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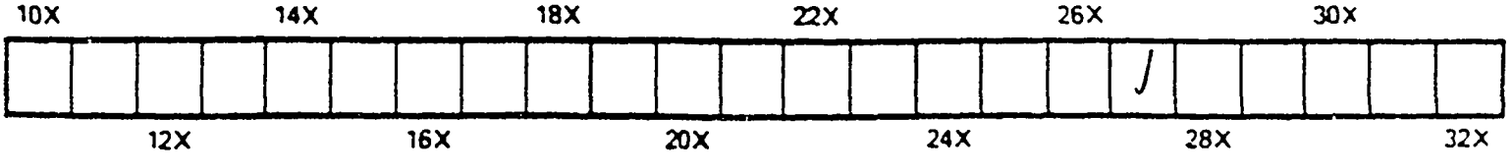

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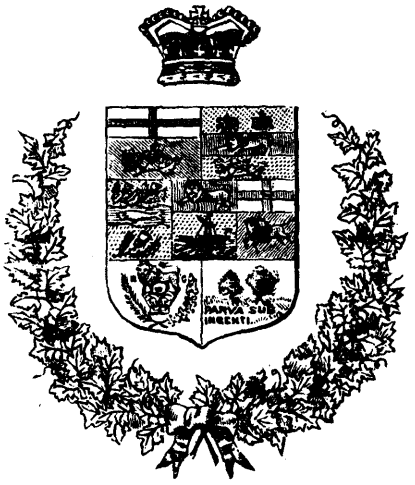

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CONTENTS.

INVENTIONS PATENTED.

No. 15,871. Improvement on Stump Extractors. (*Perfectionnement des arrache-souches.*)

Samuel T. Gaty, (assignee of James L. Neville,) O'Fallon, Mo., U.S., 27th November, 1882; for 5 years.

Claim.—1st. The combination of the sliding capstan with rope and sweep, the capstan adapted to be elevated by building up the coils of rope. 2nd. The combination of the sliding capstan E having a head, with ropes M M', bearing block D and sweep F. 3rd. The combination of bearing block D having incline faces, with oblique sheaves or pulleys R, ropes M M' and sweep F. 4th. The combination of upper pulleys R, lower pulleys Q within the beam, evener O having pulleys at its ends, capstan E, ropes M M' and sweep F. 5th. The combination of the evener O having pulleys at its ends and links and ropes M M', capstan E and sweep F. 6th. The combination of capstan E, pins G J, sweep F, lever K, pull rod H and push rod I.

No. 15,872. Improvement in Apparatus for Soldering Cans. (*Perfectionnement dans les machines à souder les boîtes métalliques.*)

William W. Williams and William A. Williams, San Francisco, Cal., U.S., 27th November, 1882; for 5 years.

Claim.—1st. The combination, in a machine for soldering on the ends of cans, of the fixed suppor ing block having a recess adapted to receive and tightly hold the can top or bottom around its rim or e ige, the vessel for holding solder and a frame or float for causing the solder to rise and flow around the joint, between the body of the can and its top or bottom. 2nd. In combination with a pan or receptacle to contain a body of solder in a molten plate, a fixed holding plate or die B having the discharging trigger, and means for mechanically displacing the solder at intervals and causing its surface to rise to, and to uniformly flow around the top of said die. 3rd. The combination of a solder-holding pan, a fixed holding block, for the can top or bottom arranged therein, the movable pressure float and an adjustable stop, for regulating the amount of descent of the float in the fluid solder, and the rise of the solder about the joint between the can body and its top, or bottom. 4th. The solder pan or receptacle A and the stationary die B, in combination with the hinged pressure float c H and the adjustable stop N, as means for controlling the vertical movement of the float. 5th. In combination with the hinged frame H, suspended hollow float C and the adjustable stop N beneath the frame H. 6th. In a soldering apparatus, the combination of the d.e B and the discharging device consisting of the trigger D, lever *d* and rod *f*. 7th. The soldering die B having the vent *v* and outlet tube V.

No. 15,873. Improvements in Fire Kindlers. (*Perfectionnements aux fagots d'allumage.*)

James H. Davis, Ypsilanti, Mich., U.S., 27th November, 1882; for 5 years.

Claim.—1st. A corn cob kindler composed of the cob section A, the rigid plug C driven into one end thereof, and the flexible wick secured in its place by said plug. 2nd. A corn cob kindler composed of a corn cob section saturated with inflammable material, a plug C of rigid material also saturated with inflammable material, and a wick which is held in place by said plug. 3rd. The combination of a corn cob, a rigid wooden plug, a wick, a core G and an inflammable closing end F. 4th. The new article of manufacture, *to wit:* a corn cob saturated and coated with a product of petroleum and covered with a varnish which will prevent the evaporation of the petroleum, in combination with a wick and a plug for securing the wick in its place.

No. 15,874. Improvements on Fishing Reels. (*Perfectionnements aux dévidoirs de pêche.*)

William Mills and Thomas B. Mills, Brooklyn, N. Y., (assignees of B. D. Boulton, Jersey, N. J.,) U. S., 27th November, 1882; for 5 years.

Claim.—1st. The combination, with the frame and spool of a reel, of a non-rotary internally toothed ring attached to the frame, a spur-wheel upon the spool and a pinion engaging with said ring and wheel, and adapted to be revolved around said wheel and between it and said ring, and rotated on its axis by engagement with said ring. 2nd. The combination, with the frame and spool of a reel, of a non-rotary internally toothed ring attached to the frame, a spur-wheel upon the spool, a rotary handle plate and a pinion pivoted to the handle plate and engaging with said wheel and toothed ring, and adapted to be revolved around said wheel and, at the same time, rotated on its axis by reason of its engagement with said ring. 3rd. The combination, with the spool of a multiplying reel and a handle geared therewith, to rotate slower than said spool, of a ratchet wheel, a coiled spring having an attached pawl or tooth engaging with said ratchet wheel, and a friction box containing said spring, the said box, spring pawl and ratchet wheel being interposed between said spool and handle. 4th. The combination, with the spool of a multiplying reel, of a wheel adapted to rotate therewith and having in it a friction box, a ratchet wheel adapted to rotate in the same direction but at a slower speed than said spool, and a spring coiled in said friction box, and having, at its inner end, a pawl or tooth for engaging with said ratchet wheel. 5th. The combination, with a reel of a handle secured thereto and adapted to be extended beyond the periphery thereof in unwinding, and a spring for retracting the handle after winding. 6th. The combination of the handle plate E, the toothed cap *h*' or disk H, the bifurcated handle I having a rack *h*² upon one side, and the spring *j*.

No. 15,875. Improvements on Harrows. (*Perfectionnements aux herses.*)

Peter Patterson and Alfred S. Patterson, Patterson, Ont., (assignee of Dewitt C. Reed, Kalamazoo, Mich., U. S.,) 27th November, 1882; (Extension of Patent No. 9104).

No. 15,876. Improvements in Warming and Ventilating, and Apparatus Therefor. (*Perfectionnements dans le chauffage et l'aérage, et appareil pour cet objet.*)

Thomas Rowan, London, Eng., 1st December, 1882; for 5 years.

Claim.—1st. The general arrangement and construction of apparatus for warming and cleansing, or purifying air, before entering railway carriages. 2nd. The general arrangement and construction of apparatus for warming, moistening and otherwise treating air before entering buildings and factories. 3rd. The use of currents of air charged with, or with exhalations from pine oil, or encalyptus oil, so as to supply chambers with the atmosphere found to be beneficial in the treatment of certain diseases. 4th. Constructing stoves, whereby the used or burnt air and products of combustion are condensed and purified before leaving the stove.

No. 15,877. Improvements on Door, Shutter or Sash Fasteners and Alarms. (*Perfectionnements aux fermetures de portes, contrevents ou châssis.*)

Isaac Brooke, Royer's Ford, Penn., U. S., 1st December, 1882; for 5 years.

Claim.—1st. A fastener, in combination with an alarm consisting of a hammer, a dog which controls the hammer and is controlled by the arm of the fastener, a spring and a bed or nipple. 2nd. A fastener arm and a hammer, in combination with a dog and a spring common to the hammer and dog. 3rd. The dog formed with a wing, in combination with a spring and the arm of the fastener, said spring and arm bearing on opposite ends of said wing.

No. 15,878. Improvements on Steam Injectors. (*Perfectionnements aux injecteurs de vapeur.*)

Garner C. Williams, Ellenville, N. Y., U.S., 1st December, 1882; for 5 years.

Claim.—1st. A steam injector or water inlet port opening into, and an overflow port opening out of one and the same chamber. 2nd. A steam nozzle and a water inlet port opening into one and the same chamber, and an overflow port opening out of said chamber. 3rd. The combination of the water inlet port, the overflow port and the steam nozzle, all in one and the same chamber and arranged relatively to one another, whereby water entering the chamber will submerge the injector nozzle before it can pass out through the overflow. 4th. The combination of a steam nozzle and a water inlet port opening into one and the same chamber, an overflow port opening out of said chamber and a partition between said ports, so that water entering the chamber from the inlet port must flow over the steam nozzle and partition before it can pass out of the overflow port. 5th. The combination of a steam nozzle and a water inlet port opening into one and the same chamber, an overflow port opening out of said chamber, a combining tube and a shield interposed between the steam nozzle and the combining tube. 6th. The combination, with overflow port, of an overflow valve opening outward under the pressure of the steam in the injector, when the water is not flowing to the boiler enclosed by the pressure of the water, when it is flowing into the boiler.

No. 15,879. Improvements on Machines for the Manufacture of Roving. (*Perfectionnements aux machines pour la fabrication de la mèche de filature.*)

Edward W. Kelly, Lowell, Mass., U. S., 1st December, 1882; for 5 years.

Claim.—1st. The combination, with two sets of drawing rolls, of an intermediate rotating condenser arranged to compact and condense without twisting the sliver as it passes from one set of rolls to the other. 2nd. The combination, with two sets of drawing rolls, of an intermediate rotating tubular condenser provided with a spiral bore of substantially cylindrical cross-section. 3rd. In machinery, for the manufacture of roving for spinning purposes, the combination of two or more sets of drawing rolls, rotating condensers between each, two sets of drawing rolls to compact and condense the moving sliver without putting twist therein, and means for twisting and winding the sliver after it passes from the terminal set of drawing rolls. 4th. The combination, with the condenser stand and means for imparting lateral reciprocating movement to the same, of the condenser tube, and the rotary driving shaft E provided with a sliding worm engaging corresponding gear on the condenser tube.

No. 15,880. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Gaylord B. Saladee, Freeport, Ill., U. S., 1st December, 1882; for 5 years.

Claim.—1st. In a spring platform, arms combined with springs of a substantial U-shape, which springs are connected at their transverse portions to the arms, the opposite ends of which extend beyond the springs for connection to the body or frame. 2nd. The combination in a vehicle, of a body frame, arms *c* and U-shaped springs B, the same being connected to the centres of the springs and extending beyond the springs and tooth arms, and springs being attached at their ends to the body and frame. 3rd. The combination of the arms C connected to the frame and the U-shaped springs connected at the centres to the arms, the latter extending beyond the springs.

No. 15,881. Improvements in Invalid Lounges. (*Perfectionnements aux canapés des malades.*)

Archibald J. McDonald, Springfield, Ohio, U. S., 1st December, 1882; for 5 years.

Claim.—1st. In an invalid lounge, a top consisting of three sections hinged together and having its head section supported upon pivoted journals, whereby its connected sections are made to assume the position required by tilting of said head section. 2nd. A lounge for the use of invalids and for other purposes, the top of which is constructed in three sections flexibly connected together, the head section thereof being pivoted to the top of the frame standards in such manner as to allow it to be tilted to any required degree of inclination, toward either side of its bearings, and having the foot section supported upon horizontal guide-rails, the intermediate section between the head and foot sections being unsupported, except at its connected ends, the hole of said sections adapted to be operated by the weight of the body thereon, in conforming them to the positions shown and specified, through the movement of the pivoted section. 3rd. A lounge for the use of invalids and for other purposes, having its top sections flexibly connected, one of said sections being pivoted in such a manner as to adapt it to be operated in connection with the other sections attached thereto, by the weight of the body, and provided with an automatic locking device for securing said sections in adjustment. 4th. In a lounge constructed with separate sections, flexibly connected together and having the head or operative sections, pivoted in the manner described, the combination, with said section, of an adjustable head rest applied thereto and made detachable therefrom. 5th. In an invalid lounge, a detachable head rest having a pivoted self-adjustable roller. 6th. In a lounge having its sections flexibly connected together, a detachable head-rest for attaching to the head section of the lounge. 7th. In a lounge for invalids provided with devices for manipulating the same, whereby the sections are made to conform to the positions required for consumptive patients, the combination, with the pivoted section, of the adjustable lung pads, as a means of facilitating the purpose and use of the same. 8th. The combination, with the pivoted section *a*, of the lung pads *h h* connected together by the webbing *g* and provided with the adjusting devices.

No. 15,882. Improvement in Plough Shares. (*Perfectionnement des socs de charrues.*)

David Clinton, Wellington, Ont., 1st December, 1882; for 5 years.

Claim.—The steel point A B B and the steel wing D C.

No. 15,883. Improvements in Lubricating Devices. (*Perfectionnements dans les appareils de lubréfiage.*)

Timothy Holland, Troy, N.Y., U.S., 1st December, 1882; for 5 years.

Claim.—1st. The combination of a lubricating vessel containing an oil and water chamber, that is connected with a steam boiler so as to receive steam pressure therefrom, and constructed to deliver oil to a conduit pipe, a conduit pipe to connect said lubricator with one of the steam cylinders of a locomotive, and a steam pipe connecting said conduit pipe with the steam boiler. 2nd. In a lubricating device constructed to supply oil from a pended nozzle, in descending drops within a glass tube that is larger than the oil pipe and its nozzle, and which glass tube connects so as to be steam tight, with a conduit pipe at the lower end of the tube, the combination of a steam pipe connecting with said glass tube to force the descending drops through the latter and the connected conduit pipe, and steam pipe connecting said conduit pipe with the boiler. 3rd. The combination of an upper chamber connected with the steam boiler, a lower oil and water chamber connected with the upper chamber by a pipe and provided with an oil overflow outlet near its top having a pendent discharge nozzle, and an intermediate valve on the pipe connecting the two chambers to regulate the steam pressure upon the oil and water in the lower chamber, and the flow of condensation from the upper chamber thereto. 4th. In a lubricating device connected with the steam boiler so as to receive pressure therefrom, the interiorly arranged pipe S3 open at its upper end and its horizontal connection *s4* made with the annular space A in the pipe P1. 5th. In combination with the glass tube of a lubricating device, an exteriorly placed protecting pipe constructed with oppositely arranged sight openings, through which to observe the flow of oil through the pipe, and a clamp constructed with oppositely arranged plugs, and a thumb-screw to secure the plugs within the sight openings of the exterior protecting pipe. 6th. The combination, with the exterior transparent tube, which receives the oil from the lubricating-vessel and delivers it in visible drops to a conduit pipe leading to the cylinder of an engine, of a puppet valve *n* and a chamber *s7* provided with a valve seat *n7* arranged intermediate the said tube and the pipe. 7th. A lubricating device in combination, consisting of two lubricating vessels *x* and *x x* connected with the boiler at *s1* by the branch steam pipes *s2 s2*, and each having a conduit pipe for attachment to a locomotive steam cylinder, and each conduit pipe connected with the boiler.

No. 15,884. Improvement on Sleigh Knees. (*Perfectionnement des courbes de traîneaux.*)

Benjamin F. Brown, Houghton, Mich., U. S., 1st December, 1882; for 5 years

Claim.—1st. The sleigh knee D provided with the horizontal flange E around its upper part, a little below its upper end D1, having perforations H in its sides, to receive the fastening bolts and recesses J, in its front and rear to receive the strengthening pins, and having its lower end flared at the front and rear and provided with perforations K and flanges. 2nd. The combination, with the runners A, of the beam B having its lower side recessed, and the brace C perforated and having its end recured to the runners of the knee D, provided with the perforated and recessed flange E around its upper part, a little below the upper end D1, and downwardly projecting flanges G on the sides of its flaring lower part, the fastening bolts I and the strengthening-pins J.

No. 15,885. Improvements on Drive Well Points and Strainers. (*Perfectionnements aux sondes des puits artésiens.*)

Oscar B. Olmsted, Beloit, Wis., U.S., 1st December, 1882; for 15 years.

Claim.—1st. In a well tube strainer, a central web or spider having radial wings. 2nd. An internal support for well tube strainers, consisting of a series of wings united at their inner edges and radiating from the point of union, closed at the lower end and provided with a coupling ring at the upper end. 3rd. The strainer core or support for the drive well tubes consisting of a series of radial wings, united at the centre and provided with a tapering point at its lower end, and a coupling ring at its upper end. 4th. An internal support for drive well strainers, consisting of a web or spider having radial wings united at their inner edges, and a wire mould around said web or spider. 5th. In combination with a web or core having radial wings, a wire wound spirally upon the web, and a strainer or gauge covering surrounding the wire. 6th. In combination with a core or web having radial wings, a wire wound spirally around said core, a gauge covering surrounding the wire, and a perforated metal jacket enveloping the gauge.

No. 15,886. Improvements on Wash Stands. (*Perfectionnements aux lavabos.*)

Abram L. Farewell, East Whitby, Ont., 1st December, 1882; for 5 years.

Claim.—Firstly, the hinged bracket B, and, secondly, the combination of the stand A with the bracket B, the pitcher C and the shelf E.

No. 15,887. Improvements on Waggon Beds. (*Perfectionnements aux lits des wagons.*)

Brantley P. Joiner, Florence, Ala., U. S., 1st December, 1882; for 5 years.

Claim.—The combination, in a waggon bed or body, of the bottom B having stationary side rails C provided with the projecting ends D,

inside bails E and outside loops or staples L, detachable side boards F having hooked straps G, end gates J provided with the hooked clamping rails K and detachable folding rack M.

No. 15,888. Improvements on Removable Insoles for Hob Nail Shoes.

(*Perfectionnements aux fausses-semelles mobiles des chaussures à caboches.*)

William G. Hoover, Pittsburg, Penn., U.S., 1st December, 1882; for 5 years.

Claim.—The removable insole A for hob-nail shoes, made of sole-leather, having a continous unperforated body and upper surface, with a net work of grooves cut or scored in its under surfaces, to permit escape of heated air at the edges of the sole.

No. 15,889. Improvements in Show Stands.

(*Perfectionnements aux montres des magasins.*)

Giles S. Roath, Greenville, Ct., U. S., 1st December, 1882; for 5 years.

Claim.—The combination of a concavo-convex mirror C, a gas pipe provided with a revolving top G and suitable jets H, for causing the top and the table Q attached thereto to revolve, the table adapted to hold ornamental objects to be reflected in the mirror.

No. 15,890. Improvements on Ice Velocipedes. (*Perfectionnements aux vélocipèdes à glace.*)

Augustus F. Woodham, Minneapolis, Minn., U. S., 1st December, 1882; for 5 years.

Claim.—1st. In a velocipede, the combination of a suspended driving-wheel, having attachments for engaging a screw, front sled-runners having an attached hand steering device, and a rear spiral propeller having a screw on its shaft. 2nd. The driving-wheel *c* constructed of inner and outer rims or bands *g h*, having boxes *i* in between them, in combination with the radial pins *k* fitted to work in said boxes, and the springs *n* pressing said pins outward. 3rd. The shaft *l* supported by a ball and socket joint and the screw D, and propeller E, in combination with the runners and runner from off the vehicle.

No. 15,891. Improvement in Adjustable Barrel Covers. (*Perfectionnement des fonds de barils mobiles.*)

Willis F. Hood, Deerfield, Mich., U. S., 1st December, 1882; for 5 years.

Claim.—1st. An adjustable barrel cover composed of a stationary segmental section attached to an adjustable flexible band adapted to embrace the exterior of the top of the barrel, and a movable section pivotted to said stationary section and adapted to swing over it. 2nd. The combination, with the stationary and movable cover section, of the flexible band secured to the former and provided with the ears, and the end portion projecting beyond one of said ears, and a belt passing through said ears. 3rd. The combination of the stationary cover-section and a cup *f* pivotted to the underside, so that the cup may be swung into or out of the opening left by said section.

No. 15,892. Liquid Stove Polish.

(*Mine de plomb liquide pour les poêles.*)

The Einstein Manufacturing Company, (Assignee of Harry Einstein,) Philadelphia, Penn., U.S., 1st December, 1882; for 5 years.

Claim.—The composition of matter to be used as a liquid stove polish consisting of water, gelatine, nut galls, sulphate of iron and plumbago.

No. 15,893. Improvements on Cigar-Holders. (*Perfectionnements aux porte-cigares.*)

Edward S. May, Detroit, Mich., and George R. Sutherland, Campbell, N.Y., U.S., 1st December, 1882; for 5 years.

Claim.—A cigar-holder composed of a single tube having a flaring mouth or cup *a*, flattened tapering draft aperture *d*, shoulders *c c* at the junction of cup *a* and aperture *d*, and recesses *b2 b2*, the whole formed in a single piece.

No. 15,894. Improvements in Axle Lubricators. (*Perfectionnements dans les boîtes à graisse des essieux.*)

Frederick C. Henshaw, Montreal, Que., (Assignee of Chester D. Flynt, Brooklyn, N.Y., U.S.,) 1st December, 1882; for 5 years.

Claim.—1st. The combination of the pad formed of cotton waste and hair, or equivalent absorbent, and elastic materials, inclosed in a suitable foraminous envelope, and the distributor of felt, or equivalent material, secured to the pad. 2nd. The combination of the pad formed of cotton waste and hair, or equivalent absorbent, and elastic material, and inclosed in a suitable foraminous envelope, the distributor of felt, or equivalent material, secured to the pad, and metal strips fastened to the distributor. 3rd. The combination of the pad formed of cotton waste, or other equivalent absorbent material, and of hair or other elastic material, the foraminous envelope enclosing said pad, the springs secured in the envelope and the distributor of felt, or equivalent material, secured to the pad. 4th. The combination of the pad of cotton waste, or other equivalent absorbent material, and of hair or equivalent elastic material, the foraminous envelope inclosing said pad, the springs secured in the envelope, the distributor fastened to the pad and the metallic strips secured to the distributor.

No. 15,895. Improvements in Non-Conductors of Heat and Water Repellant Packing of Pipes and Mains for Conveying Steam, Hot Water, &c. (*Perfectionnements aux mauvais conducteurs de chaleur et aux garnitures hydrofuges des tuyaux pour transporter la vapeur, l'eau chaude, etc.*)

Joseph G. Hill, Newark, N. J., and John L. Lee, Stoatsburgh, N. Y., U.S., 1st December, 1882; for 5 years.

Claim.—1st. Lamp black, as a moisture repellant packing material. 2nd. Underground mains or pipes, jacketted with, or enveloped in lamp black, as a heat retaining, moisture repellant medium. 3rd. Underground mains or pipes, for the transmission of steam, hot water or the like, laid in trenches and embedded in lamp black. 4th. The method of applying finely divided lamp black to steam or other pipes, by filling bags with the same and wrapping the bags around he pipes. 5th. Steam or other pipes surrounded by bags filled with lamp black. 6th. Woven envelopes filled with lamp black, for jacketting steam pipes and other articles.

No. 15,896. Improvements on Hand Stamps.

(*Perfectionnements aux timbres à main.*)

George J. B. Rodwell and Theodore Snell, Toronto, Ont., 1st December, 1882; for 5 years.

Claim.—1st. An outer casing A having a pad *b* set within it and resting on a sponge or other porous substance, containing ink of any suitable quality, in combination with printing type detachably set within a recess formed in the bottom of the case B which is made to fit within the outer casing A. 2nd. In a printing stamp in which the type is set into a recess formed in the bottom of the casing made to fit within another casing, having on the inner side of its bottom a printing pad, the combination of a spring or springs F so arranged as to keep the type on the bottom of the casing B from coming in contact with the printing pad *b* until sufficient pressure to overcome the strength of the spring has been applied. 3rd. In a printing stamp in which the type is set into a recess formed in the bottom of a casing, made to fit within another casing having on the inner side of its bottom a printing pad, the combination of a stopper C made to hermetically seal the casing B and to support the brush D, which may be utilized for applying the ink contained within the casing B to the pad *b* or its feeders *a*.

No. 15,897. Improvements in Lozenge Machinery. (*Perfectionnements dans les machines à pastilles.*)

Thomas Robertson, Toronto, Ont., 5th December, 1882: (Extension of Patent No. 8173.)

No. 15,898. Lozenge Machine.

(*Machine à pastilles.*)

Thomas Robertson, Toronto, Ont., 5th December, 1882: (Extension of Patent No. 3620.)

No. 15,899. Improvements on Centrifugal Bolts for Flour Mills. (*Perfectionnements aux blutoirs centrifuges des moulins à blé.*)

Jonathan Mills, Terre-Haute, Ind., U. S., 5th December, 1882; for 5 years.

Clam.—1st. In a horizontal centrifugal bolt, the combination of an outer shell, a reel revolving longitudinal, continuously arranged flyer blades, and a central drum having a close continuous peripheral surface. 2nd. The combination, with the outer shell and reel, of a flyer having a number of longitudinal troughs or recesses in its circumferential surface, said troughs being closed at their bottom and embraced laterally by longitudinal spirally directed flyer blades, whereby material falling into said recesses is prevented from falling to the bottom of the reel. 3rd. The combination, with the outer shell and with the reel, of a flyer consisting of a peripherally closed drum, proximating in diameter that of the reel and provided with longitudinal spirally directed blades, applied to the circumferential surface thereof. 4th. The combination, with the surrounding bolting reel, of the inner drum, and secured to the drum surface, a number of longitudinal blades, each separately adjustable and shorter than the length of the drum, but arranged together to operate as a continuous blade or series of continuous blades, for the purpose of acting at all points of the reel opposed to the drum. 5th. The combination, with a bolting reel, of an inner flyer, constructed with one or more series of short blades arranged longitudinally of the flyer, so as to throw the material being acted upon outward against the bolting reel, said blades for a part of the length of the flyer being slightly inclined from a longitudinal direction for the purpose of feeding the material along in the reel, and those near the tail of the reel being less inclined, or otherwise set so as to retard the progress of the material lengthwise of the reel. 6th. The combination of an outer stationary shell, an inner rotating bolting reel and a central drum having a close or continuous peripheral surface, said drum being provided with longitudinal blades on its peripheral surface arranged to operate together as a continuous blade, or series of continuous blades, and having a rotary motion in the same direction with, but at a higher speed than the reel, whereby material being bolted is prevented from overloading the bottom of the reel. 7th. The combination, with the flyer drum F and with the reel having an opening or openings in its front end for the admission of air, of oblique blades applied to the front end of the drum, to induce an air current through the reel head by the rotation of the drum. 8th. In a reel, the combination, with a fastening for securing the reel cloth at one end thereof, of an adjustable fastening for the opposite end

consisting of a contractible clamping hook D^{12} provided with external hooks d^7 and tension rods d^5, combined with the reel rim D^1. 9th. The combination, with the feed spout having a door h and with the reel head provided with a cam face d, of an apertured hopper h^1 pivotally mounted within the spout, engaged with the cam and accessible from the door h, whereby objectionable substances in the material are retained and may be removed. 10th. A group of three centrifugal bolts mounted on a single frame and forming a unitary machine, two of said bolts being elevated equally and the third arranged centrally beneath them, combined with conveyers and a spout or spouts forming part of the machine, whereby material may pass from either of the elevated bolts to the lower one. 11th. In a group of two or more centrifugal bolts, the combination of two of said bolts arranged side by side, enclosing chests therefor provided with discharge openings on their adjacent sides, and a conveyer box or boxes located between said two bolts and common to both, the moving parts in said bolts, which carry the bolted flour out of the chests, being arranged to revolve in opposite directions inwardly and upwardly. 12th. As a means for communicating reduced motion from a flyer shaft to the reel and conveyer shafts in a centrifugal bolt, the combination, with a rotating reel, a flyer and two parallel conveyers, of gear connecting the conveyer shafts with each other, reducing gear leading from the flyer to one of said conveyer shafts, and gear leading from the other of said conveyers to the reel. 13th. In a group of three centrifugal bolts, the combination of the flyer shaft E, the driving belt E^2, the conveyer shafts G^2 G_9, gear wheels g g^1 g^2, fixed pulley I^4, loose pulley I_3 having the pinions i, flyer pullies I I^1 I^2 arranged in the plane of I_3, reel pulleys I^7 I^8 I_9 in the plane of the pulley I_4, the conveyor pulleys I^5 I^6, also in the plane of the pulley I^4, the belts R and R^1 and tightening pulleys J and J^1 arranged in the respective planes of said belts and located at the left of the pulleys I^1 I^7. 14th. In a group of centrifugal bolts, the combination, with the flyer reel and conveyer shafts and their pulleys and with the belt or belts forming the drive of the group, of the fixed head J^4 provided with a recess J^{10}, the arm J^3 supporting a pulley or pulleys on an axis J^2, at right angles with said arm, a screw J^8 J^9 and a spring J^7 interposed between the head J^4 and wheel or head J^8.

No. 15,900. Improvements on Magneto-Electric Railway Signals. (*Perfectionnements aux signaux électro-magnétiques des chemins de fer.*)

John R. Johnson and Orville B. Johnson, Boston, Mass., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A cut-off mechanism arranged to disconnect the generator or signal from the mechanism connected with the track, at the first blow received from the same, and provided with clockwork or other suitable devices, to prolong said disconnection until the signal has been given and the train has passed said mechanism. 2nd. A rotary magneto-generator provided with a cushion or spring r inserted in the connecting rod C, between the actuating devices of said generator, and the lever struck by the passing train, said cushion being adapted to receive a blow given sharply and suddenly to said lever, and to transmit it gradually and without shock to the actuating devices of said generator. 3rd. A magneto-generator provided with a cushion or spring r, to diminish the suddenness of the blows imparted to the actuating mechanism by passing trains of cars, and with an auxiliary device for severing the connection between the track and said actuating devices and thereby prevent them from receiving more than one of said blows. 4th. In magneto-electro signalling apparatus, the cut-off mechanism consisting of two interlocking hooked rods C G for displacing the driving mechanism from its normal position, and a bent lever E operated by one of said rods to separate said rods provided with a clockwork N and connecting rod K to hold said rods apart, and with a spring h to drive said clock and to interlock said rods when released by said clock.

No. 15,901. Improvements on Impervious Packages. (*Perfectionnements aux boîtes imperméables*)

John A. Wright, Keene, N. H., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A package made of staves, or pieces of wood, and coated or lined with a compound of glue, water, linseed oil, borax and glycerine. 2nd. A package made of wood, prepared with a strip of paper or cloth, glued or fastened over each of its joints and coated or lined with a compound, consisting of glue, water, linseed oil, borax and glycerine. 3rd. A package made of wood, having each of its joints covered, or protected with a strip of paper or cloth, glued or otherwise fastened in place.

No. 15,902. Improvements in Guides for Paint Staffs. (*Perfectionnements aux guides des règles d'preuve.*)

Thomas E. Davis, Range, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—In guides for paint staffs, the combination, with the foot A having the post a, and the adjustable paint staff B, of the slide b fitted at one end with a set screw d bearing upon the upper end of the mill spindle, and having in its other end an eye, which receives the post a, and also a set screw c thereat, and the eye piece e having a collar to adapt it to spindles of different sizes, and an arm adjustable in an aperture in the post a by a set screw f.

No. 15,903. Improvements in Means of Finishing Zinc-Coated Wire. (*Perfectionnements aux moyens de finir le fil de fer couvert en zinc.*)

Henry Roberts, Pittsburgh Penn., U. S., 5th December, 1882; for 5 years.

Claim.—1st. The automatically opening and closing die made in four, or other convenient number of parts divided centrally, or approximately so, in combination with the bath I of melted metal and provisions for inducing the traverse of the wire through the bath and dies. 2nd. The combination of the dies N^1 N^2 N^3 N^4 formed to leave the tapering hole n between them, with the yoke R having inclined sides and the adjustable weight T. 3rd. The combination, with a melted metal bath I, of the scraper N^1 N^2 N^3 N^4 and the material W, for a subsequent wiping treatment.

No. 15,904. Improvements on Gate Attachments. (*Perfectionnements aux pentures des barrières.*)

Robert E. Chambers, New Glasgow, N. S., 5th December, 1882; for 5 years.

Claim.—1st.. The combination of an ordinary gate g having a lower hinge of ordinary construction H h and an upper double jointed hinge consisting of a lever H^1 pivoted upon an ordinary staple hinge pin h, one end h^2 engaging the eye of a common hinge H, and the other end h^3 cranked sideways and, if necessary, upwards, and provided with means for attaching a cord or cords, led and arranged for moving the lever forward and backward from a point at a distance therefrom. 2nd. The combination of the gate g hinged to a gate post P^1 by an ordinary hinge H h below and above by a double jointed lever hinge H^1 H h to which a cord or cords are attached and led directly and indirectly to posts p^1 p^2 over suitable pulleys in the rail P, the gate having ordinary latches engaging catches on the posts P^2 P^3. 3rd. The lever hinge H^1 having a boss or crank h^1 arranged to be pivoted upon a hinge pin h and one end provided with a pin h^2 to engage the eye of a common hinge H, the other end h^3 cranked sideways and provided with the means of securing thereto a cord or cords, or their equivalents. 4th. The combination of the cords C^1 C^2 C^3 C^4 attached to the lever H^1 C^1 being led direct, and C^2 indirect over suitable pulleys to a distant post p^1 c^4 being led direct, and c^3 indirect to the post p^2.

No. 15,905. Improvements on Electro-Magnetic Watchmen's Registers. (*Perfectionnements aux régistres électro-magnétiques des gardiens de nuit.*)

George F. Ransom, Cleveland, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—In a watchman's time registering clock, the combination, with a clock movement, a revolving dial connected therewith, and parallel bars located on opposite sides of the dial and radially thereto, of a series of electro-magnets having needles secured to their armatures and arranged radially to the clock dial for piercing the dial on a radial line.

No. 15,906. Improvements on Boat Lowering Apparatus. (*Perfectionnements aux appareils pour descendre les canots.*)

Martin Bourke, Youngstown, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination, with suitable cranes, or davits, or arms, to which the ropes or falls are connected, of the drums D E, sliding gear wheel l and stationary gear wheel K, and the adjustable shafts carrying their respective gear wheels and pinions. 2nd. The combination, with the windlass mechanism for elevating or lowering the boat, of the hollow standards B and swinging arms C. 3rd. The combination, with the clutches T, of the standards S having braces a^1, and the bolts Q with stops b^1. 4th. The combination, with the standard S having elbow i^1, of the clutches T provided with spring tripping devices U. 5th. The combination, with the clutches T, of the standards S, bolts Q and pins g^1.

No. 15,907. Improvements on Bed Clothes Fasteners. (*Perfectionnements aux agrafe-couvertures des lits.*)

Allyn Cox, New York, N. Y., U. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination, with a clamp for holding the clothes, of an attached flexible connection for securing the fastener to the bottom of the mattress, or to the bedstead beneath the bed or mattress. 2nd. The combination, with the bed or mattress B, of the flexible strap or connection b and a clamp E. 3rd. In a bed clothes fastening clamp E, the jaws or sides e d united at their base, but constructed to form a contracted space or mouth at the opposite ends, for reception of the clothes, and a weighing surface within them for the hold of the clothes, in combination with the movable clip or locking device K. 4th. The combination, in the clamp E, of an elastic stand or holder consisting of the two sides e d, united at their base e and inclining toward each other, as they rise from said base, with a moving clip K arranged to work upon or against one of the sides d and having an elastic bearing as produced by the elastic construction of said holder. 5th. The combination of the rigid internally-corrugated side e of the clamp, the elastic side, or jaw and the sliding clip K.

No. 15,908. Improvements on Car-Couplers. (*Perfectionnements aux accouplages des chars*)

Asher W. Clark, Orangeville, Ind., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A spring-actuated coupling hook, an uncoupling device and a locking mechanism, whereby the hook can be held at different positions. 2nd. The combination, with the hook h, of the spring k, the rod m, pawl n and spring s.

No. 15,909. Improvements in Force Pumps. (*Perfectionnements aux pompes foulantes.*)

David O. Holman and Charles A. Macfarlane, Knowlton, Que., 5th December, 1882; for 5 years.

Claim.—The combination, with a reciprocating force pump, of the semi-circular recesses D D, the valve openings H H and covers G G as placed at the sides of the pump, and the valve yokes or frames I I.

No. 15,910. Process for Manufacturing Feather Pillows, Bolsters, &c. (*Procédé pour la confection des oreillers, traversins, etc., de plume.*)

Herman Berger, Milwaukee, Wis., U. S., 5th December, 1882; for 5 years.

Claim.—A filling for bolsters, cushions, pillows, mattrasses and similar articles made of turkey, chicken, or other coarse inferior feathers chopped fine.

No. 15,911. Process for Manufacturing Albumen from Fish Spawn. (*Procédé de fabrication de l'albumine avec le frai de poisson.*)

Uno H. Hillman, Osterville, Mass., U. S., 5th December, 1882; for 5 years.

Claim.—The process of manufacturing albumen from fish spawn consisting in adding to the crushed spawn sufficient water to dissolve the albumen, and evaporating the albuminous water by boiling under a vacuum sufficiently low to preserve the ready solubility and coagulative power of the albumen.

No. 15,912. Improvements on Grain Carriers. (*Perfectionnements aux tables des moissonneuses.*)

The Toledo Mower and Reaper Company, (assignee of John S. Davis,) Toledo, Ohio, U.S., 5th December, 1882; for 5 years.

Claim.—1st. The combination of an endless carrier for a harvester, the supporting rollers for the carrier located at the ends of the carrier frame, the adjustable supporting mechanism between said rollers and between the upper and lower portion or opposite surfaces of the carrier, and means for positively adjusting and securing said mechanism. 2nd. The combination of the cross heads provided with bearings, the carrier supporting roller mounted in said bearings, the guideways for the cross-heads, and the adjustable bar connecting the cross-heads. 3rd. The combination of the carrier, its supporting rollers, the sliding boxes or cross-heads, provided with bearings for one of said rollers, the cross-bar between the upper and lower portions of the carrier with which bar the cross-heads are jointed, and the adjusting lever linked to said bar. 4th. The combination of the adjustable carrier supporting roller, the sliding boxes, the guideways, the resilient bar having jointed connection at its ends with said sliding boxes, the adjusting lever, the link or connecting bar and means for securing the lever in its adjusted position. 5th. The combination of the platform, the carrier, the roller mounted in fixed bearings, the adjustable roller, the cross-heads provided with bearings for said adjustable roller, the bar connecting said cross-heads, the link rod, the lever and the cross-bar with which said lever has pivotal connection. 6th. The combination of the platform, the adjustable carrier supporting roller, the adjusting and supporting mechanism therefor, the slotted back board and the rack with which the detent of the adjusting lever engages.

No. 15,913. Improvements on Metal Working Tools. (*Perfectionnements aux outils pour travailler les métaux.*)

James E. Woodbridge and Frederick N. Gardner, Hartford, Conn., U.S., 5th December, 1882; for 5 years.

Claim.—1st. The cap E made convex transversely on its bearing surface and resting on the surface of the cutter, along a horizontal middle line only of said cutter in order to avoid injury to its corners. 2nd. The combination of the grooved cap piece E provided with the side plates F consisting of vertical straps attached to the cap piece and the grooved base D provided with recesses G adapted to inclose and hold a cutter C. 3rd. The base D provided with laterally bevelled ends D^1, whereby the back of the tool is supported while the cutting edge is left free. 4th. A tool-holder provided with ends D^1 D^1, bevelled laterally in opposite directions, for holding and supporting tools adapted to cut in both right and left directions.

No. 15,914. Improvements on Sleds and Sleighs. (*Perfectionnements aux traîneaux.*)

Charles M. Amsden, Wooster, Ohio, U. S., 7th December, 1882; for 5 years.

Claim.—The combination, with the cross-bars *a*, side rails *b* and seat board *c*, of the metallic arches *f*, the side bars *f* turned horizontally outward at the top, and the T-iron runners A, the said arch bars and side bars being rivetted together and to the rib *e* of the runners.

No. 15,915. Improvements on Car Wheels. (*Perfectionnements aux roues des chars.*)

Albert D. Canfield, Arlington, Vt., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with a flanged hub and annular plate E, of a rim having two grooves *a a*, and the sections C D having each two tongues fitting said grooves. 2nd. In combination with the hub and rim of the wheel, the sections C and D having the conical bolts *f f* placed between them in such manner as to have a drawing action upon the sections.

No. 15,916. Method of Uniting Wood for Floor Coverings. (*Méthode d'assemblage du bois de parquetage.*)

Charles E. Rider, Rochester, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. Introducing lead or other suitable metal or alloy, into grooves in the wood in the molten condition. 2nd. The wooden tiles, composed of wooden blocks united by the introduction of molten metal or alloy into grooves therein. 3rd. The method of forming joints in wood, by introducing molten metal into grooves formed in the opposing surfaces of the wood, while the latter is in a heated condition.

No. 15,917. Improvements on Electro-Magnetic Devices. (*Perfectionnements aux appareils électro-magnétiques.*)

Elihu Thomson, New Britain, Conn., U.S., 7th December, 1882; for 5 years.

Claim.—1st. In combination with a hollow movable core placed in the interior of a coil of wire or helix, an external casing and tapering extension connected to said casing for the purpose of obtaining an axial attractive force, constant for a constant current independently of changes of position of said core with respect to said coil within practicable limits. 2nd. A movable core H surrounded by a coil of insulated wire and immersed in a vessel of oil or glycerine, and whereby said coil is checked in its movement, in consequence of the resistance to the passage of said oil or glycerine, from a position above said coil to a position below it and *vice versa*. 3rd. The combination of the following elements, viz: a coil or helix, a movable core, a vessel of oil or glycerine in which said core moves, an exterior iron casing and tapering extension of the same interior to said coil or helix.

No. 15,918. Improvements in Vehicle Dashes. (*Perfectionnements aux garde-crotte.*)

Lachlan E. McKinnon, St. Catharines, Ont., 7th December, 1882; for 5 years.

Claim.—1st. In a vehicle dash frame, the extending of the end uprights F F to a point below the bottom rail A and attaching to the extensions F^1 F^1 and additional bottom rail A^1. 2nd. The clamp or plate D with holes or slots. 3rd. The special feet B with the offset G. 4th. The combination of a dash having an additional bottom rail A^1 with clamps or plates D, bolts or screws C and feet B. 5th. The combination of a dash having an additional bottom rail A^1 with bolts or screws C and feet B. 6th. The combination of a dash having an additional bottom rail A^1, with clamps or plates D and bolts or screws C. 7th. The combination of a dash having an additional rail A^1, with bolts or screws C.

No. 15,919. Improvements on Gas Burners for Heating Purposes. (*Perfectionnements aux becs à gaz de chauffage.*)

Thomas Fletcher, Warrington, Eng., 7th December, 1882; for 5 years.

Claim.—A gas burner for heating purposes having slits formed by cutting or by equivalent means for the outlet of a combined gas and air, the slits having such a width, that the lighting back of the flame into the body of the burner is prevented, this width of slit not exceeding one fifteenth of an inch as a maximum.

No. 15,920. Improvements on Thimble Skeins and Axle Boxes. (*Perfectionnements aux cuillers des essieux et aux boites à graisse.*)

George W. Smith, Rock Falls, Ill., U. S., 7th December, 1882; for 5 years,

Claim.—1st. A thimble skein having socket *b*, head *c*, sand band *d*, collar *e*, side arms *f*, bottom arm *g* and top arm *h*, to adapt it to be used in connection with a wooden axle. 2nd. The combination, with a skein having head *c*, collar *e* and sand band *d*, of the box *h*, having the sand band *j*, shoulder *o* and collar *k*.

No. 15,921 Improvements on Animal Traps. (*Perfectionnements aux ratières.*)

Bennet Greig, New York, N.Y., U.S., 7th December, 1882; for 5 years.

Claim.—1st. The wire frame embodying in its structure the bow-shaped base sections projecting in opposite directions, to support the trap on the ground, the double upright limbs forming the junctions between the base sections, the two traverses at the bottom of the upright limbs, the single traverse at the top thereof, and the stretchers connected to the upper and lower traverses, in combination with the bow-shaped swinging knockers hung to the lower traverses, the springs arranged on such traverses to act on the knockers with a tendency to throw the same in a downward direction, the swinging braces hung to the upper traverse for retaining the knockers in a raised position, and the bait-holding triggers hung to the stretchers for engaging the braces. 2nd. The combination, with two united stationary base sections, each provided with a traverse D, of a bow-shaped knocker loosely hung at its ends on each of said traverses, a spring coiled on each traverse and acting on the knockers, and means for holding the two knockers in an upright position.

No. 15,922. Improvements on Scrap Books. (*Perfectionnements aux albums.*)

Arthur L. Colton, Milwaukee, Wis., U.S., 7th December, 1882; for 5 years.

Caim.—1st. The combination, in a portfolio scrap-book, of the covers A and B and envelopes C, all provided with holes or eyelets D, and one of said covers being further provided with a belaying pin F, a string E passing through said eyelets, both ends of which are attached to the belaying-pin and are adapted to be wound or unwound from the shank thereof, thus shortening or lengthening the available portion of the string, and a string E^1 attached at one end to the string E and free at the other, and adapted to be wound around the belaying pin and thus secure the book together. 2nd. The combination, with the cover B, of the belaying pin F secured thereto and provided with lateral holes in its shank, adapted to receive and hold the ends of the

string E, and having a head or flange under which the string E1 may be wound and thereby secured.

No. 15,923. Improvements on Dead Pulley Rigs. (*Perfectionnements aux garnitures des poulies fixes.*)

Hilen C. Crowell, Erie, Penn., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The hanger A having legs, or prongs A1 A1, in combination with the box B having wings with openings for the said legs A1 A1, and means for clamping and adjusting the said box in place upon the said legs. 2nd. The hanger A having legs, or prongs A1 A1, in combination with the box B having wings with openings for the legs A1 A1, and the set screws 2 2 and 3 3 3 3, and the pivots points 4 4 arranged and operating to secure and adjust said box upon said legs. 3rd. The hanger A having legs, or prongs A1 A1, in combination with the box B formed of the parts *b b*, said parts *b* having wings with opening for the legs A1 A1, and having the part *b* attached thereto by bolts 1 1. 4th. The hanger A with legs A1 A1, in combination with the split box B, split sleeve C with flange C1, split flange C2 and split pulley D. 5th. The combination, with the two parts of the split pulley D, of the clamp E formed of the straps *e e*, with inclined U-shaped lugs *e2*, and the bush-irons *e1* with flaring inner walls and the bolts 9 9.

No. 15,924. Improvements on Hay Presses.

(*Perfectionnements aux presses à foin.*)

William J. H. Kappe, Belleville, Ill., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination of the baling chamber F, follower L, pitman M having recess *a1*, and rack N, vertical shaft G, eccentric rack H, connecting arms O, guide R, castor Q travelling in the latter, and the sweep or main lever I. 2nd. The combination, with the baling chamber F, of the follower L, pitman M hinged to said follower and provided with a pivotted rod G1 having loop J1, hinged cover R having cross bar T, lever W, sliding rods X, cord or chain A1 and link E1. 3rd. The combination of the baling chamber F having covers R S provided with cross bars T, loops or clasps U and spring V, and horizontal lever W to which are pivotted rods X having bent ends Z, and springs Y. 4th. The baling chamber F having perforations S1 and flanges T, pivoted with notches U1, in combination with the partitions V1 having studs W1 and brackets X1.

No. 15,925. Improvements in Whiffletree Hooks. (*Perfectionnements aux crochets des palonniers.*)

Harlow S. Higinbotham, Allegan, Mich., U. S., 7th December, 1882; for 5 years.

Claim.—A whiffletree hook provided with the collar and the shouldered head, so arranged, in relation to each other and the eye end of the trace, that said end of the trace can only be disconnected from the hook by the indirect passage thereof between the collar and the shoulder of the head.

No. 15,926. Improvements on Lath Trimming Machines. (*Perfectionnements aux machines à dresser la latte.*)

George W. Nichols and William Taylor, Clinton, Iowa, U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination with the saws B B adjusted the length of a lath apart, of the compress arms D D having the lever arms C C1, the connecting arms H K, the rock shaft E and the lever L. 2nd. The combination, with the compress-arms D D having the lever arms C C1, of the rock shaft E, connecting arms H K and lever L. 3rd. In combination, the saws B B adjusted the length of a lath, the compress arms D D having lever arms C C1, the connecting arms H K, the rock shaft E, the lever L and the stationary and movable head blocks M M.

No. 15,927. Improvements on Movable Fence Posts. (*Perfectionnements aux pieux des clôtures mobiles.*)

Samuel Gibbs, Blue Mound, Mo., U. S., 7th December, 1882; for 5 years.

Claim.—The combination, with the inclined stakes B C D bevelled at their upper ends, of the binding wires E F, whereby the said stakes will be firmly held in place.

No. 15,928. Improvements on Means for Conveying Heating or Motive Agents through a Train of Cars. (*Perfectionnements aux moyens de faire circuler des agents de chauffage ou moteurs sur des trains de chars.*)

Louis Fitzgerald, (Assignee of Maurice J. Walsh,) New York, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with a pipe for conveying a heating or motive agent along a car, of a section of rigid pipe for extending beyond the car and connected to the pipe which extends along the car, so as to be adapted to move vertically and laterally relatively thereto, and another section of pipe telescopically fitted to the section first named, and having secured to its outer end a coupling piece. 2nd. The combination, of the pipes A B, the telescopic sections A1 A2 B1 B2, the cock C having an externally spherical barrel and shell D.

No. 15,929. Improvements in Apparatus for Heating Cars. (*Perfectionnements dans les appareils à chauffer les chars.*)

Louis Fitzgerald, (Assignee of Maurice J. Walsh,) New York, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with pipes arranged one within the other, for conveying a heating agent backward and forward through the car, of a cock and two separate flexible pipes arranged so as to be independently accessible and extending beyond the car. 2nd. The combination, with pipes arranged one within the other, for conveying a heating agent backward and forward through a car, of a cock and two separate flexible pipes arranged so as to be independently accessible, extending beyond the car and provided with coupling pieces.

No. 15,930. Improvements on Spikes.

(*Perfectionnements aux clous barbelés.*)

William H. Bailey, Minneapolis, Minn., U. S., 9th December, 1882; for 5 years.

Claim.—A spike comprehending a head with straight parallel sides and upwardly bevelled hook or head, a rectangular shank or neck below the head, a spirally grooved body in cross section rectangular and of uniform sectional area and twist, and a point which is double bevelled.

No. 15,931. Improvement in Saw-Guides.

(*Perfectionnement des guide-scies.*)

Jacob F. Chandler, Henry G. Chandler and Horace F. Paul, Concord, N. H., U. S., 9th December, 1882; for 5 years.

Claim.—1st. The movable arm B1 to which are attached the adjustable saw guides C C secured in any desired lateral position by set screws *c c*, said arm B1 being adjustably fastened to the swivel piece B by means of set screws *b1* and slots *b2*, said swivel piece B being oscillated by lever *b*, in combination with levers D D1, guide roll *d5*, spindle *d4* and bed bed plate A to which is adjustably attached the rest E. 2nd. The arm B1 with its saw guides C C oscillated by and in combination with arms or levers D D1, spindle *d4*, guide roll *d5*, swivel piece B and spring F, all arranged to operate within and upon the bed plate A. 3rd. The lever D fulcrumed at *d*, and friction roll *d1*, in combination with lever D1 provided with set screws *d2*, slot *d3*, spindle *d4* and guide roll *d5*. 4th. The swivel piece B journalled into the bed plate at A1, actuated by lever *b* held in a position of rest by a suitable spring F, all arranged for the purpose of oscillating the arm B1, which may be adjustably fastened to swivel piece B by means of set screws *b1* and slots *b2*. 5th. The movable arm B1, saw-guides C C, levers D D1, friction roll *d1*, spindle *d4* and guide roll *d5*, for the purpose of twining or twisting a band saw while guiding it into work.

No. 15,932. Improvement on Vehicle Wheels and Axles. (*Perfectionnement des roues et des essieux des voitures.*)

Benjamin N. Shelley, Anderson, Ind., U. S., 9th December, 1882; for 15 years.

Claim.—1st. A self-lubricating axle having a channel or reservoir for oil leading to the interior of the axle box, from a point between the ends of the axle. 2nd. A self-lubricating axle having its body formed of a piece of metallic tubing with sleeves secured over the ends of the tubing and having discharge orifices leading through the tubing and the sleeves, and a supply orifice between the ends of the axle. 3rd. An axle having its body formed of a piece of metal with sleeves secured to the ends thereof, which are provided with collars at their inner ends, combined with axle boxes having shoulders to fit against the said collars, and nuts adapted to screw into the inner ends of the boxes and washers arranged between the nuts and inner ends of said sleeves. 4th. A self-lubricating axle having a tubular body with sleeves secured to its ends and passages for oil leading from the interior of the tubular body through the sleeves combined with boxes which are secured on the sleeves by nuts screwing into the inner ends of the boxes and plugs screwing into the outer ends of the boxes against the ends of the sleeves. 5th. The combination, with the box having an annular collar on the outer surface near its inner end, of the concave-convex plates having recesses, or sockets, in their adjacent edges, the spokes set in said sockets and a nut on the outer end of the box for binding said parts together. 6th. The combination, with the box having a collar at its inner end, of the externally threaded sleeve placed over the box, the rubber cushion arranged between the box and said sleeve, the spokes having their inner ends set in zigzag order against the sleeve, the plates arranged on opposite sides of the spokes and the nut for binding the parts together. 7th. The combination, with the spokes and the wheel hub, of the felly formed in one piece and secured to the spokes, the flanged block fitted between the ends of the felly, the flanged tire having its ends bent inward and inserted in a recess in the block and the screw inserted into the block between the bent ends of the tire. 8th. The combination, with the spokes and the wheel hub of the felly formed in one or more pieces, and the tire having its ends inserted between two adjacent ends of the felly.

No. 15,933. Improvements on Cultivators.

(*Perfectionnements aux cultivateurs.*)

Josiah J. Deal and William M. Johnson, Wilmot, Ohio, U. S., 9th December, 1882; for 5 years.

Claim.—1st. The connecting rods for the draft of a cultivator fastened directly to the front ends of the plough beams. 2nd. The combination of the connecting rods D D, plough beams A A and double back bar B. 3rd. The beams A A having their ends pivotted betweeen two bars. 4th. The boot of a cultivator having its lower section cylindrical. 5th. The boot of a cultivator having the cylindrical lower part at an angle to the axes of the upper part. 6th. The adjustment of the two beams of a cultivator by means of the screw bolts. 7th. The combination of the connecting rods D D, double bar B, plough beams A A, the adjustable screw bolts H H and the shovel boots F. 8th. The fenders G in combination with the shovels of a cultivator. 9th. The boots F fastened to the plough beam by one wooden pin below and a screw bolt above.

No. 15,934. Improvements on Type and Space Holders. (*Perfectionnements aux porte caractères et blancs.*)

Louis K. Johnson, Brooklyn, N. Y., U. S., 9th December, 1882; for 15 years.

Claim.—1st. One or more bearings or shoulders *b b*, situated in the frame or case *a*, and affording support for the columns of type independent of the channels containing them, in combination with the said type containing channels. 2nd. The bearing shoulders *a* for supporting the channels independent of the columns of type contained therein, in combination with the type supporting shoulders *b b*. 3rd. The adjustable bearings or rests S, for supporting the channels independent of the columns of type contained therein, in combination with said channel and with the type supporting shoulders *b b*. 4th. A type and space holder provided with the type supporting shoulders *b b*, to support the lowest type of a column at or near its extremities, while the intervening space between said points of support is unobstructed. 5th. A type and space holder provided with sockets, recesses or seats arranged relatively in advance of, and one above another, and constructed to receive support and present the type containing channels with their broad sides towards the operator. 6th. The combination of the channel supporting recesses, or seats, arranged with relation to each other so as to leave the spaces P between them, for the purpose of allowing the channels to be inserted from the point of the case into their respective positions therein.

No. 15,935. Improvements in Saw Swages. (*Perfectionnements aux estampes à scies.*

Milo Covel, Chicago, Ill., U. S., 9th December, 1882; for 5 years.

Claim.—1st. In a saw swaging mechanism, the combination, with the swaging hammer adapted to have an automatic reciprocating movement, of the adjustable round die, or anvil I. 2nd. The combination, with the hammer C provided with the spring handle Ct, of the bifurcated socket piece D. 3rd. The combination, with the hammer C, of the bifurcated socket piece D, the sliding-block a_4, the spring-rods a_2 a_3 and the springs b_1 b_2 b_3 b_4. 4th. The combination, with the crank shaft E, of the spring-rods a_2 a_3 and the spring placed thereon, the bifurcated socket piece D and the hammer C. 5th. The combination, with the crank shaft E, of the loose hand-pulley F, the friction pulley G and the spring d_4. 6th. The combination, with the crank-shaft E, of the band pulley F, the friction pulley G, the bearing pin *f*, the bell crank H, the connecting rod h_1 and the treadle board H_1. 7th. The combination with the right-angled guide plate K, of the spring clamps K_2 K_3. 8th. The combination, with the body A consisting of the parts B B_1, of the round die I and the dovetailed clamps I_1.

No. 15,936. Process for Desulphurizing Ores. (*Procédé pour désulphurer les minerais.*)

Zabdiel A. Willard, Boston, Mass., U. S., 9th December, 1882; (Extension of Patent No. 8328.)

No. 15,937. Improvements in Bobbins. (*Perfectionnements dans les bobines.*)

David Hambleton, Lachute, Que., 9th December, 1882; for 5 years.

Claim.—1st. The combination of the barrel A having reduced ends and annular shoulders, with the heads B formed with annular seats and flaring openings. 2nd. The barrel A having reduced ends *a* and annular shoulders *b*, in combination with the heads B formed with annular seats *c* and flaring openings *d*, the greater diameter of the barrel entering the head, so that the shoulders will abut against the seat between the sides of the head, and the bushing C driven into the ends of the barrel, to expand and force the ends thereof against the sides of the flaring openings. 3rd. The barrel A having reduced end *a* and shoulders *b*, in combination with the heads B formed with seats *c* and flaring openings *d* and the bushings C having flaring head *e*, shank *f* and bevel *g*. 4th. The combination, with the barrel A having reduced ends *a* and shoulders *b*, and the bushings C formed with flaring heads *e*, of the heads B formed with annular seats *c* and flaring openings *d*, said openings increasing in diameter from the seats, to the outer face, or side of the head.

No. 15,938. Improvements on Millstone Drivers. (*Perfectionnements aux conducteurs-moteurs des meules.*)

Wells E. Sergeant, Minneapolis, Minn., U. S., 10th December, 1882; (Extension of Patent No. 8204.)

No. 15,939. Improvements in Tackle Blocks. (*Perfectionnements aux moufles des palans.*)

Joseph W. Norcross, Boston, Mass., U. S., 10th December, 1882; (Extension of Patent No. 8203.)

No. 15,940. Perpetual Draw Lime Kiln. (*Four à chaux à opération continue.*)

Joseph Patullo, Orangeville, Ont., 10th December, 1882; (Second extension of Patent No. 1867.)

No. 15,941. Improvements in Filtering Apparatus. (*Perfectionnements aux appareils filtrants.*)

Augustus H. Horsnell and William Murphy, Montreal, Que., 11th December, 1882; for 5 years.

Claim.—1st. In combination with a tap or faucet A, the spigot B holding a filtering medium. 2nd. In combination with a water pipe, the spigot B holding a filtering medium. 3rd. The spigot B having inserted therein a filtering medium with wire screens D D covering same. 4th. The spigot B holding therein a solid block C of charcoal, or like porous substance.

No. 15,942. Improvements on Sad Irons. (*Perfectionnements aux fers à repasser.*)

John G. Baker and Thomas H. Ashbury, Philadelphia, Penn., U. S., 11th December, 1882; (Extension of Patent No. 8237.)

No. 15,943. Improvements on Sad Irons. (*Perfectionnements aux fers à repasser.*)

John G. Baker and Thomas H. Ashbury, Philadelphia, Penn., U.S., 12th December, 1882; (Extension of Patent No. 8237.)

No. 15,944. Improvements on Shingle Machines. (*Perfectionnements aux machines à bardeaux.*)

Byron C. Brown, Clinton, Iowa, U.S., 12th December, 1882; (Extension of Patent No. 8342.)

No. 15,945. A Railroad Track Clearer. (*Machine à nettoyer les voies de fer.*)

Augustus Day, Detroit, Mich., U.S., 12th December, 1882; (Extension of Patent No. 1911.)

No. 15,946. Improvements on Sad Iron Grinders. (*Perfectionnements aux émouleurs des fers à repasser.*)

John G. Baker, Penn., U.S., 12th December, 1882; (Extension of Patent No. 8244.)

No. 15,947. Improvements on Sad Iron Grinders. (*Perfectionnements aux émouleurs des fers à repasser.*)

John G. Baker, Philadelphia, Penn., U.S., 13th December, 1882; (Extension of Patent No. 8244.)

No. 15,948. Improvements on Side Spring Waggons. (*Perfectionnements aux wagons à ressorts de côté.*)

Harford Ashley, Thurlow, Ont., (Assignee of William Wright, Akron, N.Y., U.S.,) 13th December, 1882; for 5 years.

Claim.—The combination, with the side springs F F and the transverse bars H H, of the rearwardly diverging springs I I resting with their front ends upon the transverse bars H H and having their rear ends connected with the rear axle and the spring J extending forward, having its rear end resting upon the transverse bars H H, between the front ends of the springs I I, and its front end attached to the yoke E.

No. 15,949. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

John Byfield, Georgetown, Ont., 14th December, 1882; for 5 years.

Claim.—1st. The standard Q attached to a revolving cam cylinder, or its equivalent, and supporting the sliding yarn carriers R, in combination with cams for operating the carriers R. 2nd. The standard Q attached to the cam cylinder B and extending above it, with loops *q* on its ends for guiding the yarn, in combination with bobbin carriers S carried on the cylinder B. 3rd. The rods M resting on the double cams L, and connected to the cams O and N. 4th. The rock shaft I provided with cranks *e f* and pawl *g*, in combination with the ratchet wheel L for operating the cams L. 5th. The rock shaft I provided with a crank *e*, in combination with the cam K attached to the cam cylinder B. 6th. A cam block *b* attached to the rock shaft I, in combination with the lever J provided with a pawl *d* for operating the pattern plate. 7th. The pattern plate D pivotted on the slide G and operated intermittingly by the revolving cam cylinder, or its equivalent. 8th. The perforated pattern plate D, pivotted on the slide G and provided with a scroll E, fitting into the guide H and caused to revolve intermittingly in the form of the scroll, by mechanism operated by the cam B or its equivalent. 9th. The perforated pattern plate D having an intermittent movement, in combination with movable pins *t* arranged to operate through the lever U, the pawl *g*. 10th. As a new article of manufacture, a stocking, or other knitted work made of two or more coloured yarns unbroken from the commencement to the end.

No. 15,950. Improvements in Grinding Mills. (*Perfectionnements aux moulins à blé.*)

Joseph Pratt, Montreal, Que., 14th December, 1882; for 5 years.

Claim.—1st. The combination, with the stones enclosed in a suitable casing, of a central shaft vertically adjustable and having the lower stone secured rigidly thereon and run by a pulley mounted on said shaft. 2nd. The combination of the central shaft C provided with pulley *c*, plate F fixed rigidly to said shaft stones D E and adjusting screw G.

No. 15,951. Improvements in the Method of, and Apparatus for Breaking Down and Getting Coal and other Minerals in Mining. (*Perfectionnements dans la méthode de casser et extraire le charbon et les minéraux par la mine, et aux appareils pour cet objet.*)

Charles S. Smith, Leicester, and Thomas Moore, Shipley, Eng., 14th December, 1882; (Extension of Patent No. 13,928.)

No. 15,952. Improvements in the Method of, and Apparatus for Breaking Down and Getting Coal and other Minerals in Mining. (*Perfectionnements dans la méthode de casser et extraire le charbon et les minéraux par la mine et aux appareils pour cet objet.*)

Charles S. Smith, Leicester, and Thomas Moore, Shipley, Eng., 15th December, 1882; (Extension of Patent No. 13,928.)

No. 15,953. Improvements in Hand Cars. (*Perfectionnements aux chars à bras.*)

Samuel H. Walz, Three Rivers, Mich., U. S., 15th December, 1882; for 5 years.

Claim.—1st. In velocipedes for railways, the frame composed of tubing A B trussed as shewn united at the forward end to a sleeve B1 and at the rear end by means of a curved bar A1. 2nd. In velocipedes for railways, the tubular trussed frame having at the rear end a spring *h* provided with a horizontal slot *i* to receive the journal of the rear shaft, in combination with a slotted arm J by means of which the angle of the shaft *a* may be adjusted and secured. 3rd. In velocipedes for railways, the forward axle composed of two tubular parts, one operating within the other, the wheels on the opposing trucks being rigidly secured to the tubular shaft so that the wheels and axle revolve together. 4th. In velocipedes for railways having three wheels, the combination of the forward wheels revolving on the same shaft, in combination with the rear single wheel secured to an adjustable shaft. 5 h. In a hand car or like device for railways, a seat supported at the rear to the frame by rods on which said seat can have free movement, and also at the front movably attached to and supported by the driving lever at a point below that at which said lever is pivoted to the frame. 6th. In a railway hand car, or like device, a movable seat sustained at its rear part by rods connecting directly to the frame, and at its front by the driving lever.

No. 15,954. Improvements on Trusses. (*Perfectionnements aux bandages herniaires.*)

Charles Cluthe, Toronto, Ont., 15th December, 1882; for 5 years.

Claim.—1st. A pad for trusses composed of a coiled wire having close coils extending across its face and proximately flattened at the point of contact with the body, whereby it is adapted to press on the hernia, with or without an intervening covering and to exert its greatest pressure at its exterior circumference. 2nd. In a double truss and in combination with the cross-bar connecting the pads, the plates B turning on the same centres which hold the cross bar and provided with stops *d d* to limit their motion. 3rd. The top plate B for trusses provided with the loops *c c*, stops *d* and screws *e*. 4th. The combination, with a double truss, of the stiff spiral-spring cross bar C provided with eyes at each end for pivotally attaching it to the pads. 5th. The combination, with a double truss, of the stiff spiral-spring cross-bar C provided with adjustable screw eyes *f*. 9th. The combination, with a truss, of a thigh strap consisting of a stiff spiral spring rigidly secured to the pad plate at one end and flexibly connected with the belt at the back, whereby said spring assumes a curve when applied to the body to prevent contact with and chafing of the skin.

No. 15,955. Improvements on Stump Extractors. (*Perfectionnements aux arrache-souches.*)

John Bruce, Prince Albert, Ont., 15th December, 1882; for 5 years.

Claim.—The combination of the shear legs A A footed upon a sill A1 provided with wheels, the legs held by the leg B footed upon a swivel plate B1 and braced by the tie beams T, a jib J secured to the top of the frame and supported by braces C, lever L having one end suspended from the top of the frame, the other being made to be raised or lowered by means of a rope R threaded in the pulleys P in the jib, and the pulleys P1 in the free end of the lever, the said lever holding in a slot and by a pin *d*, the draw-bar D provided with holes and below with a swivel Y to which the root chain is attached, and above with a fastening, or holding up device, consisting of a chain or rope F running over a pin *f* and having a fastening or holding up rod or bar F1, which may be secured in a clip F2.

No. 15,956. Improvements on Watch Hands. (*Perfectionnements aux aiguilles des montres.*)

John W. Bell, Conowingo, Ind., U. S., 15th December, 1882; for 5 years.

Claim.—The combination of a pair of coupled hands, one of which has a peripheral groove with inclined sides cut around its hub, and the other a split ring sprung into the groove and around the hub, for the purpose of preserving a constant frictional contact between the two and maintaining a definite angular relation between the hands for correctly indicating the differences in time.

No. 15,957. Improvements on Trace Detaching Devices. (*Perfectionnements aux appareils à détacher les traits.*)

William G. Cummins, McMinnville, Tenn., U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination, with a whiffletree having a mortise and perforation in each end, of a trace guard journalled in said mortise having its outer end bent to retain, when closed, the trace on the trace pin and having its inner end provided with a depending arm or lever and a detaching rod located in the whiffletree mortise and having its outer end arranged to reciprocate in the end of the whiffletree, said rod being adapted to be actuated by engagement with the depending arm of the trace guard. 2nd. The combination, with a whiffletree having a mortise and perforation in each end of a trace guard, the outer end of which is bent to retain the trace pin, the inner end being provided with a depending arm, a detaching rod, the outer end of which is provided with a disk plate, or equivalent device arranged to be reciprocated on the trace pin, said rod being adapted to be actuated by the depending arm of the trace guard, and a spring encircling the detaching rod and adapted by pressing against the trace guard arm, to keep it normally closed. 3rd. The combination, with a whiffletree, having a mortise and perforation in each end, of a trace guard bent to retain, when closed, the trace on the trace pin and having an arm or lever depending from its inner end and a detaching rod arranged to be reciprocated by the arm of the trace guard in the end of the whiffletree and adapted when the trace guard is raised to disengage the trace and trace pin. 4th. The combination, with a whiffletree having a mortise and perforation in each end, of a trace guard bent to retain, when closed, the trace or the trace pin, and having an arm depending from its inner end, a detaching rod having its inner end pivotted to the lever arm aforesaid and its outer end adapted to reciprocate in the end of the whiffletree and to push the trace from the trace pin, when the trace guard is raised, and a spring encircling the detaching rod and adapted to keep the trace guard normally closed. 5th. The combination, with a whiffletree provided with metallic tips mortised and perforated at each end, of a trace guard bent to retain, when closed, the trace on the trace pin and having an arm depending from its inner end, a detaching rod, the inner end of which is engaged with the lever arm, its outer end being arranged to reciprocate in the end of the whiffletree tips and a spring encircling the detaching rod and adapted by impinging against the lever arm of the trace guard to keep it normally closed.

No. 15,958. Improvements on Wire Coiling Machines. (*Perfectionnements aux machines à rouer le fil de fer.*)

John Tye, Toronto, Ont., 15th December, 1882; for 5 years.

Claim.—1st. A spindle having a loose fitting collar covering two parallel grooves cut in a helical form on the said spindle, for the purpose of coiling two wires simultaneously. 2nd. In a wire coiling machine in which the wire is moved by the action of two revolving feed-rollers, two or more grooves cut in the circumference of the feed-rollers and on a line with two or more straight parallel holes made through the guiding tool, in combination with two or more spiral grooves cut parallel to each other, on the surface of the coiling spindle, which spindle is provided with a loose fitting sleeve.

No. 15,959. Process for the Distillation of Hydro-Carbon. (*Procédé de distillation des hydro-carbures.*)

Herman Frasch, Cleveland, Ohio, U. S., 15th December, 1882; for 5 years.

Claim.—1st. The process of purifying the vapour of hydro-carbon by passing it through a bath of liquified hydro-carbon. 2nd. The process of purifying the vapour of hydro-carbon, by passing it through a bath of liquid hydro-carbon, at any point between the primary still and final condensation. 3rd. In combination with a still and condenser adapted for the distillation and condensation of hydro-carbon, a bath of liquified hydro-carbon through which vapour from the still may pass before entering the condenser.

No. 15,960. Improvements on Petroleum Stills. (*Perfectionnements aux alembics à pétrole.*)

Herman Frasch, Bay, Mich., U. S., 15th December, 1882; for 5 years.

Claim.—1st. In combination with a still, a dome in the shape of an inverted truncated cone. 2nd. In combination with a still provided with a dome, in shape of an inverted truncated cone, circular flanges that may be attached to said dome at their proper place without fitting and without other support than the dome. 3rd. In combination with a still, the dome B, the head *a*, the flanges *b b1 b2 b3*, the plates *d d d d* of the thimbles *h h h h h*, the bolt *g* and the cross bar *f*. 4th. In combination with a still, the head *a*, the plates *d d d d* and the cross bar *f*, the bolt *g* and the thimbles *h h h h h* forming a continuous support. 5th. In combination with a still, the head *a*, the flanges *b b1 b2 b3*, the plates *d d d d* and the cross bar *f*, the thimbles *h h h h h* and the bolt *g* holding the said plates and said flanges firmly in their respective places. 6th. In combination with a still, the dome B, the head *a*, plates *d d d d*, the thimbles *h h h h h*, the bolt *g* and the cross bar *f*, a passage way through said dome, to the inside of said still.

No. 15,961. Improvements in Stove Pipe Shelves. (*Perfectionnements aux tablettes des tuyaux de poêles.*)

Joseph Kurtis and John Bray, Springfield, Ohio, U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination of the socket *d* constructed with ledge, or stop *d1* and upper and lower cross bars *d4 d5*, and the shelf *e* having the shank *e1* projected therefrom and constructed with the hook *e4*, and means for securing the socket to the stove pipe. 2nd. The combination of the socket *d* constructed with ledge *d1* and lower cross bar *d5*, and adapted to be secured to a stove pipe, and the shelf *e* having shank *e1* constructed with the hook *e4*. 3rd. In a supporting band for stove pipe shelves, the hinge *b* composed of the wing *b1* having depending pin *b3* and the wing *b2* provided with the hole for the pin *b3*, and having the arm *b4* extended over and rested on the wing *b1*.

No. 15,962. Improvements in Fish Drying Houses and Apparatus. (*Perfectionnements dans les sécheries et les appareils de dessication pour le poisson.*)

Frederic B. Nichols and Cartheart Thomson, Halifax, N. S., 15th December, 1882; for 5 years.

Claim.—1st. The piston blower N with its ingress valves L moving backward and forward in chamber T, and egress valves O external to the drying chamber W in which the high pieces forming the ends of the flakes *d d* resting one on another from the partitions dividing the space at F into a series of chambers, *said* flakes resting on car *z* which moves on tramway F for the purpose of supplying and removing material and adjusting the flakes to form partitions corresponding with the partitions forming chambers T all in combination. 2nd. The combination of the revolving segmental gearing H with pinions P X and their attached pulleys Q Y having belts V fastened to them and passing over guide pulleys R S, all working in combination with the piston blower N. 3rd. In segmental toothed gearing H attached to the shaft A in such a manner that each succeeding piece of gearing will be the same number of degrees behind the preceding one as is occupied by the arcs and gearing with pinions P X, in combination with blowers N of the series of chambers to force successive blasts of air over the fish, or other materials, placed in the drying chamber U. 4th. The external doors D E in combination with the blowing and drying chambers T U, internal trap doors J K and cooling chamber M, for the purpose of either forcing blasts of external drying air in through the opening at D and out of the opening at E, or by closing doors D E and opening trap-doors J K, to circulate the air contained in the chambers free from damp external air and keep the fish cool.

No. 15,963. Improvements on Sash Balances and Locks. (*Perfectionnements aux contrepoids et fermetures des châssis.*)

Christian J. Scheelky, Martinsburg, W. V., U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination, with a boxing or frame A, of the upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D D secured within the parting strip groove, and a suitable cord retaining device. 2nd. The combination, with the boxing A and balance sashes B C, of the pulleys D D secured within the parting strip groove, the pulleys G secured to the boxing in line with the inside bead, pulley H secured to the lower sash, cord *f* and a suitable device for retaining the lower end thereof. 3rd. The combination of the pulley block having in its end a recess, or groove *b*, and the cord guard E having raised central portion *e*, semi-circular arms *e*, and prongs *d*. 4th. The cord retaining and sash clamping attachment F pivotted eccentrically to the lower sash and having at its upper end recessed lug *m n*, dovetail groove *s* and rubber strip *t*, and at its lower end recessed lugs *o p* having a cord retaining device. 5th. The combination, with a boxing or frame A, of the upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D D and the cord retaining and sash clamping attachment F pivotted eccentrically to the lower sash and having at its upper end recessed lug *m n*, dovetailed groove *s* and rubber strip *t*, and at its lower end recessed lug *o p* and cord clamping ring *w*. 6th. As an improvement in devices for raising, lowering and securing window sashes, the combination, of a boxing or frame A and an upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D G and H, pulley block D, cord guard E having semi-circular arms *e* and prongs *d*, and the eccentrically pivotted cord retaining and sash clamping attachment F.

No. 15,964. Improvements in Machines for Finishing the Blanks of Wire Bale Ties. (*Perfectionnements aux machines pour finir les ébauches des cercles de paquets en fil de fer.*)

The Washburn and Moen Manufacturing Company, (Assignee of Edwin S. Lenox,) Worcester, Mass., U. S., 18th December, 1882; for 15 years.

Claim.—1st. In a wire bale tie blank finishing machine, the combination of a chamber composed of side and bottom plates in which the tie is introduced, and a blade for pressing and forming same attached to an arm, or lever, connected with said chamber and operated by means of an eccentric. 2nd. The combination of a chamber in which the blank is held and pressed, a revolving spindle connected with and rotating same, and jaws for holding the main strand of the wire and the end of the returned piece. 3rd. The handle L set loosely on the lever K, pressed inwards by spring *k*, held by nut *l* and capable of retraction.

No. 15,965. Improvements on Machines for Forming the Blank Hooks of Wire Bale Ties. (*Perfectionnements aux appareils pour former les ébauches des crochets des cercles de paquets en fil de fer.*)

The Washburn and Moen Manufacturing Company, (Assignee of Edwin S. Lenox,) Worcester, Mass., U. S., 18th December, 1882; for 15 years.

Claim.—1st. The combination of a revolving shaft carrying pegs which hold the wire and, when turned, bend it into a hook or S-shape and lever also carrying pegs between which the wire is held and serving, when turned, to bend back the end of the tie. 2nd. The combination, with the revolving shaft D carrying pegs which, by its revolution, bends the wire, of guides C C for preventing lateral movement during such bending. 3rd. The combination, with the revolving shaft and lever, of the adjustable gauge L.

No. 15,966. Improvements on Feed-Cutters. (*Perfectionnements aux coupe-paille*)

Andrew Hershy, Bertie, Ont., 18th December, 1882; (Extension of Patent No. 8228.)

No. 15,967. Improvements on Double-Acting Pumps. (*Perfectionnements aux pompes à double effet.*)

Joseph H. Branson, Belmont, N.Y., and Benjamin Branson, Flushing, Ohio, U.S., 18th December, 1882; for 5 years.

Claim.—1st. A pump having its cylinder suspended below the base plate, a suction pipe suspended independently of said cylinder and the discharge pipe-coupling whereby the cylinder may be removed without disturbing the suction pipe. 2nd, A pump having its cylinder suspended below the base plate, a suction pipe suspended below said base plate by a rod connected directly to the base plate and connected to the suction pipe by a suitable coupling, whereby the suction pipe is properly supported when the cylinder is removed. 3rd. A pump having its suction pipe united by a coupling directly with a branch pipe extending above the cylinder, to form a combined vacuum chamber and suspending rod, and opening directly into the coupling. 4th. The combination of the coupling D carrying the suction tube with the suspending rod E, whereby the suction tube may be held in its normal position, when the cylinder is removed. 5th. The coupling B provided with an opening for the discharge tube C, and the coupling D having an opening for the suspending rod E, in combination with said tube C, rod E, the cylinder A and suitable fastening devices. 6th. The couplings B D, one of which has slots provided with recesses, in combination with the cylinder A and bolts having heads, or nuts fitting into the recesses in the coupling. 7th. The couplings B D in combination with the cylinder A, the discharge tube C, rod E and bolt K. 8th. The couplings B D having slots provided with recesses, in combination with cylinder A, discharge tube C, rod E and bolts having nuts, or heads fitting into receses. 9th. The combination of the base plate F provided with set screws *f f*, with the couplings B D, discharge pipe C and the suspending pipe or rod E. 10th. The combination of the base plate F provided with set screws *f f*, with the head plate G, union *h*, cap nut *g*, sections I and nuts *i* on said sections I. 11th. The coupling B provided with an opening for receiving the upper cylinder, a lower opening concentric with the upper one for receiving the lower cylinder, an extension for receiving the discharge pipe, and a guiding socket *b*. 12th. The coupling B provided with an opening for receiving a large cylinder, another and smaller opening concentric with it to receive a smaller cylinder, and an extension to receive the discharge pipe, in combination with two pistons and cylinders of unequal diameter, the small cylinder fitting into the small opening of the coupling and extending upwards, and the other cylinder connected to the larger opening. 13th. The coupling B having an opening to receive the upper cylinder, and a lower lower larger opening concentric with the upper one for receiving the lower cylinder, and an extension for receiving the discharge pipe, in combination with the cylinders of unequal bore, the coupling D and suitable clamping devices.

No. 15,968. Railway Frog Protector. (*Protecteur des rails de croisement.*)

Phillip Schan, Kalamazoo, William B. Stronger and Clinton A. Glynn, Portage, Mich., U.S., 18th December, 1882; for 5 years.

Claim.—1st. In a device for preventing the foot from being caught in a railway frog, or between two converging rails, a spring plate having the upper straight portion, the side flanges and the perforated end formed on an upward incline. 2nd. In a railway frog foot protector, a spring plate provided with the upper straight portion having the downward and outward extending flanges, whereby said portion is stiffened and allowed to rise flush with the upper face of the rails.

No. 15,969. Improvements on Culinary Forks. (*Perfectionnements aux fourchettes de cuisine.*)

Roswell W. Turner, Boston, Mass., (co-inventor with Norman W. Stearns, Washington, D.C., and Thomas J. Holmes, Boston, Mass.,) U.S., 18th December, 1882; for 5 years.

Claim.—1st. The tube A, rod D, spiral spring K and device for compressing the same, in combination with the toggle arms C C and jaws B B. 2nd. The tube A with the jaws B B pivotted to its lower end and with the sleeve *l* made to slide over its upper end, in combination with the rod D connected with the jaws B B by the toggle arms C C, the rod being depressed against the resistance of the spiral spring K. 3rd. The toggle arms C C for connecting the upper ends of the jaws B B, with the lower end of the tube A, in combination with the central rod D having its lower end secured to the fulcrum *r* of the jaws, and with its upper end surrounded by a spiral spring K and attached to a tubular sleeve *l* made to slide over the upper end of the tube. 4th. The collar, or projection *n* on the outside of the tube A, in combination with the sleeve *l*, rod D, spiral spring K, toggle arms C C and jaws B B.

No. 15,970. Process for Manufacturing Crystallized Anhydride of Grape Sugar from a Watery Solution of Grape Sugar. (*Procédé de fabrication de l'anhydrite cristallisée de sucre de raisin au moyen d'une solution aqueuse de sucre de raisin.*)

Arno Behr, Chicago, Ill., U.S., 18th December, 1882; for 5 years.

Claim.—The process of manufacturing crystallized anhydride of grape-sugar by forming a solution containing about fifteen per cent of water, with grape sugar of upward of ninety five per cent in purity, and in filling such solution or mass into moulds of ordinary construction and cooling it to a temperature preferably of about 100° Fahrenheit, and holding it about that temperature for from twelve to twenty four hours, or until thorough crystallization has taken place, and in then expelling the liquid therefrom by means of a centrifugal machine.

No. 15,971. Method of Refining Grape Sugar. (*Méthode pour faire la défécation du sucre de raisin.*)

Arno Behr, Chicago, Ill., U.S., 18th December, 1882; for 5 years.

Claim.—The method of refining grape-sugar by forming a hot solution of ordinary grape sugar containing only about fifteen per cent of

water and in stirring into such solution a minute quantity of finely divided crystallized anhydride of grape-sugar previously prepared, and in then depositing the hot mass in molds and allowing it to rapidly cool to about one hundred degrees Fahrenheit, and thereafter cooling it slowly, maintaining at a temperature between one hundred degrees and eighty five degrees Fahrenheit, for from two to three days, or until thorough crystallization has taken place, after which the resulting hard mass of crystals is drained preferably in a centrifugal maching and thereby the molasses or liquid impurities are expelled.

No. 15,972. Improvements on Pipe and Nut Wrenches and Pipe Cutters.

(*Perfectionnements aux clés à tuyaux et à vous et aux découpoirs des tuyaux.*)

Israel Kinney, Windsor, Ont., 18th December, 1882; for 5 years.

Claim.—1st. In a wrench, the combination, with the connected jaws B B; having their inner edges opposite each other, of the handle A provided with tapering tongues so arranged that they will continually and automatically tighten their grasp on the pipe, or other article, by their wedge-like action while turning the tool in the opposite direction, will relax them. 2nd. The tool, when used as a pipe cutter, having a sharp-edged tongue or blade A^3, in combination with suitable jaws so constructed that, when the tool is turned in one direction, the said knife A^3 and jaw B will continually and automatically tighten their grasp by a wedge-like action and gradually cut in and through the pipe, the cutting operation being performed by rotating the pipe on the edge *d* of the knife or tongue A. 3rd. In combination with the wrench, or pipe-cutter, the adjusting screw D, metallic block E, antifriction rollers F F^1 and handles A^2 A^3 A^4.

No. 15,973. Improvements on Magneto-Electric Railway Signals. (*Perfectionnements aux signaux électro-magnétiques des chemins de fer.*)

John B. Johnson and Orville B. Johnson, Boston, Mass., U. S., 18th December, 1882; for 5 years.

Claim.—In a rotary magneto-machine, consisting of a revolving armature with two induction coils driven rapidly within the field of a set of permanent magnets, by means of multiplying gear and devices connecting said gear with a railroad-track, and operated by passing trains of cars, in combination with a signalling mechanism, set mechanically by the train and adapted to be unset by means of a merged or continuous current of electricity generated by said magneto-machine.

No. 15,974. Improvements on Snow Shovels.

(*Perfectionnements aux pelles à neige.*)

Charles A. Way, North Charleston, N. H., U.S., 18th December, 1882; for 5 years.

Claim.—The combination, with the blade A and handle B, of the metallic clasp C provided on its sides with flanges or ears *a*, secured in place by bolts *d d* passing through said ears, and the blade, and rivetted upon the plate D, and the bolt *f* passing through the end of the clasp, the thin portion of the chamfered end of the handle and the blade A and rivetted on the triangular plate D.

No. 15,975. Improvements on Vehicle Devices for Checking Horses. (*Perfectionnements aux appareils pour contrôler les chevaux.*)

William P. Kirkland, San Francisco, Cal., U. S., 18th December, 1882; for 5 years.

Claim.—The combination and arrangement of the internally toothed hub wheel *c*, sliding windlass rod E mounted in suitable bearings upon the axle B and having a pinion F and ratchet tooth I, sleeves K and O carrying the spring pawl M, and strap P.

No. 15,976. Improvements on Sole and Upper Protectors. (*Perfectionnements aux protecteurs des semelles et des empeignes.*)

Joseph G. Whittier, Attica, Ind., U. S., 18th December, 1882; for 5 years.

Claim.—A metallic casting constructed to conform to the configuration of the toe of the sole and upper of a boot or shoe, protecting both, and provided with a series of projections intermediate of the two edges and formed with downwardly extended spurs, adapting it to be secured between the sole and the upper.

No. 15,977. Improvements on Rubber Buckets for Chain Pumps. (*Perfectionnements aux godets en caoutchouc pour les pompes à chapelet.*)

Edward W. Grant, Ypsilanti, Mich., U.S., 18th December, 1882; for 5 years.

Claim.—1st. The combination of the elastic body A having bevels *c c* and an intermediate groove *a*, with the clamping device adapted for expanding the bucket. 2nd. The combination of the elastic body A having bevels *c c* and an intermediate groove *a*, with the parts B *e h* and *f*. 3rd. The combination of two elastic frusta of cones, whose bases are of equal diameter, having flanges of equal diameter, and an annular groove *a*, with a link clamping device. 4th. A rubber chain bucket consisting of the following elements in combination: a double bevelled annularly grooved portion A having flanges *b b*, the parts B *f*, the screw stem on the part B, the nut *h* and the washers *g*.

No. 15,978. Improvements in Berths for Steamers. (*Perfectionnements aux lits de bord.*)

Gustave Leve, New York, N. Y., U. S., 18th December, 1882; for 5 years.

Claim.—1st. Any vessel carrying passengers compartments or cup-boards, for holding berth frames, bedding, etc., in part constituted of a portion of the fixed partition or walls of the vessel, the fronts of said cupboards being adapted to be drawn out from the said fixed portions and when in that position serving as the end of the berth frames, the other end being supported on the inside of the fixed cupboard. 2nd. Any vessel cupboards or recesses formed in or on the fixed partitions or sides of the vessel, and having their fronts attached thereto by pivoted bars or links D hinged centrally of the extended berth.

No. 15,979. Improvements on Hame Attachments. (*Perfectionnements dans la pose des attelles.*)

Thomas R. Pangle and Richard G. Holloway, New Madrid, Mo., U.S., 18th December, 1882; for 5 years.

Claim.—The combination, with the hame A, of the attachment consisting of the plate B cast at its outer, or forward end with flanged loops *c d* and the pin *h*, said plate extending back beyond the hame and curved, or inclined inwardly.

No. 15,980. Improvements on Shears.

(*Perfectionnements aux cisailles.*)

Andrew J. Lytle, Hillsborough, Ohio, U.S., 18th December, 1882; for 5 years.

Claim—1st. In a shear having a penetrating blade adapted to work into and cut against one side of a slot, the combination, with such blade, of an opposite jaw to form one side of the slot, and a detachable bed-blade fixed along side said jaw and set with its cutting edge above the level of said jaw, to form an opposite and higher side for said slot. 2nd. A shear blade formed of sheet metal longitudinally bent into angle-section and adapted to shear across the thin edge of the metal. 3rd. In a shear having a detachable blade formed of sheet metal bent longitudinallly into angle section, the combination, with such blade, of an attaching surface arranged to bear against the inner surface of such blade and also against the under surface of the horizontal part of such blade, whereby the horizontal support of the blade, by means of the angle tends to relieve the screws, or rivets from downward strain. 4th. The combination of the cutting or penetrating jaw or blade B and the jaw *c* having a longitudinal slot I into which the blade B enters, one side of the slot being elevated above the other side, said elevated side being adapted to come in contact with the cutting blade B. 5th. In a pair of shears, the jaw *a* provided with longitudinal channel a^1 and the blade B entering said channel and retained therein by set screw *b* located at one side of the jaw. 6th. The blade B provided with a fin b_1, in combination with the jaw *a* having channel a^1, and opening *d* adapted to receive said fin, and one or more set screws b^1 passing through one side of the jaw and adapted to impinge against the fin b^1.

No. 15,981. Improvements on Candy Whistles and Moulds Therefor.

(*Perfectionnements aux sifflets en sucre et aux moules pour cet objet.*)

George H. Mills, Philadelphia, Penn., U. S., 18th December, 1882; for 5 years.

Claim.—1st. A mould for candy whistles having a core with a detachable plug at its inner end. 2nd. A candy whistle mould core having its inner end bifurcated, or kerfed, and provided with a plug which only partly fills the bifurcation, leaving a slot for the passage of the candy in moulding. 3rd. The combination, with the candy whistle mould core having its inner end bifurcated and one of its tines grooved, of a detachable sliding plug G having a stem *g*. 4th. In a candy whistle having two longitudinal air passages communicating with an internal air chamber, said passages being divided by a diaphragm *h* of substantially even thickness throughout. 5th. In a candy whistle mould having a vent lug inclined on its lower or inner side, in combination with a core having its adjacent side correspondingly bevelled, whereby the rear edge of the vent of the whistle formed in such mould is lower than its front edge.

No. 15,982. Improvements on Punches for Marking Cattle. (*Perfectionnements aux poinçons pour marquer le bétail.*)

Auguste Tignière, Wichita, Ks., U.S., 18th December 1882; for 5 years.

Claim.—The combination of a female die D of pyramidal form with a sharp shear edge, and a male die D^2 having shear edges, with intermediate concavity.

No. 15,983. Improvements on Spark-Arresters and Extinguishers. (*Perfectionnements aux arrête-flammèches et extincteurs.*)

Thomas G. Leslie, Hay, Ont., 18th December, 1882; for 5 years.

Claim.—In combination with smoke stack A the elbow, or bent pipe B, arrester C having gauge sides D and tapering, or funnel-shaped bottom *h* to which is attached the water cup E, for the purpose of arresting and extinguishing the sparks.

No. 15,984. Improvements on Friction Clutches. (*Perfectionnements aux embrayages à friction.*)

Ralph R. Osgood, Troy, N.Y., U.S., 18th December, 1882; for 5 years.

Claim.—1st. A rocking lever connected with the friction band, said lever being mounted in an arm keyed to the revolving shaft and provided with a crank inclined as explained, a clutch shipper mounted upon the revolving shaft and movable in the direction of the length thereof and a connecting rod having multiple joints, the several parts being combined. 2nd. The clutch collar movable in the direction of the axis of the shaft, a jointed connecting rod hinged at its base to the clutch collar and, at the opposite end, swivelled upon the crank of the rocking lever, the crank movable parallel with the face of the drum, the several parts being combined. 3rd. In combination with the crank which controls the rocking-lever, the thimble mounted thereon and journalled in the forked section of the coupling rod, the base section of said rod being hinged to the clutch collar. 4th. The combination, with the clutch-collar made movable backward and forward upon the shaft, of a travelling wheel mounted in said collar and bearing upon the shaft. 5th. In combination with the drum head, the wooden segments or blocks forming bearing surfaces for the band, the same being held in place by and bearing against the ledges formed in or on the drum head. 6th. The wooden blocks, or segments forming the bearing surface for the band, the same being held in place by the ledges formed in, or on the drum head, and grooved for the reception of an angular band.

No. 15,985. Improvements in Saw Clamps and Bench Irons. (*Perfectionnements aux pannetons et aux mentonnets.*)

Thomas Crispin, Detroit, Mich., U.S., 18th December, 1882; for 5 years.

Claim.—1st. The adjustable bar H in combination with the slotted standard C. 2nd. The combination of the shanks B B with base A, standards *c c*.

No. 15,986. Improvements on Electric Logs. (*Perfectionnements aux lochs électriques.*)

Robert M. Lowne, East End Finchley, Eng., 18th December, 1882; for 5 years.

Claim.—1st. A hermetically close rotator *a* containing the apparatus for making and breaking contact and provided with an air chamber *as*. 2nd. In combination with a hermetically closed case, or rotator *a*, an enclosed suspender or rolling weight *b* which is the revolution of the rotator gives motion by a projection or carrier *c* to a train of wheels $c^1 c^2 c^3 c^4 c^5$ operating the contact maker and breaker. 3rd. In making and breaking contact by means of a fly wheel *d* operated by a spring *e* and a train of wheels $c^1 c^2 c^3 c^4 c^5$ set in motion by a suspended, or rolling weight *b*, all enclosed within the hollow rotator. 4th. Establishing electrical connection between the rotator and the copper pole of the battery, by means of a platinum centre, or contact piece g^3 carried by the rotator, and a platinum point m^3 carried by a platinum spring m^2 connected to the conductor *m* of the cable. 5th. Effecting electrical connection between the rotator and the zinc pole of the battery by means of the rotator case *a*, the surrounding water and the swivel *a*, which latter is in connection with the conductor *n* of the cable. 6th. The combination of hermetically closed rotator case *a* containing the contact making and breaking mechanism, the disk *i*, wheels *j*, plate *k* and frame *k*1. 7th. The combination of hermetically closed rotator case *a*, enclosed suspended or rolling weight *b*, train of wheels $c^1 c^2 c^3 c^4 c^5$, fly wheel *d*, contacts $g^1 f^1$, platinum centre or contact piece g^3, platinum point m^3 and spring m^2.

No. 15,987. Improvements on Fertilizer Distributors for Grain Drills. (*Perfectionnements aux distributeurs des engrais pour les semoirs en ligne.*)

Jacob S. Baker, Hanover Junction, Penn., U.S., 18th December, 1882; for 5 years.

Claim.—1st. The combination of the rollers D with scrapers I having their edge in close contact with the rollers, to prevent the fertilizer from sticking and clogging on the rollers and the valve F. 2nd. The combination, with the valve F, of the connecting rods F1, springs *f* arranged upon said rods, lever F2, cam G1 and oscillating crank shaft G carrying said cam. 3rd. The combination of the plane rollers D and scrapers I having their bevelled edge in close contact with the rollers, to prevent the fertilizer from sticking and clogging on the rollers, in combination with the valve F, the connecting rods F1, springs *f* arranged upon said rods, lever F2, cam G1 and oscillating crank shaft G carrying said cam.

No. 15,988. Improvements on Machines for Catting and Fishing Ships' Anchors. (*Perfectionnements aux machines à caponner et traverser les ancres des navires.*)

John N. Purdy, St. John, N.B., 18th December, 1882; for 10 years.

Claim.—The combination of the small windlass and turn-table, with the cathead.

No. 15,989. Improvement in Nozzles for Sprinklers. (*Perfectionnement des becs d'arrosoirs.*)

Fernando B. Smith, Wilmot, Ohio, U.S., 18th December, 1882; for 5 years.

Claim.—The combination of a discharge tube A, spraying device and a wire, the spraying device being fastened to the wire in such a manner that it will always spring back to the centre of the tube when left free to move.

No. 15,990. Improvement in Car-Couplings. (*Perfectionnement des accouplages de chars.*)

The Atwood Railway Wheel Company, (assignee of Isaac S. McGiehan,) New York, N.Y., U.S., 18th December, 1882; for 5 years.

Claim.—1st. A draw-bar attachment for car-couplers composed of two horizontal beams H attached to the car by suitable means, and being cut away to receive two cross-bars B and C placed on the top of these beams and at right angles to them having between them the springs D, and the draw-bar G consisting of two parts *a* and *a*1 secured to each other by means of a pin K, one part *a* passing through the cross-bar B and the other port *a*1 passing through the cross-bar C, and being secured on the outside by a pin. 2nd. The coupler A having its draw-bar G composed of two parts *a a*1, each part passing through the adjacent cross-bar and secured to each other by means of the pin K, for the purpose of giving freedom of movement to the coupler A.

No. 15,991. Improvements in Automatic Cash Carriers. (*Perfectionnements aux machines à transmettre la monnaie.*)

William S. Lamson, Lowell, Mass., U. S., 18th December, 1882; (Extension of Patent No. 15,138.)

No. 15,992. Improvements in Automatic Cash Carriers. (*Perfectionnements aux machines à transmettre la monnaie.*)

William S. Lamson, Lowell, Mass., U. S., 19th December, 1882; (Extension of Patent No. 15,138.)

No. 15,993. Improvements in Compounds for Sewer Pipes, Sidewalks, &c. (*Perfectionnements dans les agglomérés pour les tuyaux d'égouts, trottoirs, etc.*)

Daniel H. Dorsett, Clinton, Iowa, U.S., 21st December, 1882; (Extension of Patent No. 14,128.)

No. 15,994. Improvements in Compounds for Sewer Pipes, Sidewalks, &c. (*Perfectionnements dans les agglomérés pour les tuyaux d'égouts, trottoirs, etc.*)

Daniel H. Dorsett, Clinton, Iowa, U.S., 21st December, 1882; (Extension of Patent No. 14,128.)

No. 15,995. Improvements in Stoppers for Tooth Powder Bottles. (*Perfectionnements aux bouchons des bouteilles pour la poudre dentifrice.*)

Robert H. T. Nesbitt, Leavenworth, Ks., U. S., 21st December, 1882; for 5 years.

Claim.—The cork, or stopper, having in its upper end a horizontal tray, substantially the shape of and adapted for the insertion of a tooth brush.

No. 15,996. Improvement on Nail Cutting Machines. (*Perfectionnement des machines à découper le clou.*)

John Coyne, Pittsburgh, Penn., U. S., 21st December, 1882; for 15 years.

Claim.—1st. The arrangement of a diagonally arched griping lever, with a heading lever pivoted centrally below the griping dies, so as to operate within the diagonal arch of the griping lever, for the purpose of securing rigidity and certainty of action of the heading lever and greater compactness of construction. 2nd. The single toggle arm 11 seated by ball and socket joints in and between the extremity of the short arm of the cutting lever, and the extremity of the heading lever at an angle to the axis of the latter, so that, when the short arm of the former is raised, it communicates a rapidly decreasing movement to the heading-lever, by bringing the toggle arm in line with the axis of the heading-lever. 3rd. The combination of a heading-lever having a short transverse arm, a toggle for communicating a forward movement to said lever, a lug on the transverse arm of the lever and a spring, bearing on said lug for retracting the lever. 4th. The combination, with the arm of the griping lever and cam for operating the same, of the divided bearing composed of the cam friction plates adjustable to and from each other, to vary the length of time of contact between the cam and griping lever. 5th. The combination of the rear arm of the griping lever and the cam 38 on the main shaft, with an ellipsoidal cam yoke constructed for the purpose of communicating the peculiar required intermittent motion to the lever. 6th. The combination of a moving cutter having spring gauge pivotted in its rear, an adjusting screw to the cutter, and a stop device to limit the forward movement of the gauge, the arrangement, of the stop device back of the gauge so as to permit of the location of the adjusting-screw centrally to the cutter. 7th. The arrangement in a cut-nail machine, of a rock shaft pivotted below the bed, for communicating power to a self-feeding device, and operated by power from the main shaft through the medium of shafting and gearing. 8th. The combination, with a cut-nail machine, of the bracket 73 for sustaining and connecting a rail separating device. 9th. In combination with a cut-nail machine, the bracket 78 for sustaining the agitator of the nail-separating device.

No. 15,997. Improvements on Switch Stands. (*Perfectionnements aux bâtis des aiguilles de chemin de fer.*)

Dwight Tracy, Ridgewood, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination of a switch-moving rod and a switch provided with interlocking lugs or catches, having inclined engaging faces and one of which is adapted to yield to enable the lug, or catch upon the rod to pass the lug or catch upon the stand. 2nd. The combination of a switch-moving rod and a switch stand provided with

interlocking lugs or catches, having inclined engaging faces and one of which is adapted to yield, to enable the lug or catch upon the rod to pass the lug or catch upon the stand, and a spring for maintaining said lugs, or catches in engagement with each other. 3rd. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, having inclined engaging faces, a spindle adapted to yield longitudinally, a crank upon said spindle for actuating said moving rod, and a spring for returning said spindle and crank. 4th. The combination of the rod B and stand C, provided with inclined catches *c d*, the spindle D, the slotted crank D1, the crank pin *b* rigidly fixed to said rod and engaging with said slotted crank, and the spring G arranged with said stand and between the shoulders *j* and *k*. 5th. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle, a slotted crank and a crank pin fixed to the said rod and fitting the slot in said crank, whereby provision is afforded for moving the rod laterally to disengage the lug or catch from the lugs or catches upon said stand, and for moving it longitudinally for shifting the switch. 6th. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle and slotted crank, a crank pin fixed to said moving rod and fitting said slotted crank, and a locking bolt projecting on the sides of said rod for precluding lateral movement thereof. 7th. The combination, with a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle and a slotted crank for operating said rod, and a locking bolt projecting on the side of said rod and precluding lateral movement thereof, of a handle adapted to be moved horizontally to turn said spindle, and raised or lowered to actuate said locking bolt. 8th. The combination of the switch stand, or column C, the spindle D, the handle E fulcrumed at *e*, the locking bolt F1 having a ring-shaped upper portion F surrounding said stand or column, and the link *g* connecting said handle and said ring-shaped portion F1.

No. 15,998. Improvements on Railway Switches. (*Perfectionnements aux aiguilles de chemin de fer.*)

Dwight Tracy, Ridgewood, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination of a movable switch rail forming one rail of the turn-out, a stationary frog-rail forming a portion of the opposite side of the main track and a laterally yielding outer frog-rail, and a guard-rail placed upon opposite sides of said stationary frog-rail and connected positively together so as to move simultaneously. 2nd. The combination of a movable switch-rail forming one rail of the turn-out an outer frog-rail constructed and secured so as to form a laterally yielding spring and forming the other rail of the turn-out, and a continuation of the main rail, a stationary frog-rail upon the inner side of said outer frog-rail, and a guard-rail connected with said outer frog-rail. 3rd. The combination of a movable switch rail forming one rail of the turn-out, a stationary frog-rail forming a portion of the opposite side of the main track and an outer frog-rail, and a guard-rail arranged on opposite side of said stationary frog-rail, both constructed and secured so as to form laterally yielding springs and connected positively together, so as to move simultaneously. 4th. The combination of a laterally yielding outer frog-rail forming one rail of the turn-out, and one rail of the main line and a continuation of the main line adjacent to said turn-out rail, which is deeper than said outer frog-rail and over the flange of which said outer frog-rail may be moved. 5th. The combination, with a fixed rail point, of wing rails secured to the sleepers at their ends, suitably spaced and secured together at their middle parts and adapted to be sprung either way, so that one of said wing rails shall be immediately adjacent to said rail point.

No. 15,999. Improvements on Life Boats.

(*Perfectionnements aux bateaux de sauvetage*)

William Lockerby, Newton, Mass., U. S., 21st December, 1882; for 5 years.

Claim.—In a collapsible life boat, the oblong permanently inflated section A provided with bulk heads *b b*, in combination with the extension section consisting of the rigid bottom *c* and a flexible water proof strip secured to the lower edge of section A.

No. 16,000. Improvements on Railway Switch Fastenings. (*Perfectionnements aux arrête-aiguilles de chemin de fer.*)

Thomas Rowlands, Prescott, Ont., 21st December, 1882; for 5 years.

Claim.—1st. The combination, with the switch stand and switch mechanism having a switch lever 8 provided with post 18, of the rocking shaft 16 having a crank end and provided with locking arms 17 17, lift bar 15, latch bar 14, hold fast block 13, notched bar 11, moving endwise therein and connecting with bar 10 tying the rails 1 1 of the switch for locking the bar 11 by the downward throwing of the arms 17 17 on to the top of the post on the switch lever. 2nd. In combination with the switch rails and a switch mechanism operated by a lever 8, the safety attaching tie bar 10, notched bar 11, hold fast block 13 and latch bar 14 for locking the rails after adjustment of the switch mechanism. 3rd. In combination with the rock shaft 16 having locking arms 17 17, the switch lever 8 having post 18 engaging with said arms, for locking the latch bar.

No. 16,001. Improvement in Car-Couplings.

(*Perfectionnements aux accouplages des chars.*)

Edward L. Litton, Gaffney, S. C., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The draw-head A provided with a shaft B, and bar E having hook F and link G, in combination with the arm C, the rod D and the springs *e e1*. 2nd. The combination of the shaft B extending to the sides of the car and provided with handles, the link bar E provided with hook F and spiral spring. 3rd. The pivotted link G and spring *e2*, in combination with link bar E and its hook F.

No. 16,002. Improvements on Vehicle Tops. (*Perfectionnements aux couvertures des voitures.*)

Silas H. Raymond, South Bend, Ind., U. S., 21st December, 1882; for 5 years.

Claim.—The combined nut-lock and fastening for rotatively uniting parts of vehicles, consisting of the screw stud 1 attached to one of the parts and having a flat portion, or depression 8, an elastic washer 4 placed thereon and resting against a suitable bearing surface, a metal washer resting on the elastic washer, the other part to be fastened, a metal washer 6 having a flat portion or straight edge 7 in its eye and radial projections 9 on its face, and nut 11 having radial recesses 10.

No. 16,003. Improvements on Ale Condensers. (*Perfectionnements aux condensateurs à bière.*)

James W. Evenden, Rome, N. Y., U. S., 21st December, 1882; for 5 years.

Claim.—The combination of the barrel for holding the ale, a connecting pipe, or tube, a three way cock and the cask, or vessel, into which the ale is drawn to be condensed.

No. 16,004. Improvements on Car Trucks. (*Perfectionnements aux trains des chars.*)

James W. Chisholm, Brooklyn, N. Y., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The king-bolt 18 connecting the truck frame to the car body bolster 12, in combination with the suspension links *a a* connecting the axle boxes 3 3 with the truck frame. 2nd. In a car truck, in combination, axle-box suspension links adapted to allow the axles and wheels to move transversely in the truck frame, double inclined bearing plates and supporting rollers, whereby the car body is raised as the truck swivels thereunder and a central king-bolt, or rigid swivelling connection.

No. 16,005. Improvements on Toilet Apparatus for Ships. (*Perfectionnements aux lavabos des navires.*)

Darius Wellington, Boston, Mass., U. S., 21st December, 1882; for 5 years.

Claim.—1st. A wash bowl supported on a ball and socket joint and adapted to maintain a level position at all times independent of the ship's movement. 2nd. The combination, with a wash bowl having an outlet coupling supported in a ball and socket joint, of a weight, or counterpoise connected with said coupling. 3rd. The combination, with a wash bowl having an outlet coupling supported in a ball and socket joint, of a nut secured to said coupling and having weighted arms adapted to form a support for a waste jar, whereby the bowl and jar will be maintained constantly in a level position independent of the ship's movement and without liability of spilling their contents. 4th. The combination of a bracket waste pipe and stench trap supported thereby, a self-levelling bowl having an outlet coupling supported in said bracket by a universal joint and communicating with the waste pipes, and a counterpoise connected to the lower portion of the bowl and extending below said bracket. 5th. The combination, with a self-levelling bowl, of a waste pipe or pipes connected therewith and adapted to convey its contents away from a cabin or state room. 6th. A water tank hinged to a suitable support and adapted to be turned down to form a table. 7th. The combination, with a self-levelling bowl, of a water tank hinged to a suitable support above said bowl and adapted to be turned down over the same to form a toilet table. 8th. The combination, with a suitable frame supporting a water tank and a self-levelling wash bowl, of a sliding mirror. 9th. The combination of a self-levelling wash bowl, a hinged water tank located above the same and adapted to be turned down to form a table, and a vertically sliding mirror provided with means whereby it may be adjusted and held at any desired height. 10th. The combination of a self-levelling bowl provided with a counterpoise, a waste jar supported on said counterpoise, a flat rectangular water tank hinged to a support above the wash bowl and adapted to be turned down to form a table and a vertically sliding mirror arranged in a frame at the rear of the tank.

No. 16,006. Improvements in Cockle Machines. (*Perfectionnements aux machines à ivraie.*)

Thomas M. Bales, Dublin, Ind., and Jacob A. Jackson, Des Moines, Iowa, U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination, with the inclined frame A, of the inclined angular rotating shafts I K, the lower one being placed to cause the endless belt to incline upwardly and outwardly, the endless belt L consisting of hinged plates extending lengthwise of the rotating shafts and having their surfaces covered by perforated plates of a size corresponding thereto, and the metal lined pivoted side F inclined towards the belt and forming, in connection therewith, an inclined trough, governed by spring pressure. 2nd. The combination, with the inclined rotating shafts I and K and the sectional hinged endless belt, of the metal side H secured to the ends of the frame and the top of the center-board D, to form trough *h* and space *h2*. 3rd. The combination, with the endless belt, metal side H, trough *h* and centre-board D, of the inclined strip E and the pivoted inclined side F.

No. 16,007. Improvements on Inlaid Work, and Process for Producing the same. (*Perfectionnements aux ouvrages en marqueterie, et procédé pour cet objet*)

William C. Edge, Newark, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. he method of producting inlaid work which consists in intimately connecting two or more slices of metal in them, embossing them so as to bring parts of the lowermost slice into the plane of the uppermost slice, and in then cutting down the embossed parts to show the metal of the lower slice, or slices, in that of the upper. 2nd. Inlaid work, composed of an upper perforated slice *a* of metal and of one or more lower slices, each of which extends beneath the slice *a* and projects also into the perforation of said slice *a*.

No. 16,008. Improvements in Gas Motor Engines. (*Perfectionnements aux machines à gaz.*)

Thomas Ashbury, Herbert Sumner, William Lees and Richard W. B. Sanderson, Manchester, Eng., 21st December, 1882: for 5 years.

Claim.—1st. he combination of two or more gas motor engines with cranks equidistant, or at any convenient angle in the circle of traverse. 2nd. The arrangement of one side shaft for driving the valve gearing and governors to each pair of cylinders. 3rd. The arrangement of duplicating gas motor engines directly opposite, or side by side, each other, in one bed common to both ensuring thereby perfect freedom from oscillation by balancing reciprocating parts.

No. 16,009. Improvements on Apparatus Connected with increasing the Illuminating Power of Coal Gas. (*Perfectionnements aux appareils se rattachant à l'augmentation de la puissance d'éclairage du gaz de houille.*)

Frederick Weston, Brixton, Eng., 21 December, 1882. ; for 5 years.

Claim.—1st. he arrangement of carburetting chamber with its lined passages. 2nd. The arrangement of screw-cap, spindle, spring and valve for replenishing the reservoir and putting the apparatus in or out of action. 3rd. The construction and arrangement within one vessel, or apparatus, of appliances for replenishing the reservoir and for setting the apparatus in or out of action and of the other parts therewith.

No. 16,010. Improvements on Churn Dashes. (*Perfectionnements aux battes-beurre.*)

Hiram C. Robinson, DeSoto, Ill., U. S., 21st December, 1882 ; for 5 years.

Claim.—The disk C having bevelled slots or openings c and secured upon the lower end of the dasher staff, in combination with the rotary sleeve B having spiral flanges B1.

No. 16,011. Improvements on Awning Frames. (*Perfectionnements aux châssis des tentes.*)

Egbert C. Cook, Chicago, Ill., U. S., 21st December, 1882 ; for 5 years.

Claim.—1st. The combination of the front rod D made in sections, the screw coupling D1 for coupling the ends of the said sections, the brace rods C C and the T-couplings E E for coupling the brace rod to the front rod. 2nd. The combination of the wall plates B B having hooks B1 B1 thereon, the brace rods C C having thereon the thimbles C1 C1 with their eyes *a a*, the front rod D made in sections, the screw-coupler D1 and the T-couplers E E.

No. 16,012. Improvement in Bags for Fertilizers. (*Perfectionnement dans les sacs à engrais.*)

Charles Richardson, Ephraim J. Walton and Francis N. Buck, (assignees of Charles E. Buck,) Wilmington, Del., U.S., 21st December, 1882 ; for 5 years.

Claim.—A textile or fibrous sack, or enclosing integument, for inclosing phosphates, guanos and fertilizers, the threads, fibres or substance of which is coated, saturated or impregnated with a soluble silicate.

No. 16,013. Improvements in Steam Boilers. (*Perfectionnements aux chaudieres à vapeur.*)

Dan W. Kellogg and William A. Kirby, Auburn, N.Y., U.S., 21st December, 1882 ; for 15 years.

Claim.—1st. In a vertical cylindrical steam boiler, the combination of a feed water pipe, a closed feed water heating drum and a water heating coil, the said drum being connected on one side with one end of, and surrounded by a water-heating coil, the other end of which communicates with the upper portion of the annular water leg. 2nd. The combination of the external vertical feed water pipe, a coiled water heating pipe arranged in the upper part of a vertical steam boiler having a double shell the whole length thereof, and a water heating drum communicating with the feed pipe and water heating pipe and surrounded by the latter, the said water heating drum being provided with an inverted conical bottom. 3rd. The combination, in an annular steam-boiler, of the water heating drum, a water heating coil surrounding the drum both arranged in the upper portion of the boiler and hanger straps hooked at both ends and suspended from the upper edge of the boiler. 4th. The combination, in a vertical cylindrical boiler, of a water heating coil communicating with the annular water leg of the boiler, and a super heating steam pipe arranged in a horizontal coil, above the water pipes, to be protected thereby and connected with the steam-space of the boiler. 5th. The combination, in a vertical cylindrical boiler provided with an annular water leg and steam chamber above, of a super heating steam pipe arranged in a horizontal coil in the upper part of the boiler, and a safety valve arranged outside of the boiler-casing with a base as a union or joint between the said super heating pipe and a steam-pipe leading to engine. 6th. The combination, with a vertical cylindrical boiler provided with an annular hot air chamber between its outer casing and the water jacket, or leg thereof, of vertical division plates in the annular hot air chamber, to divide the said chamber in two communicating sections, and a crown plate arranged diagonally across the upper end of boiler, to cause the products of combustion to pass through the annular air chamber. 7th. In a vertical cylindrical boiler, the combination of a fire-chamber, a water heating drum and coil in the upper part of said chamber, and a super heating coil communicating with said boiler, the latter having also a double shell to form a water-leg, and an open-ended cylindrical division-plate extended from the upper to lower portion of the water leg and suspended in such manner that the water may freely circulate around it. 8th. The combination, in a vertical cylindrical boiler, of a double inner shell, an external casing having air descending and ascending flues and a conical ash pan secured to its lower end, kept apart from the lower edge of the shell by bolts in such manner as to leave a space between them for cinders to pass. 9th. The combination, in a vertical cylindrical boiler provided with a double shell to form a water leg, of a water-pipe coil connected with both shells and a hollow tube plug, closed at the outer end and open at its inner end, connected to the water pipe by an elbow joint and provided with an opening to connect the water-leg with the water coil. 10th. The combination, with a cylindrical steam boiler, of the pump feed water pipe, water coil, water leg, siphon pipe. pump supply pipe and three way cock connecting the siphon-pipe, supply-pipes and pump.

No. 16,014. Improvements in Grain Thrashing and Separating Machines. (*Perfectionnements aux machines à battre et séparer les grains.*)

Edward Huber and Frederick Strobel, Marion, Ohio, U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination, in a grain separator, of the concave of the thrashing cylinder, the pivotted arms C, a transverse shaft D, the eccentrics E on this shaft, the guides F on the frame, a ratchet wheel G on said shaft, and a pawl H. 2nd. The combination, with the grain chute R1, of the jointed supporting links S1, the cross bar T1 and the suspension links U1, whereby the chute can be inclined to the right or left and given an endwise shaking motion. 3rd. The combination of the bottom L1, the comb A2 hinged to the main frame above the extension of bottom L1, and the riddle T having its tail end arranged above the jointed end of the comb. 4th. The combination, with the shoe A1, of the supporting braces B1 pivotted at their convergent ends, and the suspension springs C1 having their flat blades in planes radiating from the pivot of said braces.

No 16,015. Improvements on Camp Cooking Stoves. (*Perfectionnements aux poêles de cuisine de camp.*)

George M. Beecher, (Assignee of Wilmot H. Cole,) Brockville, Ont., 21st December, 1882; for 5 years.

Claim.—1st. The combination, in a portable stove, of bottomless sections hinged to fold rectangularly together and a rectangular oven section removably connected therewith when in use, and receiving the folding sections when packed for transportation. 2nd. The rectangular bottomless combustion chamber section A provided with draft aperture C, flue openings F, pot holes B and an end door D, the pot hole section G hinged thereto having flue openings H, the section I hinged to section G and heating the bottom of the oven and provided with flue openings I and the oven section K having flue casing O, the oven section being detachable, whereby the other sections can be packed therein.

No. 16,016. Improvements in the Method of Separating Sugar from Molasses and Syrups. (*Perfectionnements dans la méthode de séparer le sucre des melasses et sirops.*)

Carl Scheibler, Berlin, Prussia, 21st December, 1882; for 15 years.

Claim.—1st. The method of producing monosaccharate of strontia in molasses and syrups by introducing into same, while at a temperature below the boiling point, hydrate of strontia, by cooling the liquor and by stirring it in order to effect the formation of the saccharate of strontia at a low temperature and the separation thereof from the liquor. 2nd. In combination with the method of producing monosaccharate of strontia in molasses and syrups by introducing into the same, while at a temperature below the boiling point, hydrate of strontia, by cooling the liquor and by stirring it, the addition to the liquor of saccharate of strontia previously obtained, in order to promote the separation of the saccharate of strontia formed in the liquor. 3rd. In combination with the process of producing monosaccharate of strontia in molasses and syrups, the treatment of the mother lye resulting from such process by adding thereto an additional quantity of hydrate of strontia and boiling in order to produce cicasic saccharate of strontia.

No. 16,017. Improvements in Machinery for Manufacturing Spring Horse Shoes. (*Perfectionnements aux machines pour faire les fers à cheval élastiques.*)

Frederick A. Roe, New York, N.Y., U.S., 21st December, 1882; (Extension of Patent No. 15,725.)

No. 16,018. Improvements on Machinery for Manufacturing Spring Horse Shoes. (*Perfectionnements aux machines pour faire les fers à cheval élastiques.*)

Frederick A. Roe, New York, N.Y., U.S., 22nd December, 1882; (Extension of Patent No. 15,725.)

No. 16,019. Improvements in Sewer Traps.

(*Perfectionnements aux soupapes d'égouts.*)

Robert Bain, Thomas West, Robert McClain and John Ritchie, Toronto, Ont., (Assignees of Horace A. Palmer, Rochester, N. Y., U.S.) 23rd December, 1882; (Extension of Patent No. 8256.)

No. 16,020. Improvements on Overalls.

(*Perfectionnements aux pardessus.*)

William Carter, Toronto, Ont., 23rd December, 1882; (Reissue of Patent No. 12,171.)

Claim.—In overalls, a piece of material secured to the fork of the garment by stitching carried around each button hole, so as to form a cross seam between each hole as well as a seam near the front edge of the fly, and another seam behind each button hole.

No. 16,021. Improvements on Stop Motions for Looms. (*Perfectionnements aux mécanismes casse-mêche des métiers à tisser.*)

Frederick O. Tucker, Hartford, Conn., U. S., 23rd December, 1882: (Extension of Patent No. 15,328.)

No. 16,022. Improvements on Stop Motions for Looms. (*Perfectionnements aux mécanismes casse-mêche des métiers à tisser.*)

Frederick O. Tucker, Hartford, Conn., U. S., 26th December, 1882: (Extension of Patent No. 15,328.)

No. 16,023. Improvements on Indexes.

(*Perfectionnements aux index.*)

John H. Wagstaff, St. John, N.B., 26th December, 1882: (Extension of Patent No. 14,750.)

No. 16,024. Improvements on Indexes.

(*Perfectionnements aux index.*)

John H. Wagstaff, St. John, N.B., 27th December, 1882: (Extension of Patent No. 14,750.)

No. 16,025. Improvements on Foot Rests.

(*Perfectionnements aux appui-pieds.*)

Frank Gourdeau, Ottawa, Ont., 27th December, 1882; for 5 years.

Claim.—1st. The combination of the part B, having the slots F, 2nd. The upper part A, provided with a notch to serve as a boot jack. 3rd. The parts B and C, pivotted together to serve as an adjustable seat.

No. 16,026. Improvements on Friction Clutches. (*Perfectionnements aux embrayages à friction.*)

Dennis Frisbie, New Haven, Conn., U. S., 27th December, 1882; for 5 years.

Claim.—1st. An annular channel of dove tailed, or reversed V-shaped section, in combination with corresponding reversed V-shaped friction pieces traversed therein, and attached to the other part, and with abutting surfaces, or pieces to allow of inducing the friction by pressing the reversed V-shaped and abutting pieces together. 2nd. The two independent lengths of shafting A B, a long hub A_1 A_2, and bushing C, in combination with each other, and with the wheels A_3 D mounted on the respective shafts, and friction piece I, and means for operating them arranged to serve as a friction clutch, with the shafts held in line at the centre. 3rd. The friction pieces I carried on one wheel and engaging frictionally with the other, in combination with the compound lever H E, toggle links F and operating sleeve G. 4th. The bolt I and adjusting nut J thereon, in combination with the friction piece I and with the compound lever H E, toggle link F and sleeve G, to allow of adjustment to accommodate the toggle action. 5th. The pinching K and threaded shoe K_1, in combination with each other, and with the lever H and its operating means.

No. 16,027. Improvements on Stiffeners for Boots and Shoes. (*Perfectionnments aux contreforts des chaussures.*)

Cléophas Rochette, St. Sauveur, Que., 27th December, 1882; for 15 years.

Claim.—1st. A stiffener for boots and shoes composed of a number of layers of leather, or other suitable material, the layers having an aggregate thickness, equal to the thickest part of the stiffener and being of different sizes, the smallest placed innermost and concentrically, and the stiffener so formed and cemented, subjected to suitable pressure for consolidation. 2nd. The method of producing stiffeners for boots and shoes by forming them of a number of different sized layers of leather, or other suitable material, the smallest being placed innermost and concentrically, and the stiffener so formed and cemented, subjected to pressure between two surfaces, of which one is comparatively hard and rigid such as iron, and the other soft and yielding, such as wood, and a sheet of cloth placed interveningly between the surface of the plates and the stiffeners to be pressed, to facilitate the removal of the latter after pressing. 3rd. The method of pressing stiffeners for boots and shoes, between a surface or plate of hard material, such as iron, and a surface or plate of yielding material such as wood, which will yield to the varying thickness of the stiffener, and distribute the pressure more equally over the same. 4th. The method of pressing stiffeners, between a yielding, and a non yielding surface, or plate, and having a sheet of cloth, or other suitable fabric, interveningly placed between the said surfaces and the stiffeners to be pressed for the purpose of facilitating the separating of the stiffeners from the said surfaces after pressing. 5th. The combination of the plates I and W, formed with a pile, the stiffeners formed of four, or more layers L L_1 L_2, ready for pressing and placed between two pieces of cloth C, between each pair of plates I and W.

No. 16,028. Improvements on Magnetic Ore Separators. (*Perfectionnements aux séparateurs des minerais magnétiques.*)

Joseph LaBrèche-Viger, Montreal, Que., 27th December, 1882; for 15 years.

Claim.—1st. An endless apron composed of a smooth surfaced non-conducting material mounted upon upright rollers, in such a position as to prevent a surface, slightly inclined from the vertical, moving over series of magnets, or electro-magnets, disposed in one or more rows, inclined downwards in the direction of the movement of the apron, the whole mounted in a suitable frame work. 2nd. The combination of the frame work F_1 F_2 F_3 F_4 supported and held in an inclined position by the feet F_5, the non-conducting plate M secured in the frame and holding a series of magnets, or electro-magnets *m* in inclined rows clamped in it, the endless non-conducting apron A mounted upon rollers R_1 R_2, journalled in the frame, parallel to the plate and level with the poles of the magnets, the apron moving horizontally in the direction of the downward incline of the rows of magnets, and the necessary tension of the apron being obtained by a tension roller T, at the back, held in the brackets B, radially adjustable, to form a regulator of the apron, the motion being imparted to one of the rollers by means of a cord C or equivalent, the hopper H at the top of the frame, over the highest magnets, provided with feed apron *h*, receiving motion from the shaft S by means of the cord C, on the pulley P_2 from the pulley P, the hopper provided with a regulating slide h_1, pocket h_2 and tubes or spouts *t*, to deposit the ore on the highest magnets in each row.

No. 16,029. Improvements on Carriage Tops.

(*Perfectionnements aux soufflets des voitures.*)

William Hodge, Uxbridge, Ont., 28th December, 1882: (Extension of Patent No. 14,185.)

No. 16,030. Improvements on Machines for Raising or Depressing Carriage Tops. (*Perfectionnements aux machines à abaisser ou relever les soufflets des voitures.*)

William Hodge, Uxbridge, Ont., 28th December, 1882: (Extension of Patent No. 14,870.)

No. 16,031. Improvements on Lamps.

(*Perfectionnements aux lampes.*)

Frederick Siemens, Dresden, Germany, 28th December, 1882: (Extension of Patent No. 12,348.)

No. 16,032. Improvements on Lamps.

(*Perfectionnements aux lampes.*)

Frederick Siemens, Dresden, Germany, 28th December, 1882: (Extension of Patent No. 12,348.)

No. 16,033. Improvements in Car-Couplers.

(*Perfectionnements aux accouplages des chars.*)

Charlie E. Mark, Flint, Mich., U.S., 28th December, 1882; (Extension of Patent No. 15,391.)

No. 16,034. Improvements on Car-Couplers.

(*Perfectionnements aux accouplages des chars.*)

Charlie E. Mark, Flint, Mich., U.S., 28th December, 1882; (Extension of Patent No. 15,391.)

No. 16,035. Improvements in Contrivances for Varying the Gauge of the Wheels of Rolling Stock. (*Perfectionnements aux moyens de changer l'écartement des roues de matériel roulant.*)

David Anderson, Fairview, Stowell, Victoria, 28th December, 1882; for 15 years.

Claim.—1st. Constructing axles of railway rolling stock with an extensible sleeve or sleeves, to admit of the alteration of the gauge of their wheels. 2nd. Constructing such axles with a solid collar in the centre, and with a hinged clamp on either side, having recesses for receiving and holding the flanges on the inner ends of the axle sleeves. 3rd. The combination of the sole plate E_1 the rollers E_2, platforms F and F_1 having recesses F_2 and F_3 (or their equivalent in the shape of rails) with a right and left handed screw G, turning collar G_2 and thrust bearing G_3.

No. 16,036. Improvements on Carriages.

(*Perfectionnements aux voitures.*)

Francis X. Roy, Montreal, Que., 30th December, 1882; for 5 years.

Claim.—1st. The combination, in a carriage having the king bolt *o*, of the compound brace Q, having an aperture through which the king bolt *o* moves. 2nd. The combination, in a carriage top, of the standard A having slides X, joint F, standard B, brace J having sliding joint G, with screw K and swivels E and H.

No. 16,037. Improvements on Globe Valves.

(*Perfectionnements aux soupapes à boulet.*)

Peter G. Van Wie, Cleveland, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of the straight parallel sided valve C having the annular flange or projection N and the conical point, with the straight parallel sided valve seat F bevelled to receive the flange N. 2nd. The combination of a straight parallel sided valve C having annular flange N, and the conical point with the recessed cap H. 3rd. The combination of a removable valve seat F bevelled to receive the flange N, with the body A having partition B, and valve C having flange N.

No. 16,038. Improvements on Wire Covering Machines.

(*Perfectionnements aux machines à couvrir le fil de fer.*)

James M. Rice and Merritt H. Rice, Dubuque, Iowa, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The guide B provided with the groove *c*, and passage *d* leading into said groove. 2nd. The guide B provided with the groove *c*, and passage *d* leading into the said groove, and the tension device. 3rd. The guide provided with the screw-threaded portion B, in combination with the shaft C provided with screw-threaded device H, and means for operating the shaft C. 4th. The guide proper B, provided with the groove *c*, and a passage *d* leading into said groove, and with a passage *a*1 to admit the shaft C, in combination with the shaft C and shafts or arbors D D1, and means for operating the arbors. 5th. The combination of the travelling guide B, the shaft C with screw H, belt shipper lever I, the revolving arbors D D1, and means for operating the arbors. 6th. The guide B having a screw-threaded passage *a a*1 in its portion B1, and provided with a groove *c*, a passage *d* and a tension device *f*1, in combination with the shaft C, male screw H and the shaft or arbors D D1. 7th. The guide proper B, provided with the grooves *c* and passage *d*, and with a passage *a*1 and an opening *b*.

No. 16,039. Improvements on Saw Frames.

(*Perfectionnements aux montures des scies.*)

Charles H. Bennett, Blosburgh, Penn., U.S., 30th December, 1882; for 5 years.

Claim.—1st. In combination with the saw and frame, the externally inclined clamps *a h*, of which one has an inside stud *i* passing through the other clamp and through the saw, and the triangular yokes on the inner ends of adjustable screws. 2nd. The bow A, of gas pipe and the saw blade B, in combination with means for holding the ends of the saw blade in the bow.

No. 16,040. Improvements on Feed Water Alarms for Steam Boilers.

(*Perfectionnements aux indicateurs du niveau de l'eau des chaudières à vapeur.*)

George W. Getchell, Brewer, Me., U. S., 30th December, 1882; for 5 years.

Claim.—1st. In combination with a steam boiler, a float *d*, chain *e*, arm *f*, upon shaft *g*, and latch or crank *h*, together with an alarm apparatus adapted and arranged to operate by the motion of the crank *h*, as the water rises or falls. 2nd. The combination, with a steam boiler, of a float *d*, revolving shaft *j*1 *j*, and connecting mechanism, whereby the rise and fall of the said float operates to release one or the other of the said sheats, as the water is high or low, and sound the alarms. 3rd. In combination with a steam boiler, the connected cylinder *c*, weighted float *d* attached to the arm *f*, the shaft *g* and latch *h*, arranged to engage levers *i i*1 upon revolving shafts *j j*1, and to release one or the other, as the water level in the boiler varies, allowing them to revolve and operate an alarm signal.

No. 16,041. Improvements in Metal Lasts.

(*Perfectionnements aux formes métalliques.*)

James Markie, London, Eng., 30th December, 1882: for 5 years.

Claim—Metal lasts described and represented in the drawing.

No. 16,042. Improvements on Permanent Ways of Railways.

(*Perfectionnements aux voies permanentes des chemins de fer.*)

William Seaton, London, Eng., 30th December, 1882; for 5 years.

Claim.—The form of the solid bridge rail, or saddle rail, with notched ends for the reception of metal key, or keys, in combination with (for the purpose of steadying, securing and fastening the rails) horizontal longitudinal plates or fastenings with curved ends, and flange-headed bolts secured or counter sunk into the bottom of the sleepers, into which a twin nut-headed screw bolt enters, after first passing through the longitudinal plates, or fastenings, the rails and the sleepers, by which means all the parts can be screwed tightly together, and the rails so jointed together obtain the solidity of a continuous rail.

No. 16,043. Improvements on Car Couplings.

(*Perfectionnements aux accouplages des chars.*)

George W. Eltzroth and Isaac Raypholtz, Marion, Ind., U.S., 13th December, 1882; for 5 years.

Claim.—1st. The combination of the draw-head having perforation D, longitudinal slot F in its top, and intermediate groove G, the upright standard having bearing N at its top, and an elevated front extension at its bottom, provided with bearing R, the right angular flat spring arranged in rear of the link recess and having circularly notched end L, and the coupling pin having an about mid-way flange or shoulder S. 2nd. The rest or bracket T, having end V, central cross-bar X, provided with flattened portions B1, an end Z formed by a circular coil.

No. 16,044. Improvements on Anti-Cribbing Attachments for Horses.

(*Perfectionnements aux moyens d'empêcher les chevaux de ronger.*)

Owen P. Deeds, Cunven, Penn., U. S., 30th December, 1882; for 5 years.,

Claim.—1st. A curved plate having means for attaching it to the teeth of the horse. 2nd. A longitudinal curved plate adapted to rest aganinst the upper front teeth of an animal, and provided with end perforations, for receiving fastening devices to attach the plate to the teeth.

No. 16,045. Process and Apparatus for Improving the Fire Test of Oils.

(*Procédé et appareil pour améliorer l'épreuve du feu des huiles.*)

Henry C. Smith, Cleveland, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. Passing the oil in a thin layer over a body of heated water, and simultaneously passing a current of air over the layer of oil, whereby the lighter gases and vapours are eliminated from the oil. 2nd. The combination and arrangement of a closed tank A, a coil of steam pipes *a a a*, a coil of air pipes *b* in said tank, partitions *c c* and false perforated bottom *d*, the said tank being provided with an inlet *d*1, a vapour outlet *a*1, the air pipe connecting with the interior of the tank above the outlet *a*.

No. 16,046. Improvements on Bed Bottoms.

(*Perfectionnements aux sommiers des lits.*)

Wheeler Bartram, Madison, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of a series of metallic spring straps provided with slots for adjusting the same to the frame or bedstead, with a series of spiral springs attached to the flexible metallic supports running crosswise of the same. 2nd. The combination, with spiral springs extending from end to end of the frame, of the transverse flexible metallic support *a* and slotted metallic spring straps *d*, adjustably attached to the frame by means of pins *c*.

No. 16,047. Improvement on Railway Brakes.

(*Perfectionnement des freins de chemins de fer.*)

Nathan Webb, Sacramento, Cal., U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of the spring C and the fulcrum *b*, and the brake beam A. 2nd. The combination, with the spring C and the chain rod J, of the stop *g* and the retaining pin *f*.

No. 16,048. Improvements on Rotary Gang Ploughs.

(*Perfectionnements aux charrues rotatoires à plusieurs socs.*)

Isaac N. Kyle, Troy, Ohio, U. S., 30th December, 1882: for 5 years.

Claim.—1st. The combination, with a diagonal series of concavo-convex disks, having continuous cutting edges, of a front series of flat cutting disks arranged to operate in the line of draft, but equidistant between the cutting points of the concavo-convex disks, whereby the earth is first cut, and then subdivided and turned over. 2nd. The combination, with a diagonal series of concavo-convex disks, having continuous cutting edges, of a front diagonal series of flat cutting disks, arranged to operate in the line of draft, but equidistant between the cutting points of the rear concavo-convex disks.

No. 16,049. Improvements on Reaping Machines.

(*Perfectionnements aux moissonneuses.*)

Thomas I. Williams, Mariposa, Ont., 30th December, 1882: for 5 years.

Claim.—The combination of the stock A and finger B.

No. 16,050. Improvements on Cleaning Ash Pans of Locomotive Engines.

(*Perfectionnements dans le nettoyage des cendriers des machines locomotives.*)

Alden D. Kilborn and William F. Smith, Tucson, Arizona, U.S., 30th December, 1882; for 5 years.

Claim.—A distributor for cleaning locomotive ash pans with water, consisting of the hollow cross bar C provided with a front row of straight ejecting pipes, or nozzles D, made of unequal length, to throw the water in a series of streams which strikes the bottom, one in advance of another, whereby the cinders are more uniformly acted upon, and the pan more thoroughly cleaned.

No. 16,051. Improvements on Electric Air Lamps.

(*Perfectionnements aux lampes électriques atmosphériques.*)

Elihu Thomson, New Britain, Conn., U. S., 30th December, 1882; for 5 years.

Claim—1st. The combination, in an electric lamp, of an upper carbon rod, a wheel rotated by a downward motion of said rod, a frame supporting said wheel and movable in position with it, an electro-magnet in the main or principal circuit acting upon said frame to separate carbons, a wheel or wheels, the shaft of which is stationary, an electric magnet in a derived circuit around the carbons and a locking detent controlled by said magnet and acting to prevent the rotation of the stationary wheel or wheels. 2nd. The combination, with

the feeding train of an electric light regulator, of a detent device engaging with the periphery of the wheel of the train, and an electro-magnet controlling said detent, the circuit of which is through the periphery of the wheel and the detent. 3rd. In an electric light regulator, a derived circuit electro-magnet, a detent controlled thereby, and a releasing wheel which is in the derived circuit with the electro-magnet and with whose periphery the detent engages. 4th. In an electric light regulator, the combination, with the lighting mechanism acting upon the carbon carrier and the locking device, of the feeding train of intermediate devices acting upon said locking device, to release the train when the lifting mechanism is lowered. 5th. The combination, with the swinging frame carrying the feeding gear and serving to separate the carbons to form the arc of a projecting part acting upon the detent of said feeding gear. 6th. The projection F1 of the frame F, in combination with the detent device, whereby the electrodes are allowed to run together by the release of a detent when the current through the lamp ceases from any cause. 7th. In combination with a shunt circuit around the lifting electro-magnet, circuit closing devices adapted to be brought into action by the descent of the carbon carrier when the carbons are consumed. 8th. The combination, with the descending carbon rod R of contact points D and B, one of which is carried by the rod and which are adapted to form a cut out of the direct magnet coil C whereby, when the carbon points are nearly consumed, they drop together and remain in contact.

No. 16,052. Improvements on Machines for Raising or Depressing Buggy Tops. (*Perfectionnements aux machines à lever ou abaisser les soufflets des voitures.*)

William Hodge, Uxbridge, Ont., 30th December, 1882; (Extension of Patent No. 14,870.)

No. 16,053. Improvements on Snow Ploughs. (*Perfectionnements aux charrues à neige.*)

Horace Resley, Cumberland, Md., U.S., 30th December, 1882; for 5 years.

Claim.—1st. The combination with the deflection D, of the scoop A having its sides C C connected to the forward part of its wings *a a* by the braces *c c* arranged on opposite sides of the deflector. 2nd. The combination of the scoop A, the truck B having the rounded bar *a2* upon its bumper, and which serves as a rest for the scoop, the slotted braces *g g* secured to the under side of the bumper, the rollers *f f* and their axle arranged under the forward end of the scoop. 3rd. The combination of the truck B having bar *a2*, the scoop A adapted to rock thereon, the cords *d d*, the windlass E having pin *e*, and the loop *d1* placed upon one of the cords and adapted to be engaged with the said pin.

THE

CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

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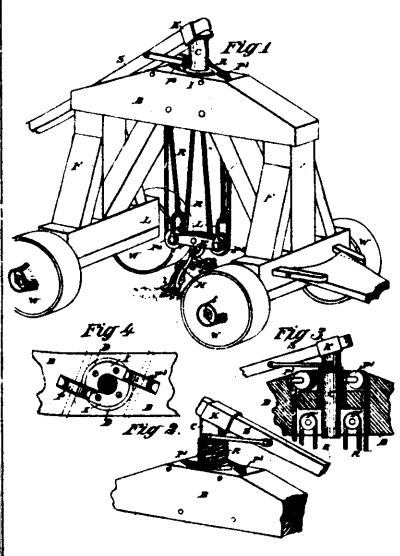
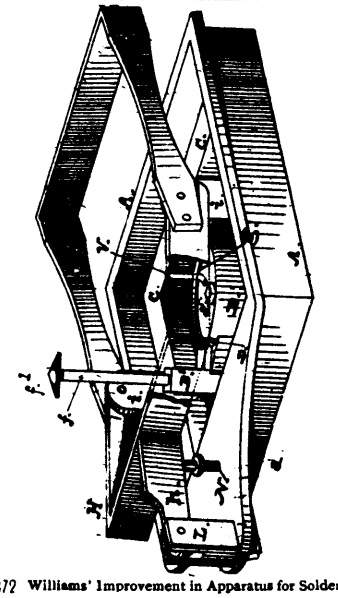
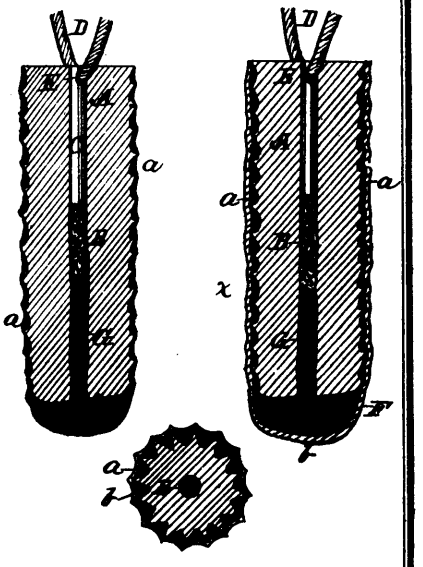


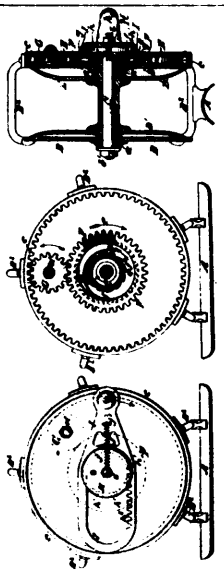
15871 Gaty's Improvements on Stump Extractors.



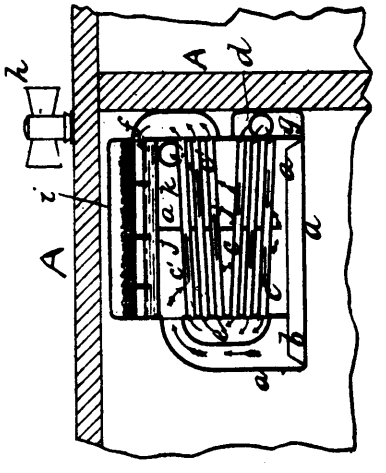
15872 Williams' Improvement in Apparatus for Soldering Cans.



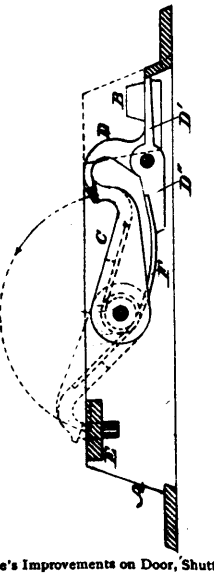
15873 Davis' Improvements in Fire Kindlers.



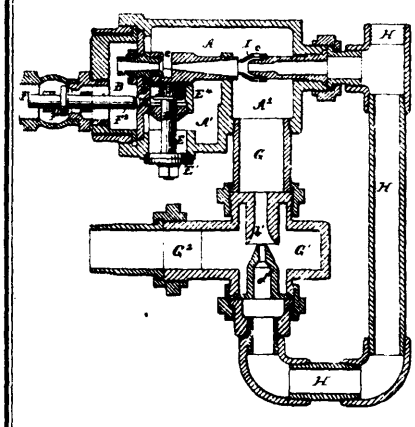
15874 Mills' Improvements on Fishing Reels.



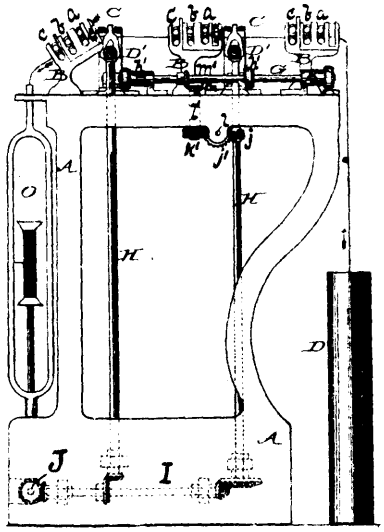
15876 Rowan's Improvements in Warming and Ventilating and Apparatus therefor.



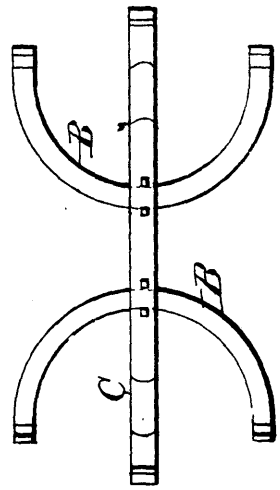
15877 Brooke's Improvements on Door, Shutter or Sash Fasteners and Alarms.



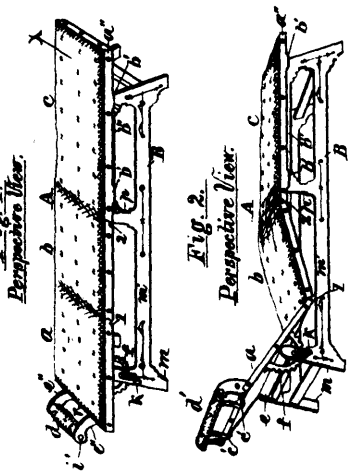
15878 Williams' Improvements on Steam Injectors.



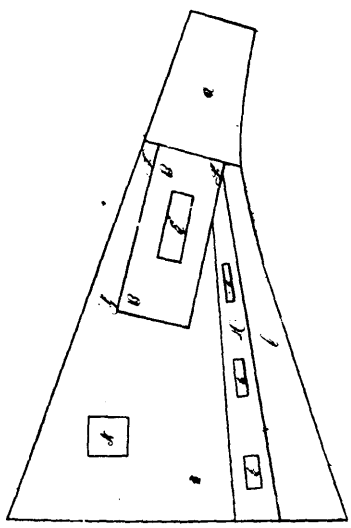
15879 Kelley's Improvements on Machines for the Manufacture of Roving.



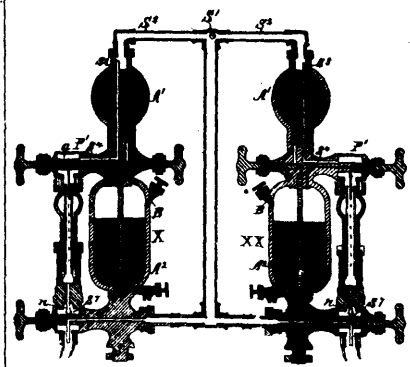
15880 Saladee's Improvements on Vehicle Springs.



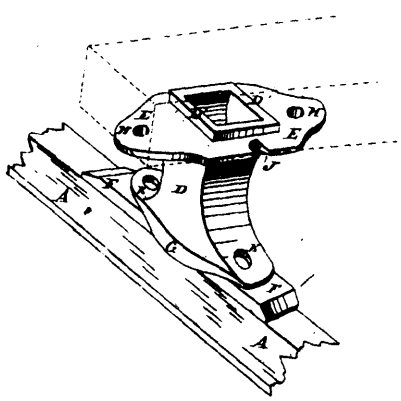
15881 McDonald's Improvements in Invalid Lounges.



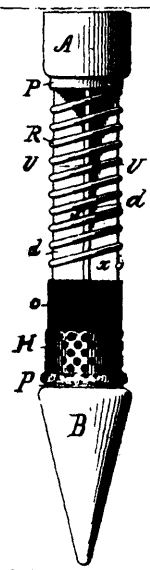
15882 Clinton's Improvement in Plough Shares.



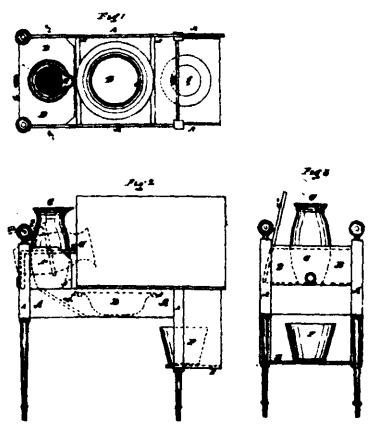
15883 Holland's Improvements in Lubricating Devices.



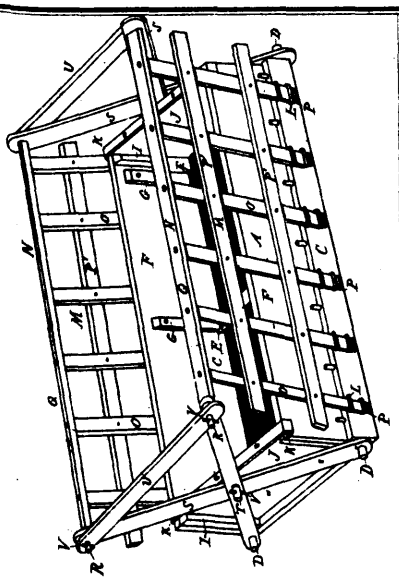
15884 Brown's Improvement on Sleigh Knees.



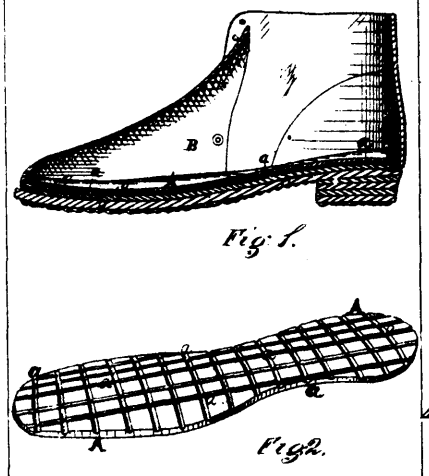
15885 Olmsted's Improvements on Drive Well Points and Strainers.



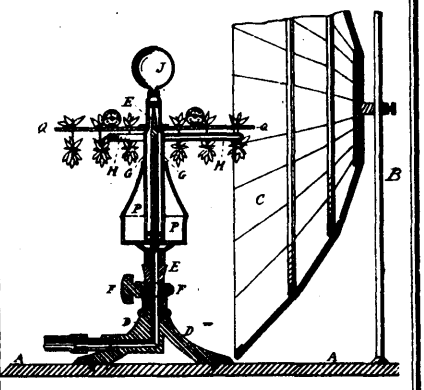
15886 Farewell's Improvements on Wash Stands.



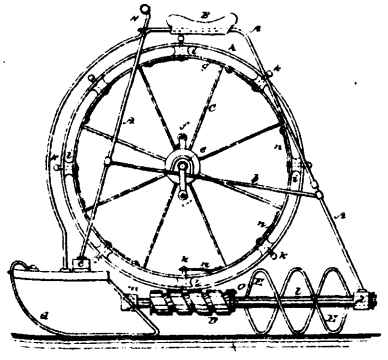
15887 Joiner's Improvements on Waggon Beds.



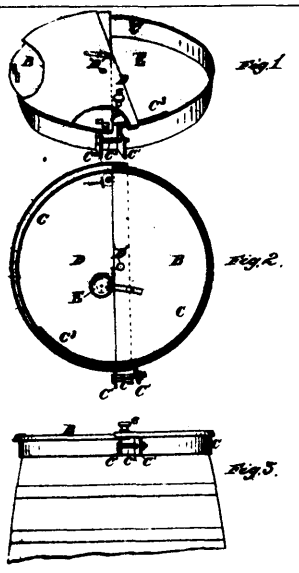
15888 Hoover's Improvements on Removable Insoles for Hob Nail Shoes.



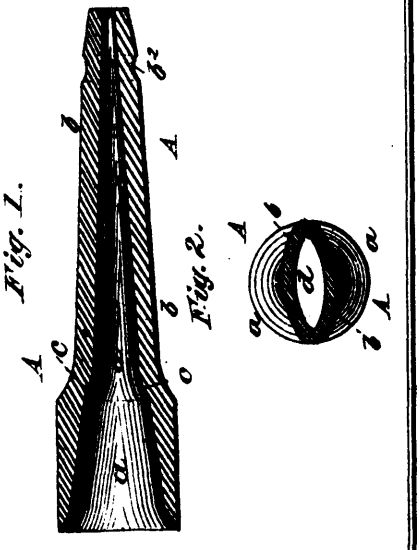
15889 Roath's Improvements in ShowStands.



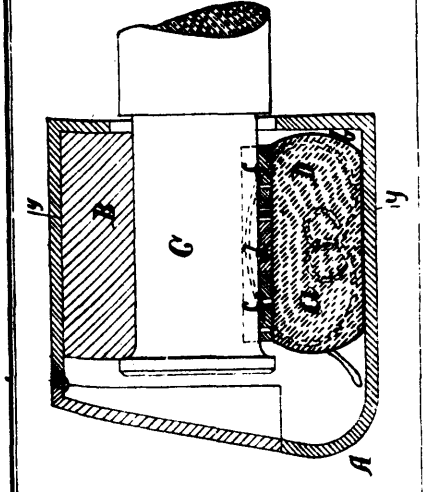
15890 Woodham's Improvements on Ice Velocipedes.



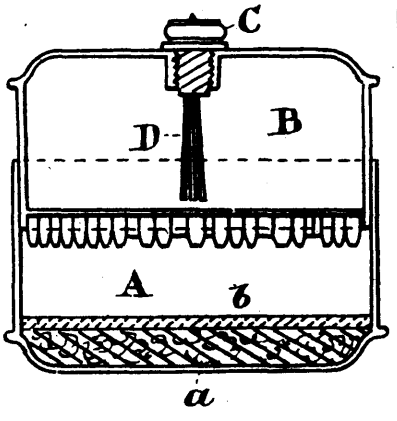
15891 Hood's Improvement in Adjustable Barrel Covers.



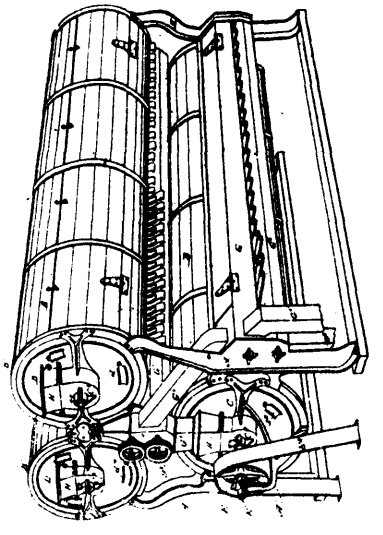
15893 May's Improvements on Cigar-Holders.



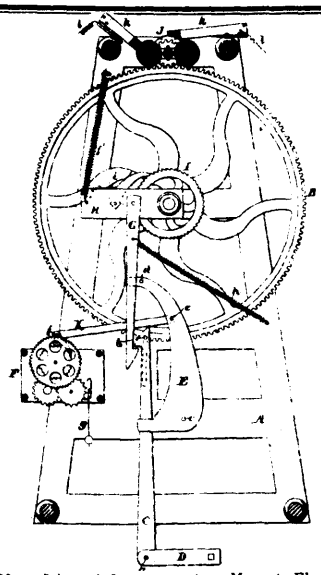
15894 Flynt's Improvements in Axle Lubricators.



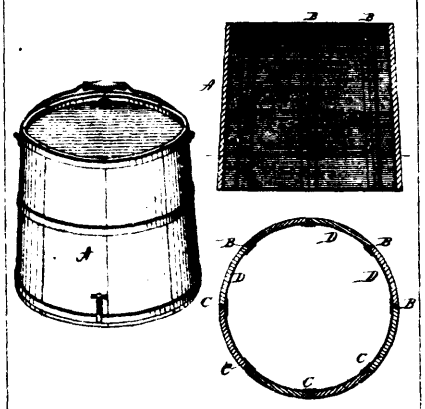
15896 Rodwell's Improvements on Hand Stamps.



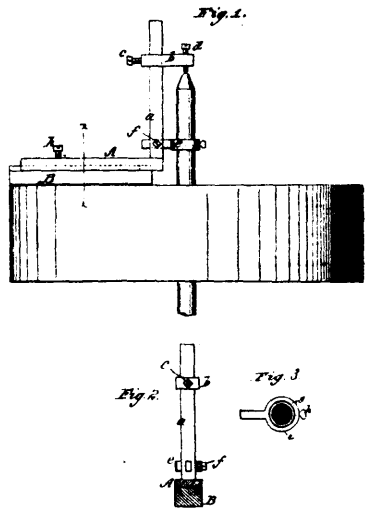
15899 Mills' Improvements on Centrifugal Bolts for Flour Mills.



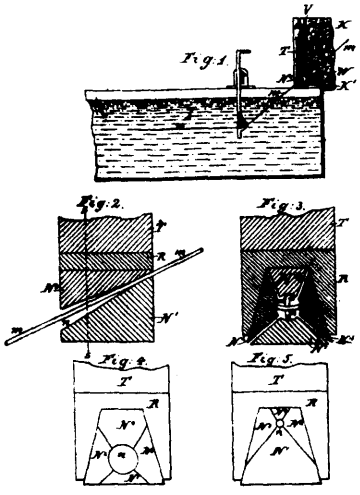
15900 Johnson's Improvements on Magneto-Electric Railway Signals.



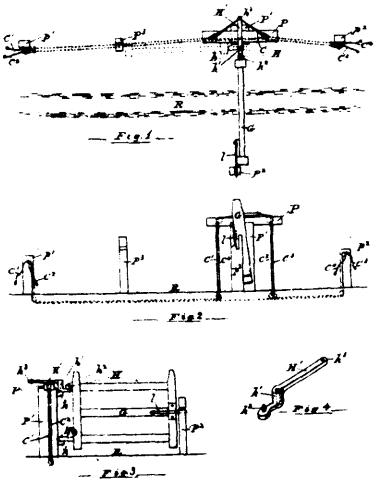
15901 Wright's Improvements on Impervious Packages.



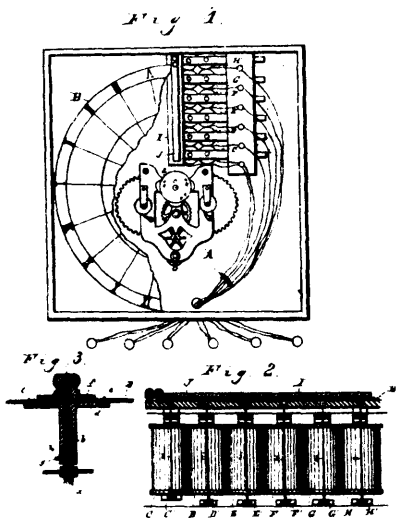
15902 Davis' Improvements in Guides for Paint Staffs.



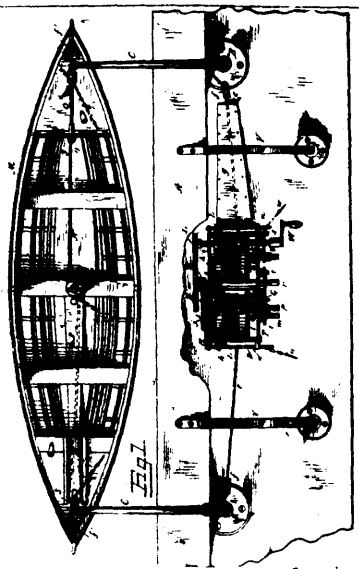
15903 Roberts' Improvements in Means of Finishing Zinc Coated Wire.



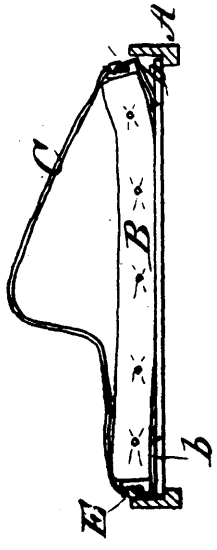
15904 Chambers' Improvements on Gate Attachments.



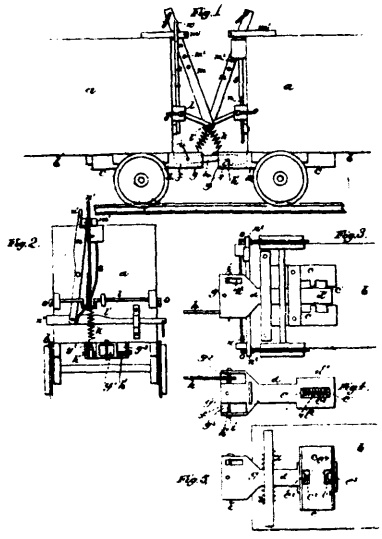
15905 Ransom's Improvements on Electro-Magnetic Watchmen's Registers.



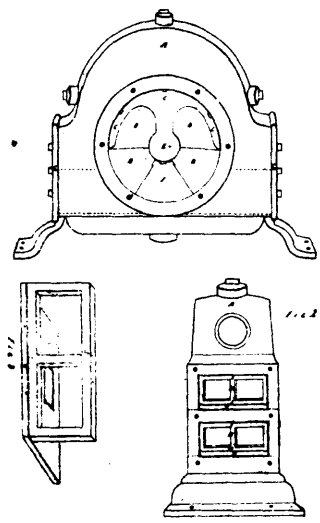
15906 Bourke's Improvements on Boat Lowering Apparatus.



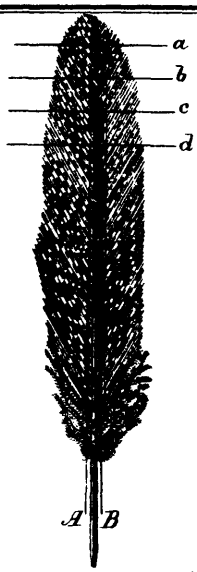
15907 Cox's Improvements on Bed Clothes Fasteners.



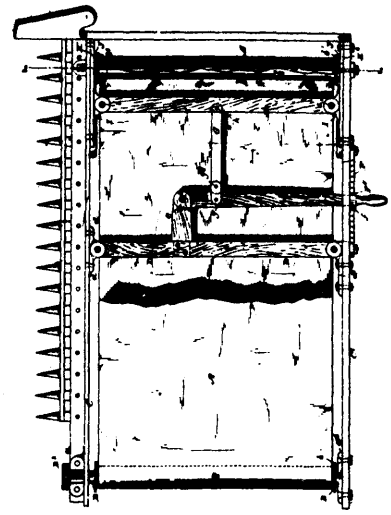
15908 Clark's Improvements on Car-Couplers.



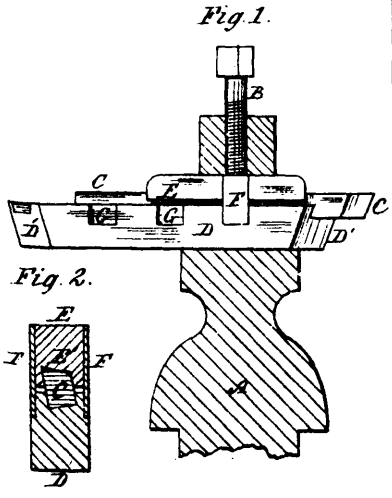
15909 Holman's Improvements in Force Pumps.



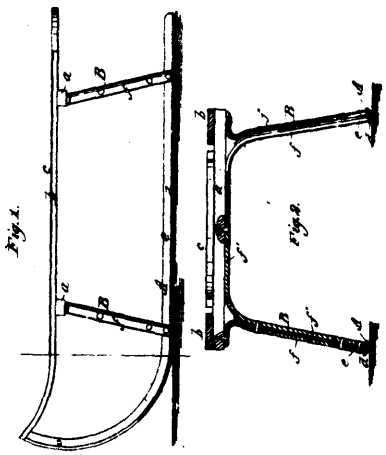
15910 Berger's Process for Manufacturing Feather Pillows, Bolsters, &c.



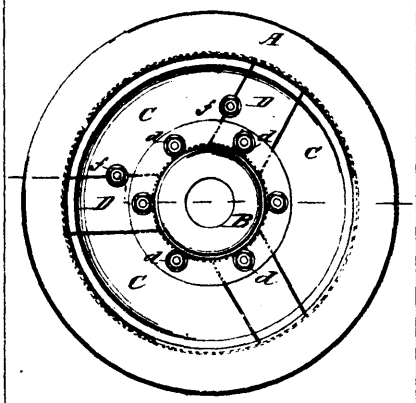
15912 Davis' Improvements on Grain Carriers.



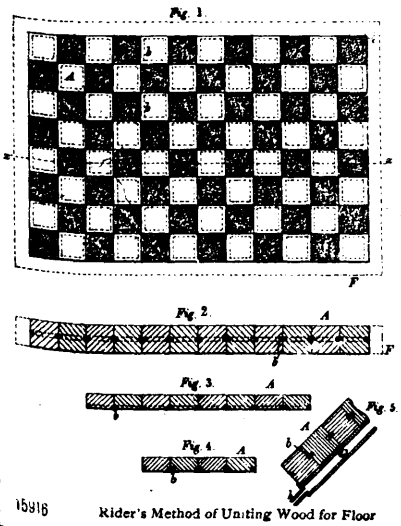
15913 Woodbridge's Improvements on Metal Working Tools.



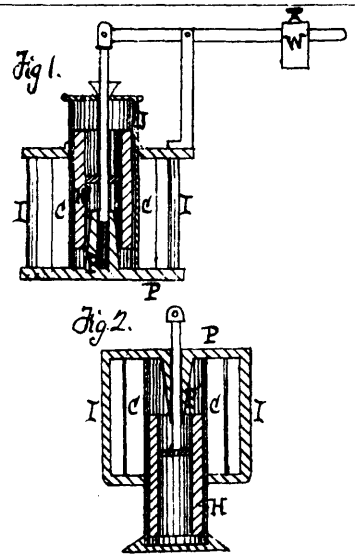
15914 Amsden's Improvements on Sleds and Sleighs.



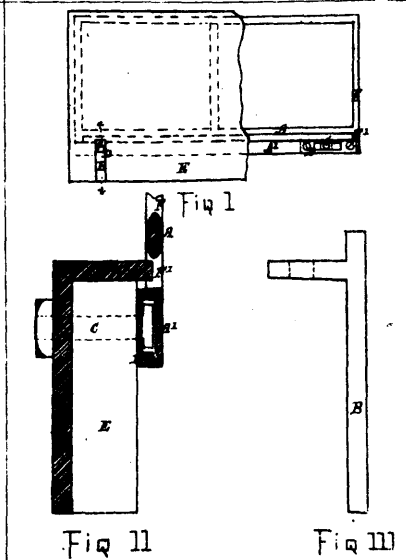
15915 Canfield's Improvements on Car Wheels.



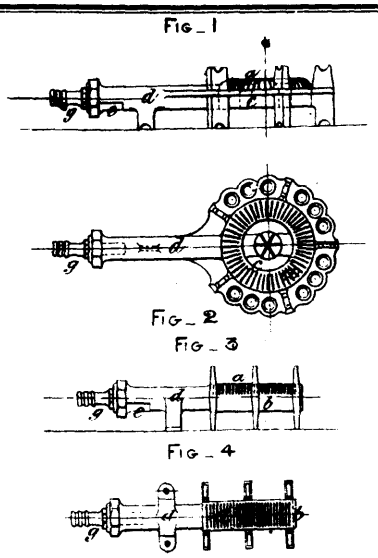
15916 Rider's Method of Uniting Wood for Floor Coverings.



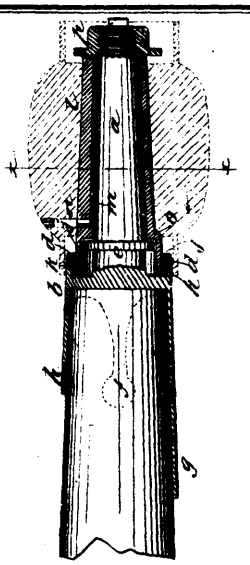
15917 Thomson's Improvements on Electro-Magnetic Devices.



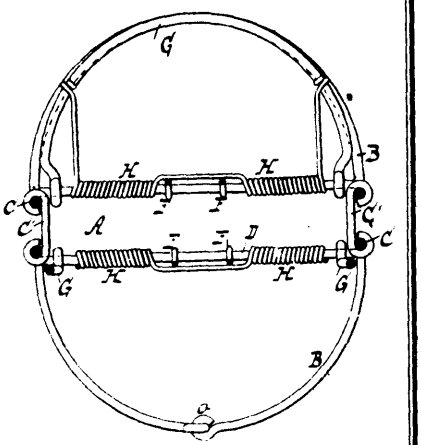
15918 McKinnon's Improvements in Vehicle Dashes.



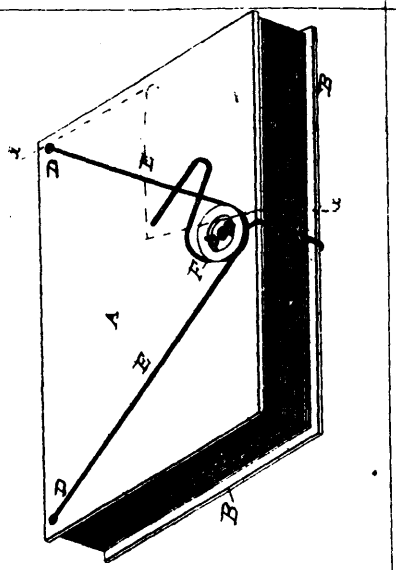
15919 Fletcher's Improvements on Gas Burners for Heating Purposes.



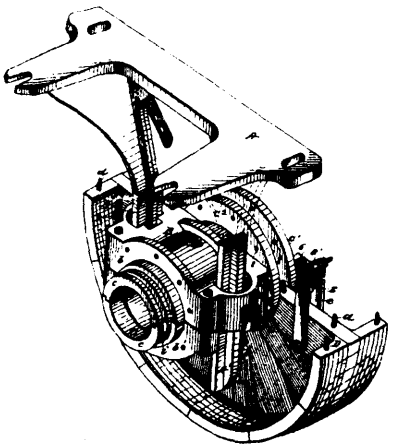
15920 Smith's Improvements on Thimble Skeins and Axle Boxes.



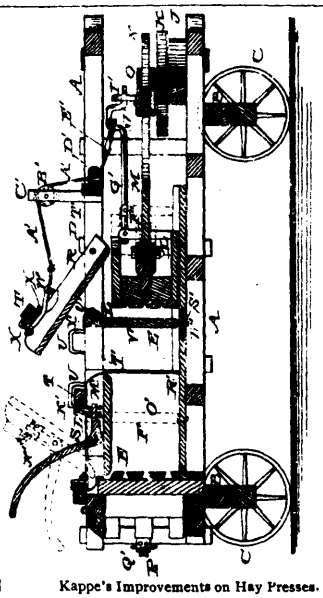
15921 Greig's Improvements on Animal Traps.



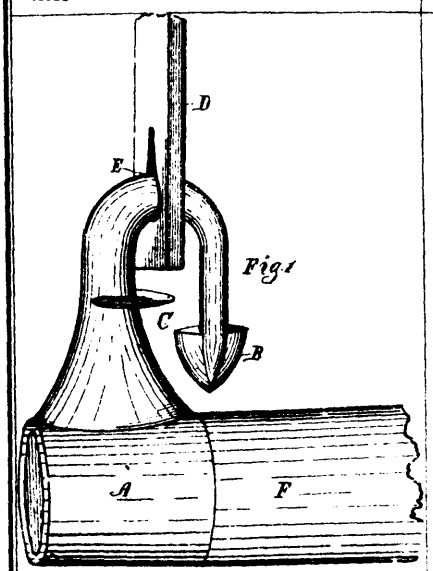
15922 Colton's Improvements on Scrap Books.



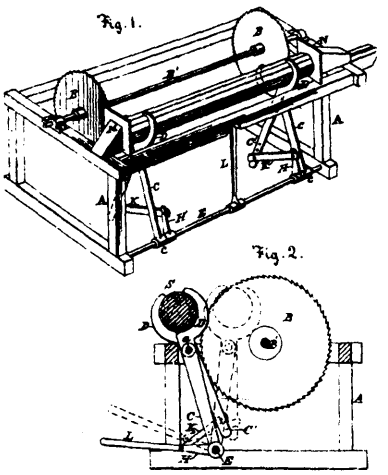
15923 Crowell's Improvements on Dead Pulley Rigs.



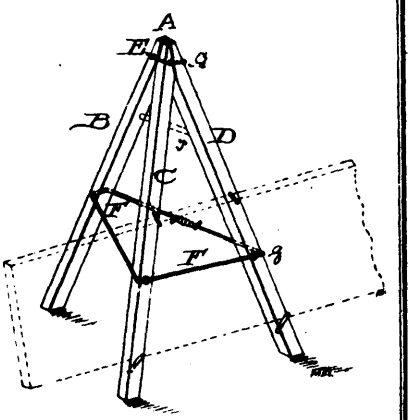
15924 Kappe's Improvements on Hay Presses.



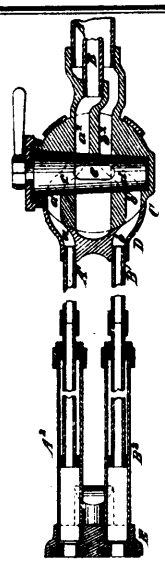
15925 Higinbotham's Improvements in Whiffletree Hooks.



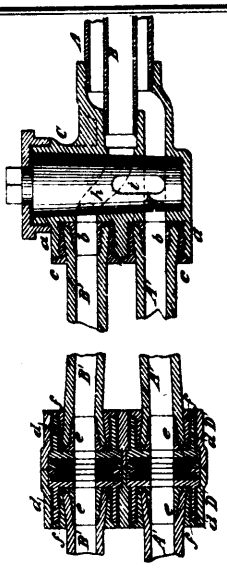
15926 Nichols & Taylor's Improvements on Lath Trimming Machines.



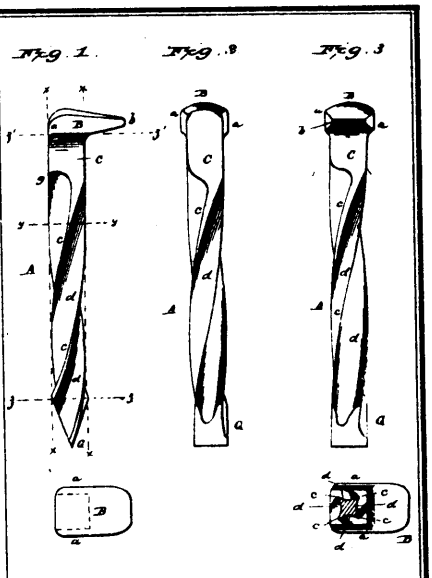
15927 Gibbs' Improvements on Movable Fence Posts.



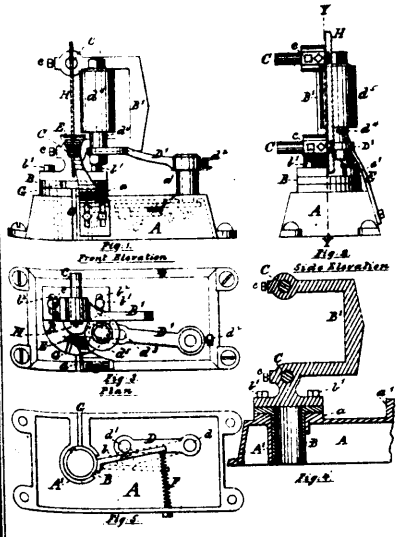
15928 Walsh's Improvements on Means for Conveying Heating or Motive Agents through a Train of Cars.



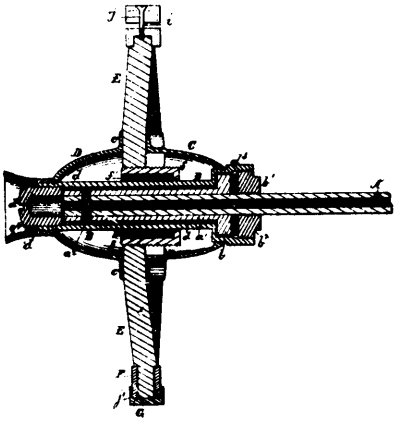
15929 Walsh's Improvements in Apparatus for Heating Cars.



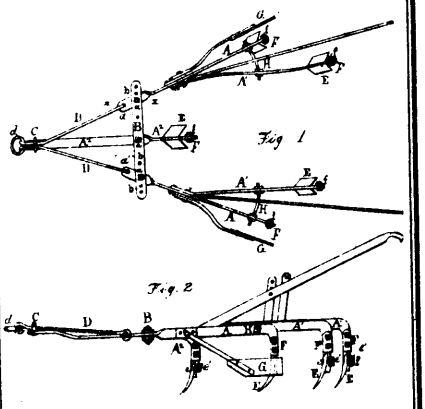
15930 Bailey's Improvements on Spikes.



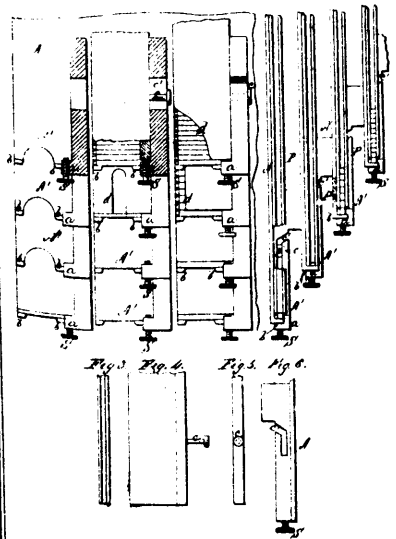
15931 Chandler's Improvements in Saw Guides



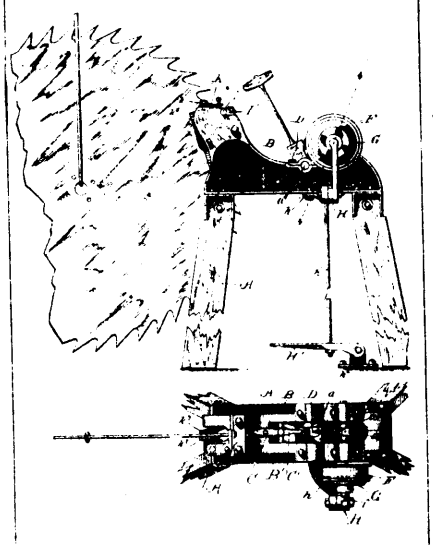
15932 Shelley's Improvement on Vehicle Wheels and Axles.



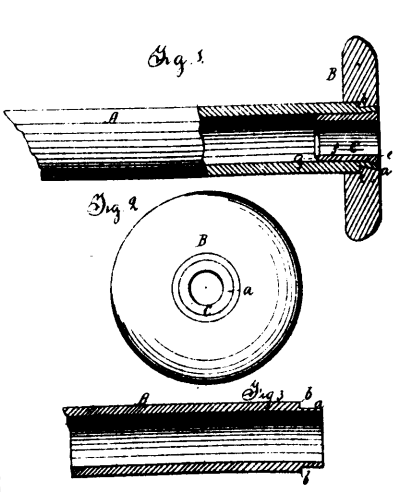
15933 Deal's Improvements on Cultivators.



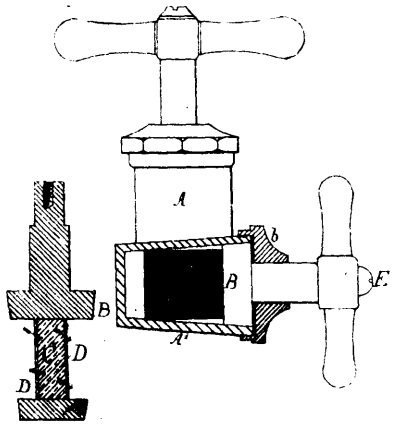
15934 Johnson's Improvements on Type and Space Holders.



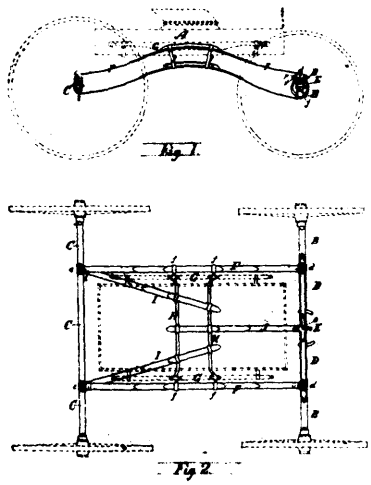
15935 Covel's Improvements in Saw Swages.



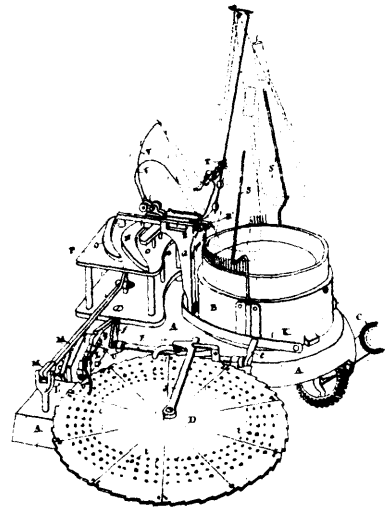
15937 Hambleton's Improvements in Bobbins.



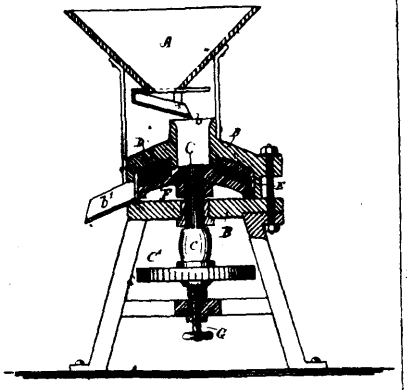
15941 Horsnell & Murphy's Improvements in Filtering Apparatus.



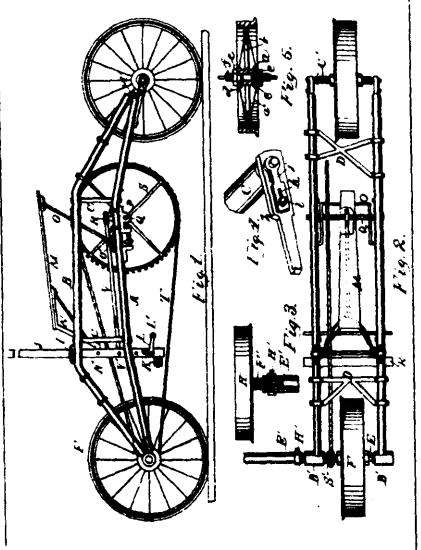
15948 Wright's Improvements on Side Spring Waggons.



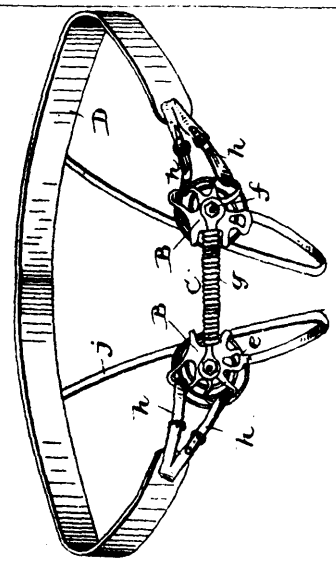
15949 Byfield's Improvements in Knitting Machines.



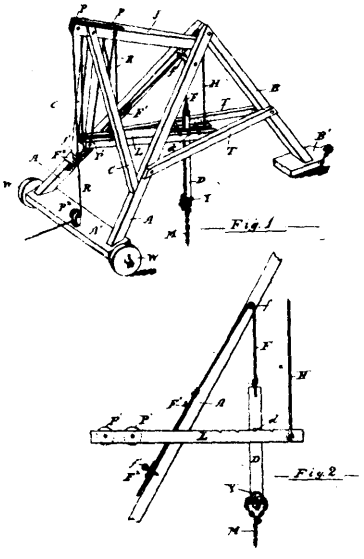
15950 Pratt's Improvements in Grinding Mills.



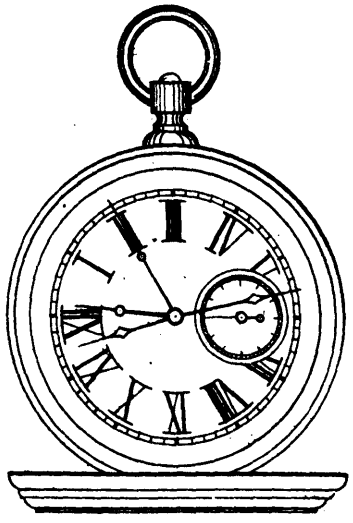
15953 Walz's Improvements in Hand Cars.



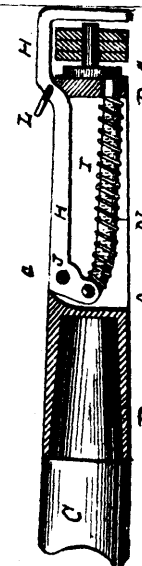
15954 Clutha's Improvements on Trusses.



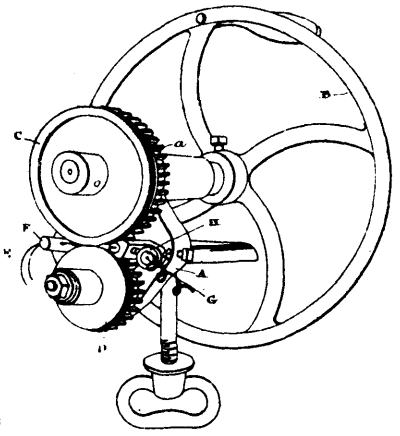
15955 Bruce's Improvements on Stump Extractors.



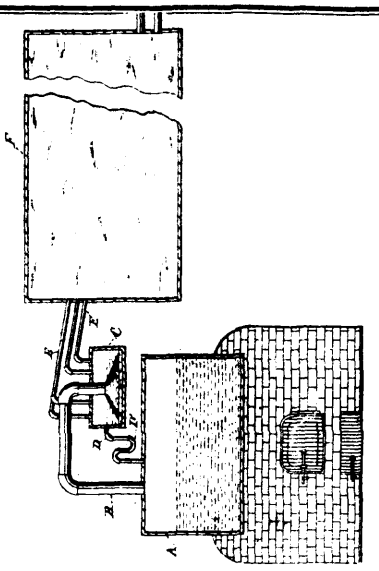
15956 Bell's Improvements on Watch Hands.



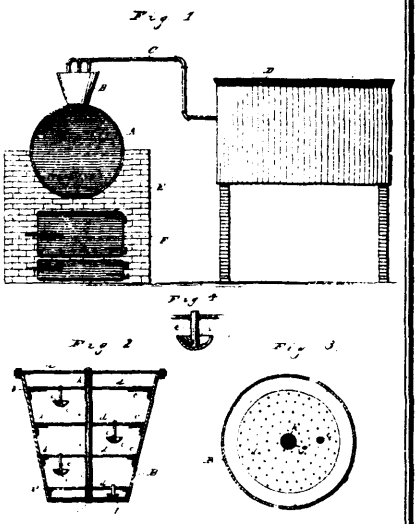
15957 Cummins' Improvements on Trace Detaching Devices.



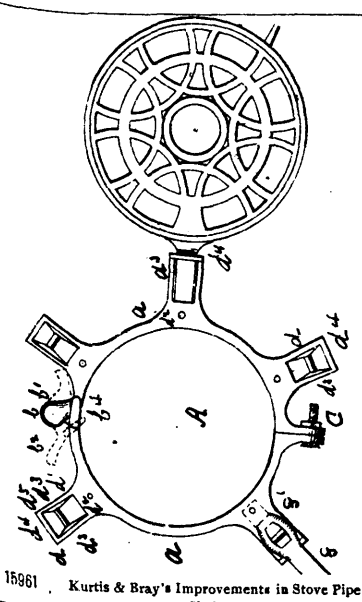
15958 Tye's Improvements on Wire Coiling Machines.



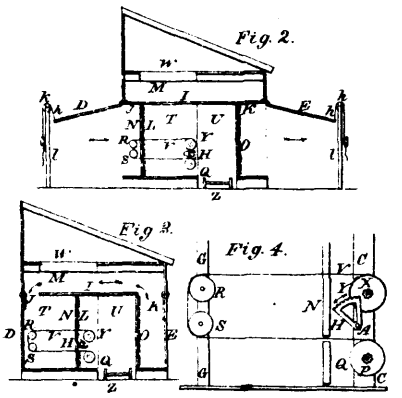
15959 Frasch's Process for the Distillation of Hydro-Carbon.



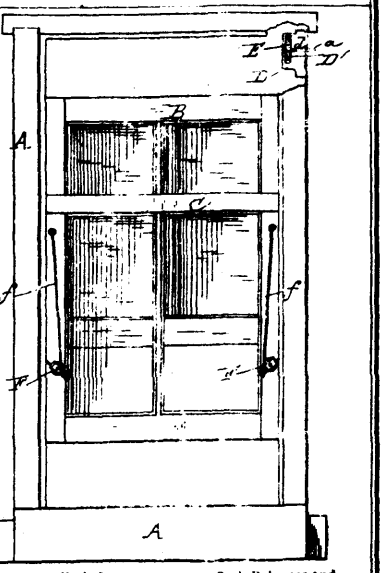
15960 Frasch's Improvements on Petroleum Stills.



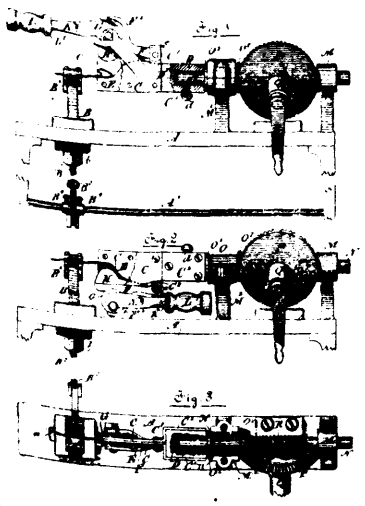
15961 Kurtis & Bray's Improvements in Stove Pipe Shelves.



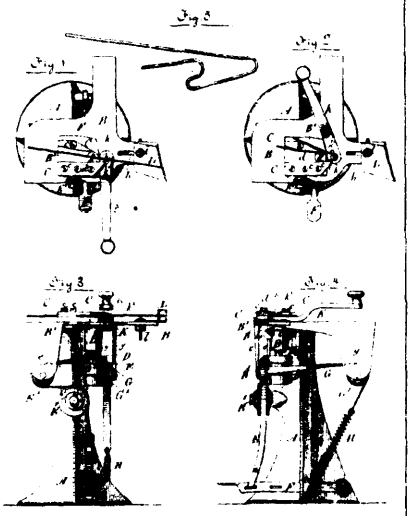
15962 Nichols & Thomson's Improvement in Fish Drying Houses and Apparatus.



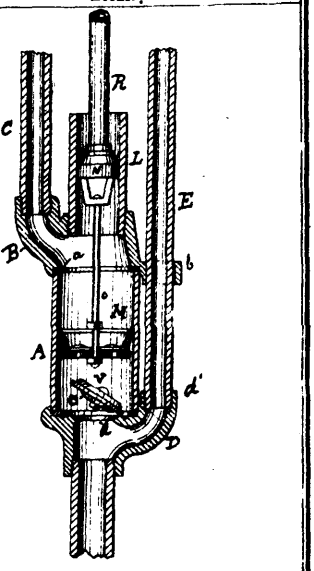
15963 Scheelky's Improvements on Sash Balances and Locks.



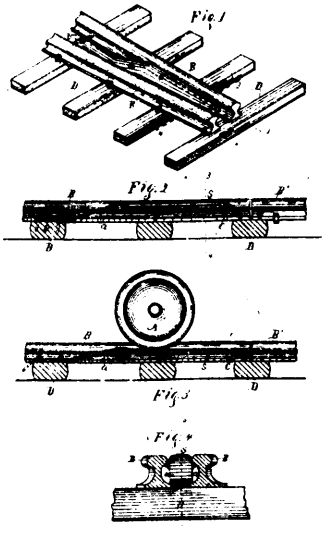
15964 Lenox's Improvements in Machines for Forming the Blanks of Wire Bale Ties.



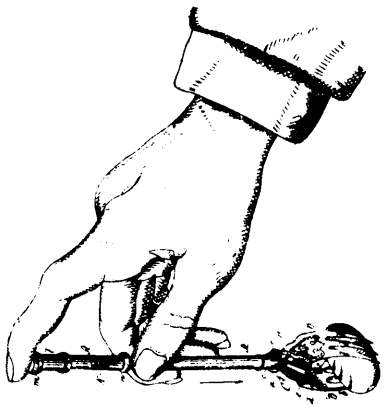
15965 Lenox's Improvements in Machines for Forming the Blank Hooks of Wire Bale Ties.



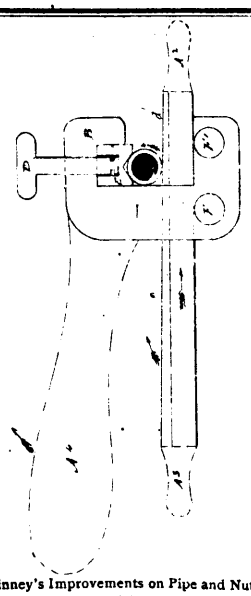
15967 Branson's Improvements on Double-Acting Pumps.



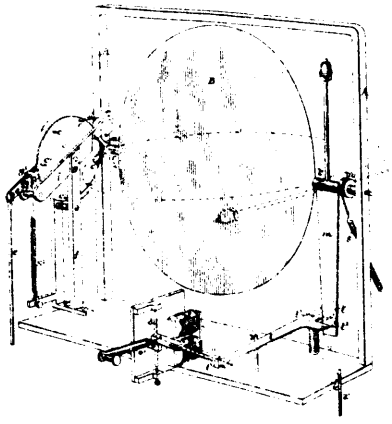
15968 Schan & Stronger's Railway Frog Protector.



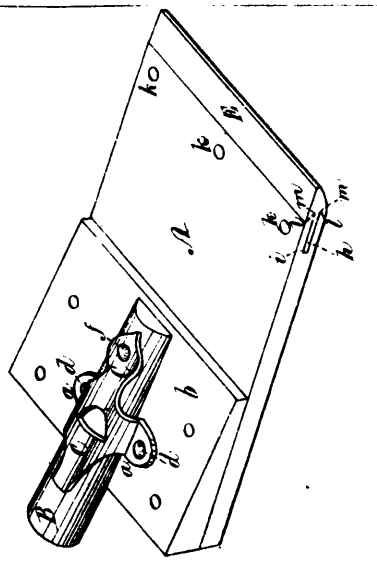
15969 Turner's Improvements on Culinary Forks.



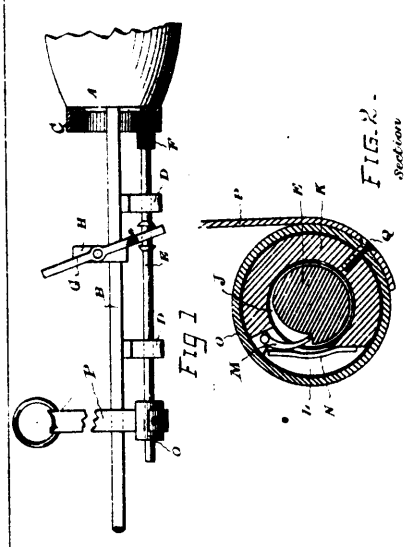
15972 Kinney's Improvements on Pipe and Nut Wrenches and Pipe Cutters.



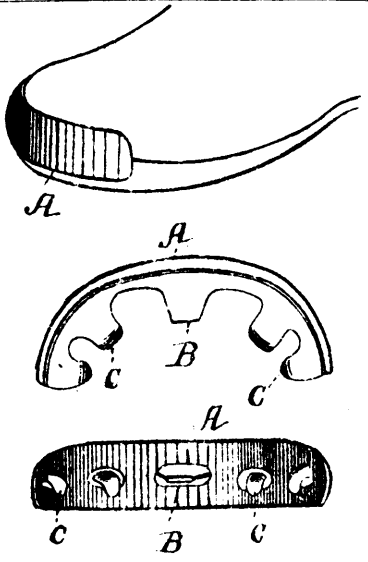
15973 Johnson's Improvements on Magneto-Electric Railway Signals.



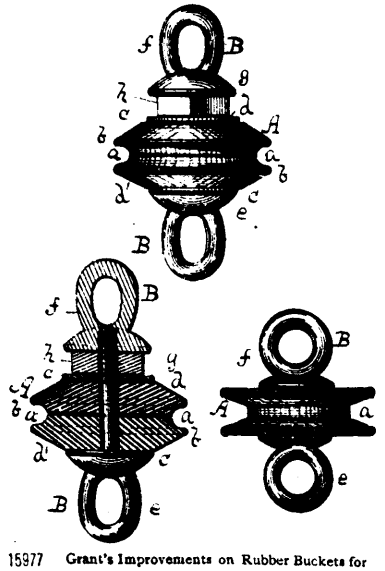
15974 Way's Improvements on Snow Shovels.



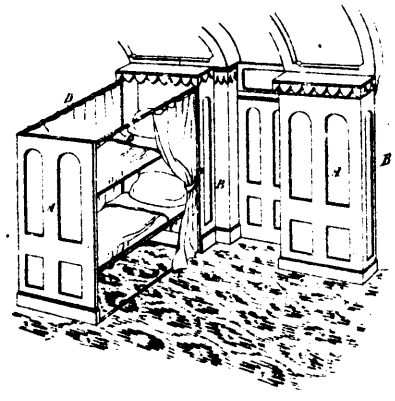
15975 Kirkland's Improvements on Vehicle Devices for Checking Horses.



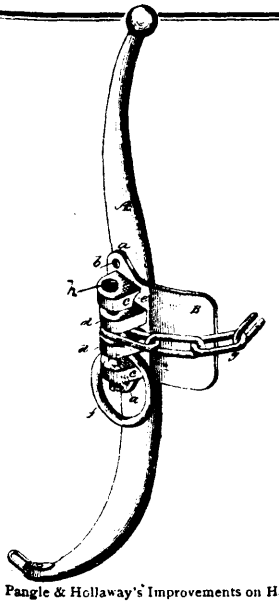
15976 Whittier's Improvements on Sole and Upper Protectors.



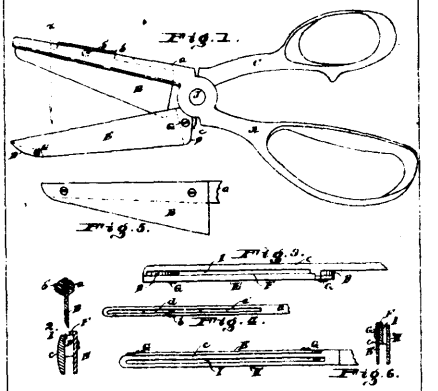
15977 Grant's Improvements on Rubber Buckets for Chain Pumps.



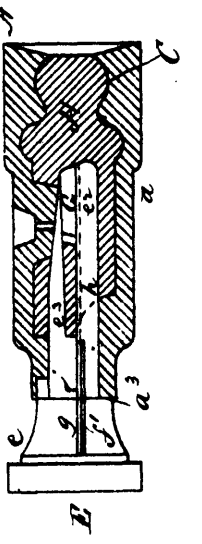
15978 Leve's Improvements in Berths for Steamers.



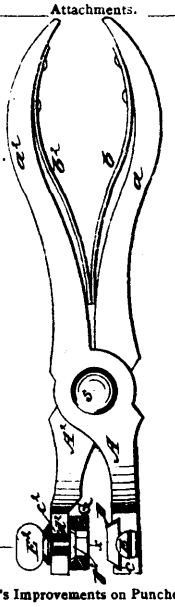
15979 Pangle & Hollaway's Improvements on Hame Attachments.



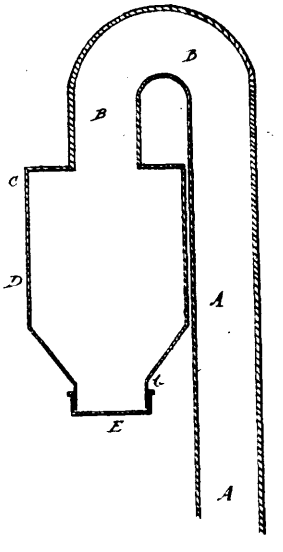
15980 Lytle's Improvements on Shears.



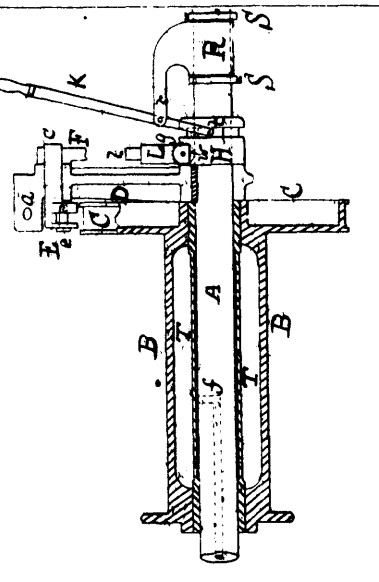
15981 Mills' Improvements on Candy Whistles and Moulds therefor.



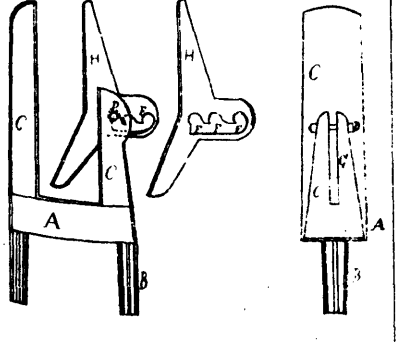
15982 Tignière's Improvements on Punches for Marking Cattle.



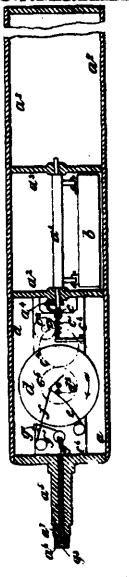
15983 Leslie's Improvements on Spark Arresters and Extinguishers.



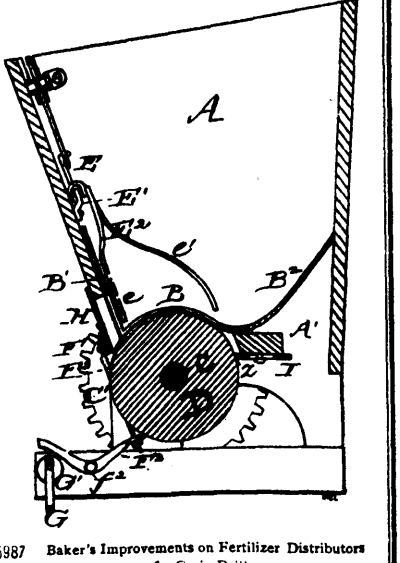
15984 Osgood's Improvements on Friction Clutches.



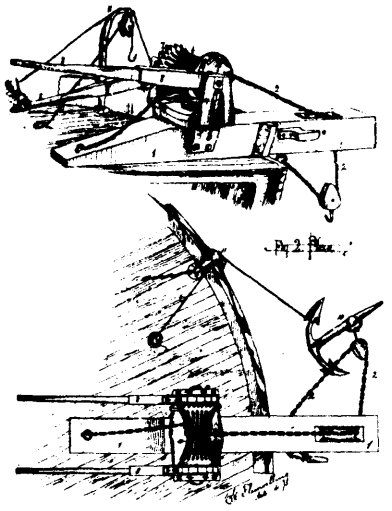
15985 Crispin's Improvements on Saw Clamps and Bench Irons.



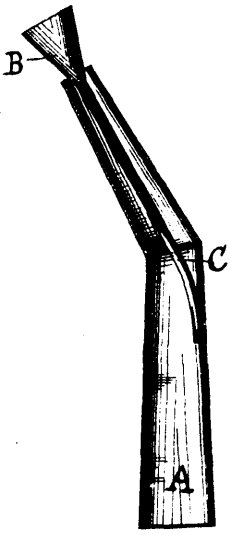
15986 Lowne's Improvements on Electric Locks.



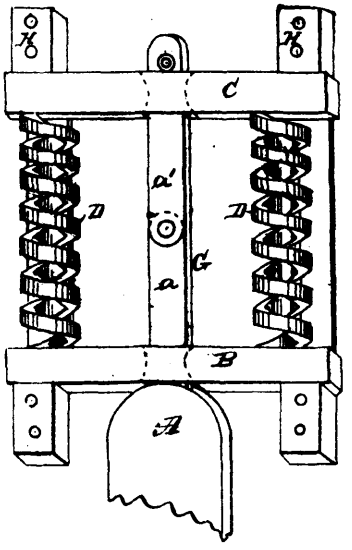
15987 Baker's Improvements on Fertilizer Distributors for Grain Drills.



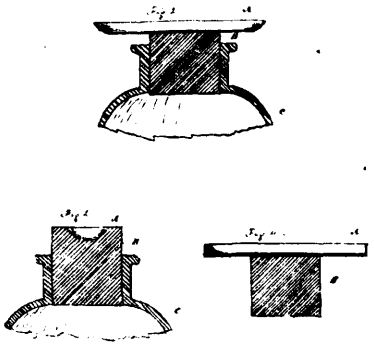
15988 Purdy's Improvements on Machines for Catting and Fishing Ships' Anchors.



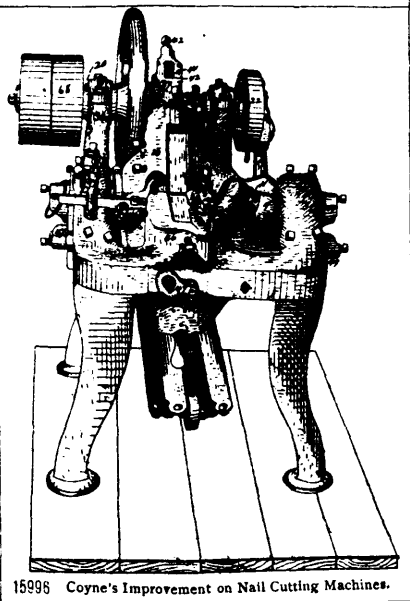
15989 Smith's Improvement in Nozzles for Sprinklers.



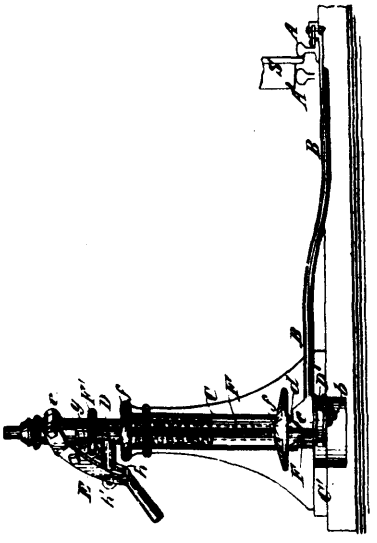
15990 McGtehan's Improvement in Car-Couplings.



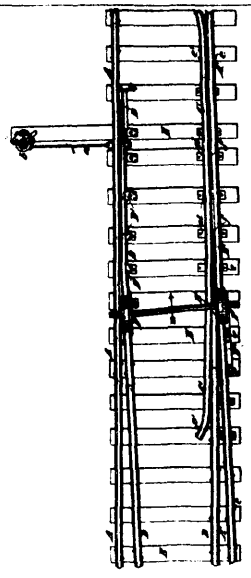
15995 Nesbitt's Improvements in Stoppers for Tooth Powder Bottles.



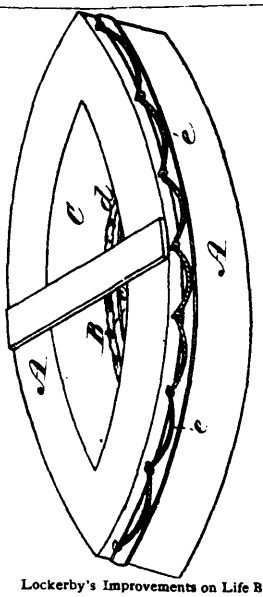
15996 Coyne's Improvement on Nail Cutting Machines.



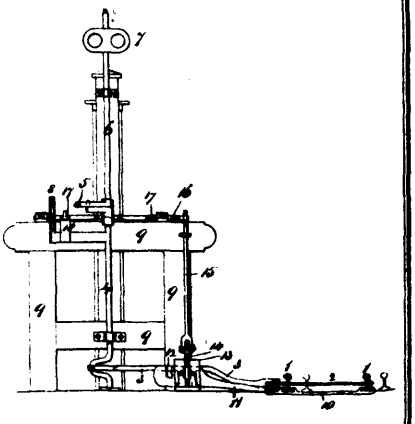
15997 Tracy's Improvements on Switch Stands.



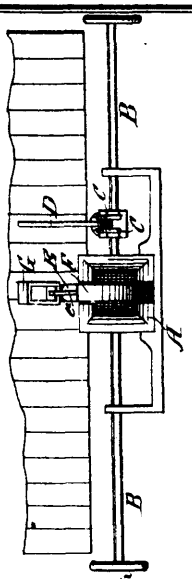
15998 Tracy's Improvements on Railway Switches.



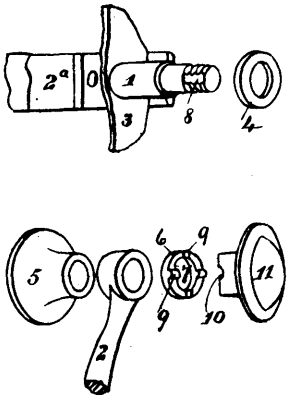
15999 Lockerby's Improvements on Life Boats.



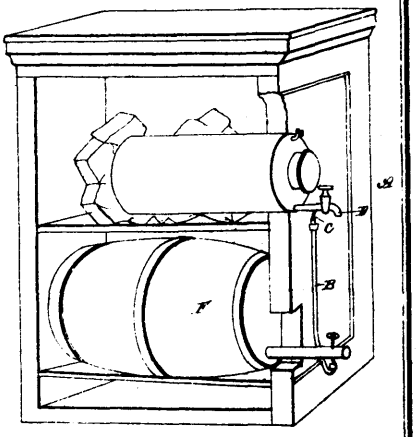
16000 Rowlands' Improvements on Railway Switch Fastenings.



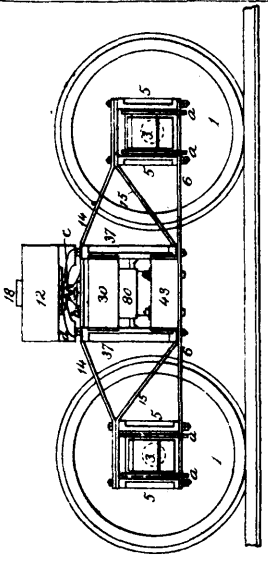
16001 Litton's Improvements on Car-Couplings.



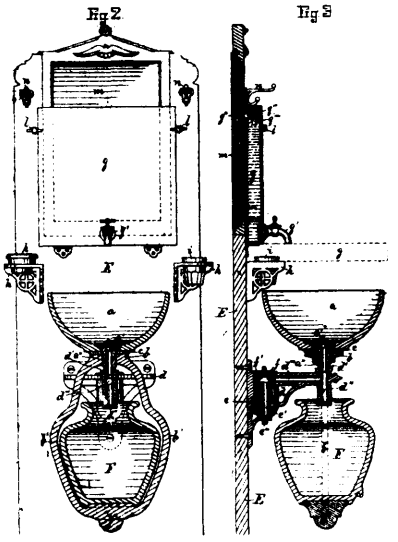
16002 Raymond's Improvements on Vehicle Tops.



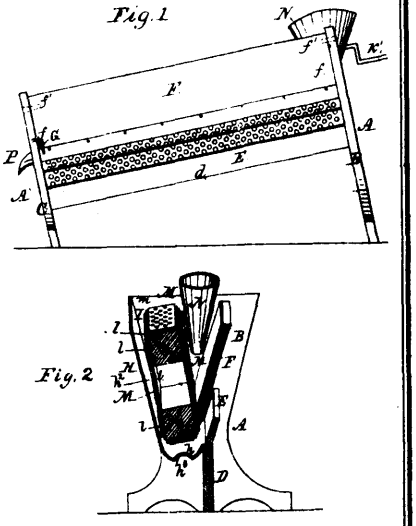
16003 Evenden's Improvements on Ale Condensers.



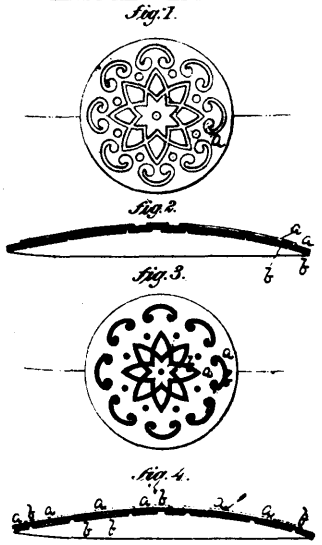
16004 Chisholm's Improvements on Car Trucks.



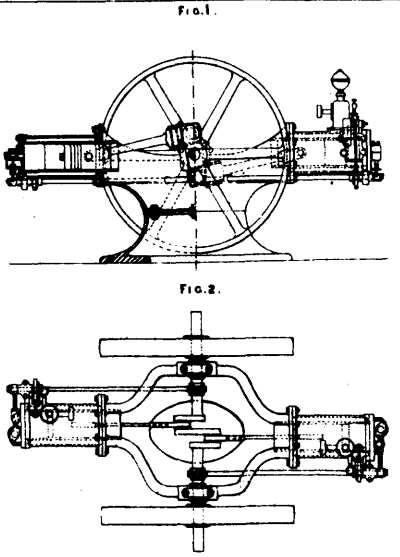
16005 Wellington's Improvements on Toilet Apparatus for Ships.



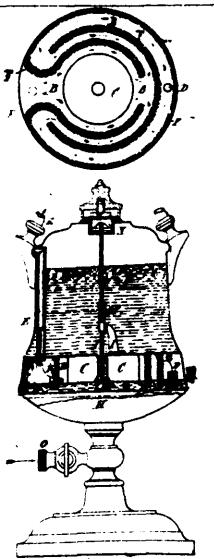
16006 Bales' Improvements in Cockle Machines.



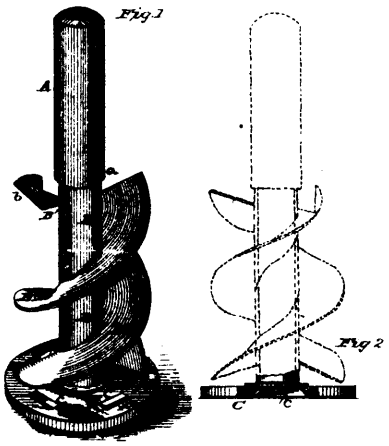
16007 Edge's Improvements on Inlaid Work, and Process for Producing the same.



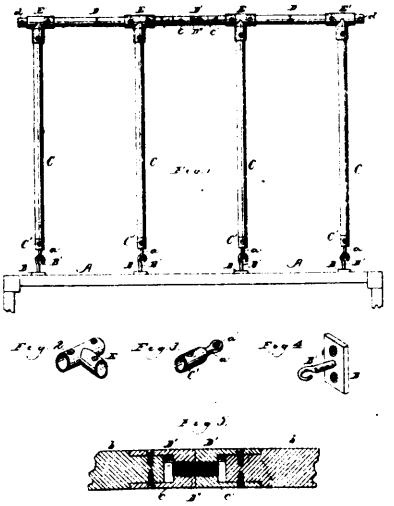
16008 Ashbury, Sumner, Lees & Sanderson's Improvements in Gas Motor Engines.



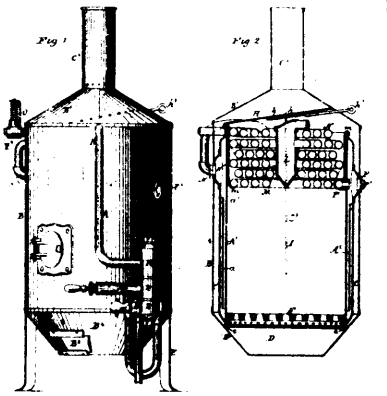
16009 Weston's Improvements on Apparatus Connected with Increasing the Illuminating Power of Coal Gas.



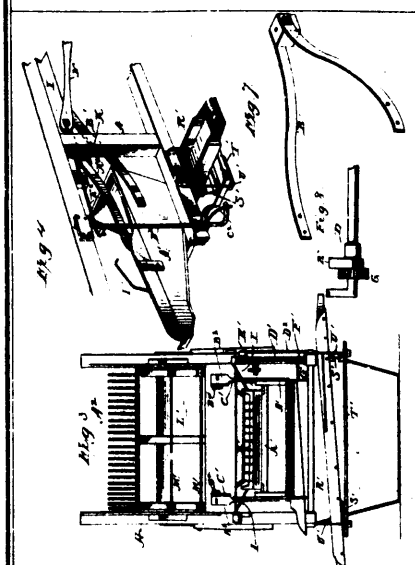
16010 Robinson's Improvements on Churn Dashers.



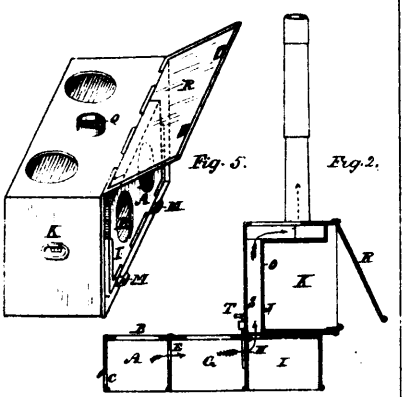
16011 Cook's Improvements on Awning Frames.



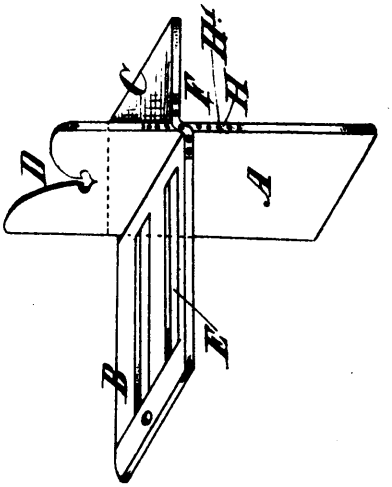
16013 Kellogg & Kirby's Improvements in Steam Boilers.



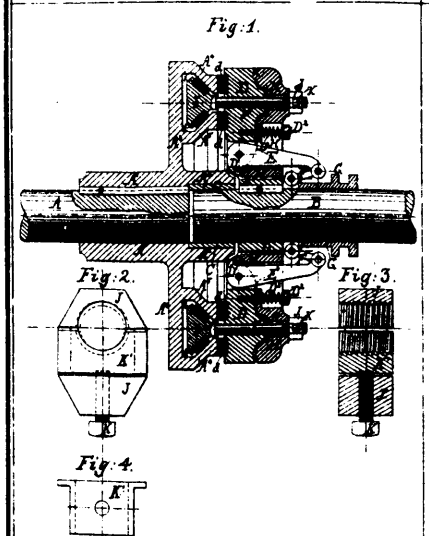
16014 Huber & Strobel's Improvements in Grain Thrashing and Separating Machines.



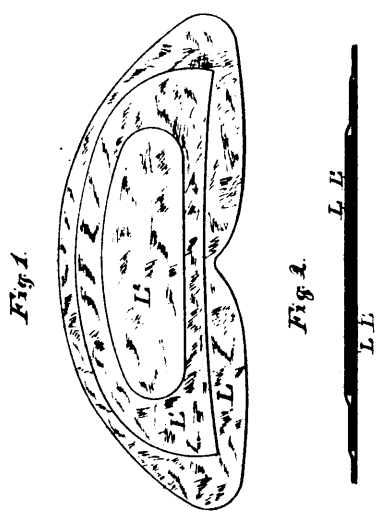
16015 Cole's Improvements on Camp Cooking Stoves.



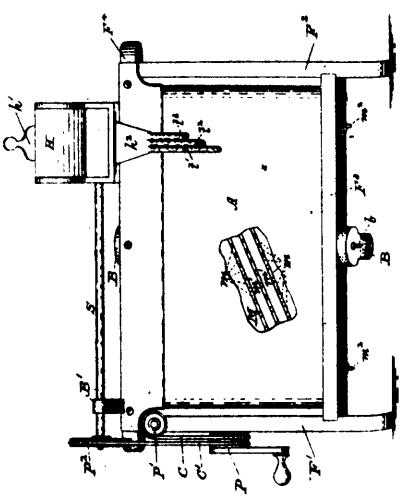
16025 Gourdeau's Improvements on Foot Rests.



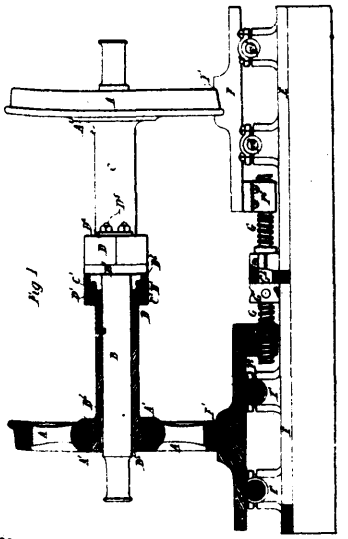
16026 Frisbie's Improvements on Friction Clutches.



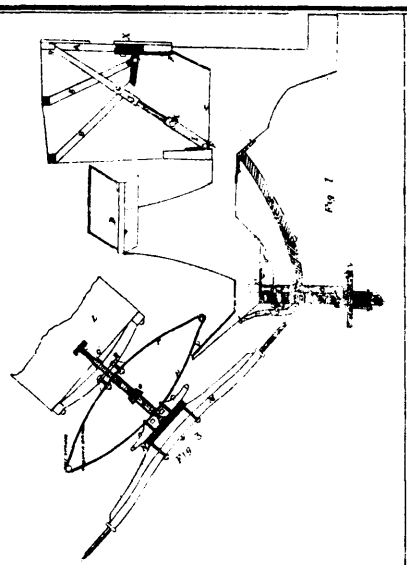
16027 Rochette's Improvements on Stiffeners for Boots and Shoes.



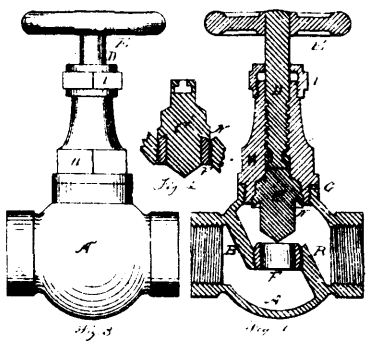
16028 LaBrèche-Viger's Improvements on Magnetic Ore Separators.



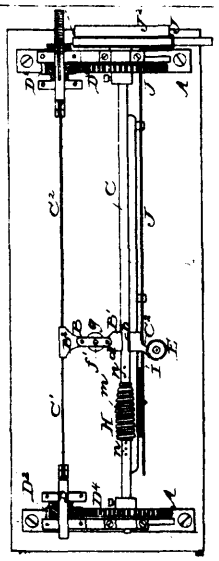
16035 Anderson's Improvements in Contrivances for Varying the Gauge of the Wheels of Rolling Stock.



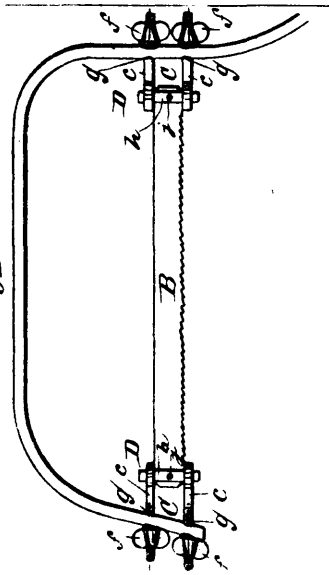
16036 Roy's Improvements on Carriages.



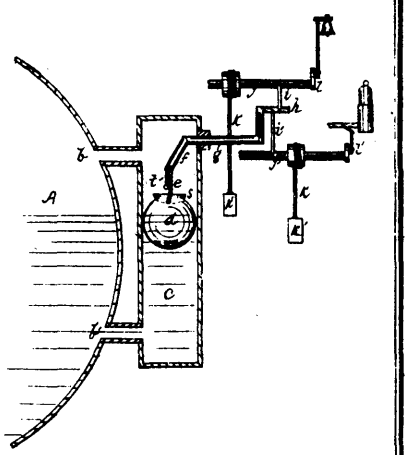
16037 Van Wie's Improvements on Globe Valves.



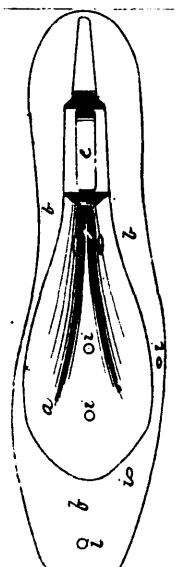
16038 Rice's Improvements on Wire Covering Machines.



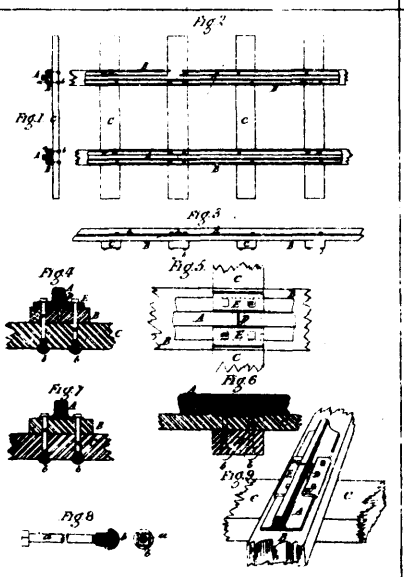
16039 Bennett's Improvements on Saw Frames.



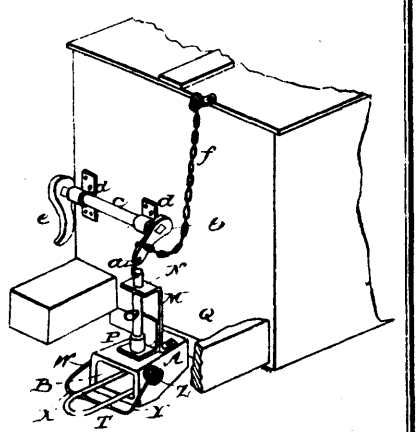
16040 Getchell's Improvements on Feed Water Alarms for Steam Boilers.



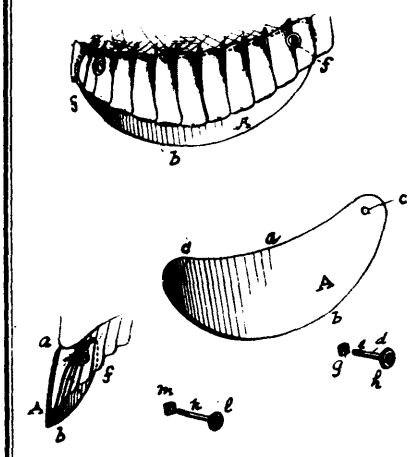
16041 Markie's Improvements in Metal Lasts.



16042 Seaton's Improvements on Permanent Ways.



16043 Eltzroth & Raypholtz's Improvements on Car-Couplings.



16044 Deeds' Improvements on Anti-Cribbing Attachments for Horses.

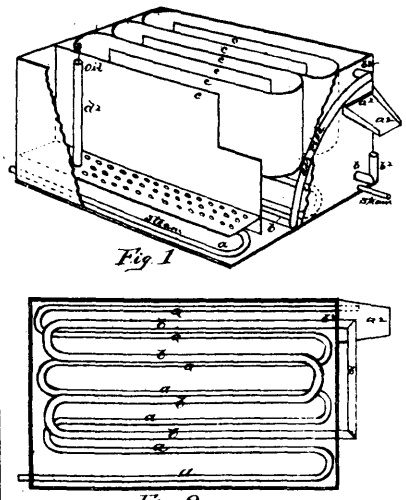
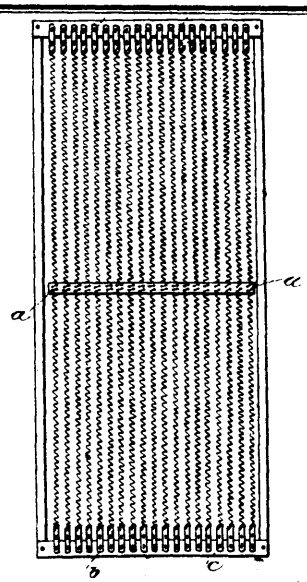


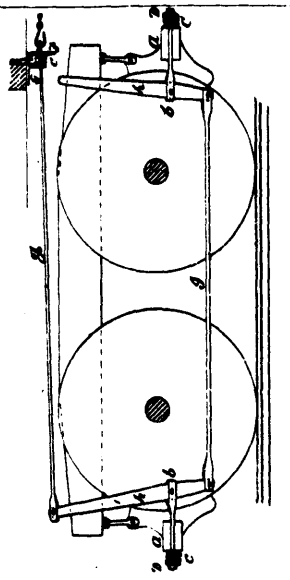
Fig. 1

Fig. 2.

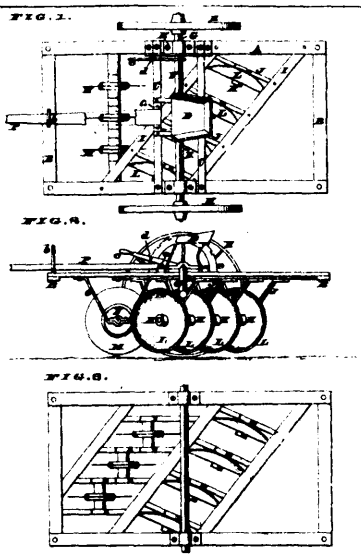
16045 Smith's Process and Apparatus for Improving the Fire Test of Oils.



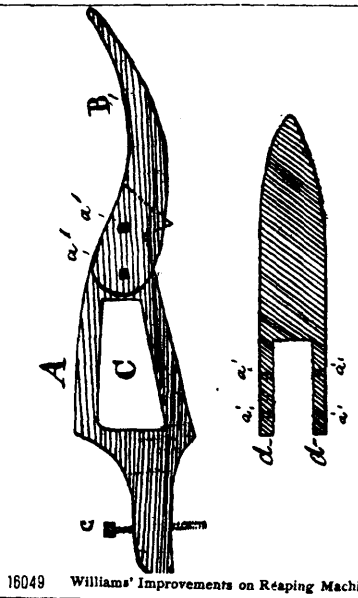
16046 Bartram's Improvements on Bed Bottoms.



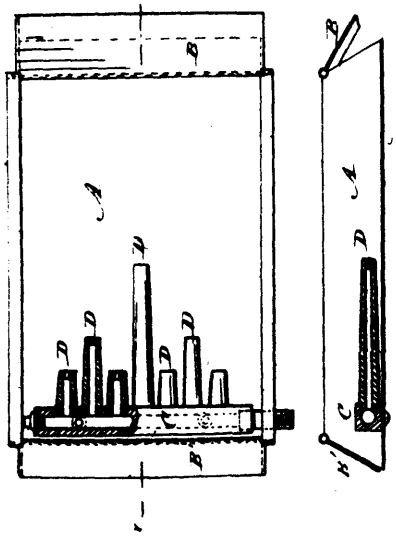
16047 Webb's Improvement on Railway Brakes.



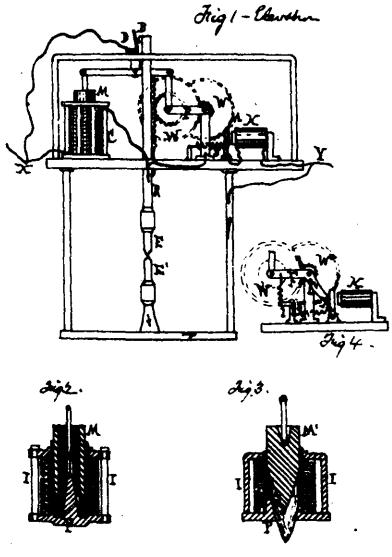
16048 Kyle's Improvements on Rotary Gang Machines.



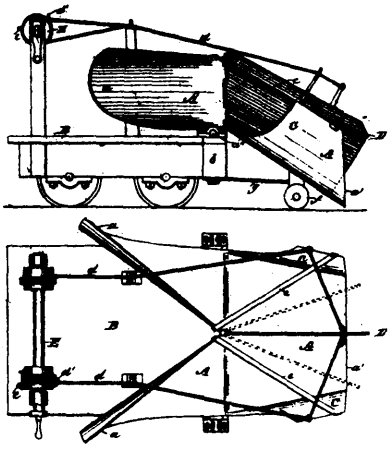
16049 Williams' Improvements on Reaping Machines.



16050 Kilborn & Smith's Improvements on Cleaning Ash Pans of Locomotive Engines.



16051 Thomson's Improvements on Electric Air Lamps.



16053 Resley's Improvement on Snow Ploughs.