115 Cannon Street, London, England, 24th December, 1891; 5 years.

Claim.—1st. As a new article of manufacture, the herein described wire nail having a beveled point formed by a single oblique cut, and a head consisting of a beveled end of the nail formed by a single oblique cut, the beveled portion only being bent at a substantially right angle to the body of the nail, substantially as set forth. 2nd. In a machine for making nails, the combination of the feeding mechanism for feeding the wire forward, gripping mechanism for grasping and holding the wire, a cutter arranged at an oblique angle to the wire for severing the latter upon an oblique angle, and means for giving the cutter a continuous forward movement as it cuts the wire in order to form the nail head, substantially as set forth. 3rd. In a machine for making nails, the combination of means for feeding forward the wire, a cutter for severing the wire, means for grasping and holding the wire during the cutting operation, means for forming the head of the nail, and by a continuation of the cutters' motion forcing it into the parts to be united thereby, and means for moving the nail, grasping and holding devices after the heading operation and before the nail is driven or forced into the parts it unites, substantially as set forth.

No. 37,999. Art of Manufacturing Artificial Flowers. (*Art de fabriquer des fleurs artificielles.*)

Victor Alpenburg and Louise Alpenburg, both of New York, State of New York, U.S.A., 24th December, 1891; 5 years.

Claim.—1st. In the manufacture of artificial flowers the method described, of treating rice paper or analogous material by soaking in a solution of salt petre, alum, and carbonate of potassium, coloring in a dye in the presence of wood alcohol and glycerine, and finally treating with wax, all substantially as herein specified. 2nd. The method described of treating rice paper or analogous material in a solution, drying, coloring in a dye and drying, cutting to the forms required, waxing the edges, and finally shaping mechanically to the dishing, curled, or veined condition desired, as herein specified. 3rd. An artificial flower having petals of rice paper saturated and dyed and shaped to the required forms and having the edges waxed as herein specified.

No. 38,000. Process of Making Railway Rails. (*Procédé de fabrication des rails de chemin de fer.*)

Johnson Company, (assignees of Maximilian M. Suppes), all of Johnstown, Pennsylvania, U.S.A., 24th December, 1891; 5 years.

Claim.—1st. The hereinbefore described process, which consists in forming a rail and a base or support separately and welding said rail and base or support together. 2nd. The process of making an improved railroad rail, which consists in forming a rail provided with a head and web and welding a support or base to said web. 3rd. The process of making an improved railroad rail which consists in rolling a rail provided with a head and web and welding a base or support to said web. 4th. The hereinbefore described process, which consists in rolling a rail and welding a base or support to said rail at intervals throughout the length of the rail. 5th. The hereinbefore described process, which consists in rolling a rail provided with a head and web and welding a base or support to said web at intervals throughout the length of the rail. 6th. The process of making an improved railroad rail, which consists in forming the rail proper without base or support and welding a base or support thereto. 7th. The process of making an improved railroad rail, which consists in forming the rail proper without base or support and welding a base or support to said rail at intervals throughout its length.

No. 38,001. Belt Joint. (*Joint de courroie.*)

George Cassady, Vancouver, British Columbia, Canada, 24th December, 1891; 5 years.

Claim.—1st. A belt joint formed by cutting out one end of the belt flatways a V-shaped gap, cutting the other end to form an exact counterpart and inserting the same in said gap, cementing the spliced or joined surfaces together and securing the free edges by rivets or stitches, substantially as set forth. 2nd. A belt joint formed by cutting out of one end of the belt flatways a V-shaped gap, the other end inserted and cemented in said gap after shaping it to form an exact counterpart of said gap, substantially as set forth.

No. 38,002. Means and Apparatus for Heating Railway Carriages, also Applicable to Other Like Heating Purposes. (*Appareil pour chauffer les chars de chemin de fer, etc.*)

Marie Ferdinand Lanorenon, Paris, France, 24th December, 1891; 5 years.

Claim.—1st. The hereinbefore described system of heating by means of a mixture of compressed air and steam under pressure, capable of transmitting the heat to distant localities, affording a uniform pressure in the pipes and enabling the temperature to be regulated as required at each of the localities where the heat is applied, substantially as hereinbefore explained, the said system being applicable to heating and a fixed or moveable locality. 2nd. For the purpose of the realization in practice of this system of heating by a mixture of compressed air and steam under pressure, the arrangement of a main pipe A, to which the said mixture is supplied and which communicates with branch heating pipes B, each of the latter being provided with a regulating cock or valve D, placed on the junction of these pipes or at the opposite extremity all arranged and operating in the manner and for the purpose, substantially as hereinbefore described and illustrated by way of example in the annexed drawings, as applied to the heating of a railway train. 3rd. For heating railway trains in particular the arrangement hereinbefore described and claimed consisting of a main pipe A, and heating pipes B, having regulating valves D, in combination or connection with the compressed air reservoir of the air brakes or with a special air pump and with the steam exhaust of the said pumps or with the boiler for the purpose of producing the mixture of air and steam which the said main pipe A, provided with a union C, for each carriage or car distributes to all the heating pipes B, substantially as hereinbefore described, with reference to the accompanying drawings.

No. 38,003. Process and Apparatus for Tanning Hides. (*Procédé pour tanner les peaux.*)

Lorentz Albert Groth, London, England, 24th December, 1891; 5 years.

Claim.—1st. The method or process of tanning which consists in keeping the hides or skins in motion in a stationary or fixed tank,

vat or ordinary tan-pit containing the tanning liquor in keeping the tanning liquor in motion so as to prevent the same from becoming stagnant between the hides or skins and from being carried round therewith and in passing a current of electricity, or not, through the tanning liquor and the hides or skins, substantially as hereinbefore described. 2nd. In apparatus for tanning hides or skins in which such hides or skins are kept in motion in a stationary or fixed tank, vat or tan-pit containing the tanning liquor the combination with the main rotary, reciprocating or other frame work B, B', of the separate removable frames C, for carrying the hides or skins, substantially as hereinbefore described and shown. 3rd. In apparatus for tanning hides or skins in which such hides or skins are kept in motion in a stationary or fixed tank, vat or tan-pit containing the tanning liquor, the combination with the apparatus for keeping the hides or skins in motion of means or apparatus for stirring, agitating, or circulating the said tanning liquor in the said tank, vat or tan-pit, substantially as hereinbefore described and shown, and for the purpose specified.

No. 38,004. Method of Manufacturing Cellulose Nitrates. (*Mode de fabrication de nitrate de cellulose.*)

Carl Friedrich Clemm, Ludwigshafen, Bavaria, Carl Josef Haas, Mannheim, and William Lenz, Waldhof, Baden, German Empire, 24th December, 1891; 5 years.

Claim.—A process of converting sulphite cellulose or cellulose obtained from wood by any other known process into a condition favourable for the manufacture of cellulose nitrates, especially of pure cellulose hexanitrate (term according to Bellstein, 2nd edition) —(C¹² H¹⁴ (No. 3) O⁴) which process consists in reducing to such a degree by means of a suitable reducing machine (disintegrator) carding machine, devil or the like the cellulose previously entirely freed from incrusting matters and other soluble constituents and then dried, that by a thorough treatment of a sample of the so produced comminuted material with intrasulphuric acid a nitrate is attained which is not decomposed at a temperature of two degrees centigrade substantially as hereinbefore described.

No. 38,005. Quadrant and Brush Holder for Railway Motors. (*Quadrant et porte-brosse pour moteurs de chemin de fer.*)

Reliance Electric Manufacturing Company, Waterford, Ontario, Canada, (assignees of Frank Bankson Rae, Detroit, Michigan, U.S.A.) 24th December, 1891; 5 years.

Claim.—1st. A brush holding quadrant for electric motors, consisting of a collar made in two parts connected together by screws, whereby the two parts can be adjusted with relation to each other around the armature bearings, substantially as described. 2nd. A brush holding quadrant consisting of a collar made in two parts adjustably secured together and provided with arms carrying brush holders, the said arms being connected to the respective portions of the collar, substantially as described. 3rd. A quadrant and brush holder for electric motors consisting of a collar made in two portions and adjustably connected together, each portion of the collar carrying an arm secured thereto, and brush holding stem secured to each arm and supporting a rectangular brush holder, and a spring actuated lever for maintaining the brushes in position, substantially as described. 4th. The combination with the brush holder having an extension of a lever connected thereto, a rod passing through the extremity of the rod and holder and a spring adjustably mounted on the rod and bearing on the lever, substantially as described. 5th. The combination with the brush holder of a spring actuated lever, the said lever having arms pivoted thereto and arranged to bear upon the brush, substantially as described. 6th. A quadrant and brush holder for electric motors, consisting of a collar in two portions, a screw handle adjustably connecting the portions of the collar, insulating arms socketed in the collar, brush holding stems mounted in the arms supporting rectangular brush holders, extensions connected to said brush holders, spring actuated levers mounted in the extensions and pivoted arms connected to the levers for bearing on the brushes, substantially as described.

No. 38,006. Furnace Mouth Lining.

(*Garniture pour bouches de fourneau.*)

Ben Brackett Lamprey and Almon Cole Bugbee, both of Lake Village, New Hampshire, U.S.A., 26th December, 1891; 5 years.

Claim.—1st. A furnace mouth lining, constructed and arranged for the circulation of water and steam therein, combined with a steam dome connecting with the lining, a pipe affording means of communication between the steam dome and boiler, and another pipe affording means of communication between the boiler and said lining, substantially as set forth. 2nd. A furnace mouth lining, constructed and arranged for the circulation of water and steam therein, combined with a steam dome connecting with the lining, a pipe, affording means of communication between the steam dome and boiler, a pipe affording means of communication between the boiler and said lining, and an inlet pipe communicating with said lining, substantially as set forth. 3rd. A furnace mouth lining constructed and arranged for the circulation of water and steam therein, combined with an inlet, a pipe affording means of communication between said lining and a high point in the boiler, and another pipe affording means of communication between said pipe and a lower point in the boiler, substantially as set forth.

No. 38,007. Window Frame. (*Cadre de fenêtre.*)

Josephus Hooper, Louisville, Kentucky, U.S.A., 26th December, 1891; 5 years.

Claim.—1st. The combination of a window frame, a sash holding strip, a headed pin on the under side of the strip, a mortise in the

frame, a plate covering the mortise and having a key-hole slot therein, and an auxiliary catch to hold the strip against endwise movement, substantially as described. 2nd. In a window frame, the combination of the sash holding strip, the mortise *a*, in the frame, the plate *b*, covering the mortise, the key-hole slot *c*, in the plate, the headed pin or screw in the under side of the strip, and a spring catch to hold the pin in the narrow part of the slot, substantially as described. 3rd. In a window frame, the combination of the sash holding strip, the mortise *a*, in the frame, the plate *b*, covering the mortise, the key-hole slot *c*, in the plate, the headed pin or screw in the underside of the strip and the spring catch secured upon the outer side of the strip and having its end projecting through the strip alongside of the pin, substantially as described. 4th. In a window frame, the combination of the sash holding strip, the mortise *a*, in the frame, the plate *b*, covering the mortise, the key-hole slot *c*, in the plate, the headed pin or screw in the under side of the strip and the spring catch projecting inward from the strip, and having a knob or thumb piece on the outer side, substantially as described.

No. 38,008. Pea Harvester. (*Arrache-pois.*)

William Henry Humphries, Walton, Ontario, Canada, 26th December, 1891; 5 years.

Claim.—In a pea harvester the combination with the lift of a downwardly projecting plate secured thereto and pivoted upon a bar carried immediately behind the cutter-bar, substantially as and for the purpose specified.

No. 38,009. Thill Supporter.

(*Arçon de limonière.*)

Alonzo Dillenback, Pelatine Bridge, New York, U.S.A., 26th December, 1891; 5 years.

Claim.—1st. In a thill-supporter, the combination, with an axle, of a vehicle and a rod hinged thereto and projecting forward between the thills, with a sleeve reciprocating on said rod, said sleeve provided with an automatic catch and secured to the cross-piece between the thills, all substantially as described and for the purpose set forth. 2nd. In a thill-supporter, a rod attached at one end to a vehicle, provided near its opposite end with a reciprocating sleeve, said sleeve provided with a slot in which is secured an eccentric catch operating in connection with said rod, and provided with a nut attached to the end of a whiffletree-bolt, all substantially as described and for the purpose set forth. 3rd. In a thill-supporter, a rod hinged at one end to a vehicle provided near its opposite end with a reciprocating slotted sleeve, said sleeve attached to the cross-piece between the thills, all substantially as described and for the purpose set forth. 4th. In a thill-supporter, a combination of a rod provided with an eye at one end articulating with an eye in a stud attached to a vehicle, said rod provided with a reciprocating sleeve attached eccentrically to a whiffletree-bar, all substantially as described and for the purpose set forth. 5th. In a thill supporter, a combination of a rod articulating with a stud attached to a bar secured by a clip to the spring of a carriage, said rod provided with a sleeve to which is attached an eccentric catch operating in connection with said rod and secured to the whiffletree-bar, all substantially as described and for the purpose set forth.

No. 38,010. Machine for Mixing Tea.

(*Machine pour mélanger le thé.*)

Charles Bremner, Hamilton, Ontario, Canada, 26th December, 1891; 5 years.

Claim.—1st. In a tea mixer, the combination of a cylinder, half round bottom, globular shaped frame having three ribs, provided each with a wing, and a spindle and crank handle for operating the same, substantially as and for the purpose specified. 2nd. In a tea mixer, the combination of the cylinder *A*, half round bottom *B*, globular shaped frame *F*, with curved ribs *a*, and wings *b*, shaft *C* and crank handle *D*, with or without the cover *G*, substantially as and for the purpose specified.

No. 38,011. Lubricator for Journal Bearings. (*Graisseur pour coussinets de rouillon.*)

Walter William Smith, The Priory Works, Lower Clapton, London, England, 26th December, 1891; 5 years.

Claim.—1st. In a journal lubricator wherein the lubricant is fed by capillary attraction to a pad held up to the journal, a frame curved to the shape of the journal made in two longitudinal parts loosely kept in their relative positions by means of helical springs on their ends, the frame so made being supported on a vertical spiral or other spring or springs resting on the base of the axle box, and being provided on its underside with pins, spikes, or their equivalents on to which the longitudinal sides of the pad or selvage edges thereon are impaled, substantially as hereinbefore described and for the purposes stated. 2nd. In a journal lubricator wherein the lubricant is fed by capillary attraction to a pad held up to the journal, the use of a frame for supporting the pad constructed substantially in the manner and for the purpose hereinbefore set forth. 3rd. In a journal lubricator wherein the lubricant is fed by capillary attraction to a pad on a frame held up to the journal, the method of securing the pad to the frame by means of pins, spikes, or their equivalents on the underside of the frame on to which the sides of the pad or selvage edges thereon are impaled, substantially as and for the purpose hereinbefore set forth. 4th. My improved means for lubricating journals substantially as described and for the purposes stated.

No. 38,012. Lubricator for Car Axles.

(*Boîte à graisse.*)

Edward Best, Carleton Place, Ontario, Canada, 26th December, 1891; 5 years.

Claim.—1st. A car-axle lubricator consisting of a casting having a recessed concave portion in which a broad wick is brought in contact with the axle, a spiral spring adapted to hold the casting and wick in contact with the said axle, slots in the said casting through which the ends of the said wick pass, the said ends being securely held at the bottom of the axle-box, and flexible shields secured to the ends of the said casting, substantially as set forth. 2nd. The combination, with a car-axle box, of the casting *C* having a recessed concave surface *c*, rims *D*, slots *E*, depending flanges *F*, spring-seat *H*, apertures *G*, the spiral spring *L* adapted to rest on the bottom of the box and on the said seat *H*, the wick *M*, lying in the said concave recess *c*, and passing through the slots *E*, and the shields *I* and *J*, secured to the said depending flanges *F* by the strips *K*, substantially as set forth. 3rd. In a car-axle lubricator, a casting *C*, having the apertures *G* and a recessed concave portion *c* adapted to hold a wick in contact with the bearing portion of the axle, the ends of the said wick being securely held at the bottom of the axle-box, substantially as set forth. 4th. The combination, in a car-axle lubricator, with the casting *C*, wick *M*, and spring *L*, of the flexible shields *I*, *J*, and *J*, secured to depending flanges at either end of the said casting *C*, substantially as set forth.

No. 38,013. Water Gage. (*Indicateur d'eau.*)

Henry G. Brooks, Battle Creek, Michigan, U.S.A., 26th December, 1891; 5 years.

Claim.—1st. The cylindrical chamber *G* provided with the stuffing box *d*, the telescopic extension *b*, and the clamping bar *I* carrying the screw *c*, in combination with the glass tubes of a water-gage, substantially as and for the purpose specified. 2nd. The cylindrical chamber *G* having the stuffing box *d*, the telescopic extension *b*, the clamping bar *I* carrying the screw *c*, and the joining bar *B*, in combination with the glass tube of a water-gage, all substantially as set forth. 3rd. The clamping bar *I* having the set screws *i*, *j*, circular foot pieces *o*, *o*, and screw *c*, in combination with the telescopic extension *b*, stuffing box *d*, chamber *G*, and glass tubes of a water-gage, substantially as set forth. 4th. The seatings having the inner tube *B*, and the gasket *m*, in combination with the glass tube of a water-gage, as described. 5th. The gasket *m* having a flanged base and upper portion which gradually decreases in outside diameter from the base in the top, substantially as described.

No. 38,014. Draft Equalizer.

(*Régulateur du tirage.*)

Joseph W. Gamble and James T. R. Green, both of Des Moines, Iowa, U.S.A., 26th December, 1891; 5 years.

Claim.—1st. In the improved draft evener, the combination of the tongue, the angle bracket secured to the tongue and having its outer portion provided with a vertical flange and having the shoulders arranged at the ends of the flange, the bell crank lever having its long arm arranged between the said shoulders, the brace rod *23*, secured to the bracket and connected with the pivot of the bell-crank lever and supporting the same, the bracket bar, the main whiffletree pivoted to the bracket bar and connected with the bell-crank lever and having whiffletrees at its ends, substantially as described. 2nd. In the improved draft evener, the combination of the tongue, the angle bracket having its arms bent at *19*, and secured to the tongue, and provided at its outer end with the shoulders *21*, the stationary brace *24* secured to the tongue and the outer end of the bracket, the bell crank lever fulcrumed on the bracket and having its long arm arranged between the said shoulders *21*, the bracket bar, the main whiffletree pivoted to the bracket bar at a point beyond its centre, and having its long arm connected with the short arm of the bell crank lever, and its short arm connected with the long arm of the bell crank lever, the keeper secured to the tongue and inclosing the main whiffletree, the doubletree *6*, secured to the outer end of the main whiffletree, and the doubletree *6* secured to the inner end of the main whiffletree, and having one of its singletrees arranged on each side of the tongue, substantially as set forth.

No. 38,015. Car Axle Box. (*Boîte à graisse.*)

The Edward Best Car Axle Box and Lubricator Company, assignees of Henry Bush Spencer, all of Ottawa, Ontario, Canada, 26th December, 1891; 5 years.

Claim.—In an oil-vessel for car axles, the combination with a spring supported removable vessel, of the dish inclined side wings *D* and the raised bearings *E*, substantially as set forth.

No. 38,016. Wire Fence Stay Fastening.

(*Attache d'étai pour clôture en fil de fer.*)

Sylvester Eberly, Ottokoe, and Emanuel Dolson Batdorf, Batdorf, both of Ohio, U. S. A., 26th December, 1891; 5 years.

Claim.—1st. The combination with a fence wire and a stay wire, of a fastening plate having slots *a* and *b*, which slots cross midway of their ends and form the four separate and independent wings *e*, the latter binding at their inner edges against the sides of the said wires, substantially as described. 2nd. A fastening plate for the purpose described, having slots *a* and *b*, which cross midway of their ends, and having the four separate and independent wings *e*, the plate being deflected between its ends on a line corresponding with the position of one of the said slots, substantially as described for the purpose set forth.

No. 38,017. Pill Box. (*Boîte pour pilules.*)

Kamame Medicine Company, assignees of William Henry Hartley, all of Windsor, Ontario, Canada, 26th December, 1891; 5 years.

Claim.—1st. A box provided with a partition having its ends bent and extending along the sides of the box, substantially as described. 2nd. A box provided with a partition having its ends bent in opposite directions and extending along the sides and in the corners of the box, substantially as described. 3rd. A box provided with a partition piece having its end portions slit, then bent in opposite directions and extending along the sides of the box, substantially as described.

No. 38,018. Boot and Shoe. (*Chaussures*)

J. A. and M. Coté, assignees of Hilaire Gaudette, all of St. Hyacinthe, Quebec, Canada, 28th December, 1891; 5 years

Claim.—1st. The combination with the sole of a shoe or boot, of a cork insole secured between the sole and its inner lining, substantially as and for the purpose specified. 2nd. The combination with the sole of a shoe or boot, of a cork insole inserted in a recess made on the inside of the sole and secured between the said sole and its inner lining, substantially as and for the purpose specified.

No. 38,019. Railway Switch.

(*Aiguille de chemin de fer.*)

Dwight Madison Church, Willimatic, Connecticut, Arthur Charles Andrew, Windham, Connecticut, and Edgar Benjamin Fors, Bay City, Michigan, all in U.S.A., 28th December, 1891; 5 years.

Claim.—1st. In combination with a railway switch, the described means whereby the lever on the locomotive may operate the same, consisting of a lever on the locomotive and carrying a wheel having a flange thicker than those of the car wheels, levers F, G, H, J, and slides I, K, all substantially as set forth. 2nd. In combination with lever D, slide E, lever F, and a ball on lever F, the combination being and operating substantially as set forth. 3rd. In combination with a railway switch point and a lever Q, the slide K, connecting said lever and switch, and the bar M, on which the switch lever is pivoted, the combination permitting the switch to be operated by the action of the thick flanged wheel, even when the switch lever is locked.

No. 38,020. Sulky Plow. (*Charrue à siège.*)

Herbert W. Fleury, (assignee of Charles Thom and Charles J. Bailey), all of Aurora, Ontario, Canada, 28th December, 1891; 5 years.

Claim.—1st. In a sulky plow, a bracket B, fixed to the axle A, and having a sleeve D, formed on it to receive the king bolt F, extending from the bracket G, in which the plow beam is movably held, substantially as and for the purpose specified. 2nd. A bracket B, secured to the axle A, a disc E, formed on its top, and a sleeve D, on its bottom, in combination with the bracket G, having a disc formed on its bottom to rest on the disc E, and a king-bolt F, to fit into the sleeve D. 3rd. The vertical bars h, forming the sides of the bracket G, and between which the plow beam section H, passes, in combination with the side plates P, and movable blocks Q, substantially as and for the purpose specified. 4th. The vertical bars h, forming the sides of the bracket G, and between which the plow beam section H, passes, the king-bolt F, extending from the bracket G, and journaled in the sleeve D, in combination with the side plates P, and movable blocks Q, substantially as and for the purpose specified. 5th. The plow beam sections H, I, and K, secured together by the blocks M, and bolts N, the former having lips a, to overlap the edges of the sections, substantially as and for the purpose specified. 6th. The plow beam sections H, I, and K, secured together by the blocks M, and bolts N, in combination with the brace O, secured to and extending from the plow beam section I, to the plow beam section K, substantially as and for the purpose specified. 7th. In a sulky plow, a divided axle, the two parts being adjustably connected together by a bracket or sleeve provided with one or more set screws, substantially as and for the purpose specified. 8th. In a sulky plow, a plow beam section I, extending behind the rear plow and supporting the bracket in which the vertical spindle of the rear furrow wheel is journaled, substantially as and for the purpose specified. 9th. A wheel axle Z, provided with an oil cup B', and an annular flange C', in combination with the hub of a wheel having an annular flange C', a bolt A', provided with a suitable nut E', substantially as and for the purpose specified. 10th. A wheel axle Z, having an oil cup B', and an annular flange C', in combination with the hub of a wheel having a bushing D', to fit the axle, and an annular recess in its face to receive the annular flange C', a bolt A', and nut E', substantially as and for the purpose specified. 11th. The plow beam sections H, I, and K, secured together by the blocks M, and bolts N, substantially as shown and described. 12th. In a sulky plow, a plow beam section I, extending behind the rear plow and supporting the bracket on which the vertical spindle of the rear furrow wheel is journaled with a swivel support arranged to carry the front end of the plow beam, substantially as and for the purpose specified. 13th. A bracket movably fitted on the front axle A, and supporting the plow beam, in combination with means for adjusting the said bracket upon the said axle, substantially as and for the purpose specified.

No. 38,021. Method of Manufacturing Textile Materials. (*Mode de fabrication des etoffes.*)

William Vaughan Williams, (assignee of Alfred Julius Boulton), both of London, England, 28th December, 1891; 5 years.

Claim.—1st. A needle having the barbs or operative portions oppositely directed substantially as and for the purpose described. 2nd. The method of producing double faced fabrics in needle looms by means of needles having the barbs so arranged as to operate both when entering the fabric and when withdrawing from it, substantially as described. 3rd. The method of producing double faced fabrics in needle looms by passing barbed needles through it from both sides during a single passage of the fabric through the machine the barbs of one set of needles facing in one direction and those of the other set of needles facing in the opposite direction, substantially as described. 4th. The method of producing double faced fabrics in needle looms by means of needles some of which have the barbs facing in one direction and some in the other all the needles being carried in or upon the same needle plate, substantially as described.

No. 38,022. Grab Hook. (*Grappin.*)

Octave Boiteau, Eggleton, and Joseph J. Fortier, Chippewa Falls, both in Wisconsin, U.S.A., 28th December, 1891; 5 years.

Claim.—The combination with a grab hook having a fastening hole in the head thereof, a tail threaded, a guard H, and a terminal hook C, of a nut provided with stops G, G, and a chain, substantially as described and for the purposes hereinbefore set forth.

No. 38,023. Presser Wheel for Knitting Machines. (*Roue de comprimeur pour machines à tricoter.*)

Frank Leoy Wiggin, Lowell, Massachusetts, U.S.A., 30th December, 1891; 5 years.

Claim.—1st. A presser wheel for knitting machines embracing independently movable presser-bits, a support therefor, movable holders or controllers for the said presser-bits, and a pattern mechanism to control said holders, as set forth. 2nd. A presser wheel for knitting machines embracing independent radially movable presser bits, a support therefor, movable holders or controllers for the said presser-bits, and a pattern mechanism to control said holders, as set forth. 3rd. A presser wheel for knitting machines embracing independent radially movable presser-bits, each bit being provided with one or more nibs, holders or controllers to engage the said nibs, and a pattern mechanism to control said holders, as set forth. 4th. A bit for presser wheels of knitting machines provided with a beard engaging end, and having one or more nibs, as set forth. 5th. A presser wheel for knitting machines embracing a radially grooved bed or disk, movable bits provided with nibs arranged in said grooves, holders or controllers to engage said nibs, and a pattern device to control said holders, as set forth. 6th. A presser wheel for knitting machines embracing a radially grooved bed or disk, movable bits provided with nibs arranged in said grooves, a cam dial or disk to engage the bits and move the same outward into operative position, holders to engage the nibs of the bits to render the latter operative, and a pattern device to control said holders, as set forth. 7th. A presser wheel for knitting machines embracing a radially grooved bed or disk provided with a notched or toothed rim to engage the shanks of the needles, movable bits provided with nibs arranged in said grooves, a cam dial or disk to engage the bits and move the same outward into operative position, holders to engage the nibs of the bits to render the latter operative and a pattern device to control said holders, as set forth. 8th. The combination with the needle cylinder and needles, of a presser wheel having independently movable presser bits, a support therefor, movable holders or controllers for said bits, a pattern mechanism to control said holders, and means intermediate of the needle cylinder and pattern mechanism to actuate said pattern mechanism, as set forth.

No. 38,024. File for Documents.


(*Serre-papier.*)

Joseph Arthur Des Rivieres and Joseph Pierre Prud'homme, both of Ottawa, Ontario, Canada, 30th December, 1891; 5 years.

Claim.—1st. In a document file, the combination with the file C, having a follower and suitable means for securing the said follower of the sliding case B, sliding in a suitable compartment, means for limiting the sliding of said case, the grooves H, in said case, guide plate H², the edges of which project over said grooves, the space A, and stops h², the supplementary case J, having returned fingers K, the said fingers being adapted to engage and be held by the edges of the said guide plate, substantially as set forth. 2nd. The combination in a document file with bottom D, and end D², and sides d, of the grooves E, the plate E², the edges of which overhang the said grooves, the space e, the stops e², the follower F, having returned fingers f, adapted to engage and be held by the overhanging edges of the guide plate and the stop G, on said follower having the square shoulder g, substantially as set forth. 3rd. The combination in a document file, with a file C, hinged to a sliding case sliding in a suitable compartment of the slot a, in the said compartment and the removable pin m, in the said sliding case, substantially as set forth.

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

2379. JAMES LEY, 3rd five years of No. 13,790, from the 4th day of December, 1891. Improvements in Drill Flows, 1st December, 1891.
2380. CLARK DEAN PAGE, 2nd five years of No. 25,820, from the 20th day of January, 1892. Improvements in Lime Kilns, 2nd December, 1891.
2381. EDWIN POPE, 2nd five years of No. 25,494, from the 6th day of December, 1891. Improvements in Telephone Circuits and Switches, 2nd December, 1891.
2382. JOHN MITCHELL ALLEN, 2nd five years of No. 25,512, from the 6th day of December, 1891. Improvements on Paper and Composition of Matter for the same, 3rd December, 1891.
2383. PATRICK FITZGIBBONS, 2nd five years of No. 25,515, from the 7th day of December, 1891. Improvements in Tube Expanders, 4th December, 1891.
2384. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,365, from the 2nd day of April, 1892. Improvements in Kilns for making Charcoal, 4th December, 1891.
2385. RATHBUN COMPANY, (assignee), 3rd five years of No. 13,942, from the 2nd day of January, 1892. Improvements in Fire Proof Composition, 4th December, 1891.
2386. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,756, from the 15th day of January, 1892. Improvements in the Art of making Porous Earthenware from mixtures of earthy and vegetable matters, 4th December, 1891.
2387. RATHBUN COMPANY, (assignee), 2nd five years of No. 26,847, from the 4th day of June, 1892. Improvements in the Construction of Tunnels, Subways or Arches, 4th December, 1891.
2388. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,753, from the 15th day of January, 1892. Improvements in Filtering Cisterns or Vats, 4th December, 1891.
2389. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,764, from the 15th day of January, 1892. Improvements in Filtering Materials, 4th December, 1891.
2390. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,742, from the 15th day of January, 1892. Improvements in Filtering Water, Wells and Reservoirs, 4th December, 1891.
2391. RATHBUN COMPANY, (assignee), 2nd five years of No. 26,662, from the 9th day of May, 1892. Improvements in Fire Proof Posts and Columns, 4th December, 1891.
2392. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,743, from the 15th day of January, 1892. Improvements in Fire Proof Safes, Vaults, and Storage Receptacles, 4th December, 1891.
2393. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,755, from the 15th day of January, 1892. Improvements in Fire Proof Safes and Vaults, 4th December, 1891.
2394. RATHBUN COMPANY, (assignee), 2nd five years of No. 26,731, from the 16th day of May, 1892. Improvements in Pavements, 4th December, 1891.
2395. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,850, from the 25th day of January, 1892. Porous Earthenware Product with Strengthening Cores, 4th December, 1891.
2396. RATHBUN COMPANY, (assignee), 2nd five years of No. 26,732, from the 16th day of May, 1892. Improvements in Side Walks, 4th December, 1891.
2397. RATHBUN COMPANY, (assignee), 2nd five years of No. 25,541, from the 11th day of December, 1891. Improvements in Automatic Apparatus for Carbonizing Sawdust and the Production of Gas, 4th December, 1891.
2398. RATHBUN COMPANY, (assignee), 3rd five years of No. 14,533, from the 3rd day of April, 1892. Improvements in the Manufacture of Compressed Fuel from Sawdust, 4th December, 1891.
2399. BELL TELEPHONE COMPANY OF CANADA, (assignee), 2nd and 3rd five years of No. 25,731, from the 13th day of January, 1892. Improvements in Magneto Electric Signalling Apparatus, 9th December, 1891.
2400. BELL TELEPHONE COMPANY OF CANADA, (assignee), 2nd and 3rd five years of No. 26,020, from the 16th day of February, 1892. Improvements in Telephone Transmitters, 9th December, 1891.
2401. BELL TELEPHONE COMPANY OF CANADA, (assignee), 2nd and 3rd five years of No. 26,195, from the 10th day of March, 1892. Improvements in Telephone Transmitters, 9th December, 1891.
2402. JOSEPH BENJAMIN FREEMAN, 2nd five years of No. 26,070, from the 26th day of February, 1892. Improved White Pigment, 9th December, 1891.
2403. LILLIAN WHITEFIELD, 2nd five years of No. 25,614, from the 27th day of December, 1891. Marking Compound for Transferring Designs to Surfaces from Perforated Patterns, 9th December, 1891.
2404. WARREN TODD KELLOGG, 2nd five years of No. 25,590, from the 20th day of December, 1891. Improvements in Sash Pulleys, 10th December, 1891.
2405. THOMAS PATRICK SWEENEY, 2nd five years of No. 25,744, from the 15th day of January, 1892. Improvements in Air Compressors and Attachments for Locomotives, 10th December, 1891.
2406. LACHLAN EBENEZER MCKINNON, 3rd five years of No. 13,840, from the 18th day of December, 1891. Improvements on Buggy or Carriage Dashers, 12th December, 1891.
2407. WILLIAM WALLACE HANSCOM, 2nd five years of No. 25,595, from the 20th day of December, 1891. Improvements in Automatic Air Brakes for Railway Trains, 15th December, 1891.
2408. JOHN MITCHELL ALLEN, 2nd five years of No. 25,584, from the 18th day of December, 1891. Paper and Composition of matter for the same, 15th December, 1891.
2409. WILLIAM HAMILTON, 3rd five years of No. 14,011, from the 16th day of January, 1892. Improvements on a Machine for Sawing Lumber, 16th December, 1891.
2410. GEORGE THOMAS TUCKETT, 3rd five years of No. 13,985, from the 16th day of January, 1892. Improvement in Tin Caddies for putting up Tobacco, 16th December, 1891.
2411. GILES FRANK FILLEY, 3rd five years of No. 13,852, from the 20th day of December, 1891. Improvements on Cooking Stoves and Ranges, 19th December, 1891.
2412. GILES FRANK FILLEY, 3rd five years of No. 13,853, from the 20th day of December, 1891. Improvements on Cooking Stoves and Ranges, 19th December, 1891.
2413. GILES FRANK FILLEY, 3rd five years of No. 13,856, from the 20th day of December, 1891. Improvements on Stove and Range Ovens, 19th December, 1891.
2414. GILES FRANK FILLEY, 3rd five years of No. 13,857, from the 20th day of December, 1891. Improvements on Stove and Range Ovens, 19th December, 1891.
2415. GILES FRANK FILLEY, 3rd five years of No. 14,480, from the 24th day of March, 1892. Improvements on Cooking Stoves, 19th December, 1891.
2416. HARRISON ARMS, 2nd five years of No. 25,765, from the 17th day of January, 1891. Improvements in Stock Cars, 21st December, 1891.
2417. ANDREW R. BENNETT, 2nd five years of No. 25,653, from the 23rd day of December, 1891. Improvements in Decorated Asbestos or Amianthus Stove and Furnace Pipes, 21st December, 1891.
2418. SCHLICHT and FIELD COMPANY, (assignee), 2nd five years of No. 25,680, from the 8th day of January, 1892. Improvements in Indexes, 21st December, 1891.

2419. SCHLICHT and FIELD COMPANY, (assignee), 2nd five years of No. 25,697, from the 11th day of January, 1892. Improvements in Indexes, 21st December, 1891.
2420. EZRA WILLIAM VANDUZEN, 3rd five years of No. 13,900, from the 26th day of December, 1891. Improvements on Steam Water Elevators, 21st December, 1891.
2421. JOHN WILLIAM GROVER, 2nd five years of No. 25,608, from the 24th day of December, 1891. Improvements in Spring Washers for Screw Bolts and Nuts, 22nd December, 1891.
2422. ERNEST FREDERICK PFLUEGER, 2nd five years of No. 25,645, from the 29th day of December, 1891. Improvements in Fishing Floats and Line Connections Therefor, 23rd December, 1891.
2423. FREDERIC SCOTT SEAGRAVE, 2nd five years of No. 25,621, from the 27th day of December, 1891. Improvements on Ladders, 23rd December, 1891.
2424. PATRICK DUNN, 3rd five years of No. 15,669, being a re-issue of Patent No. 13,941, from the 2nd day of January, 1892. Improvements on Wire Staples, 24th December, 1891.
2425. WILLIAM SPENCER DOIG, 2nd five years of No. 25,716, from the 13th day of January, 1892. Improvements in Box Nailing Machines, 24th December, 1891.
2426. AUGUST WILLIAM KOCH, 2nd five years of No. 25,644, from the 29th day of December, 1891. Improvements in Brackets, 24th December, 1891.
2427. ALANSON HARRIS, JOHN HARRIS and JAMES KERR, 3rd five years of No. 13,909, from the 28th day of December, 1891. Improvements on Harvesting Machines, 28th December, 1891.
2428. JAMES WHITTINGHAM KENSETT, 2nd five years of No. 25,703, from the 12th day of January, 1892. Improvements in Metallic Lathing and Foundation Therefor, 28th December, 1891.
2429. JOHN J. TABER, 2nd five years of No. 25,635, from the 28th day of December, 1891. Improvements on Snow Ploughs for Country Roads, 28th December, 1891.
2430. THOMAS WILLIAM MEACHEM, 2nd five years of No. 25,770, from the 17th day of January, 1892. Improvements in Processes of Treating Raw Hides, 29th December, 1891.
2431. WILLIAM DAMER, 2nd five years of No. 25,807, from the 19th day of January, 1892. Improvements in the Manufacture of Boots and Shoes, 31st December, 1891.
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DECEMBER LIST OF TRADE MARKS.

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4200. GUSTAVUS C. KILGORE and EDGAR F. HANSON, of Belfast, Maine, U.S.A. Medicine for Nervous Diseases, and for Diseases of the Blood and Skin, Suppositories, Ointments and Medical Compounds in the form of Soap, 1st December, 1891.
4201. JOYNER & ELKINGTON, of Fort Qu 'Appelle, Assiniboia, N.W.T. Flour, 3rd December, 1891.
4202. THE ADAMS & SONS CO., of Brooklyn, N.Y., U.S.A. Chewing Gum, 7th December, 1891.
4203. SPILLING BROS., of Toronto, Ont. Cigars, 9th December, 1891.
4204. H. A. NELSON & SONS, of Toronto, Ont. Tobacco Pipes, 9th December, 1891.
4205. JOHN BOTT, Walkerville, Ont. Wine of Malt, 10th December, 1891.
4206. GEORGE H. HARPER & CO., T'p. West Flamborough, Co. Wentworth, Ont. Flour, 11th December, 1891.
4207. THE GRODER DYSPEPSIA CURE COMPANY, of Waterville, Maine, U.S.A. Medicine for the Cure of Dyspepsia. 11th December, 1891.
4208. LINE, McDONALD & CO., of London, Ont. Cigars, 12th December, 1891.
4209. TAYLOR BROS., of Toronto, Ont. Products of Clay, such as bricks and tiles, 12th December, 1891.
4210. E. REMY MARTIN & CO., of Rouillac, Charente, France. Brandy, 12th December, 1891.
4211. }
4212. } J. B. SHERRIFF & CO., of Glasgow, Scotland. Scotch Whisky, 14th December, 1891.
4213. }
4214. ALEXANDER F. MacLAREN, of Stratford, Ont. Cheese, 18th December, 1891.
4215. JOSEPH GUSTAVE LAVIOLETTE, of Montreal, Que. A Medicinal Preparation, 18th December, 1891.
4216. BROOKS, SHOBRIDGE & CO., of 74 Great Tower St., London, England. Portland Cement, 19th December, 1891.
4217. H. SHOREY & CO., of Montreal, Que. Waterproof Cloths and Garments, 21st December, 1891.
4218. THE LIVERPOOL PATENT SOAP CO., L'd., of Liverpool, England. Soaps of all kinds, 21st December, 1891.
4219. DAVID J. DYSON, of Winnipeg, Man. Baking Powder, 26th December, 1891.
4220. B. GOLDSTEIN & CO., of Montreal, Que. Cigars, Cigarettes, Cut and Plug Tobaccos, 30th December, 1891.
4221. J. & W. NICHOLSON & CO., of 193 to 205, St. John Street, Clerkenwell, London, England. Gin, Brandy, Whisky and Rum, 31st December, 1891.

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Trade Mark Branch.

6201. TRANSACTIONS OF THE CELTIC SOCIETY OF MONTREAL, VOL. II. Wm. Drysdale & Co., Montreal, Que., 2nd December, 1891.
6202. THE CANADIAN ALMANAC and Repository of Useful Information for 1892. The Copp, Clark Co., L'd., Toronto, Ont., 2nd December, 1891.
6203. IRENE. Morceau de Salon for the Pianoforte, by Willem Vandervell. }
6204. NIEMALS VERGESSEN. Gavotte for the Pianoforte, by Willem Vandervell. }
6205. DANCE OF THE FAIRIES. Characteristic Piece for Piano, by Charles Morley. }
6206. MY DARLING. Sketch for Piano, by Charles Morley. }
The Anglo-Canadian Music Publishers' Association, L'd., London, England, 2nd December, 1891.
6207. THE CANADIAN LAW TIMES. Edited by E. Douglas Armour, of Osgoode Hall, Barrister-at-law. Vol. X. Carswell & Co., Toronto, Ont., 3rd December, 1891.
6208. GOLCONDA WALTZ, by Popplewell Royle. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 3rd December, 1891.
6209. A SAILOR BOY'S EXPERIENCE, by Charles Stevens, Senior, Napanee, Ont., 4th December, 1891.
6210. HENRY VIII. Old English Dance. For the Pianoforte, by Willem Vandervell. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 4th December, 1891.
6211. MAP OF AMERICA. Canadian Series. The Map and School Supply Co., Toronto, Ont., 4th December, 1891.
6212. THE CANADIAN FORESTERS' ILLUSTRATED GUIDE, by J. C. Chapais, B.C.L., Second Edition. J. A. Langlais, Québec, Qué., 4 Decembre, 1891.
6213. DROLLERIES AND MAXIMS OF TELESPHORE LAROCHE. Temporary Copyright Serial Articles which are now being preliminarily published in separate articles in "The Land We Live In," Sherbrooke, Que. James A. McShane, Montreal, Que., 4th December, 1891.
6214. ALMA GRAND MARCH. Op. 7. }
6215. BLUE EYES POLKA. Op. 8. } For piano by B. C. Tapley.
6216. HAPPY THOUGHT MARCH. Op. 50. }
Byron C. Tapley, St. John, N.B., 9th December, 1891.
6217. CALENDRIER DU DIOCÈSE D'OTTAWA ET DE VICARIAT DE PONTIAC POUR 1892. J. A. Langlais, Quebec, Que., 9 Decembre, 1891.
6218. CALENDRIER DU DIOCÈSE DE QUEBEC 1892. J. A. Langlais, Quebec, Que., 10 Decembre, 1891.
6219. A L'ŒUVRE ET A L'ÉPREUVE, par Laure Conan. C. Darveau, Quebec, Que., 11 Decembre, 1891.
6220. THE CUCKOO, by J. H. Wallis. }
6221. THE COURT GAVOTTE, by Michael Watson. }
6222. ITALIA. Second Tarantella, by Michael Watson. }
The Anglo-Canadian Music Publishers' Association, L'd, London, England, 11th December, 1891.
6223. THE CANADIAN ALBUM. Men of Canada, or, Success by Example. Part 8. }
Vol. I. }
6224. THE CANADIAN ALBUM. Men of Canada, or, Success by Example. Part 9. }
Vol. I. }
Edited by Rev. Wm. Cochrane, D.D. Thomas S. Linscott, Brantford, Ont., 11th December, 1891.
6225. RHYMES AFLOAT AND AFIELD, by Wm. T. James, Toronto, Ont., 11th December, 1891.
6226. THE SAILOR'S FROLIC. Polka caracteristique, by Wm. Crawford. }
6227. ZAMORA. No. 2, of Spanish Dances, by Michael Watson. }
The Anglo-Canadian Music Publishers' Association, }
L'd., London, England, 12th December, 1891.
6228. CHRISTMAS NUMBER OF THE DOMINION ILLUSTRATED AND ITS SUPPLEMENTS, 1891. The Sabiston Lithographing and Publishing Company, Montreal, Que., 12th December, 1891.
6229. FOOTHOLDS FOR FAITH'S FEET. In Song and Story, by Rev. W. H. W. Boyle, B.A. Wm. Briggs, Toronto, Ont., 14th December, 1891.
6230. THE FAIRIES. Words by T. Westwood. Music by Dolores. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 16th December, 1891.
6231. STUDENTS' DANCE, for Piano, by Arthur Percival. I. Suckling & Sons, Toronto, Ont., 18th December, 1891.

6232. INSURANCE PLANS of North Bay, Sudbury and Thessalon in Ontario; Arthabaskaville, Chambly, Chicoutimi, Cookshire, Lake Mégantic, L'Assomption, Lennoxville, Magog, Marieville, Rimouski, Ste. Anne de Bellevue, St. Césaire, St. Laurent, St. Raymond, Sault-au-Récollet and Victoriaville, in Quebec; Birtle, Carman, Carberry, Glenboro, Killarney, Miami, Nepawa and Oak Lake, in Manitoba; Lethbridge, in Alberta; Prince Albert, in Saskatchewan; North Sydney, Sydney, Windsor and Yarmouth, in Nova Scotia; Chas. Ed. Goad, Montreal, Que., 18th December, 1891.
6233. A TOOTHsome MORSEL. (print.) Peter Laing, John D. Laing and James N. Laing, Montreal, Que., 19th December, 1891.
6234. ELECTION CASES. Reports of Decisions under the Dominion and Ontario Controverted Election Acts, Relating to the Election of Members from the Province of Ontario to the House of Commons of Canada, and to the Legislative Assembly of Ontario, 1884-1891, with a table of the names of cases reported, a table of the names of cases cited and a Digest of the Principal Matters. Vol. I. The Law Society of Upper Canada, Toronto, Ont., 19th December, 1891.
6235. BRIGADE LANCERS, by John Waldron.
6236. BILL THE BO'SUN. Song. Words by Hartwell Jones. Music by W. H. Jude. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 21st December, 1891.
6237. PROBLEMS IN COMMERCIAL ARITHMETIC, by M. S. Carl, St. Thomas, Ont., 22nd December, 1891.
6238. THE BELL TELEPHONE COMPANY OF CANADA, LIMITED, OTTAWA EXCHANGE, SUBSCRIBERS' DIRECTORY, DECEMBER, 1891. The Bell Telephone Company of Canada, Limited, Montreal, Que., 22nd December, 1891.
6239. HAPPY STEPS POLKA, for Piano, by Katharine T. Fuller. I. Suckling & Sons, Toronto, Ont., 23rd December, 1891.
6240. NOTIONS D'AGRICULTURE, Conseils, Recettes, Extraits, etc., etc., par Jos. E. Pouliot, Québec, Qué., 23 Decembre, 1891.
6241. ONLY A MELODY. Song. Words by Clifton Bingham, Music by A. E. Armstrong. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 28th December, 1891.
6242. THROUGH ALL THE YEARS. Song. Music by K. Ringwall. Whaley, Royce & Co., Toronto, Ont., 28th December, 1891.
6243. DANSE BRETONNE. Caprice, par F. Boscovitz. Op. 164.
6244. GONDOLINE. Barcarolle, par F. Boscovitz. Op. 163.
6245. ROSÉE DU MATIN. Valse Brillante, par F. Boscovitz. Op. 162.
6246. TYROLERS ABENDLIED. Morceau Caractéristique, par F. Boscovitz. Op. 161.
6247. SONG OF THE SOUTH WIND. For Piano, by W. O. Forsyth. Op. 21—No. 1. A. & S. Nordheimer, Toronto, Ont., 28th December, 1891.
6248. PHOTOGRAPH OF THE LATE REV. FATHER DOWD. Wm. Notman & Son, Montreal, Que., 29th December, 1891.
6249. INSURANCE PLAN OF CITY OF ST. JOHN, New Brunswick, including St. John, North, (Portland) and St. John, West, (Carleton.) Chas. E. Goad, Montreal, Que., 29th December, 1891.
- 6 50. L'ARITHMETIQUE DES COMMENCANTS. Première Partie. Bernard Lippens, Québec, Qué., 29 Decembre, 1891.
6251. METHODE NATIONALE DE DESSIN. Deuxième Cours, 30 Feuilles Exercices. Edmond Marie Templé, Québec, Qué., 30 Decembre, 1891.
6252. MANUEL ET FORMULAIRE, GENERAL ET COMPLET DU NOTARIAT DE LA PROVINCE DE QUÉBEC, par F. G. Marchand, Pages 1 à 304. Amedée Periard, Montreal, Que., 31 Decembre, 1891.
6253. SHE WAS. Words and Music by David Day. The Anglo-Canadian Music Publishers' Association, L'd., London, England, 31st December, 1891.
6254. BELL TELEPHONE COMPANY OF CANADA, EASTERN EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, DECEMBER, 1891. The Bell Telephone Company of Canada, Montreal, Que., 31st December, 1891.
6255. SYLLABAIRE, ou Premier Livre.
6256. LECTURES COURANTES. Deuxième Livre. } A l'usage des Ecoles Chretiennes.
6257. LECTURES GRADUEES. Troisième Livre. }
6258. PETIT QUESTIONNAIRE. Jean Routhier, en religion Frère Flavien, Montreal, Que., 31 Decembre, 1891.
6259. METHODE NATIONALE DE DESSIN. Deuxième Cours. Livre du Maitre. Edmond Marie Templé, Québec, Qué., 31 Decembre, 1891.

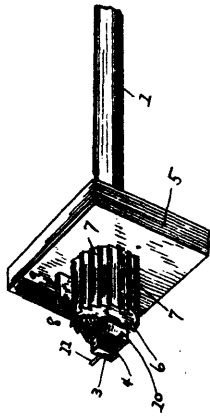
THE
CANADIAN PATENT OFFICE RECORD

ILLUSTRATIONS.

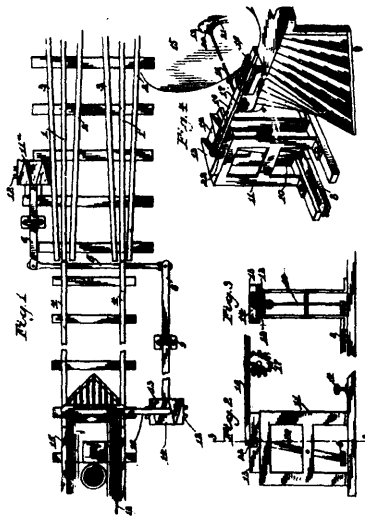
Vol. XIX.

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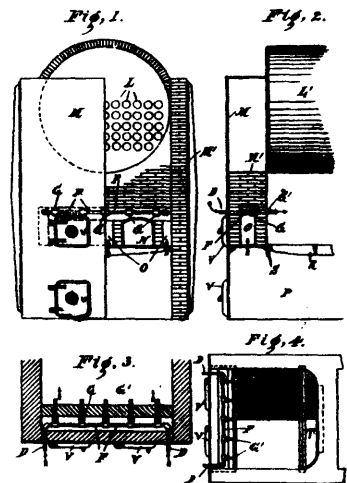
No. 12.



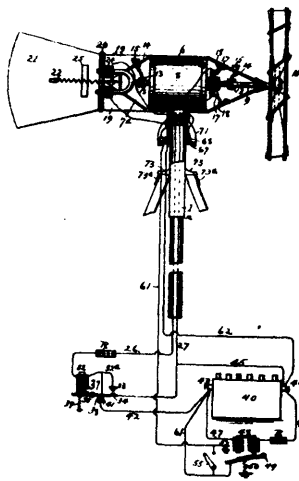
37858 Earnest's Nut Lock.



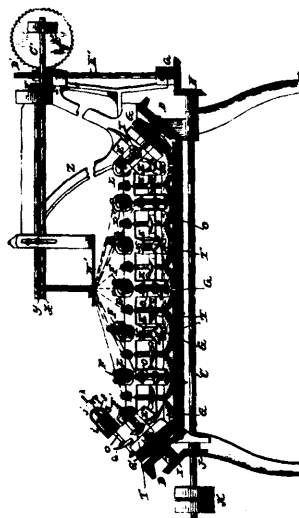
37859 McCarthy's Automatic Railway Switch.



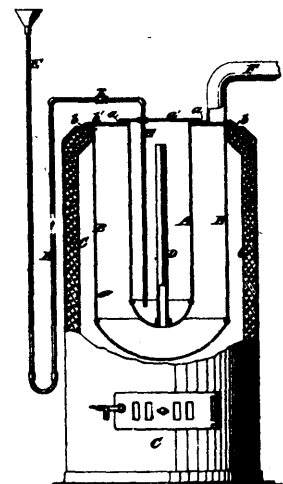
37860 Hutchinson's Water Gas Furnace and Device Connected Therewith.



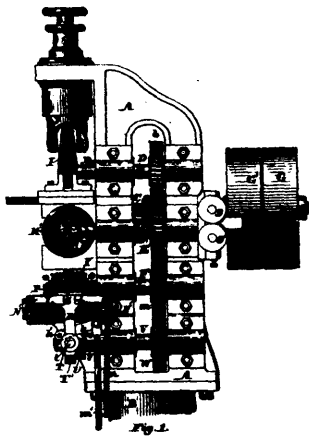
37861 Mitchell's Wind Apparatus for Generating Electricity and Charging Secondary Batteries.



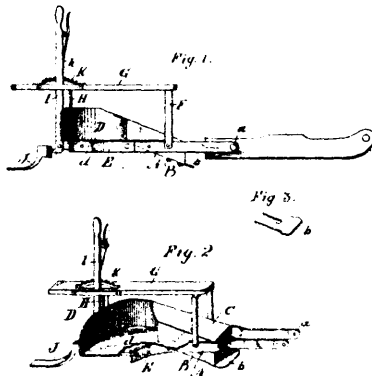
37862 Thomas' Braiding Machine.



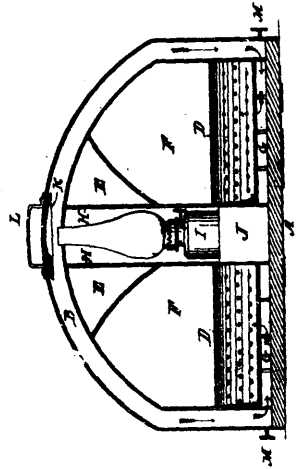
37863 Knapp's Art of Manufacturing Gas.



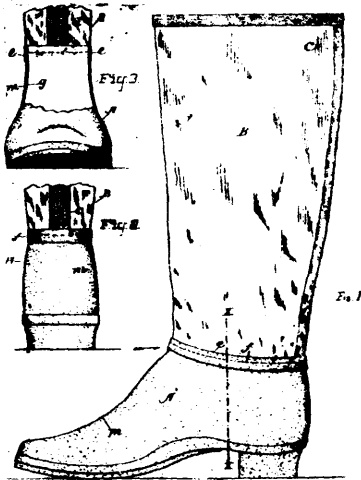
37864 Cote's Heel Stiffener Machine.



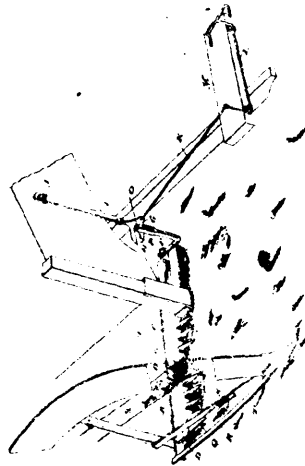
37865 Rose and Mooers' Rut Cutter for Logging Roads.



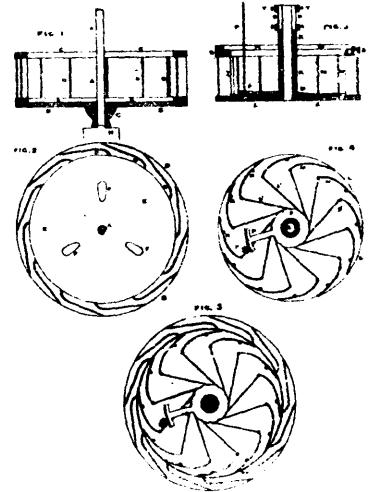
37868 Richards' Foot Heater for Buggies.



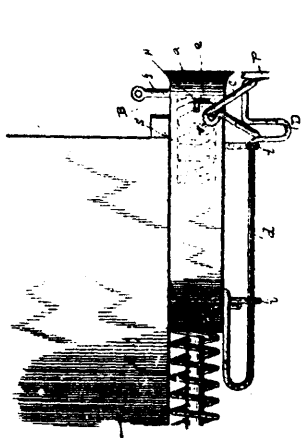
37869 Saunders' Rubber Boot.



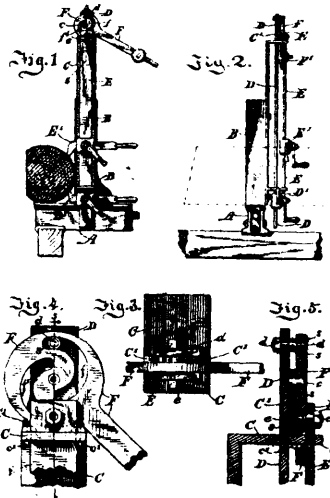
37870 Brown and Draper's Harvester.



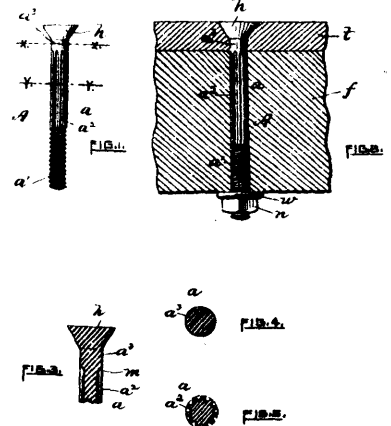
37871 Ives' Water Wheel.



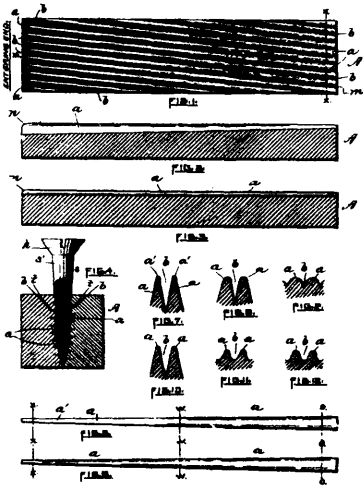
37872 Johnson's Car Coupler.



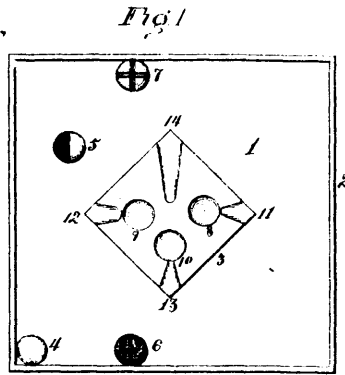
37873 Buck's Saw Mill Dog.



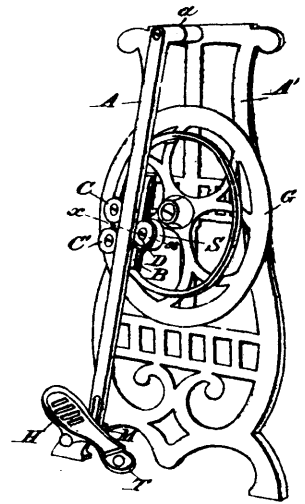
37874 Rogers' Headed Bolt or Screw.



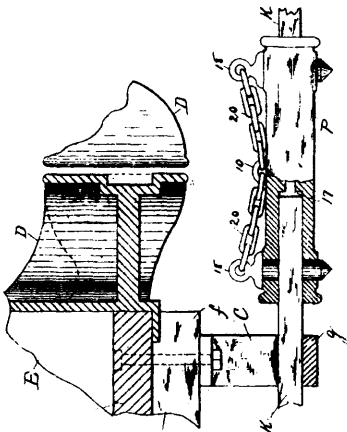
37875 Rogers' Die for Rolling Screw Threads.



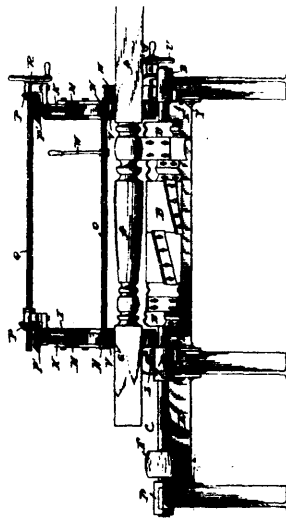
37876 Erlin's Game.



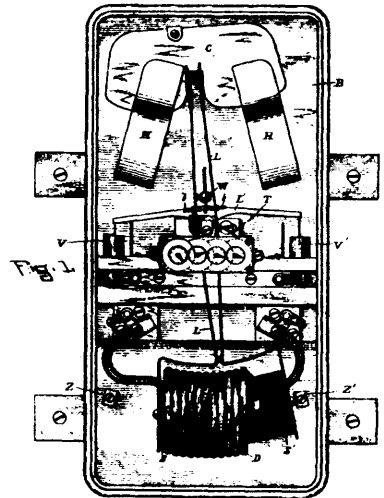
37877 Cochran's Pendulum Bar Treadle.



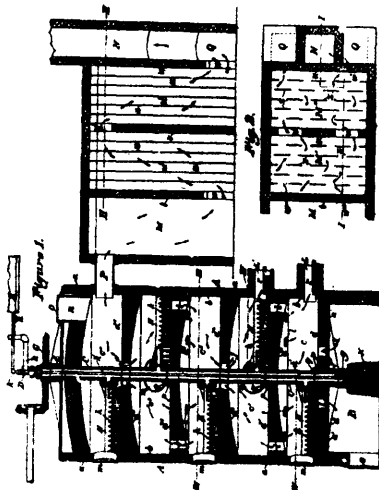
37878 Pfingst's Coupling for Electric Cars.



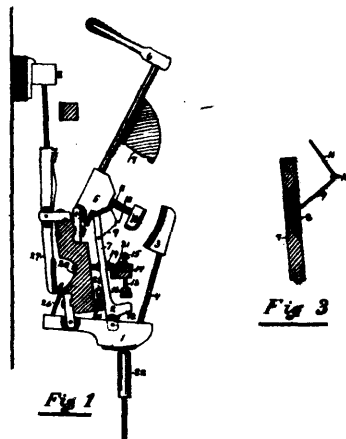
37879 Taft's Wood Working Machine



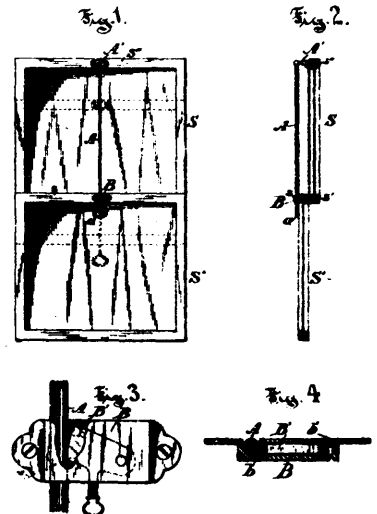
37880 Thomson's Electric Meter.



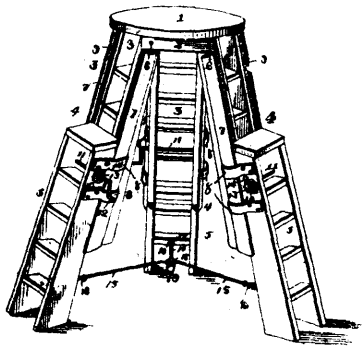
37881 Frasch's Furnace for Roasting, Calcining and Oxidizing Metals, &c.



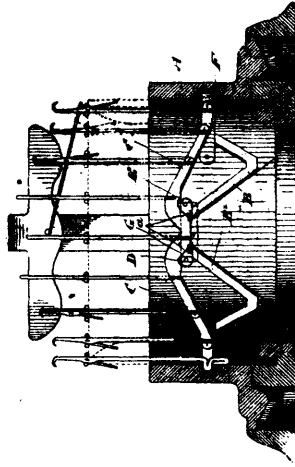
37882 Koth's Piano Action.



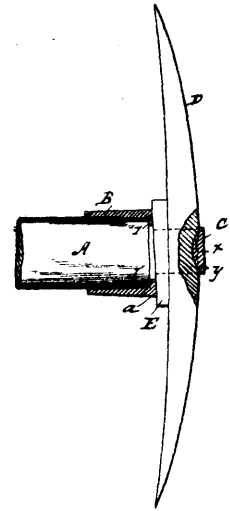
37883 Cassidy's Sash Fastener.



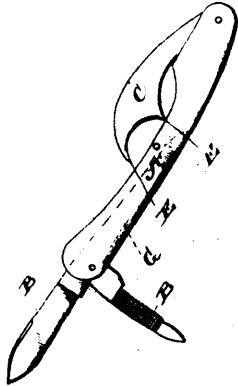
37865 Odom's Extension Ladder.



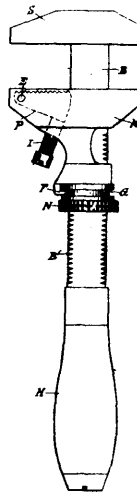
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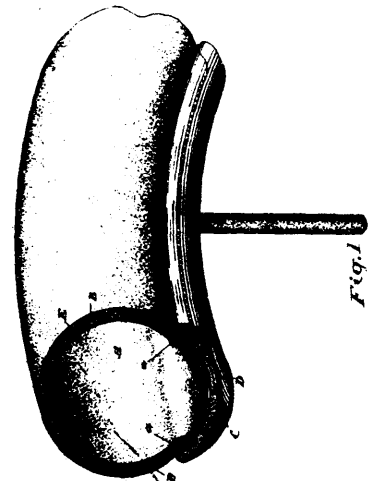
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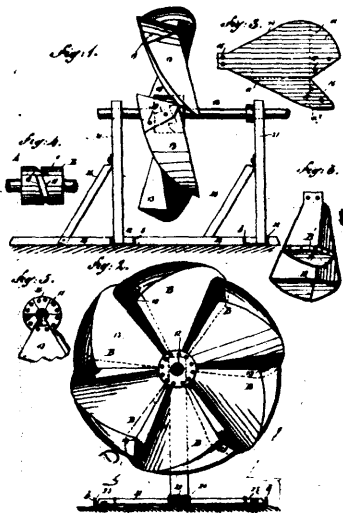
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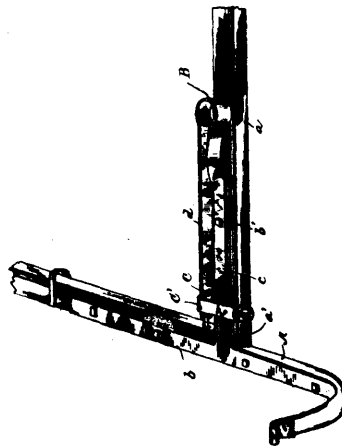
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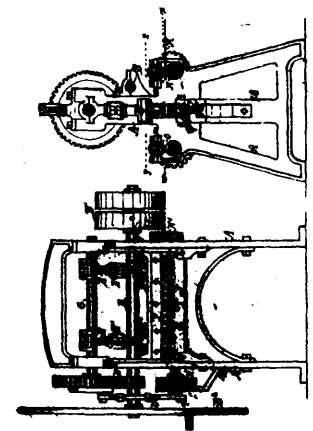
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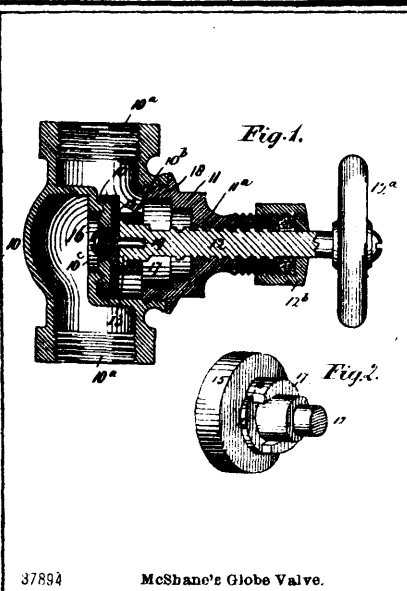
37891 McDonald's Water Wheel.



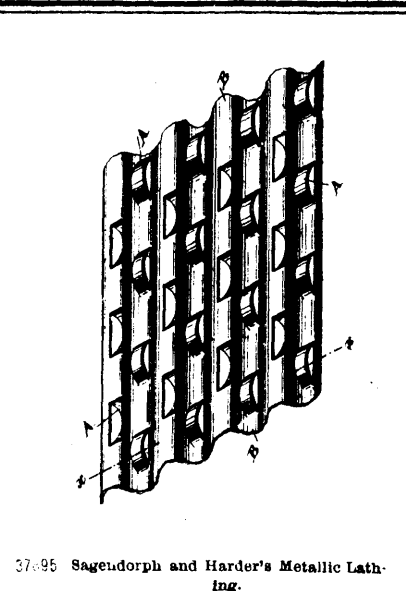
37892 Webster's Draft Device for Vehicles.



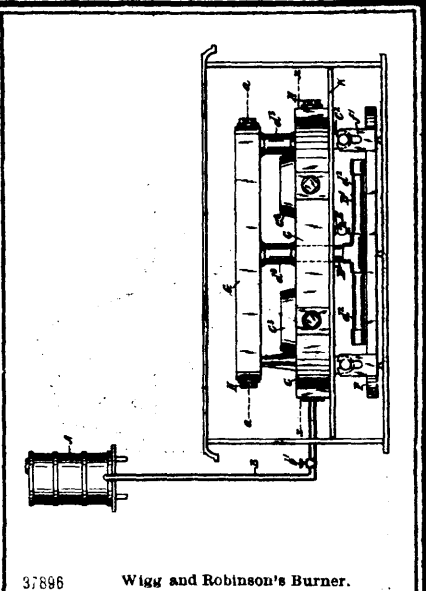
37893 Hayes' Machine for Making Metallic Lathing.



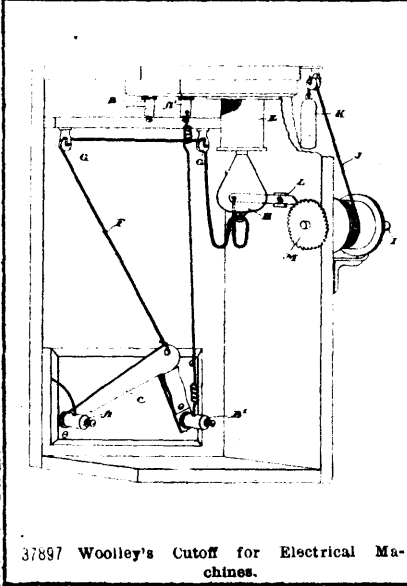
37894 McShane's Globe Valve.



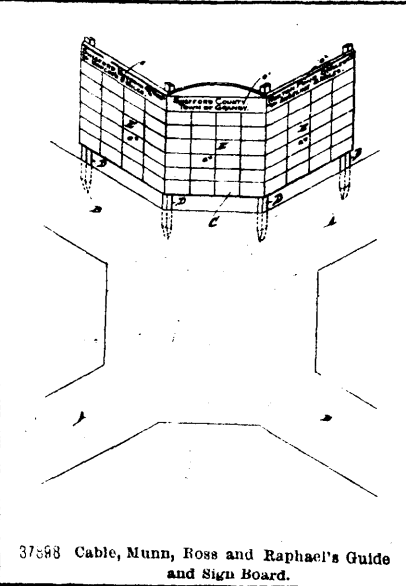
37895 Sagendorph and Harder's Metallic Lathing.



37896 Wigg and Robinson's Burner.



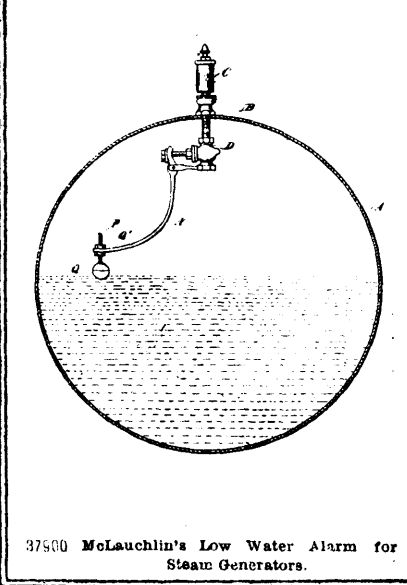
37897 Woolley's Cutoff for Electrical Machines.



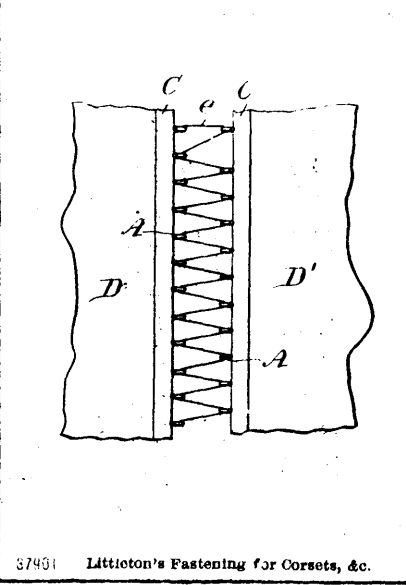
37898 Cable, Munn, Ross and Raphael's Guide and Sign Board.



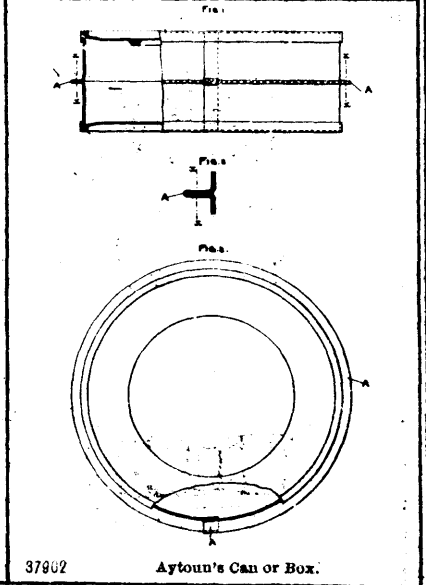
37899 Gillespie's Blanket Muzzle.



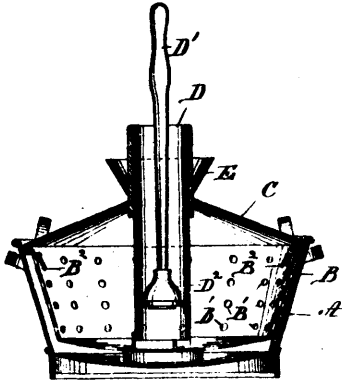
37900 McLauchlin's Low Water Alarm for Steam Generators.



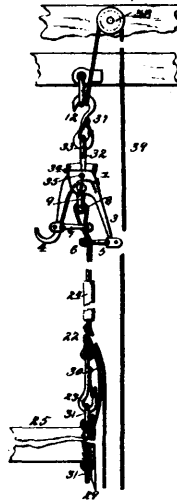
37901 Littleton's Fastening for Corsets, &c.



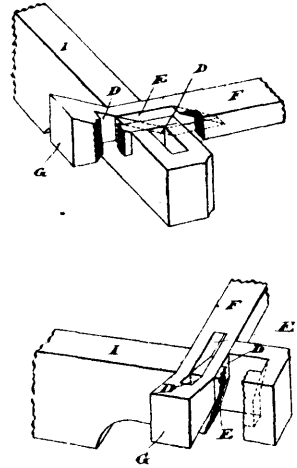
37902 Aytoun's Can or Box.



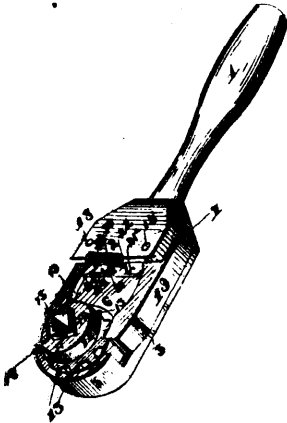
37903 Church and Taggart's Dish Washer.



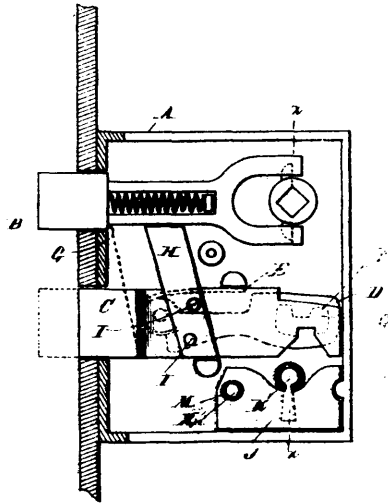
37904 Taft's Fire Escape.



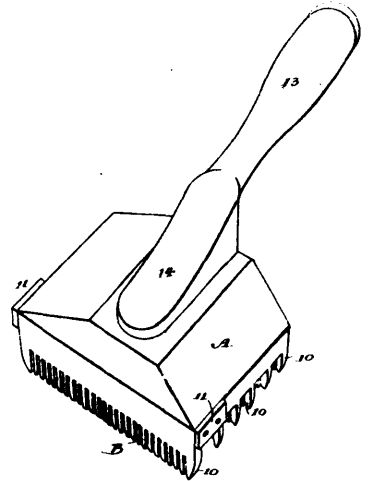
37906 Chishelm's Waggon Back.



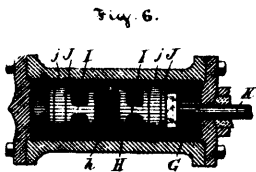
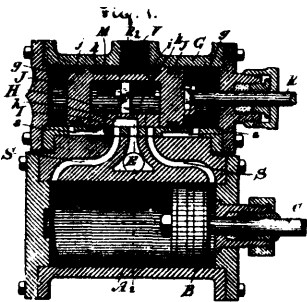
37907 Cottrell's Wrench.



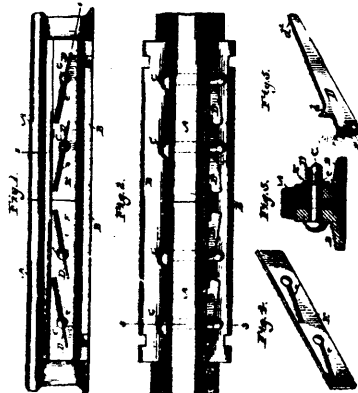
37908 Platz's Lock.



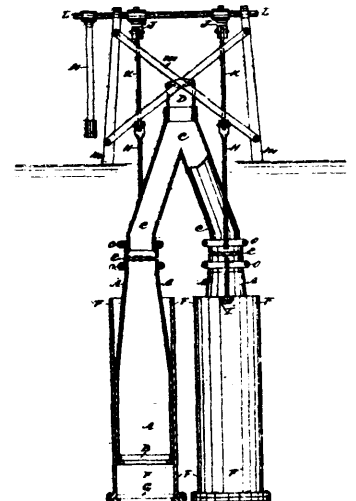
37909 Neuls' Curry Comb.



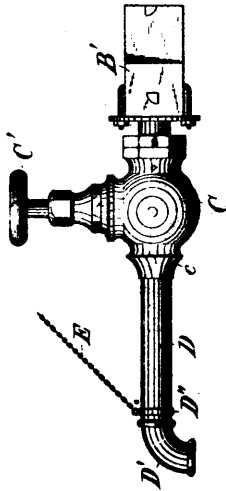
37910 Patten's Steam Actuated Valve for Steam Engines and Pumps.



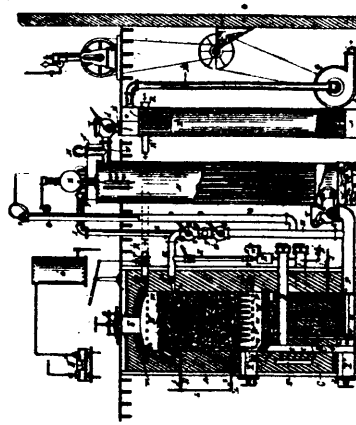
37911 Dubé and Messier's Rail Joint.



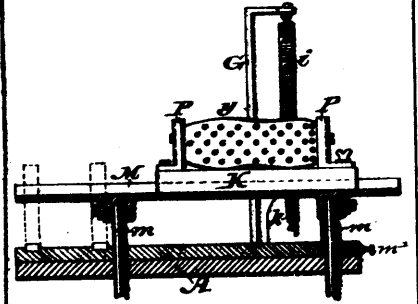
37912 Glasford's Sliding Shell Pump.



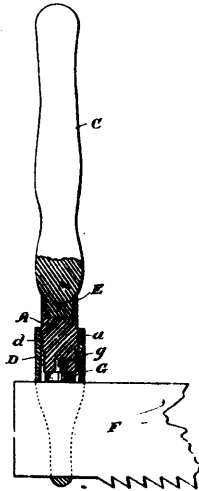
37913 Walker and Hurly's Apparatus for Discharging Steam Condensation.



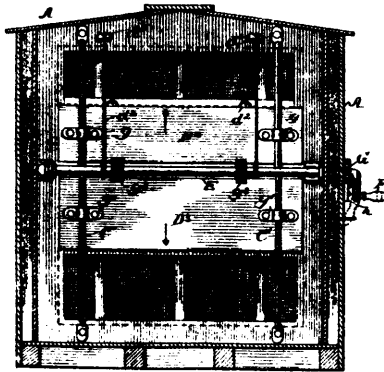
37914 Loomis' Process of and Apparatus for Manufacturing Gas.



37915 Lewis and Turner's Brush Drawing Machine.



37916 Murphy and Pyle's Saw Handle.



37917 Minnick's Ventilating Device for Railways.

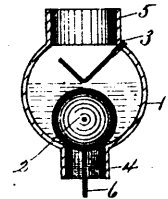


Fig. 1.

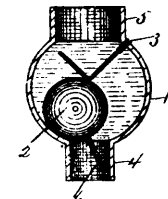


Fig. 2.

37918 Delehanty's Trap for Water Basins, &c.

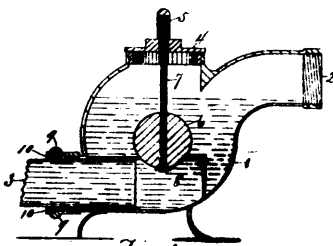


Fig. 1.

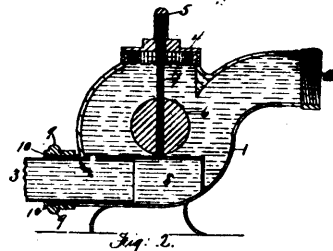


Fig. 2.

37919 Delehanty's Trap for Bath Tubs, &c.

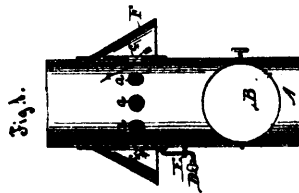


Fig. 1.

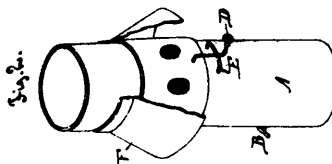


Fig. 2.

37920 Macaulay's Stove Pipe Ventilator.

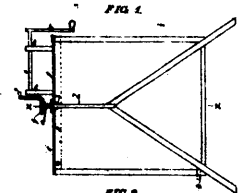


FIG. 1.

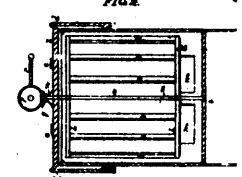


FIG. 2.

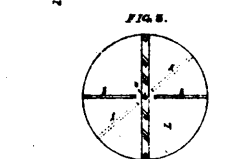
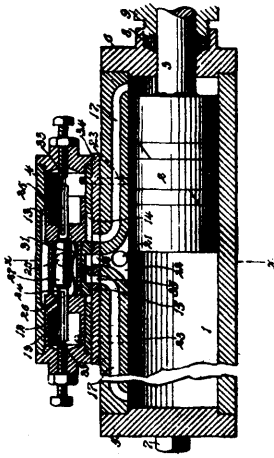
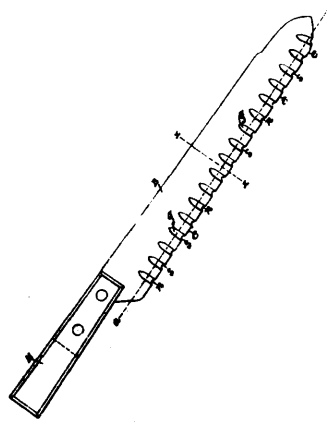


FIG. 3.

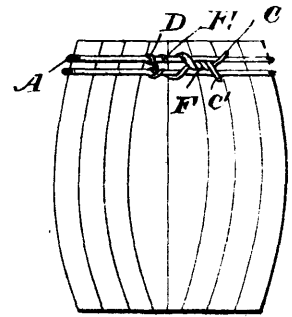
37921 Ward and Fisher's Churn.



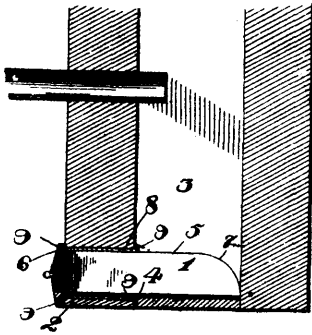
37922 Ball and Lenggenhager's Valve Mechanism for Engines.



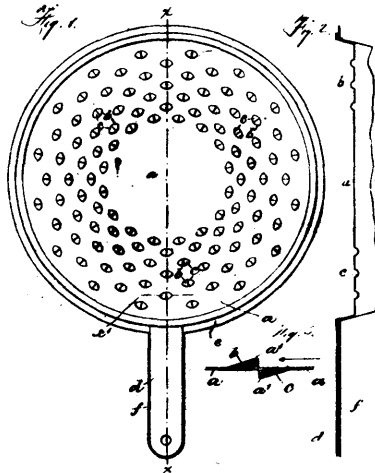
37923 Hayes and Lewis' Bread Knife.



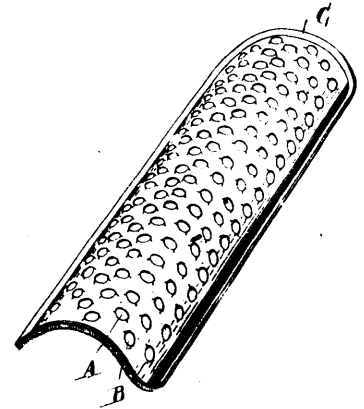
37924 Conway's Barrel Hoop.



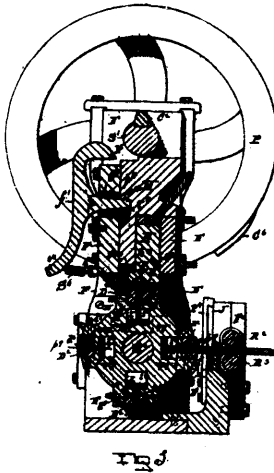
37925 Queenand's Soot Pan.



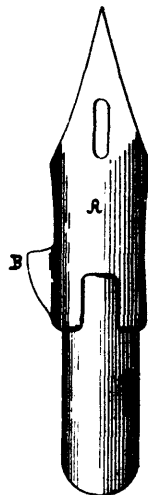
37926 Walsh's Vegetable Reducer.



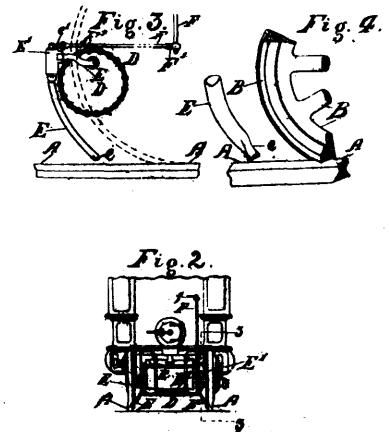
37927 Ellis' Surgical Splint.



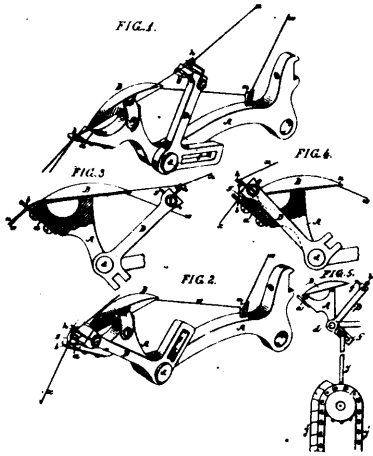
37928 Dank's Machine for Making Rivets.



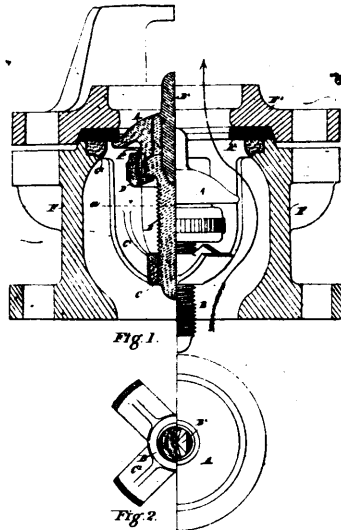
37929 Bristol's Pen.



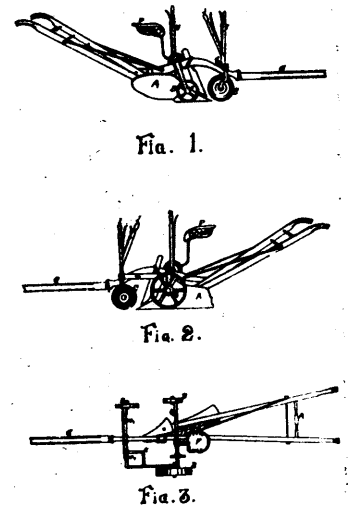
37930 Bevin's Apparatus for Blowing Sand from Railway Track Balls.



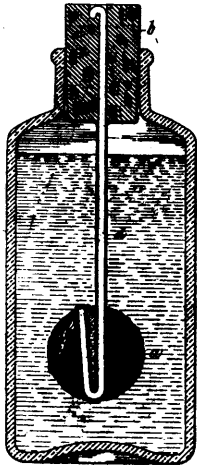
37931 Bridge's Device for Feeding Thread to Knitting Machines.



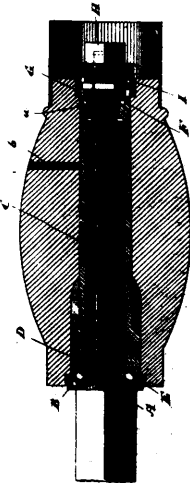
37932 Errington's Hydrant Valve.



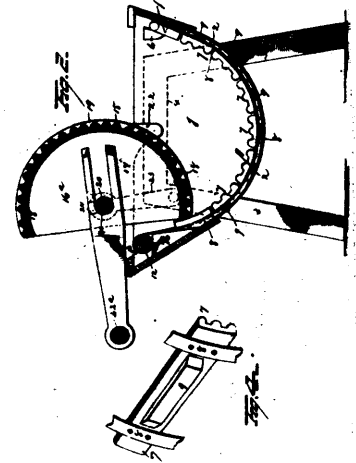
37933 Stafford's Plough Biding Attachment.



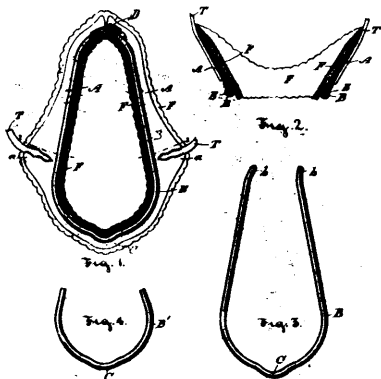
37934 Wolf's Brush for Liquid Blacking.



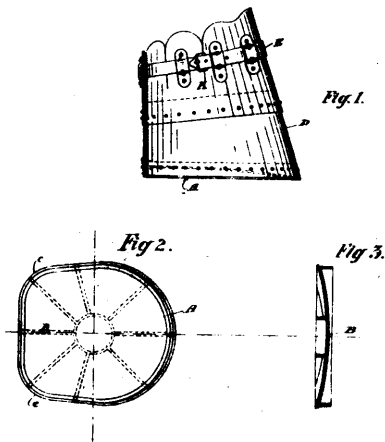
37935 Arnold's Axle Bearing.



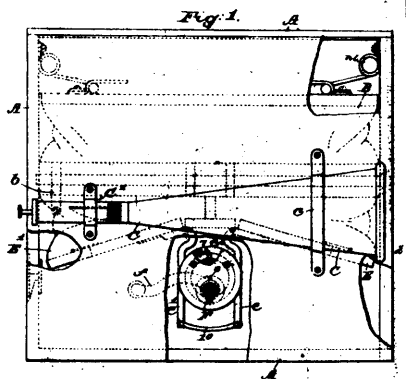
37936 Hawkins' Washing Machine.



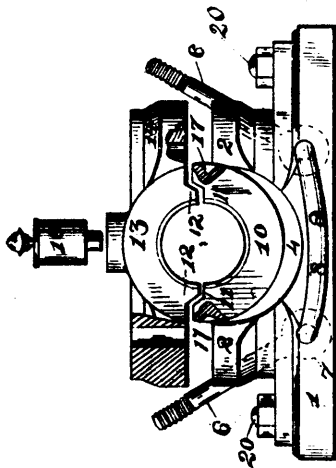
37937 Nix's Horse Collar.



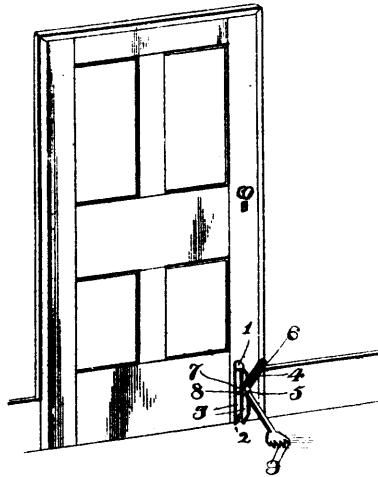
37938 Orevier's Boot for Treating Contracted Feet in Horses.



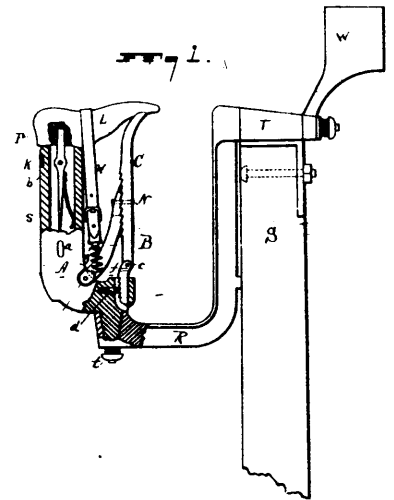
37939 Campbell's Signal Apparatus.



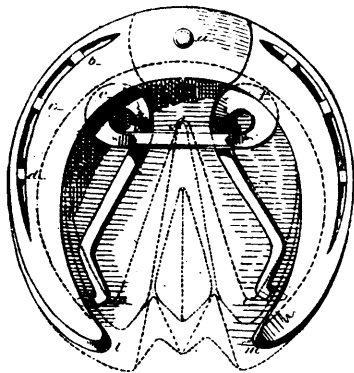
37940 Sawyer's Portable Box for Shafting.



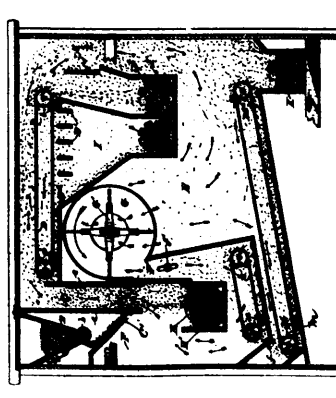
37941 Chase's Door Securer.



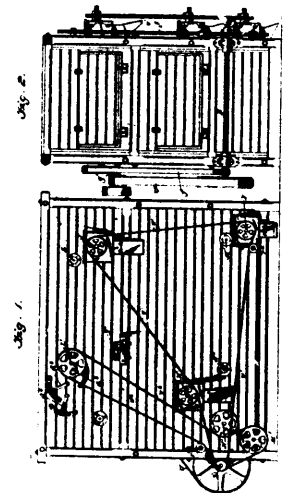
37942 Grant's Machine for Holding Lasts.



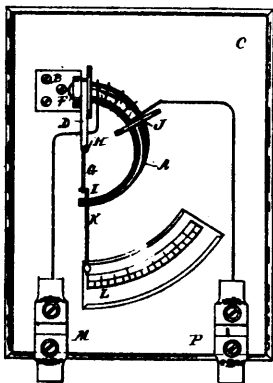
37943 Bissonette's Horse Shoe.



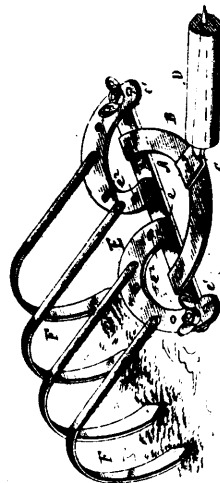
37944 Barnard's Grading, Separating and Dust Collecting Machine.



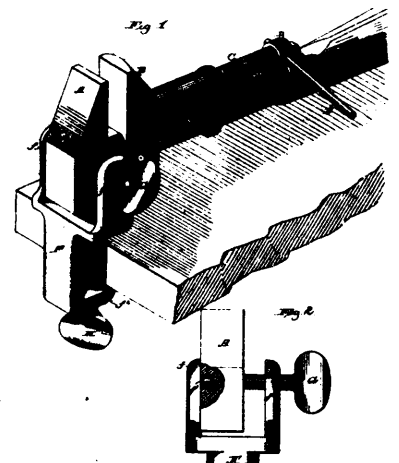
37945 Barnard's Grading, Separating and Dust Collecting Machine.



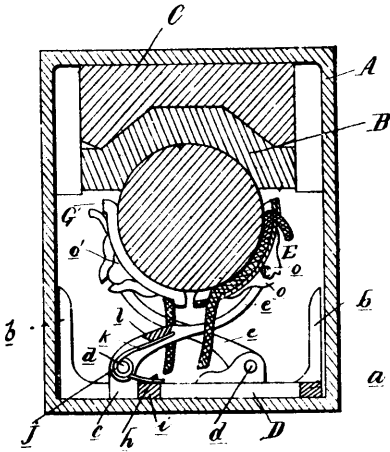
37946 Rae's Current Indicator.



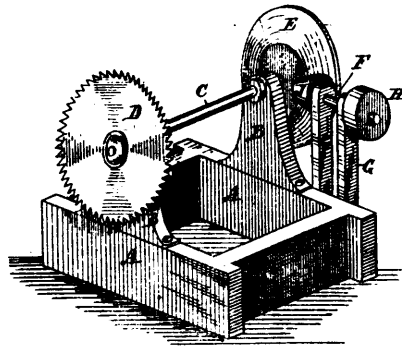
37947 McConn's Hand Harrow.



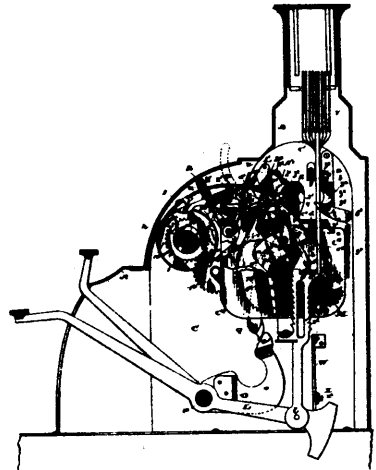
37948 Wilkes' Wrench.



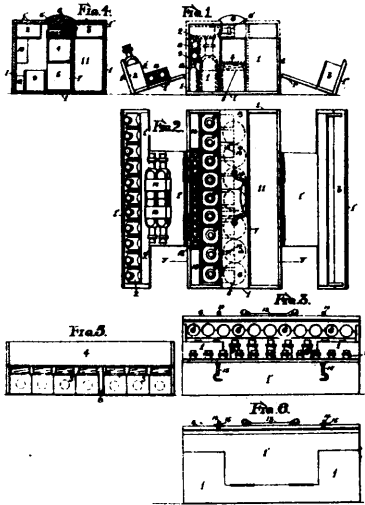
37949 Stever's Axle Lubricator.



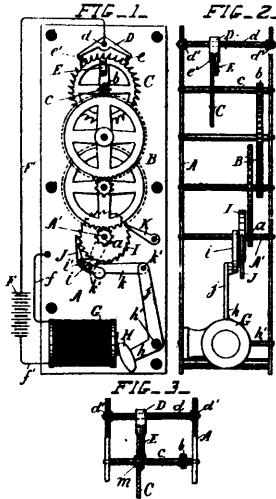
37950 Fisher's Shingle Jointing Machine.



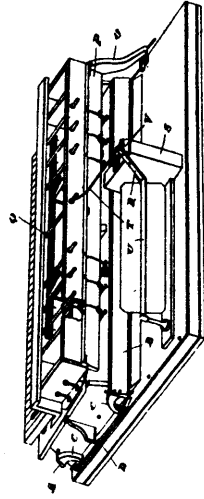
37951 Sharp's Cash Register and Indicator.



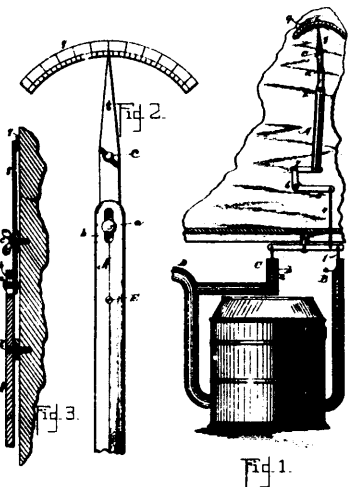
37952 Bonnar's Medical and Surgical Case.



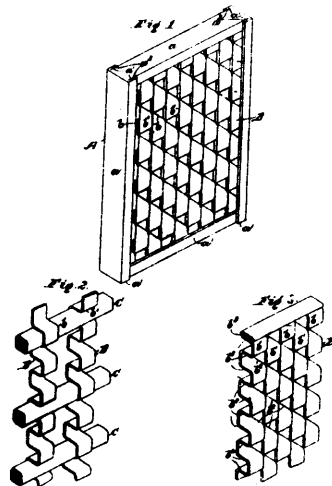
37953 Du Laney's Electric Clock Winder.



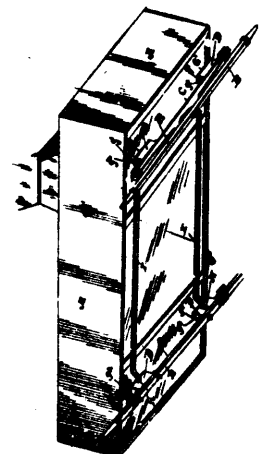
37954 Doherty's Organ Action.



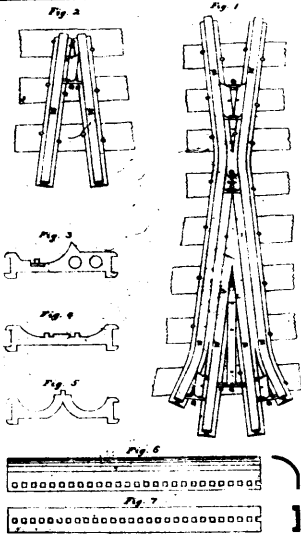
37955 Howard's Automatic Draft Regulator.



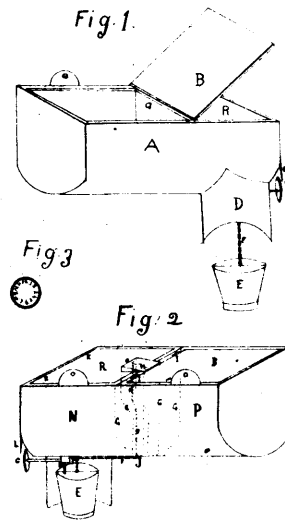
37956 Bradbury and Stone's Electrode for Storage Batteries.



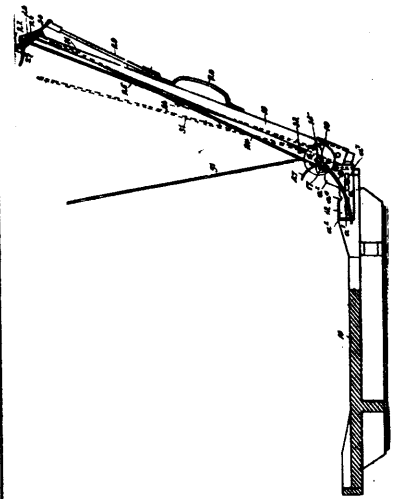
37957 Raudenbush's Vehicle Spring.



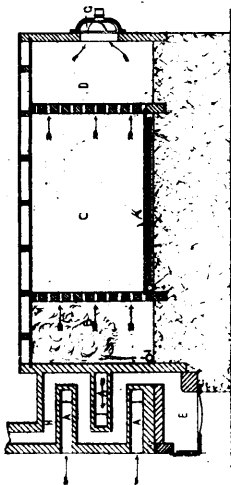
37958 Campbell's Railway Frog Guard.



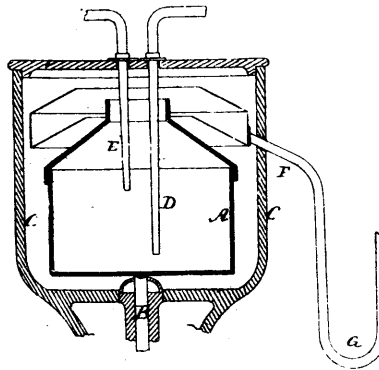
37959 Wareham's Hydraulic Gravitating Managers.



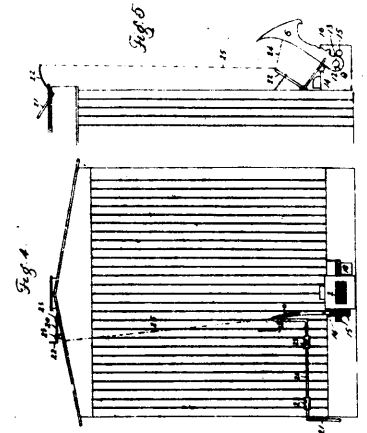
37960 Clark's Automatic Frisket for Hand Presses.



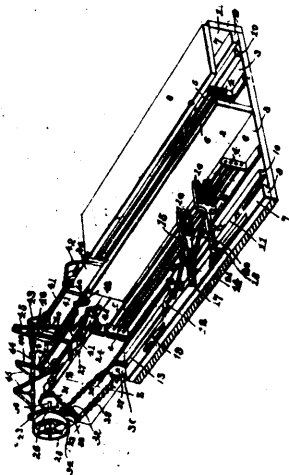
37963 Shapland's Apparatus for Drying Timber.



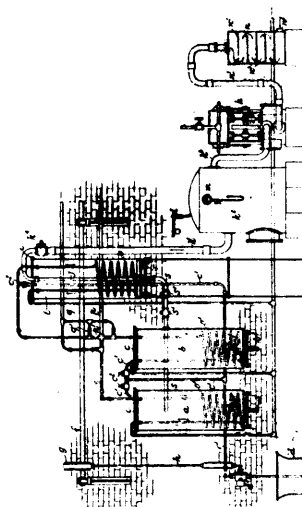
37964 Bergh's Apparatus for Saturating Fluids with Sterilized Air, &c.



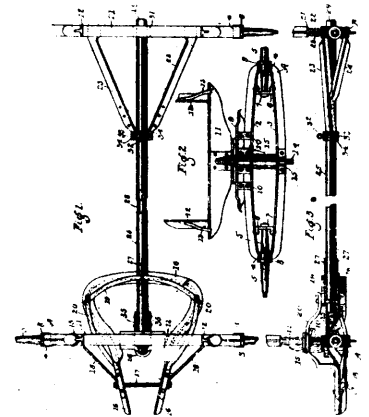
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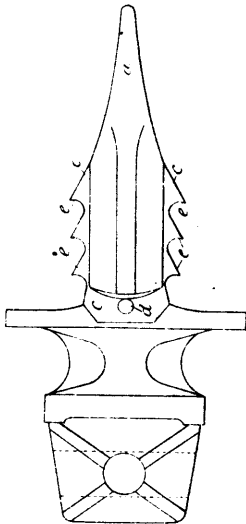
37966 Holliday's Band Cutter and Feeder.



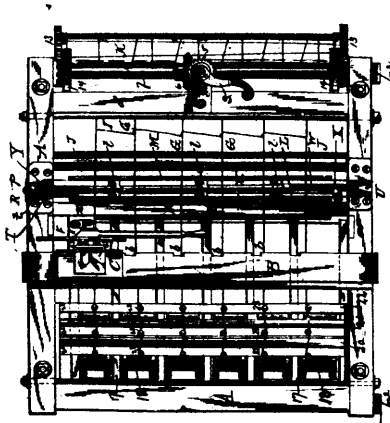
37967 Hartley and Blenkinson's Apparatus for Decolourizing Vegetable Oils.



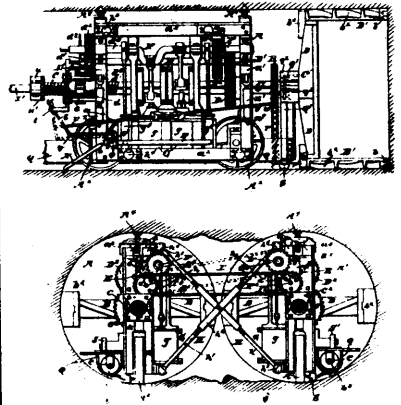
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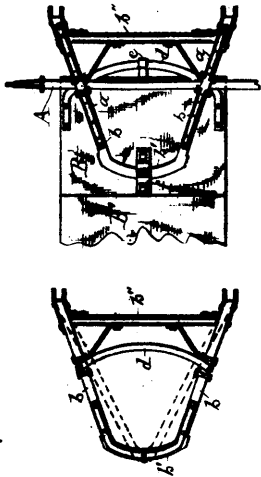
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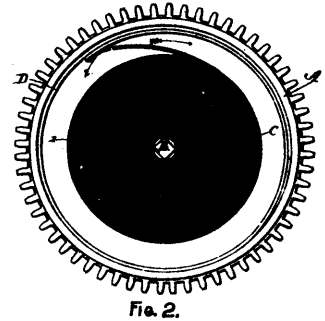
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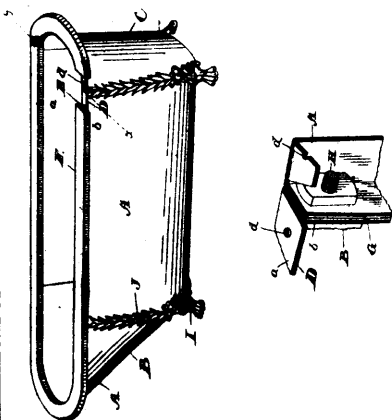
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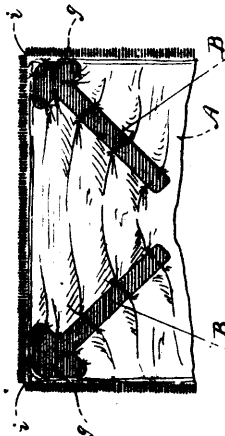
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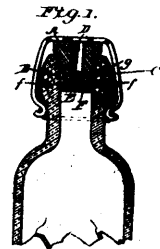
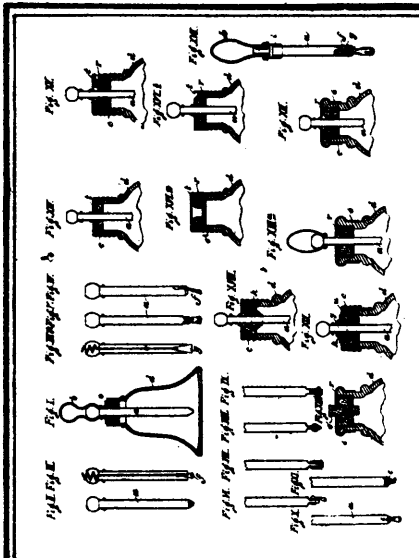


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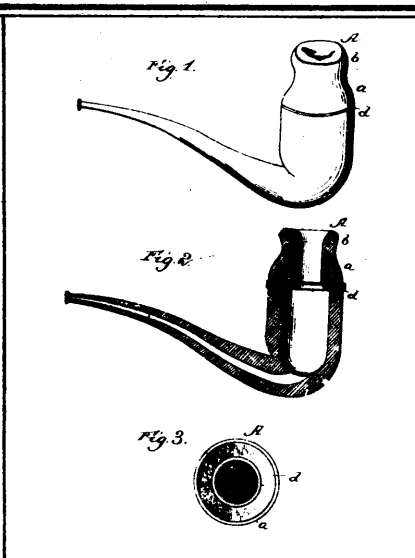
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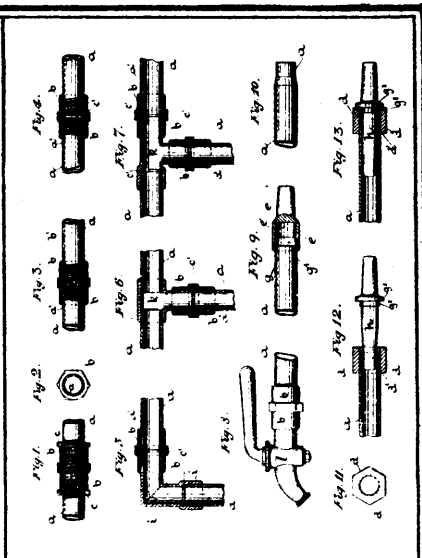
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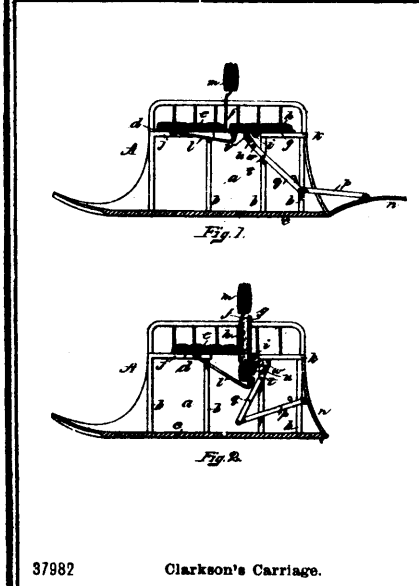
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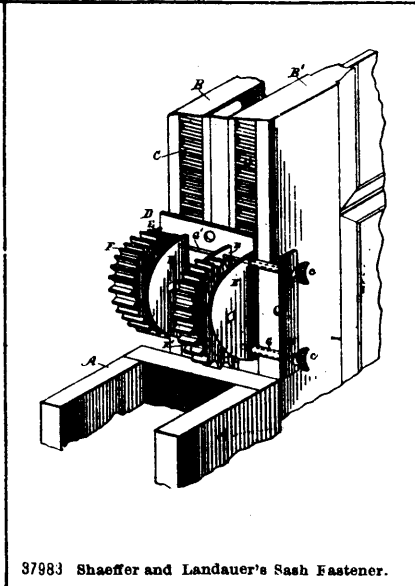
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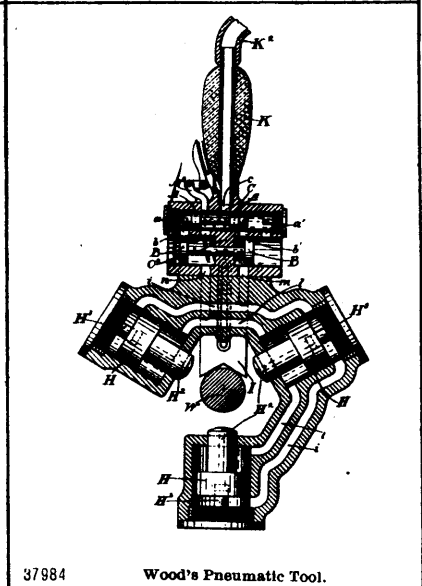
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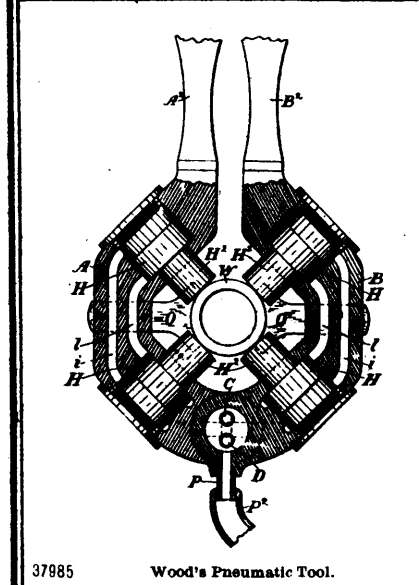
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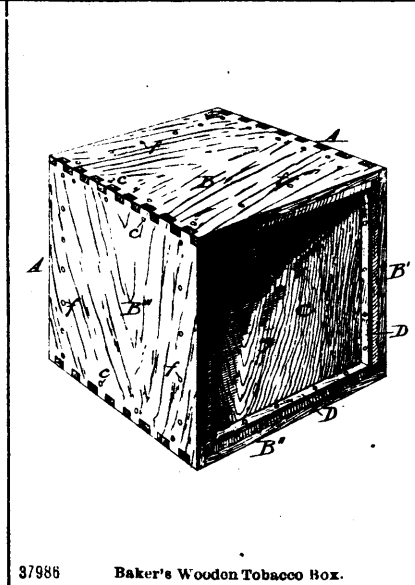
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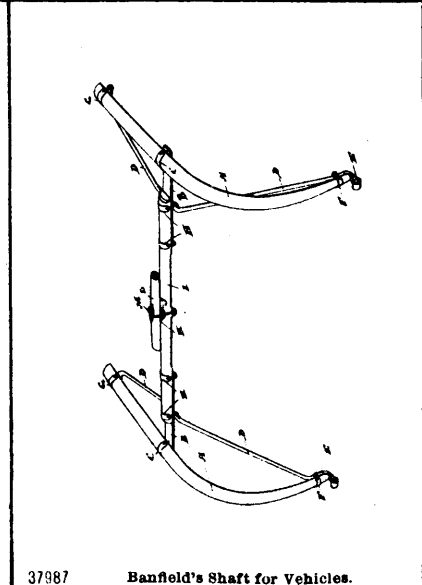
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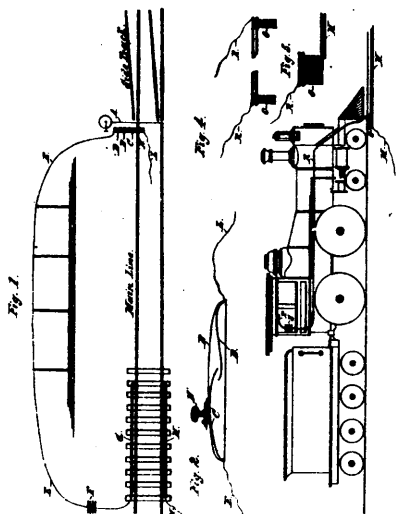
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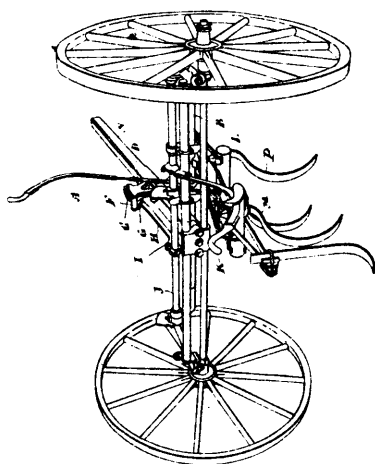
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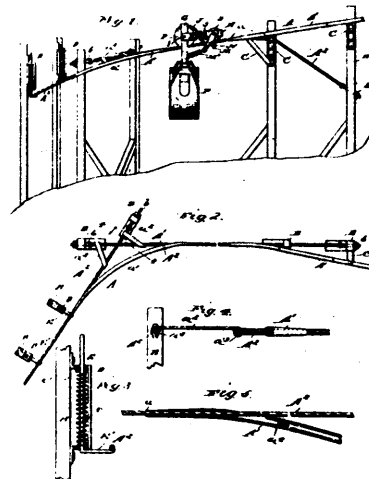
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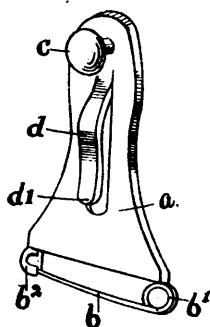
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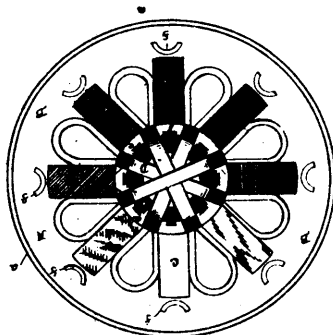
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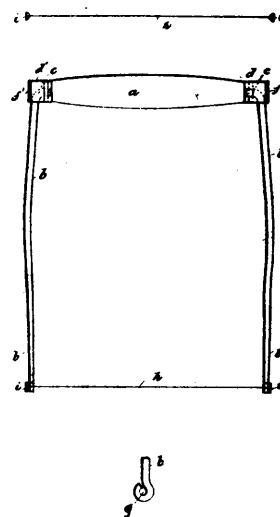
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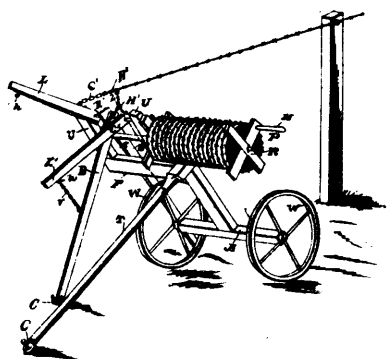
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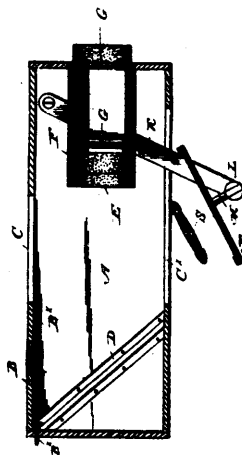
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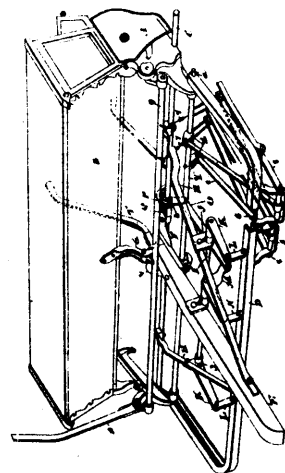
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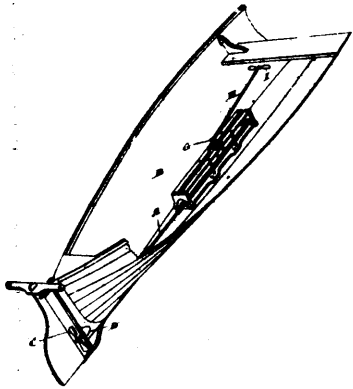
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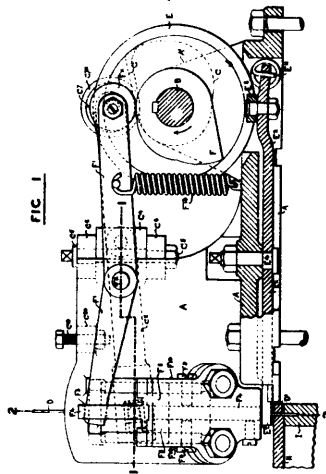
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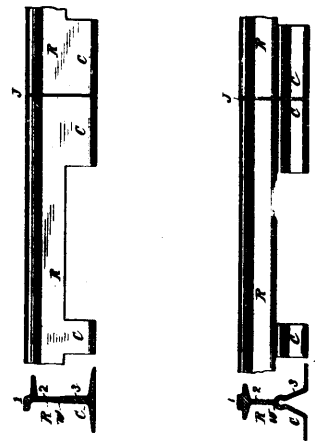
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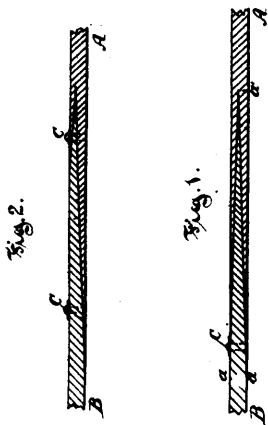
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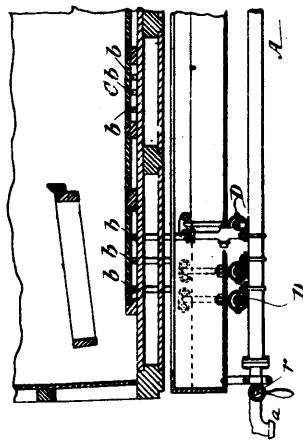
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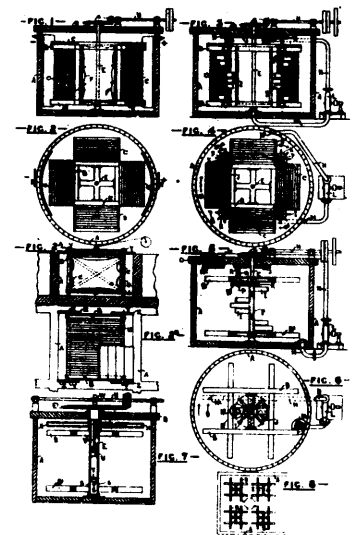
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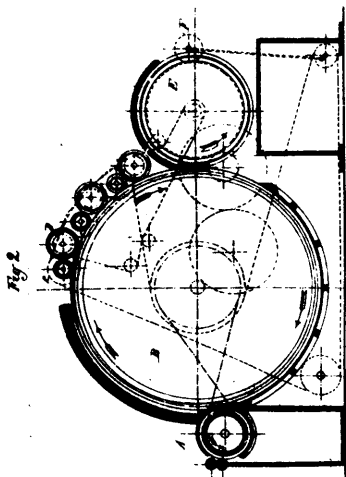
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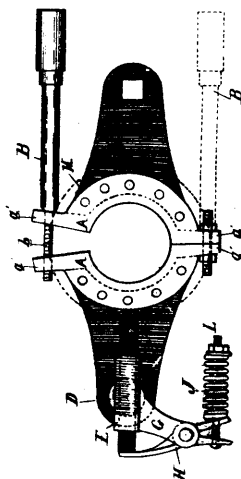
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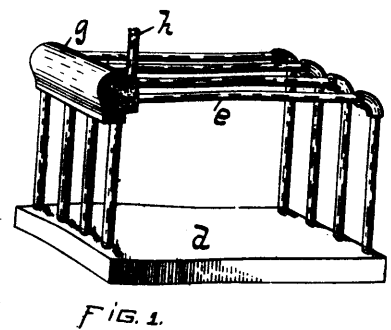
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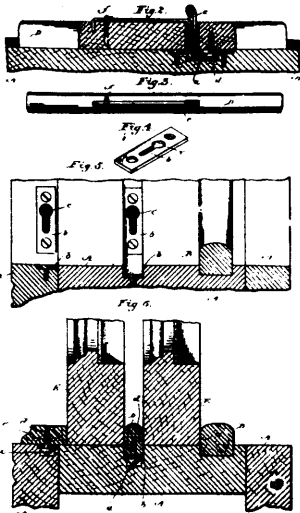
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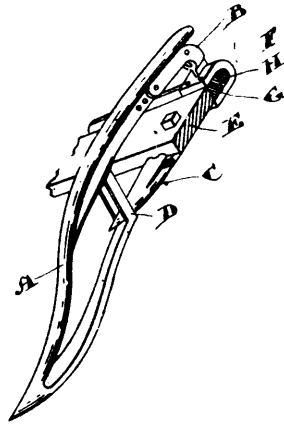
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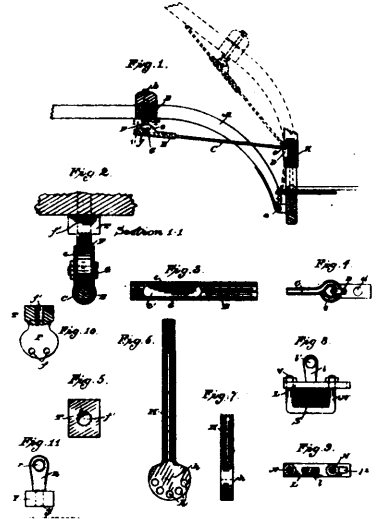
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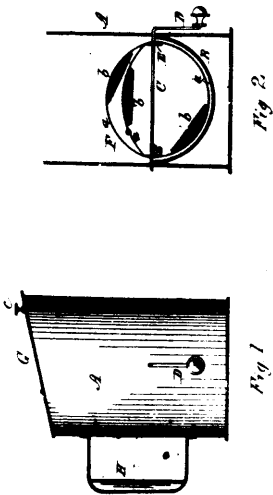
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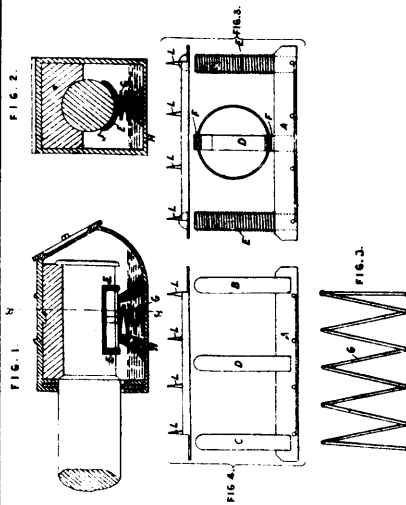
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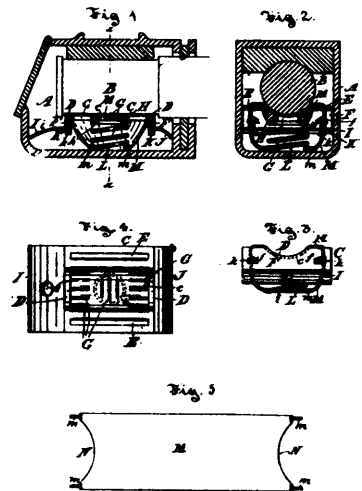
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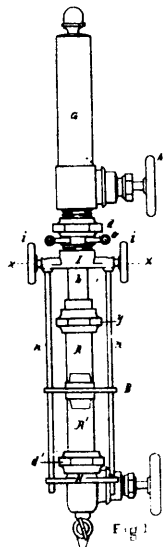
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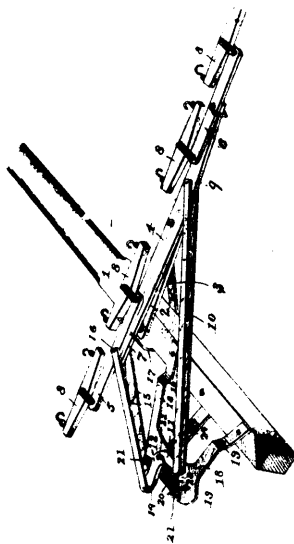
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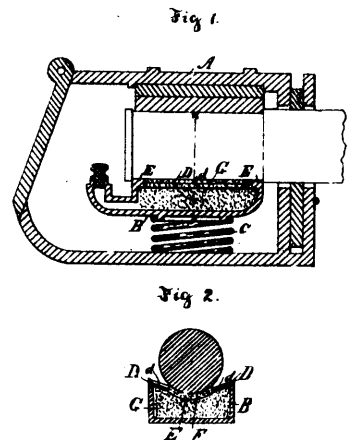
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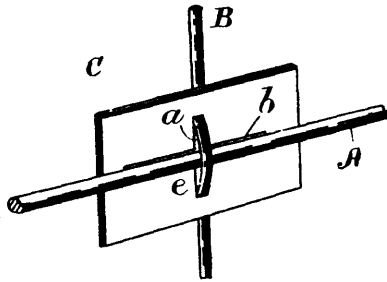
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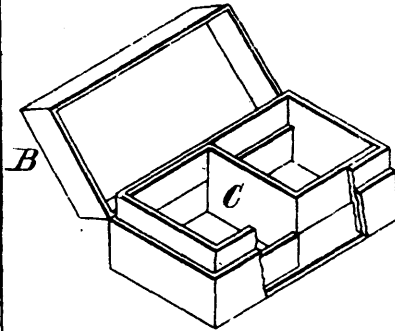


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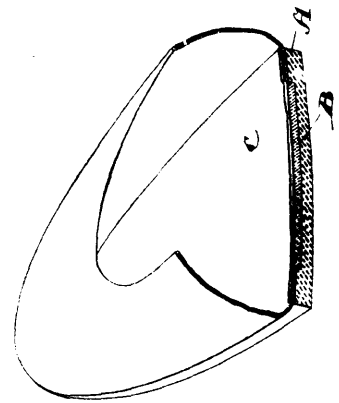


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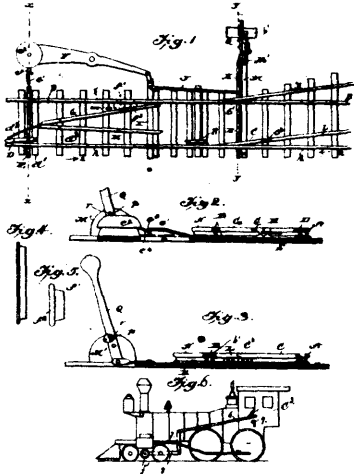
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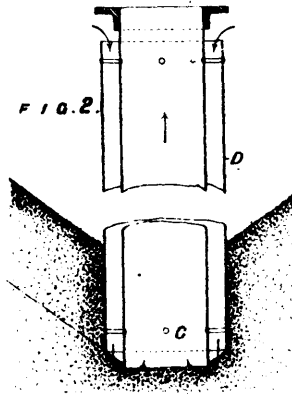
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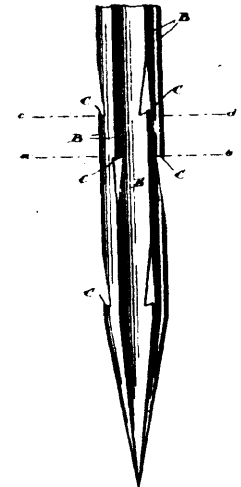
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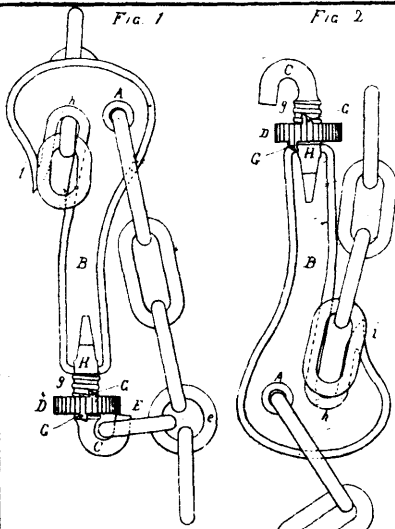
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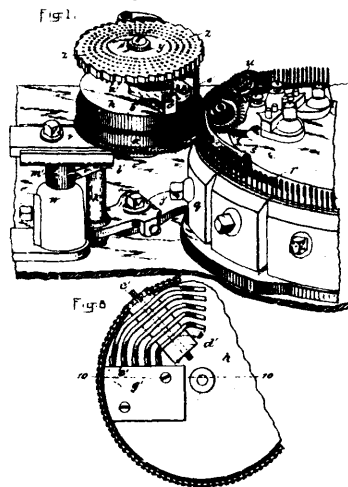
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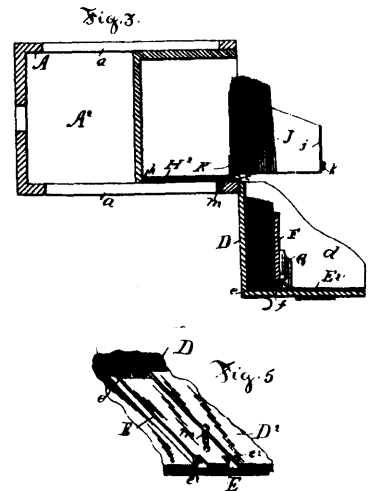
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