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INVENTIONS PATENTED.

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

No. 36,913. Method of Manufacturing Coke.

(*Mode de fabrication du coke.*)

Frederick Josiah Jones, Bedford, County of Bedford, England, 2nd July, 1891; 5 years.

Claim.—The herein described process of making hard or foundry coke by the passage, transversely through the charge of coal to be coked, of hot gaseous products of combustion, whereby the hot gases are brought into direct contact with the charge and the volatilizable products distilled off are carried away as they are generated, as specified.

No. 36,914. Sweat Pad.

(*Coussinet absorbant la sueur.*)

Otto Hubner and Arthur Hubner, both of Breslau, Prussia, 2nd July, 1891; 5 years.

Claim.—A lining for hats, caps, and other head coverings for preventing the passage of perspiration to the exterior surface of the hat, consisting of a metallic band *b*, arranged as described, by which the inner lining is held, said band *b* being secured to the material of the hat, substantially as described.

No. 36,915. Support for Shelves.

(*Support pour rayons.*)

Otto Frederick Wegener, Seattle, Washington, U.S.A., 2nd July, 1891; 5 years.

Claim.—1st. The improved shelf-support herein described, comprising the main frame and the brackets, arranged one above the other and formed from strips of metal bent to form the horizontal portions or seats *D*, the braces *F*, and the upright or connecting portions *G*, such portions *G*, being lapped against and secured to the main frame, substantially as set forth. 2nd. As an improved article of manufacture, the shelf-support herein described, consisting of the main frame having standards and cross or connecting bars and diagonal braces and the brackets, bent from strips of metal to form the horizontal portion or seat *D*, the keeper *E*, the brace *F*, and the upright or connecting portion *G*, and having such portion *G*, lapped against and secured to the standards of the main frame, substantially as set forth.

No. 36,916. Automatic Discharge Valve for Sewer Pipes.

(*Soupape automatique de decharge pour tuyaux d'égout.*)

Charles H. Shepherd, New York, State of New York, U.S.A., 2nd July, 1891; 5 years.

Claim.—1st. In an automatic discharge valve for sewer pipes, the combination, with the valve *E*, and valve-closing lever *F*, provided with the spring pressed ratchet bar *I*, of the spring pressed catch lever *d*, the spring pressed catch *h*, provided with the roller *j*, the weighted lever *K*, and the inclined plane *c*, substantially as specified. 2nd. In an automatic discharge valve for sewer pipes, the combination, with the sewer pipe *A*, of the valve *E*, the rock-shaft *C*, provided with the arm *B*, the valve closing lever *F*, the spring pressed ratchet bar *I*, carried thereby, the casing *b*, furnished with the inclined plane *c*, the catch lever *d*, the spring *e*, the catch *h*, the roller *j*, the spring *i*, the weighted lever *K*, and the limit screw *l*, substantially as specified.

No. 36,917. Wheel for Grinding Stone.

(*Roue de meule.*)

George Barney Eckhardt, Toledo, Ohio, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. A grinding wheel, consisting of a series of connected eccentrically disposed fingers. 2nd. A grinding wheel provided with eccentrically disposed fingers, and a plate connecting said fingers. 3rd. A grinding wheel constructed with a series of eccentrically arranged fingers and removable points carried by the outer series of fingers. 4th. A grinding wheel provided with eccentrically disposed fingers, said fingers being arranged in concentric series. 5th. A grinding wheel constructed with a series of fingers arranged, substantially eccentric to their pivotal point. 6th. A grinding wheel, constructed of a series of eccentrically arranged fingers, the outer of the said series being provided with removable points, a cover adapted to fit on said wheel, and means for holding the cover in position. 7th. A grinding wheel, constructed of a series of fingers arranged, substantially eccentric to their pivotal point, the inner faces being provided with recesses.

No. 36,918. Spike for Railways.

(*Chevillette de chemin de fer.*)

Walter J. Hammond and John Gordon, both of Rio de Janeiro, Brazil, South America, 4th July, 1891; 5 years.

Claim.—1st. A railroad spike, provided with a head having a beveled side, and provided with a series of steps adapted to successively engage the edges of the base of the rail when the spike is further driven after having become loose, substantially as shown and described. 2nd. A railroad spike, comprising a shank, and a head formed on the said shank and having two oppositely arranged, beveled sides, one of the said sides being provided with a series of steps or notches, substantially as shown and described.

No. 36,919. Pipe. (Pipe.)

John Emmet McGill, Detroit, Michigan, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a pipe bowl, made of corn cob and filler applied inside and out, and consisting of clay, applied substantially as described. 2nd. As a new article of manufacture, a pipe bowl made of corn cob, and a filler applied inside and outside consisting of pipe clay, and of a finish such as shellac applied to the outside only, substantially as described. 3rd. As a new article of manufacture, a pipe bowl made of corn cob having a filler of clay on the inside and outside, an extra layer applied to the inside thereof and a finish such as shellac applied to the outside, substantially as described.

No. 36,920. Reed Organ. (Orgue.)

F. Lewis Scribner, Chatham, Ontario, Canada, 4th July, 1891; 5 years.

Claim.—1st. In an organ having one or more sets or series of reeds and keys, the wind passages *W* without reeds and speaking pipes *D*, substantially as hereinbefore described and shown. 2nd. In an organ, the combination, with the flue-pipe *D*, of the opening *G*, and the movable valve *H*, substantially as and for the purposes shown and described. 3rd. In an organ, the combination, with the flue-pipe *D*, of the adjustable lip *L*, substantially as and for the purposes described and shown. 4th. In an organ, the combination, with the air-forcing and controlling mechanism of the reed tube *B*, containing the reed *R*, wind passage *W*, flue-pipe *D*, lip *L*, openings *G*, and valve *H*, substantially as hereinbefore described and shown.

No. 36,921. Road Cart. (Désobligante.)

William Luther Pike and Byron Halsey Sykes, both of Groton, New York, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. The combination, with the body, the axle and shafts, of a spring on each side of the body, consisting of sections united at

the rear, having the upper sections secured to the body and at the front end to the shaft, the lower section being secured to the axle, and at the front end connected to an adjustable bearing upon the front end of the lower part of the body, as set forth. 2nd. The combination, with the body, the axle, and the shafts of a spring on each side of the body, consisting of an upper and lower section united at their rear ends, the upper section being secured to the body and thence extending forward and having its front end secured to a shaft, and the lower section secured to the axle, and thence extending forward and having its front end adjustably connected to the front of the body, and coiled springs secured to the axle and to the rear ends of the shafts, substantially as set forth.

No. 36,922. Fence Making Machine.

(*Machine à cloture.*)

William Henry Smith, Fairfield, Nebraska, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. The herein described fence making machine, comprising a series of twisting heads having the toothed portions and the gear wheels engaging therewith, and provided with short studs projecting therefrom, and the movable frame having arms connected to said studs, substantially as set forth. 2nd. As an improvement in fence making machines, the twisting heads having toothed portions and opposite slits or openings, in combination with the gear wheels in engagement therewith and the movable frame connected to said gear wheels, substantially as set forth. 3rd. The herein described fence making machine, comprising a series of twisting heads having toothed portions and opposite slits or openings, the gear wheels engaging therewith and provided with short studs projecting therefrom, and the movable frame connected to said studs, substantially as set forth. 4th. The combination, with the frame having the lateral arms provided with end grooves or recesses, of the twisting heads having central reduced portions in said grooves or recesses, and the removable blocks or sections securing said twisting heads in place, substantially as set forth.

No. 36,923. Signal for Electric Railways.

(*Signal de chemin de fer électrique.*)

Charles Darwin Tisdale, Boston, Massachusetts, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. A railway divided into electric blocks or sections, each of which has a signal at each end independent of the other blocks or sections, in combination with electric circuits and electric motors or electro magnets arranged between the two signals of a block or section, said electric circuits being adapted to be alternately opened and closed for the setting and unsetting of the signals of the blocks or section, substantially as described. 2nd. In a railway, a signal on a revolving shaft, a lantern, a suitable support for said lantern which is connected to the signal shaft and arranged to be revolved therewith, in combination with electric circuits and an electro motor or electro magnet for operation on said shaft, and support for the setting and unsetting of the signal and lantern, substantially as and for the purpose specified. 3rd. In an electric railway signal, the combination, with a vertical shaft adapted to turn in suitable bearings, a lantern supported thereon, an arm suitably connected to an electric motor or armature of an electro magnet and having a mitre gear secured thereto, of a signal or semaphore secured to a horizontal shaft adapted to turn in bearings in a suitable support, having a cord and weight attached thereto and provided with a mitre gear engaging with the vertical shaft gear, for the purpose specified. 4th. In a railway, a signal on a revolving shaft, a cord or weight secured to said shaft, in combination with an electro magnet and its armature, one end of said cord being attached to the armature, substantially as and for the purpose specified.

No. 36,924. Plumb for Builders.

(*Plomb pour constructeurs.*)

William John Workman, Toronto, Ontario, Canada, 4th July, 1891; 5 years.

Claim.—A plumb bob suspended by a plumbing line within a closed recess formed within a plumb board, in combination with a pendulum pivoted within the said recess at a point near the plumb bob, and having a pin formed on it to project through an opening in the plumb board.

No. 36,925. Building Block, or Shape Brick.

(*Bloc de construction ou brique.*)

Rudolf Bohme, Berlin, Prussia, 4th July, 1891; 5 years.

Claim.—A shaped brick or building block having the shape of two truncated wedges one above the other, the width and height of both of said truncated wedges being the same, and the inclination of sides of both of said truncated wedges being the same, the other two sides of the brick being plane faces, substantially as set forth.

No. 36,926. Revolving Churn.

(*Baratte rotative.*)

George Branum Dowsell, Hamilton, Ontario, Canada, 4th July, 1891; 5 years.

Claim.—1st. In a revolving churn, the combination of the head E, on the top of the staves B, fitting in the cork seat D, around the bottom of the head C, in connection with the metal ring I, on the inside of staves B, as described. 2nd. In a revolving churn, the combination of the gas vent G, screwed through the stave B, and flange N, with the flaring rim O, and recessed plate K, with the gas ducts L, all substantially as herein set forth.

No. 36,927. Coil Spring Power Hammer.

(*Marteau mécanique pour ressorts spiraux.*)

Philippe D. Dupont, St. Johnsbury, Vermont, U.S.A., 4th July, 1891; 5 years.

Claim.—1st. The combination, of the box B, front plate C, and bolts W, substantially as and for the purpose hereinbefore specified. 2nd. The combination, in a coil spring power hammer, of the links H, arms F, and slip sleeve U, substantially as and for the purpose hereinbefore specified. 3rd. The combination of the arms F, links H, spring G, collars I, set screws J, and check nuts P, substantially as set forth and for the purpose specified. 4th. The combination of the slotted connecting rod L, slotted crank plate N, crank pin Z, substantially as and for the purpose specified. 5th. The combination of the solid head Q, internal bushing P, crank shaft O, and crank N, substantially as and for the purpose specified. 6th. The combination of the coiled spring G, the collars I, set screws J, and check nuts P, substantially as shown and for the purpose specified. 7th. The combination of the joint pins d, the bushing p, and pin q, as shown and for the purpose specified. 8th. The combination of the lug D, head Q, with lug pin a, arm T, and pulley S, as shown and for the purpose specified.

No. 36,928. Piano.

(*Piano.*)

George Steak, New York, State of New York, U.S.A., 7th July, 1891; 5 years.

Claim.—1st. The combination of plate a, with perforated rails b, rods c, passing through the perforations and nuts d, embracing the rods, the perforations in the rails being larger than the perforations in the nuts, substantially as specified. 2nd. The combination of plate a, with rails b, having countersunk perforations b', rods c, passing through said perforations and nuts d, embracing the rods and entering the countersunk perforations, substantially as specified. 3rd. The combination of the plate a, with step-shaped rails having countersunk perforations, rods passing through said perforations, and with nuts embracing the rods and having rounded ends that are received by the countersunk perforations, substantially as specified. 4th. The combination of plate a, with a sound producing spring consisting of a lower plate g, and of an upper spring e, secured to and projecting beyond plate g, substantially as specified.

No. 36,929. Artificial Hand.

(*Main artificielle.*)

Samuel Lucas, Poguetanuck, Connecticut, U.S.A., 7th July, 1891; 5 years.

Claim.—1st. The combination, with a palm having hinged thereto a series of fingers with ratchet teeth, a corresponding series of spring pawls, as set forth, and a corresponding series of springs connecting the said palm and fingers, substantially as and for the purpose specified. 2nd. In an artificial hand formed essentially of a series of hinged fingers with ratchet teeth and pawls, as set forth, and in combination therewith, a thumb pivotally attached to said hand and formed with a strengthening boss that is seated in a mortise in said hand, substantially as specified. 3rd. In an artificial hand, a series of hinged fingers with ratchet teeth, a corresponding series of pawls engaging said teeth, and means as set forth, for raising said pawls, the said fingers being rigid from the hinge joint outward and partly closed, as and for the purpose specified. 4th. In combination, with an artificial hand, a shank pivoted therein and arranged to yield laterally under pressure, and a spring, substantially as described, for holding said shank normally in alignment with the hand. 5th. In an artificial hand, a series of hinged fingers with ratchet teeth, a corresponding series of pawls engaging said teeth, and a fork or similar tool clamped to one of said fingers by a spring ferrule, as described.

No. 36,930. Burglar Alarm.

(*Avertisseur à sonnerie.*)

George Arter, Cleveland, Ohio, U.S.A., 7th July, 1891; 5 years.

Claim.—1st. The combination, in an alarm sounder, of the plate A, a bolt M, loosely secured thereto, having its ends m, and N, projected outside of the diameter of said plate, its front end adapted to rest against an opposing object, the rear end portion N, to form a handle by which said portion of the bolt may be thrown into or out of engagement with the retaining shoulder E, and a spring to throw the bolt longitudinally and transversely and to hold it out of engagement with the movement and the shoulder, substantially as described and for the purpose set forth. 2nd. The combination, in an alarm, of the plate A, having a perforation C, on one side of its central portion, and a perforation D, on the other side diametrically opposite or thereabout, the latter having a retaining shoulder E, and a bolt M, having its ends m, and N, projected outside of the diameter of the plate A, said bolt adapted at its front portion for a longitudinal movement, and at its rear portion for longitudinal and transverse movement, projected portions o, to engage the movement and portion p, to engage the shoulder E, to hold the portion o, in engagement with the movement, substantially as described and for the purpose set forth.

No. 36,931. Machinery for Moulding and Pressing Clay, Coal Dust, etc.

(*Aggloméré d'argile et de poussière de charbon.*)

William Johnson, Leeds, York, England, 7th July, 1891; 5 years.

Claim.—1st. The pistons b¹, b², the slots b³, the links n, and the inclines n¹, n², in combination with the main shaft A, the pressing cams l, l', the two cam wheels H, with the parts g, g', the presser head D, provided with plungers d, substantially as and for the pur-

pose set forth. 2nd. The pistons b^1 , b^2 , the slots b^3 , the links n , the inclines n^1 , n^2 , and the springs u , in combination with the presser head D , the plungers d , the cam wheels H , the parts g , g , the tappets S , the lever q , the charger O^1 , and the hopper O , substantially as and for the purpose set forth. 3rd. The links n , the packings n^2 , the facings n^3 , the bar m , in combination with the moulds b , the pistons b^1 , b^2 , or with solid pistons the plungers d , and the cam wheels H , substantially as and for the purpose set forth. 4th. The springs u , the cross beam u^2 , with recesses u^1 , substantially as and for the purpose set forth. 5th. The springs u , in combination with the pistons b^1 , b^2 , or with solid pistons, the moulds b , and the plungers d , substantially as and for the purpose set forth.

No. 36,932. Composition for Plaster, etc.

(Composition pour le plâtre, etc.)

George West, Syracuse, New York, U.S.A., 7th July, 1891; 5 years.

Claim.—The composition of matter, consisting of two pounds of glue, and two pounds of boracic acid, as set forth.

No. 36,933. Composition for Plaster, etc.

(Composition pour le plâtre, etc.)

George West, Syracuse, New York, U.S.A., 7th July, 1891; 5 years.

Claim.—The composition of matter, consisting of thirty pounds of glue, ten pounds of sal soda, thirty pounds of water, and twenty-five pounds of pulverized absorbent, as set forth.

No. 36,934. Compound for Plastering.

(Composition pour crépir.)

George West, Syracuse, New York, U.S.A., 7th July, 1891; 5 years.

Claim.—The improved composition of matter, consisting of two parts of glue, two to three parts of dextrine, and a dry mineral absorbent, substantially as specified.

No. 36,935. Rubber Lining for Hose.

(Garniture de caoutchouc pour boyaux.)

Ernest Nathaniel Foute, Cleveland, Ohio, U.S.A., 7th July, 1891; 5 years.

Claim.—1st. In a method of making collapsible seamless tubular rubber lining for hose, introducing into the collapsible seamless tubular lining at or near its point of formation a substance that will prevent the inner periphery of said seamless tubular rubber lining from sticking together, substantially as set forth. 2nd. In a method of making collapsible seamless tubular rubber lining for hose, introducing into the interior of the tube prior to its collapsing, a substance that will prevent its inner periphery from sticking together, substantially as set forth. 3rd. In a method of making collapsible seamless tubular rubber lining for hose, introducing into the tubular rubber lining as it emerges from the tube making machine, a substance that will prevent the inner periphery of the tube thus formed from sticking together, substantially as set forth.

No. 36,936. Road Cart. (Désobligeante.)

William Luther Pike, Groton, New York, U.S.A., 7th July, 1891; 5 years.

Claim.—1st. In a road cart, an axle, shafts secured thereto, half-elliptic spring connected to the axle, a full elliptic spring mounted thereon, a spring-bar upon the latter and a body mounted upon said bar, in combination with a strap extending from the front cross-bar, having openings therein through which said strap is secured to the body and for the purpose of adjusting the height thereof. 2nd. In a road cart, an axle, shafts secured thereto, half-elliptic spring connected to the axle, a full elliptic spring mounted thereon, a spring-bar upon the latter, and a body mounted upon said bar, in combination with springs secured to the under side of the shafts, thence extending forward parallel with the body, and then bent inward to bring their front ends beneath the front of the body.

No. 36,937. Mechanical Movement.

(Embrayage à friction.)

Lucius Sanford Edleblute and Friedrich Mueller, both of Sheboygan, Wisconsin, U.S.A., 8th July, 1891; 5 years.

Claim.—1st. A mechanical movement comprising a rotary device having one side thereof provided with central grooves that intercept each other at right angles, a loose ring set in the rotary device beyond the grooves and provided with a stud having its path in a circular space that crosses said grooves, a pitman connected to the ring-stud, and blocks on the pitman arranged to engage the aforesaid grooves, substantially as set forth. 2nd. A mechanical movement comprising a rotary device having one side thereof provided with central grooves that intercept each other at right angles, a loose ring set in the rotary device beyond the grooves and provided with a stud having its path in a circular space that crosses said grooves, a lubricant channel surrounding the ring within said rotary device, a porous packing interposed between said channel and ring, a pitman connected to the ring-stud, and blocks arranged on the pitman to engage the aforesaid grooves, substantially as set forth.

No. 36,938. Mechanical Movement.

(Embrayage à friction.)

Lucius Sanford Edleblute and Friedrich Mueller, both of Sheboygan, Wisconsin, U.S.A., 8th July, 1891; 5 years.

Claim.—1st. A mechanical movement comprising a rotary device

centrally provided with a lubricant space, and having intercepting grooves in one of its sides, these grooves provided with leads that communicate with said lubricant space, a sliding block arranged in each groove, and a pitman connected to the blocks, substantially as set forth. 2nd. A mechanical movement comprising a shaft provided with a lubricant channel, a disk fast on the shaft and having a central lubricant space and intercepting grooves, the latter being provided with leads that communicate with said lubricant space, a sliding block arranged in each groove, and a pitman connected to the blocks, substantially as set forth.

No. 36,939. Frame for Buck Saws.

(Chevalet à crémaillère.)

Cosmas J. Shurly and Jerome C. Dietrich, both of Galt, assignees of Charles Cruikshank, of Pembroke, both in Ontario, Canada, 8th July, 1891; 5 years.

Claim.—1st. The buck-saw frame, consisting of the longer and shorter end pieces A , B , the resistance bar C , connecting the middle of said piece A , with the piece B , near the top and the straining rod D , passing through said pieces A , B , immediately above or on top of the resistance bar C . 2nd. The combination of the longer piece A , and shorter piece B , of the main frame the connecting bar C , the straining rod D , on top of said bar C , and the saw-blade F , provided with a tang H , and thumb nut J , as set forth.

No. 36,940. Protector for Set Screws.

(Protecteur pour vis d'arrêt.)

Harry Brant Walmsley, Beverly, Massachusetts, U.S.A., 8th July, 1891; 5 years.

Claim.—1st. The improved set screw protector, consisting of a hollow elastic ball or bulb having a perforated base or bottom adapted to be secured on the set screw, substantially as and for the purpose set forth. 2nd. The improved set screw protector, consisting of a hollow elastic ball or bulb having a perforated base or bottom adapted to be secured to the set screw, and having external base extensions or projections, substantially as and for the purpose set forth. 3rd. The combination of a shaft, a hub or collar thereon, and a set screw for securing such parts together, with a guard or shield consisting of a hollow elastic ball or bulb having a perforated base adapted to be secured on the set screw, substantially in a manner as specified.

No. 36,941. Gas Stove. (Poêle à gaz.)

Thomas Edward Spencer, Toronto, Ontario, Canada, 9th July, 1891; 5 years.

Claim.—1st. In a gas stove, a heating chamber formed between the flame plate and oven bottom, and supplied from the outside by means of draft pipes inserted between the inner and outer casings, the said draft pipes having openings at or near the oven bottom to take in air, passage way from the heating chamber entering in the oven at or near the back of the oven top, and perforations from the oven into the smoke space, substantially as and for the purpose set forth. 2nd. In a heater for gas stoves, the combination of an outer casing, upper and lower water chambers, pipes for connecting the same, and a cylindrical deflector surrounding the connecting pipes, said deflector connected at its top and bottom within the outer casing forming a closed annular chamber, substantially as set forth. 3rd. In a heater for gas stoves, the combination of an outer casing, upper and lower water chambers, pipes for connecting the same, and a cylindrical deflector surrounding the connecting pipes, said deflector provided at its upper and lower ends respectively with concave, and convex flanges connecting the same with the outer casing, substantially as set forth. 4th. In a heater for gas stoves, the combination of an outer casing, an inner deflecting casing provided at its upper and lower ends with concave and convex flanges respectively connecting the same with the outer casing, upper and lower water chambers provided with projecting vertical flanges, tubular pipes connecting the same, a flow pipe fitted to the upper chamber, a supply pipe entering the lower water chamber, and a burner, substantially as set forth.

No. 36,942. Manufacture of Iron and Steel Tubes. (Fabrication du fer et de l'acier.)

Henry Howard, of Coomb's Wood, Halesowen, Worcester, England, 9th July, 1891; 5 years.

Claim.—The improvements in the manufacture of iron and steel tubes hereinbefore described and illustrated in the accompanying drawings, that is to say, raising to a welding heat a part or the whole of the skelp immediately after its formation and while still hot, and welding its edges by pressure effected either by a bell or tongs or rolls, without allowing the heated skelp to cool, thus making the formation of the welded tube from the strip of iron or steel one process or combination of processes, substantially as described and illustrated.

No. 36,943. Electric Conductor.

(Conducteur d'électricité.)

John J. Saville and James H. Winspear, both of Omaha, Nebraska, U.S.A., 9th July, 1891; 5 years.

Claim.—1st. The combination of the transmitter E , the power wire F , lateral wire g , covered and embedded in insulating water proof material, the frame carried by the car truck and having pendent arms connected by cross bars, the carrier bar formed of sections having lateral and vertical movement arms depending from said carrier bar, and having clamps and the conductor wire, substantially

as set forth. 2nd. The combination of the transmitter E, having the compound wheel H, and rubber seat and casting Z, and the wires F, G, and C, substantially as set forth. 3rd. The combination of the transmitter E, the power wire F, lateral wire G, the frame carried by the car truck and having pendent arms connected by cross bars, the carrier bar formed of sections having lateral and vertical movement arms depending from said carrier bar, and having clamps wheels carried by the end ones of the lateral arms, springs connecting said end of said arms to pendent guards of the carrier, and the conductor wire engaged by said clamps and having connection with the transmitter, substantially as specified.

No. 36,944. Horse Power. (*Mandé à un cheval.*)

Arthur F. Clement, Hastings Centre, New York, U.S.A., 9th July, 1891; 5 years.

Claim.—1st. The combination, with the jack provided with suitable guide pulleys and rollers, of a frame work located in front of the same and at one side thereof, a shaft journaled in the frame work, a series of arms radiating from the shaft and provided with flared plates secured to their upper and lower sides and at their front sides with notched cable-receiving plates 17, and a cable mounted in the arms and passing over the guide rollers to the jack, substantially as specified. 2nd. The combination, with a horse power, of a jack frame located in rear and at one side of the first mentioned frame, a power shaft journaled in the jack frame, a belt pulley mounted thereon, a star wheel mounted on the shaft and having notched arms provided with plates having V-shaped recesses, a horizontal and a vertical guide pulley located in front of the star wheel, a second horizontal pulley located in front of the first horizontal pulley, guide rollers mounted in front of the vertical and the horizontal pulleys and in the plane with the arms of the reel, and a cable passing around the arms about the guide rollers, the guide pulley, and to the star wheel, over the same, under the horizontal guide pulley, over the front horizontal guide pulley, and back to the cable arms of the reel, substantially as specified.

No. 36,945. Device for Closing Tin Cans, etc. (*Appareil à fermer les boîtes métalliques.*)

Richard Kirsch, Zantkan, Russia, 10th July, 1891; 5 years.

Claim.—1st. A closing device for tins, boxes and similar receptacles, consisting of a wire or tube a, a', a^{11}, a^{111} , of convenient cross section so inserted and soldered between the rim of the closing plate or cover and the rim or side or sides of the receptacle as to be removable for disconnecting the latter from its cover, substantially as and for the purpose set forth. 2nd. A closing device for boxes, tins and cans and such like, serving to render the opening wire independent of the solder in cases where the contents of the receptacles necessitates very strong soldering, and to produce simultaneously a closing as free as possible from lead, said closing having as principal feature that the opening wire a, a' is so embedded as to cut the tin when the receptacle is opened, whereas the soldering remains intact, it being applied to such places in the bulging l , or between box side B , and cover rim D , as to prevent as far as possible all contact with the contents of the receptacles.

No. 36,946. Separable Pulley. (*Poulie divisible.*)

Vantyle W. Coddington, Kansas City, U.S.A., 10th July, 1891; 5 years.

Claim.—1st. In a separable pulley having radial spokes, and a separable hub having end bearings for said spokes in the separable parts thereof, the combination of the rods arranged in the line of direction concentric to the periphery of said pulley, the meeting ends of said rods being adjustably clamped together and adapted to draw the ends of said spokes toward the centre of said pulley, as described. 2nd. In a separable pulley having spokes, and slots in said spokes in the line of direction concentric to the periphery of said pulley, the combination of tie rods also in the line of direction concentric to the said periphery having right hand screw threads at one end, and left hand screw threads at the other end, and swivel clamps connected with the opposing ends of said rods, for the purpose described. 3rd. In a separable pulley having suitable tie rods in the line of direction concentric to the said periphery, adjustably clamped together upon the separable parts of said pulley, and a separable hub provided with recesses extending in a transverse relation to said hub, the combination of spokes having tenons fitting in said recesses in separate parts of said hub, and said recesses adapted to permit the lateral adjustment of the separate parts of the hub, as described.

No. 36,947. Tonic for Hair.

(*Préparation pour les cheveux.*)

Minnie McGillaray, Vancouver, British Columbia, Canada, 10th July, 1891; 5 years.

Claim.—The herein described composition of matter for use as a hair restorer and invigorator, composed of oil of onions, oil of cabbage, oil of parsley, borax, sulphur, sugar of lead, aqua-ammonia, salt, alcohol, and bay-rum, combined in, substantially the proportions specified.

No. 36,948. Machine for Holding and Sharpening Insertable Saw Teeth. (*Appareil pour tenir et affûter les dents de scies ajustable.*)

George M. Beach, (assignee of Herman Bergstrom), both of Big Wausaukee, Wisconsin, U.S.A., 10th July, 1891; 5 years.

Claim.—1st. In a machine for holding and sharpening insertable saw teeth, the combination of a single rotating shaft S , mounted upon the supporting standard O , two emery wheels or grinding surfaces D, D , and driving pulley T , affixed to said shaft supporting lever B , secured at one end to said supporting standard O , swinging tooth holding lever A , adjustably secured to the free or outer end of said arm B , upon the supporting pivot C , supporting pivot C , adjustably secured to the outer end of said arm B , said lever A , being provided with a tooth retaining clamp or mechanism lever, supporting arm G , affixed to said swinging arm B , at an intermediate point between the lever, supporting pivot C , and the standard O , and adjustable stops F , affixed to the respective ends of said arms G , and adapted to limit the movement of said swinging lever A , as the respective sides of the thereby supported tooth are brought against the respective grinding surfaces D, D , substantially as and for the purpose specified. 2nd. The combination of the supporting standard O , rotating shaft S , emery wheels or grinding surfaces D, D , rigidly affixed to the respective ends of said rotating shaft S , and pulley T , secured to said shaft arm B , secured at one end to the supporting standards of said grinding wheels, tooth supporting lever A , secured to said arm B , by a supporting pivot C , tooth retaining jaws a, a' , located at the swinging end of said lever A , adjustable stops F , located upon the respective sides of said swinging arm A , and adapted to adjust and limit the movement of said arm and stop supporting arms G , secured centrally to said supporting arm B , all substantially as and for the purpose specified.

No. 36,949. Rake. (*Râteau.*)

Adam Dunn, Selena Dietrich and Fred Douglas Palmer, all of Galt, Ontario, Canada, 10th July, 1891; 5 years.

Claim.—As a new article of manufacture, a rake having its head stamped out of one piece of sheet metal, which is concave throughout its length, and has saw shaped teeth which are beveled on the under side to form a cutting edge, substantially as and for the purpose specified.

No. 36,950. Subaqueous Viaduct.

(*Viaduc sous l'eau.*)

Frederik Erik Strom, John Alvin Hilliker and Frank Theodore Lindman, all of Minneapolis, Minnesota, U.S.A., 10th July, 1891; 5 years.

Claim.—1st. A submarine way, comprising a series of piers, and a submerged viaduct secured upon said piers at a uniform depth below the surface of the water. 2nd. A submarine way having the series of supporting piers, and consisting of a sectional conduit made up of segments of cylinders parallel with each other, and joined together at their adjacent edges, and the ends of the sections meeting upon said piers, substantially as described. 3rd. In a submarine way, a series of piers, a sectional viaduct consisting of a series of arcades, the ends supported in and enclosed by said piers, and means for securing the sections together, substantially as described. 4th. In a submarine way, the combination, with a series of permanent piers, of a sectional viaduct supported in and secured by said piers arcades or arched road ways composing said viaduct, a series of struts and tie-bars connecting the upper and lower members at the intersection of the arches, and a series of guides and clamps for guiding and securing the sections together when introduced into the pier, substantially as described. 5th. A submarine viaduct, comprising an inner shell or wall in which the road ways are formed, an exterior casing or wall forming a space between it and the inner wall, a filling in said space, a covering to said exterior wall, a non-corroding covering plate thereto, and a protecting covering to said plate, substantially as described. 6th. A viaduct composed of sections provided at their meeting ends with a clamp operating automatically to lock the sections to each other, when brought together, substantially as described. 7th. A pier, formed with an aperture or opening for the reception of the sections of a viaduct, and provided with rollers or guides in the bottom of said aperture for the purpose of guiding and supporting said sections, substantially as described. 8th. In combination, with a submerged pier, a viaduct composed of sections having the contiguous ends thereof lying inside of an opening formed in said pier for said viaduct, substantially as described. 9th. A pier, comprising the upper and lower sections having an aperture or opening for the sections of the viaduct, and a series of rollers in said aperture revolving in suitable bearings in said roller sections, substantially as described. 10th. In a submerged pier, a lower or foundation section, an upper or retaining section, said sections formed with an opening for the passage of the viaduct in said opening and resting on said rollers, substantially as described. 11th. In a pier, the combination, with a suitable foundation, of a lower hollow pier section or caisson, a cap or upper section resting on said caisson, a viaduct in an aperture in said pier section, and a concrete filling within said pier and around said viaduct, substantially as described. 12th. In a pier, the combination, with a lower or hollow pier section and a foundation upon which said section rests, of a coffer dam or removable shell secured to the walls of said section, substantially as described. 13th. A pier having an opening or aperture for the passage of a viaduct, sections of a viaduct having their contiguous ends lying in said openings, a recess formed in said pier around the contiguous ends of said sections, and an opening communicating with said recess from the exterior of said pier for the purpose of introducing a filling to protect the joint at the said contiguous ends of the viaduct sections, substantially as described. 14th. A submerged pier formed of a lower section having ways formed therein at its upper end, in combination with an upper section adapted to slide into said ways, the two sections forming an aperture or opening for the reception of a viaduct, substantially as described. 15th. A submarine way comprising a series of piers provided with apertures arranged below the surface of the water, and a viaduct composed of a series of sections joined together end to end and apertures in said piers, substantially as described. 16th. The method of forming a subaqueous way, which consists in constructing a series of piers with apertures

through them beneath the surface of the water, sinking viaduct sections until they are opposite said apertures, and then moving said sections longitudinally through said apertures to the desired position.

No. 36,951. Dog for Saw Mills.

(Clameau de scierie.)

Griffin C. Miller, (assignee of Alfred K. Miller), both of Millersport, Ohio, U.S.A., 10th July, 1891; 5 years.

Claim.—1st. In a saw-mill dog, the combination, with a slotted frame provided with a stationary rack, of a sliding bar provided with a stud projecting into the slot of the frame, a gear-wheel mounted on the stud and meshing with the rack, a lever for operating the gear-wheel, and a hook carried by the said sliding plate, substantially as described. 2nd. In a saw-mill dog, the combination, with a slotted frame provided with a stationary rack, of a sliding bar provided with a stud projecting into the slot of the frame, a gear-wheel mounted on the stud and meshing with the rack, a lever for operating the gear-wheel, and a hook adjustably secured to the said sliding bar, substantially as described. 3rd. In a saw-mill dog, the combination, with a frame provided with a rack and a longitudinal slot parallel with the said rack, of a gear-wheel in mesh with the said rack, a weighted lever formed on the said gear-wheel for turning the latter, a stud on which the said gear-wheel is mounted to turn, and which projects in the said slot of the frame, and a plate carrying the said stud and supporting the hook, substantially as shown and described. 4th. In a saw-mill dog, the combination, with a frame provided with a rack and a longitudinal slot parallel with the said rack, of a gear-wheel in mesh with the said rack, a weighted lever formed on the said gear-wheel for turning the latter, a stud on which the said gear-wheel is mounted to turn, and which projects in the said slot of the frame, a plate carrying the said stud, a clip held on the said plate, a hook passing with its shank through the said clip, and a screw screwing in the said clip against the said hook-shank, substantially as shown and described. 5th. In a saw-mill dog, the combination, with a frame provided with a rack and a longitudinal slot parallel with the said rack, of a gear-wheel in mesh with the said rack, a weighted lever formed on the said gear-wheel for turning the latter, a stud on which the said gear-wheel is mounted to turn, and which projects in the said slot of the frame, a plate carrying the said stud, a clip held on the said plate, a hook passing with its shank through the said clip, a screw screwing in the said clip against the said hook-shank, and a lever for turning the said screw, substantially as shown and described. 6th. In a saw-mill dog, the combination, with a supporting frame and a sliding rack thereon, of a hook pivoted to the rack and a spring secured to the rack and having its outer end engaging the hook, substantially as and for the purpose set forth. 7th. In a saw-mill dog, the combination, with a rack mounted to slide, of a hook pivoted on the said rack, a spring held on the said rack and supporting the said hook, a gear wheel meshing in the said rack and fulcrumed on the said plate, and a weighted lever formed on the said gear wheel and serving to turn the same, substantially as shown and described. 8th. In a saw-mill dog, the combination, with a frame, of a plate mounted to slide on the said frame, an adjustable clip held on the said plate, a hook held adjustably on the said clip, a pivoted hook supported by a spring and mounted to slide, and a plate secured on the said main frame and carrying the said hook, substantially as shown and described. 9th. In a saw-mill dog, the combination, with a frame, of a plate mounted to slide on the said frame, an adjustable clip held on the said plate, a hook held adjustably on the said clip, a pivoted hook supported by a spring and mounted to slide, a plate secured on the said main frame and carrying the said hook, and means, substantially as described, for imparting a sliding motion to the said plate and the said hooks, substantially as set forth.

No. 36,952. Motor. (Moteur.)

George John Altham, Swansea, Massachusetts, U.S.A., 11th July, 1891; 5 years.

Claim.—1st. A motor, comprising in its construction, a reaction wheel, a nozzle adapted to receive fluids under pressure, a tube connected with said nozzle and extending into said wheel, and stationary chutes connected with the end of the tube and arranged to discharge the fluids tangentially with respect to the inner circumference of the wheel, as set forth. 2nd. A motor comprising in its construction, a reaction wheel provided with a cover, a nozzle adapted to receive fluids under pressure, a tube connected with said nozzle and extending into said wheel, the tube being inclined with respect to the axis of the wheel and cover, and stationary chutes connected with the end of the tube and arranged to discharge the fluids tangentially with respect to the inner circumference of the wheel, as set forth. 3rd. A motor, comprising in its construction, a receiving chamber, and a discharge chamber, a reaction wheel, a nozzle adapted to receive fluids under pressure, a tube connected with said nozzle and extending into said wheel, and stationary chutes connected with the end of the tube, the interior of the wheel as its center communicating with the atmosphere, and having communication at its periphery with the discharge chamber, as set forth. 4th. A motor, comprising in its construction, a receiving chamber, and a discharge chamber, a reaction wheel, a nozzle adapted to receive fluids under pressure, a tube connected with said nozzle and extending into said wheel, and stationary chutes connected with the end of the tube, a wheel surrounding the first mentioned wheel, the interior of the latter wheel as its center communicating with the atmosphere and having communication at its periphery with the surrounding wheel which in turn communicates at its periphery with the discharge chamber, as set forth. 5th. A nozzle for mixing fluids under pressure, embracing in its construction chambers *e*, *k*, and *l*, *g*, pipes or tubes communicating with the exterior of the nozzle, as set forth.

No. 36,953. Separator for Steam Boilers, etc. (Séparateur pour tuyaux de vapeur.)

Charles Dell Mosher, New York, State of New York, U.S.A., 11th July, 1891; 5 years.

Claim.—1st. The combination, with a steam drum or boiler, of a cylindrical steam conduit located within the steam space and provided with a continuous strip of metal bent into a spiral form extending its entire length, said spiral being of a width equal to the internal diameter of the conduit, whereby two spiral passages are formed in said conduit. 2nd. The combination, of a steam drum or boiler, a flue or conduit extending through the steam space of the boiler and provided with an internal spiral diaphragm or partition and with a water outlet, and a hood or casing containing said flue and perforated at its upper portion, said casing having in its lower portion a water outlet and a seal or check adapted to permit the escape of water from said outlet into the boiler and prevent the entrance of steam into said outlet, as set forth. 3rd. The combination of the boiler or drum, the casing having the perforated top or crown and the downwardly projecting flanges forming a water outlet, a trough receiving said flanges and sealing the water outlet against the admission of steam, and the steam flue within said casing and communicating at one end therewith, said flue having a spiral diaphragm or partition and an outlet slot or opening communicating with the outlet of the casing, as set forth. 4th. The steam flue made of spiral form in cross section, one edge overlapping the other, said edges being separated by a slot or outlet opening, combined with a spiral diaphragm or partition in said flue, as set forth.

No. 36,954. Grain Grader. (Trieur de grain.)

George Horninger Rich, Geneva, Illinois, U.S.A., 11th July, 1891; 5 years.

Claim.—1st. The grading cylinder B, composed of the rings *b*², bearing the eyes *b*⁵, and the tie rods *b*³, substantially as described. 2nd. The combination of the grading cylinder B, composed of the rings *b*², and the hoppers D, D, E, substantially as described. 3rd. The combination of the grading cylinder B, composed of the rings *b*², with a yielding cleaning device, as for example the board G, substantially as described. 4th. The combination of the grading cylinder B, composed of the rings *b*², with the board G, substantially as described. 5th. The combination of the grading cylinder B, the board G, and the brush H, substantially as described.

No. 36,955. Sash Lock. (Arrête-croisée.)

Wallace W. Doty, Pueblo, Colorado, U.S.A., 11th July, 1891; 5 years.

Claim.—1st. In a sash lock and anti-rattler, the combination of the socket plate having the slot 8, and provided with notches arranged on opposite sides of the slot, the casing, the sliding bolt arranged in the casing and provided at one end with a beveled head 7, having shoulders 22, adapted to engage said notches, said bolt having the threaded portion 26, and the nut arranged on the threaded portion of the bolt, substantially as described. 2nd. The combination, in a sash lock and anti-sash rattler, of the socket plate, the casing, the bolt sliding in the casing and provided at one end with the head 7, and having near the opposite end the threaded portion 26, and provided intermediate its ends with an annular flange and having a pin projecting from the flange, the guide and stop rods arranged within the casing and adapted to be engaged by said pin, the thumb-nut arranged on the threaded portion of the bolt, and the knob secured to the outer end of the bolt and having projections extending in the direction of said pin, substantially as described.

No. 36,956. Siphon Valve for Cisterns.

(Soupape pour siphon de reservoir.)

John Robert Meadowcroft, Montreal, Quebec, Canada, 11th July, 1891; 5 years.

Claim.—1st. In a siphon valve, the combination, with the stand pipe section, of a jointless goose neck portion, as shown and described. 2nd. In a siphon valve, the combination, with the stand pipe section having its inlet opening and valve on one side thereof, of the goose neck portion with its main length in direct vertical line with such stand pipe section, for the purposes set forth. 3rd. In combination, with the lever E, disc D, and extension or facing C², the arm E¹, projecting from such lever and having a conically shaped eye, and the conically shaped boss or projection *d* on the disc loosely fitting such eye and having its head enlarged, as described and for the purposes set forth.

No. 36,957. Ice House. (Glacière.)

Octave Lambert and Alphonse Daigneault, assignees of Joseph Freniere, all of St. Hyacinthe, Quebec, Canada, 11th July, 1891; 5 years.

Resumé.—1o. Dans une glacière la chambre à glace située à la partie supérieure ayant un double fond séparation avec la partie inférieure et dont le mur intérieur est une espèce de grillage et le mur extérieur percé des ouvertures J, K, à la partie inférieure et de l'ouverture G, à la partie supérieure permettant la circulation de l'air le tout tel que décrit pour les fins sus mentionnées. 2o. Dans une glacière la combinaison des pièces 2, 2, 3, 3, 4, 4, permettant le démontage par portions tel que décrit pour les fins sus mentionnées.

No. 36,958. Whip Stand, or Checker, for Hotels. (Porte-fouet ou marqueterie pour hôtels.)

John Valentine Corrigan, Kinlough, Ontario, Canada, 14th July, 1891; 10 years.

Claim.—The combination and arrangement of the pockets or

cavities F, F, the numbered strips J, J, the hooks H, H, and D, D, and the checks E, E, substantially as and for the purpose hereinbefore set forth.

No. 36,959. Adjustable Chair. (*Fauteuil brisé.*)

Antoine Charles Brodeur, St. Pie, Quebec, Canada, 14th July, 1891; 5 years.

Claim.—1st. In an adjustable chair, the combination, with the cross legged support having a seat E, of the pivoted leg rests F, having slots *f*, the sliding bar I, sliding in said slots, the arms K, pivoted to the said bar at their upper ends and connected by links at their lower ends, the adjustable foot board L, connected to the arms K by the links *l*, and notches *k*, the back pieces G, pivoted to the support having a top rail *g*, the fabric J, attached by its ends to the said sliding bar I, and top rail *g*, a head rest P, *p*, Q, pivoted to the said back pieces, notched plates R, *r*, and pin S, the springs O, connected with the support and the leg pieces F, substantially as set forth. 2nd. In an adjustable chair, the combination, with the pivoted front pieces F, the fabric J, secured at one end to the top rail of the chair, of the sliding bar I, to which the lower end of the said fabric is secured the said bar sliding in slots *f*, in the said pieces F, the pieces K, pivoted to the ends of the said bar I, the links M, having apertures *m*, adapted to be engaged by the pins *n*, the foot board B, links *l*, and notches *k*, substantially as set forth. 3rd. In an adjustable chair, the combination, with the arms H, pivotally connected to the leg rest and back of the pivoted blocks T, substantially as set forth. 4th. In an adjustable chair, the combination, with the pivoted back, of the pivoted head rest P, *p*, the fabric Q, the plate R, having notches *r*, and the pins S, substantially as set forth. 5th. In an adjustable chair, the combination, with a support carrying a pivoted leg and back, of the spiral springs O, connected to the said support and leg rest, substantially as set forth. 6th. In a support for an adjustable chair, the combination, with the cross legs A, B, pivoted together at *a*, rungs B, C, of the pivoted horizontal pieces D, to which is secured the seat E, the pins and slots *c*, and the hooks and pins *d*, substantially as set forth.

No. 36,960. Floor and Ceiling Plate for Steam Pipes. (*Plaque pour tuyaux de vapeur.*)

Allan Joseph Beaton, New Britain, Connecticut, U. S. A., 14th July, 1891; 5 years.

Claim.—1st. As a new article of manufacture, the herein described floor and ceiling plate, consisting of the hub or collar A, for fitting the pipe and the horizontally projecting flange for resting against the ceiling or floor, the same being divided into two parts *a*, *b*, hinged together as at 4, the lower end of said collar at a point underneath the flange *b*, being divided in the form of overlapping circumferential lugs *5*, *7*, and provided with a diametrical set screw 6, all substantially as described and for the purpose specified.

No. 36,961. Float for Fishing Lines.

(*Flotte de ligne de pêche.*)

Lawson Cutter Cummins, Montpelier, Vermont, U. S. A., 14th July, 1891; 5 years.

Claim.—A fishing float, consisting of a hollow vessel of hemispheroidal form having a resonant fluted diaphragm rigidly secured across the mouth of the same to render it air tight, a tube secured within the vessel and at its apex, and extending nearly to the diaphragm, a loose ball or clapper located in the tube and free to impinge or strike against the diaphragm or to pass through the tube and strike the vessel, and an exterior knob or projection at the apex to which the line is attached, substantially as and for the purpose hereinbefore set forth.

No. 36,962. Machine for Shaving Ice.

(*Machine à casser la glace.*)

Frank O. Opitz, Osseo, Minnesota, U. S. A., 14th July, 1891; 5 years.

Claim.—1st. An ice scraper comprising an open frame and a handle which are integrally formed, the end *d*, of the frame being wide and inclined, the receptacle secured to the frame, and the cutter adjustably secured to the said inclined end bar, substantially as set forth. 2nd. The hereinbefore specified utensil, for the purpose set forth, the same being composed of a frame having side and end bars, the end bar *d*, being wide and inclined to the plane of the side bars, a cross bar *b*, arranged close to and parallel with the said inclined end bar *d*, the end and side bars having a vertical flange, a handle projected from the frame, a receptacle fitted over and secured to said vertical flange, and a cutter seated on the said inclined end bar of the frame, and adjustable thereon, substantially as and for the purpose described.

No. 36,963. Column and Condenser for Distilling. (*Colonne et condensateur pour la distillation.*)

Edward Bolton, Cincinnati, Ohio, U. S. A., 14th July, 1891; 5 years.

Claim.—1st. The combination, in a distilling column and condenser, of a coil section composed of a number of worms connected alternately at their outer and inner ends, in the manner described the upper worm being provided with an inlet and the lower worm with an outlet, for the purpose stated. 2nd. The combination, in a distilling column and condenser, of a series of coil sections placed one above another, each section being composed of a number of worms connected alternately at their outer and inner ends, in the

manner described, each upper worm being provided with an independent inlet, and each lower worm with a separate outlet, for the purpose stated. 3rd. The combination, in a distilling column and condenser, of a series of coil sections placed one above another, each section being composed of a number of worms connected alternately at their outer and inner ends, in the manner described, each upper worm being provided with an independent inlet, and each lower worm with a separate outlet communicating with a common elevated receptacle, for the purpose stated. 4th. The combination, in a distilling column and condenser, of a series of coil sections, constructed as described, and placed one above another, the spaces between the various worms of said coils being decreased upwardly, for the purpose stated. 5th. The combination, in a distilling column and condenser, of a coil section composed of a number of worms of different diameters, those of the smaller diameter being provided with partitions extending to the inclosing shell, for the purpose described.

No. 36,964. Saw for Cutting Stone.

(*Scie pour la pierre.*)

Robert Snarr, Toronto, Ontario, Canada, 14th July, 1891; 5 years.

Claim.—As an improved stone saw, a metal plate having a series of notches with substantially parallel sides made in the edge of the said saw blade, substantially as and for the purpose specified.

No. 36,965. Dash for Churns.

(*Cylindre de baratte.*)

Isaac Franklin Sterling, Texarkana, Texas, U. S. A., 14th July, 1891; 5 years.

Claim.—The combination in a churn dasher, of a handle, a spiral-bladed head journaled thereon, means, substantially as described, for engaging the head with the handle in its descent, and for setting the head free to revolve when ascending the said blades, forming a complete circle at their outer ends, and curved inward on their radial edges forming free vertical openings, substantially as described, whereby the cream at the circumference is pressed toward the centre in spiral streams during the descent of the dasher-head, and partially thrown away from center during its ascent.

No. 36,966. Drive Chain. (*Chaîne sans fin.*)

James Douglas Storie, Oshawa, Ontario, Canada, 14th July, 1891; 5 years.

Claim.—1st. A chain link having a lug or projection *b*, extending from the side bar in proximity to its adjacent link and so arranged that when the lug is hammered down it forms a stop to prevent the adjacent link coming apart from the link next it, as specified. 2nd. A chain link having a lug or projection *b*, formed on the side bar B, which lug when hammered down extends from the side bar into a recess formed in the side bar of the same or adjacent link, substantially as and for the purpose specified.

No. 36,967. Leg for Stoves. (*Pied de poêle.*)

Frank Phillips, Windsor, Ontario, Canada, 14th July, 1891; 5 years.

Claim.—The combination, with a stove leg, of a threaded bolt having on one end a caster and on the other end a knob, by which the same can be turned, said bolt being held in guides arranged at or near the opposite ends of the leg, one of which guides is threaded to fit the thread on the bolt, substantially as and for the purpose set forth.

No. 36,968. Cover for Stacks. (*Couvert de meule.*)

John Broughton, Covington Center, New York, U. S. A., 14th July, 1891; 5 years.

Claim.—1st. A portable roof-covering, consisting of a series of parallel slats, the lower edge of each lapping upon the contiguous slat, the slats being provided with slotted slides, whereby each slat may slide laterally upon the other, substantially as specified. 2nd. A series of parallel slats having transverse slotted holding-irons, the latter being each formed with inwardly projecting lips forming a race-way or chamber between the lips, and the slat, in combination with securing bolts formed with heads to enter said race-ways, the bodies of the bolts passing upwardly through the slots and through the overlapping slat, permitting the latter to slide laterally upon the slat beneath it, substantially as shown and described. 3rd. The combination, with rigid slats, of the transverse slotted binding-irons or holders bent over the slat, and the coupling hooks and securing links arranged, substantially as described and for the purpose set forth. 4th. A roof-covering, consisting of a series of parallel slats joined at their edges so as to fold one upon another, and provided with coupling-hooks and co-acting links at the ridge of the roof, and other links at the ridge of the roof, and other links at the lower edges of the lower slats at the sides or leaves of the roof and at the under surfaces of the slats, in combination with stay-ropes secured to said last named links, substantially as and for the purpose set forth.

No. 36,969. Self Adjusting Stopper for Bottles. (*Bouchon de bouteille.*)

Edward Lovejoy Brooks, Chicago, Illinois, U. S. A., 14th July, 1891; 5 years.

Claim.—1st. A self adjusting bottle stopper, comprising in combination, an elastic bulb A, formed of a thin flexible material and provided with circumferential stiffening rings in its expanding body portion, a guide core C, and a longitudinally moving plunger D, essentially as herein set forth. 2nd. A self adjusting bottle stopper comprising in combination, an elastic bulb A, a core C, in the mouth

of the same, a cap B, the lower edge of which is pressed in against the bulb neck immediately beneath the lower rim of the core piece to secure the bulb to the core and a longitudinally moving plunger D, essentially as herein set forth.

No. 36,970. Washing Machine.

(Machine à blanchir.)

William Churchill and Thomas Hope Churchill, both of Detroit, Michigan, U.S.A., 14th July, 1891; 5 years.

Claim.—1st. A hand-saving washing implement to be used upon a common wash-board, consisting of a body C, having a corrugated under surface to engage the clothing and manipulate the same upon the wash-board, substantially as described. 2nd. A hand-saving washing implement to be used upon a common wash-board consisting of a body C, having in combination therewith a corrugated covering D, engaged upon the under surface thereof to engage the clothing and manipulate the same upon the wash-board, substantially as described.

No. 36,971. Fanning Mill. (Tarare-cribleur.)

John Secord Marsh, Belleville, Ontario, Canada, 14th July, 1891; 5 years.

Claim.—1st. In a fanning mill, the cylinder E, substantially as and for the purpose hereinbefore set forth. 2nd. In a fanning mill, the combination of the mitre gear u, the shoe H, the slot and the block shown in Figs. 3, 4, and 5, for the purpose of obtaining a certain motion, substantially as explained. 3rd. In a fanning mill, the combination of the cylinder E, the shoe H, the mitre gear U, and the slot and block shown in Figs. 3, 4, and 5, for the purpose explained.

No. 36,972. Rake for Hay. (Rateau à foin.)

Horace McPherson, Crete, Illinois, U.S.A., 14th July, 1891; 5 years.

Claim.—1st. In the horse hay rake, shown and described, the combination, with the main frame, of the two parallel endless sprocket chains R¹, arranged to travel across the path of the machine, and respectively having the inwardly projecting side studs A¹, the two parallel guides K, and L, arranged to respectively support and guide the upper and lower part of said chains, the series of spring toothed rakes H¹, R, pivotally secured to and between said chains, and adapted to be carried thereby, and having respectively the arms V, and X, the guard rails G, and G¹, centrally arranged across the machine and adapted to engage the extending ends of the rake arms to hold the rakes in proper position, the guard rail T, for engaging rake arms V, to direct arms X, under guard rail G¹, rake A¹, H¹, for stripping rake teeth H¹, and the means shown for driving said rakes and chains across the path of the machine, substantially as and for the purpose set forth. 2nd. In the horse hay rake, shown and described, in combination, with the main frame, the two driven parallel endless sprocket chains R¹, R², the guides K, and L, for respectively supporting and guiding the upper and lower parts of said chains, the series of spring toothed rakes H¹, R, pivotally attached to and between said chains, and respectively having the arms V, and X, the guard rails G, G¹, T, for respectively engaging said rake arms, and holding the rakes in proper position, and the rake A¹, H¹, for stripping the teeth of said travelling rakes, substantially as and for the purpose set forth. 3rd. In the horse hay rake, shown and described, in combination, with the main frame and its travelling wheels, the levers D¹, arms W¹, and notched arms D², substantially as and for the purpose set forth. 4th. In the horse hay rake, shown and described, in combination with the main frame and the caster wheel, the box r, pulley r, cord g¹, substantially as and for the purpose set forth. 5th. In the horse hay rake, shown and described, in combination, with the main frame, the driven endless sprocket chains R¹, rakes H¹, R, pivotally attached thereto, and the stripping rake A¹, H¹, substantially as and for the purpose set forth. 6th. In the horse hay rake, shown and described, in combination with the main frame and the rakes, the guard board D³, arranged across the path of the machine immediately in the rear of the rakes, substantially as and for the purpose set forth. 7th. In the horse hay rake shown and described in combination with the main frame the two endless sprocket chains R, the series of spring toothed rakes H¹, R, pivotally connected to and between said chains the guides G, and G¹, sprocket wheels r, r¹, z, sprocket chains c, e, shaft S, gears t, and v, and axle A, having the wheels W, substantially as and for the purpose set forth.

No. 36,973. Steam Heating System.

(Système de chauffage à vapeur.)

James Finney McElroy, Albany, New York, U.S.A., 14th July, 1891; 5 years.

Claim.—1st. In a steam heating system for railroad cars, the combination, with the main steam supply pipe underneath the car, of two side radiators within the car, each consisting of two or more courses of pipe extending from end to end of the car, of branch T's, connecting said pipes at their ends of a branch tee in the centre of the lower course or courses of pipe, and communicating with a trap through which the water of condensation is discharged, and of steam supply pipes connecting a branch tee at one end of each radiator with the main steam supply pipe, substantially as described. 2nd. In a steam heating system for railroad cars, a radiator consisting of two or more courses of pipe extending from end to end of the car, and suitably inclined to conduct the water of condensation into the center of the lower courses of branch tees connecting all the courses at their ends, of a branch tee in the center of the lower course or courses, of a trap connected to said central branch tee, a steam supply pipe connected to one of the branchtees at the end and restricted steam ports formed within said branch tee for distributing the steam into the different courses of pipe, substantially as described. 3rd. The combination, in a radiator, consisting of two

or more courses of pipe, of a branch tee in said radiator from which the steam is distributed into said pipes, and of restricted steam ports formed within said branch tee to distribute the steam in proportion to the length or capacity of the radiating pipes supplied from said branch tee, substantially as described.

No. 36,974. Car Heating Apparatus.

(Appareil de chauffage des chars.)

James Finney McElroy, Albany, New York, U.S.A., 14th July, 1891; 5 years.

Claim.—1st. In combination, with a car heating apparatus of the kind described, an overflow pipe provided with shielded or averted apertures, substantially as described. 2nd. In a car heating apparatus of the kind described, an overflow pipe having a covered top and side shields, such shields having top and bottom apertures, substantially as described. 3rd. In a car heating apparatus of the kind described, a reducing pipe, the pipe a, secured therein and capped at the top, the aperture c, the shield e, open at the top and bottom, substantially as described.

No. 36,975. Cover for Fruit Baskets.

(Couverture pour paniers à fruit.)

George H. Williams, Thorold, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—The cover for baskets, composed of the light frame of wood B, with an opening in the centre covered with the lens C, having attached thereto on the underside the small strips of wood D, across the frame at each end, and the small strip of wood A, across the centre of frame on the upper side, as and for the purposes hereinbefore set forth.

No. 36,976. Bag for Oysters. (Sac à huîtres.)

Marshall Roblin Wynn and Patrick B. Martin, both of Toronto, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—1st. A bag made from a sheet of paper, cut, creased, and folded, substantially in the manner shown and described. 2nd. A bag made from a sheet of paper, cut, creased, and folded, substantially in the manner shown and described, in combination with a wire handle, its ends being bent to clinch metal clips L, to the mouth of the bag, substantially as specified.

No. 36,977. Apparatus for the Automatic Delivery of Liquids. (Appareil actionné par une pièce de monnaie pour la livraison des liquides.)

Emile Henri Schloosing and Seth Andre Benjamin Degremont, both of Marseilles, France, 15th July, 1891; 5 years.

Claim.—1st. The combination of the horizontal lever T, with its coin receiver and arm, the vertical lever P, with its catch, and the lever Q, for actuating the valve. 2nd. The combination, with the axis D, of the arms F, F¹, carrying the balanced receptacle E, and of the lever J, to raise the lever Q, for closing the valve. 3rd. The combination, with the arm F¹, and the hook I, of the balanced lever M, and its catch m. 4th. The mechanism for delivering liquid, as described and shown in the drawings.

No. 36,978. Box for Car Axles. (Boite à graisse.)

George Franks Godley, Philadelphia, Pennsylvania, U.S.A., 15th July, 1891; 5 years.

Claim.—1st. In a car axle box, the combination of an axle journal, a brass or bearing for said journal, an oil pumping or lifting device, mechanism between said pump and the axle, and operated by the end thrust or lateral movement of the axle independently of its rotary motion to convey or conduct oil to said journal or bearing, substantially as and for the purpose set forth. 2nd. In a car axle box, the combination of an axle journal, a brass or bearing for said journal, an oil pumping or lifting device, mechanism between said pump and the axle and operated solely by the end thrust or lateral movement of the axle independently of its rotary motion to convey or conduct oil to said journal or bearing, substantially as set forth. 3rd. In a car axle box, the combination of a brass or bearing, an oil pumping or lifting device having a plunger chamber, a valve chamber, oil passages between said valve chamber and the plunger chamber, and between the valve chamber and the brass or bearing, and the box oil-well and said plunger actuated by the end thrust of the axle, substantially as set forth. 4th. An axle box brass or bearing having a projecting and depending front end forming a stop bar for the end of a car axle, a plunger in said front end of the brass and actuated by the end thrust of the axle, substantially as set forth. 5th. An axle box brass or bearing having a projecting and depending front end, forming a top bar for the end of a car axle, oil pumping devices attached to said brass end, and actuated by the end thrust of the axle, substantially as set forth. 6th. An axle box brass or bearing having projecting front end b¹, a chamber D, in said end, a plunger having projecting front end b², a pipe f¹, with valves depending from said chamber recess or recesses on the under side of said brass and duct f², connecting said recess with pipe f³, substantially as set forth. 7th. In a car axle box having a rear wall chamber a¹, provided with an open top, a metal dust shield plate n, having central opening and adjoining the front wall of said chamber, and a packing plate l, separate from plate n, between the latter and the rear wall of chamber a¹, substantially as set forth. 8th. In a car axle box having a rear wall chamber a², provided with an open top, a dust shield plate m, of sheet metal having an upset or flanged edge, central opening fitting the axle, and said edge flange being directed towards the opening in the front wall of

chamber a^2 , and a packing plate l , separate from the plate n , between the latter and the rear wall of chamber a^2 , substantially as set forth. 9th. In a car axle box having a rear wall chamber a^2 with open top, a sheet metal dust shield plate n , having a flanged bore or central opening, and a flangeless periphery adjoining the front wall of chamber a^2 , and a packing plate l , of a different material and separate from plate n , between the latter, and the rear wall of chamber, substantially as set forth. 10th. In combination, with the axle box lid opening have side wedge shaped ribs m^2 , the lid m , having lugs m^1 , adapted to engage said ribs m^2 to automatically fasten the lid to the box, and correspondingly take up the wear of the lugs and ribs, substantially as set forth. 11th. In combination, with a car axle box axle and its brass or bearing, of an oiling device composed of a plunger, a chamber for said plunger having a steel plate through which one end of said plunger passes and impinges against the end of the axle, said plate keeping the plunger in position within said chamber, and serving as a shunting plate to avoid wear, a valve chamber, in communication with said plunger chamber, and a channel or conduit between the valve chamber and the brass or bearing, substantially as set forth.

No. 36,979. Device for Identifying a Bottle Containing Poison. (*Appareil pour identifier une bouteille contenant du poison.*)

Joseph Hector LeMaitre and John Francis LeMaitre, both of Toronto, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—1st. One or more bells connected to a bottle in such a manner that any movement of the said bottle shall cause the bells to sound an alarm, substantially as and for the purpose specified. 2nd. An elastic ring A , fitted to the neck of a bottle having flexibly connected to it one or more bells B , substantially as and for the purpose specified.

No. 36,980. Machine for Making Garment Stays. (*Machine pour faire les buscs de corsage.*)

Frederick Crompton, Toronto, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—1st. The combination of the side bars A , and B , back stops a , and b , and knife edged metal strips E , and F , having equidistant notches e , and f , throughout their entire length and opposite to each other so as to parallelly receive a series of blades, as and for the purpose specified. 2nd. The combination of the side bars A , and B , back stops a , and b , knife edged metal strips E , and F , having equidistant notches e , and f , throughout their entire length and opposite to each other so as to parallelly receive a series of blades, and the removable board G , arranged as and for the purpose specified. 3rd. The combination of the side bars A , and B , back stops a , and b , knife edged metal strips E , and F , having equidistant notches e and f , throughout their entire length and opposite to each other so as to parallelly receive a series of blades, and the removable board G , having knife edged metal strips g , extending throughout its length, as and for the purpose specified. 4th. The combination of the side bars A , and B , back stops a , and b , knife edged metal strips E , and F , having equidistant notches e , and f , throughout their entire length and opposite to each other so as to parallelly receive a series of blades, the supplemental board H , arranged, as and for the purpose specified. 5th. The combination of the side bars A , and B , back stops a , and b , and knife edged metal strips E , and F , having equidistant notches e , and f , throughout their entire length, and opposite to each other so as to parallelly receive a series of blades, the cross bars C , having slots c , and thumb screws D , extending up through the slots into the adjustable side bar B , and designed to clamp it in any desired position, as and for the purpose specified.

No. 36,981. Shirt. (*Chemise.*)

Sam. L. Hyman, Nashville, Tennessee, U.S.A., 15th July, 1891; 5 years.

Claim.—A shirt constructed with a bosom, a facing extending alongside the bosom and re-enforcing the shirt body between the bosom and arm hole, a strip extending from the facing beneath and around the arm hole to the yoke, the yoke connecting said strip and the facing, said facing strip and yoke being made integral, as set forth.

No. 36,982. Shipping Package.

(*Enveloppe pour le transport.*)

William Harvey Cadwell, Lansing, Michigan, U. S. A., 15th July 1891; 5 years.

Claim.—1st. The combination, with a head C , of slats A , A , and binding wires B , B , embracing said slats and intertwined between them, said binding wires having an eye and a locking key for securing the extremities thereof together, substantially as specified. 2nd. The combination, with a head C , of slats A , A , and binding wires B , B , embracing said slats and intertwined between them, said binding wires having an eye and a locking key for securing the extremities thereof together, and a wire loop b^1 , for securing the free end of said locking key to one of said slats, substantially as specified. 3rd. The combination with slats A , having inside bevel faces a , at their ends, of binding wires B , B , embracing said slats and intertwined between them and a head C , said bevel faces a of said slats serving to tighten the binding wires B , B , as the head C is forced or driven in place and thus form a rigid package, substantially as specified. 4th. The cylindrical knockdown or extensible shipping package, consisting of the combination with slats A , having inside bevel faces a , at their ends of binding wires B , B , embracing said slats and in-

tertwisted between them, said binding wires having an eye and a locking key for securing the extremities thereof together, and said head C , being driven into place over the bevel faces a , of said slats A , so as to tighten the encircling wires or hoops B , B , and render the package rigid, said heads being removably secured in place by a chine strip so that the heads may be removed and the binding wires or hoops unfastened to extend the package in the flat, substantially as specified. 5th. The cylindrical knockdown or extensible shipping package, consisting of a woven wire slat work A , B , the wires B , B , of which are twisted together between the slats, and furnished with a loop or eye b^1 , at one extremity, and a locking key or pin b^2 , at the other extremity, formed by twisting together the ends of the wires B , B , substantially as specified.

No. 36,983. Evaporator for Liquids.

(*Evaporateur pour liquides.*)

Alexis Bail, Abbotsford, Quebec, Canada, 15th July, 1891; 5 years.

Claim.—1st. The combination, in an evaporator for liquids, with the vessel A , having a channeled bottom communicating compartments, and an outlet of the trough G , and funnel H , the shallow vessel O , partially covering the said vessel A , and the automatic supply device consisting of the tube I , i , spout K , pivoted to the said tube I , cork or plug L , and float M , substantially as set forth. 2nd. The combination, with the pan or vessel A , a , a^1 , having deep channels B , b , formed in its bottom of the divisions C , C^1 , and E , openings D , D^1 , d , e , and D^2 , formed in the said compartments gates c , and f , and the collecting tube F , substantially as set forth. 3rd. The combination, in an evaporator for liquids, with the vessel A , divided into several communicating compartments of the trough G , having lugs g , adapted to be supported on the divisions of the said compartments and the funnel H , substantially as set forth. 4th. The combination, in an evaporator for liquids, with the vessel A , having rings Q , hinged to its sides of the shallow vessel O , secured to bearers P , handles p , pins R , adapted to be engaged by the rings Q , the cover S , having flanges s , and handles T , substantially as set forth. 5th. An automatic feeding device for evaporators, consisting of a tube communicating with a vessel containing sap or other liquid to be evaporated, the said tube having a down-turned mouth, a spout pivotally connected to the said tube, a cork or plug secured in the said spout under the down-turned mouth of the said tube, and adapted to close the same when the end of the spout is raised, and a float dependently secured near the mouth of the said spout, the said float being adapted to float in the liquid being evaporated, substantially as set forth.

No. 36,984. Valve for Steam Cylinders.

(*Souape de cylindre à vapeur.*)

Henry Watkeys, New Albany, Indiana, U. S. A., 15th July, 1891; 5 years.

Claim.—1st. In combination, with the valve-seat or cylinder face provided with the two exhaust-ports p , p , between the steam ports o , o , the valve V , formed with the steam channel c , terminating with ports c^1 , c^1 , near the ends of the valve, and spaced with the inner edges of said ports corresponding to the distance from one end of the valve seat to the inner edge of the steam port o , near the opposite end of the valve-seat and having the end portion j , of the valve occupying one-third of the width of said steam-port o , and having the chamber d , extending over the entire width of the other steam port o , and both of the exhaust ports p , p , and intermediate bridges of the valve-seat, and provided across the portion of the said chamber adjacent to the face of the valve with two bridges forming three ports e , e , e , respectively of the same or approximately the same width as the three ports o , p , p , of the valve-seat, substantially as described and shown. 2nd. The combination of the cylinder-face formed with shoulders f , f , across its ends, the valve-seat D , mounted removably on said cylinder-face and formed with shoulders engaging the aforesaid shoulders of the cylinder-face, substantially as described and shown. 3rd. In combination, with the cylinder-face provided with the steam ports b , b , and single exhaust port a , the valve-seat D , mounted on said cylinder face and formed with the steam ports o , o , and two exhaust ports p , p , and the valve V , formed with steam channel c , terminating with ports c^1 , c^1 , at opposite ends of the valve, and the three exhaust ports e , e , e , communicating with the chamber d , in said valve, substantially as described and shown.

No. 36,985. Method of and Apparatus for Sawing Stone. (*Mode et appareil pour scier la pierre.*)

George Francis Clark, Rutland, Vermont, U. S. A., 15th July, 1891; 5 years.

Claim.—1st. The herein described improvement in the art of sawing stone in the quarry, which consists in first providing openings in the stone for the movement of the support of the cutting means, then dividing the stone by the action of an endless wire or band, and automatically advancing said wire, wires, or band into said openings and through the stone as the sawing advances, substantially as described. 2nd. The herein described improvement in the art of sawing stone in the quarry, which consists in forming holes vertically in the stone, arranging vertically automatically movable wire supporting devices above said holes, dividing the stone in the quarry by the action of an endless wire or band around said means, and keeping the said endless band or wire taut by the application of weights bearing upon said wire or band, substantially as described. 3rd. The combination, with the fly wheel and the vertically adjustable or movable posts carrying guide pulleys of the endless band or wire passed over said pulleys, and around the drive pulley, substantially as described. 4th. The combination, with the fly wheel and the vertically movable posts free to automatically move in holes in the stone, of the removable receptacles at the bottom of the holes, and the endless wire passed around the fly wheel and over pulleys on

said posts, substantially as specified. 5th. The combination, with the vertically movable posts, the guide sheaves thereon, and the removable receptacles beneath the posts, of the guide pulley the endless wire passed around the same and over pulleys on the post and the weights suspended from said wire, substantially as described. 6th. The combination, with the vertically movable posts, the guide sheaves thereon, and the removable receptacles beneath the posts, of the guide pulley, the endless wire passed around the same and over pulleys on the posts, and the weights suspended from trolleys on said wire, substantially as described. 7th. The combination, with the drive pulleys and the vertically movable posts free to move vertically in holes in the stone, of the endless wire passed around the drive pulley and over pulleys on posts and the weight suspended from trolleys supported by the said wire, substantially as described. 8th. An improved method of sawing stone in the quarry, which consists in the forming of vertical holes in the stone, and then severing the stone into slabs by the continuous action of an endless cutter to descend as the sawing proceeds without interrupting the continuous action of the cutter, substantially as specified. 9th. As an improved method of sawing stone in the quarry, which consists in the forming of vertical holes in the stone, and then severing the stone into slabs by the continuous action of an endless cutter moving into and between said holes, and gradually causing the cutter to descend as the sawing proceeds without interrupting the continuous action of the cutter and automatically collecting in said holes the dust and clippings formed by the cutter, substantially as described.

No. 36,986. Slipper for Plasterers.

(*Glissière de plâtrier.*)

Thomas Cherry and Robert Watson, both of Toronto, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—1st. As an improved plasterer's slipper, a triangularly-shaped frame having a moulding knife connected to it, the said knife extending from the apex of the triangle, substantially at an angle of forty-five degrees to its sides, substantially as and for the purpose specified. 2nd. As an improved plasterer's slipper, a triangularly-shaped frame with a flange around its bottom and having a moulding knife connected to it, the said knife extending from the apex of the triangle, substantially at an angle of forty-five degrees to its sides, substantially as and for the purpose specified. 3rd. As an improved plasterer's slipper, a triangularly-shaped frame having a moulding knife detachably connected to it, the said knife extending from the apex of the triangle substantially at an angle of forty-five degrees to its sides, a button F, connected to the top of the moulding knife and a handle C, arranged to brace the said knife, substantially as and for the purpose specified.

No. 36,987. Nerve Tonic and Blood Purifier.

(*Tonic pour les nerfs et purificateur du sang.*)

Frederick George Sanderson, St. Mary's, and Peter T. McGibbon, Sarnia, both in Ontario, Canada, 15th July, 1891; 5 years.

Claim.—The compounding of the substances above mentioned, substantially in the proportions above set out, so as to form a four grain pill to be known as "Standard Iron Pill."

No. 36,988. Latch for Bucket Doors.

(*Loquet pour porte d'auget.*)

William Johnston Sproule, Montreal, Quebec, Canada, 15th July, 1891; 5 years.

Claim.—1st. The latch substantially of the form and for the uses set forth, in combination with the keeper toggle and projecting block. 2nd. The inclined keeper, in combination, with the latch toggle and projecting block, substantially as and for the uses set forth. 3rd. The toggle joint, in combination, with the latch keeper and projecting block as and for the uses, substantially as set forth. 4th. The projecting block, in combination, with the latch keeper and toggle joint, as and for the uses substantially as set forth.

No. 36,989. Process of Forming the Teeth of Face Gearing.

(*Procédé de tailler les alluchons de face.*)

Thomson Meter Company, Brooklyn, New York, U.S.A., (assignees of Frank Lambert, of Brooklyn aforesaid), 15th July, 1891; 5 years.

Claim.—In the manufacture of face-gearing, the method, substantially as hereinbefore described, consisting in first forming a blank with radial arms and then bending the arms at right angles to the body of the blank and simultaneously compressing the arms, causing the metal to flow under pressure to impart the desired contour to the teeth.

No. 36,990. Mower. (*Faucheuse.*)

A. Harris, Son & Co., (assignees of Lyman Melvin Jones and James Wedlake), all of Brantford, Ontario, Canada, 15th July, 1891; 5 years.

Claim.—1st. A coupling-bar A, pivoted at one end to the frame of the machine and connected to the sleeve C, to which the shoe of the cutter bar is connected in combination with an arm F, fixed to the sleeve C, and connected to the pivoted lever H, by the rod G, substantially as and for the purpose specified. 2nd. A coupling-bar A, pivoted at one end to the frame of the machine and loosely journaled in a sleeve C, to which the shoe of the cutter-bar is connected, the pin b, fixed to the bar A, and extending through a vertical slot made in the sleeve C, in combination with an arm F, fixed to the sleeve C, and connected to the pivoted lever H, by the rod G, sub-

stantially as and for the purpose specified. 3rd. A coupling-bar A, pivoted at one end to the frame of the machine and connected to the sleeve C, to which the shoe of the cutter-bar is connected, in combination with a bracket K, loosely journaled on the sleeve C, and held by the pin b, which passes through a slot f, made in the bracket K, as indicated, substantially as and for the purpose specified. 4th. A coupling-bar A, pivoted at one end to the frame of the machine and loosely journaled in a sleeve C, to which the shoe of the cutter-bar is connected the pin b, fixed to the bar A, and extending through a vertical slot f, made in the bracket K, which is loosely journaled on the sleeve C, and has a push-bar J, connected to it which push-bar is pivoted at its opposite end to the frame of the machine, and with mechanism for raising the cutter-bar, substantially as and for the purpose specified. 5th. The lever L, pivoted on the pin on which the shoe E, is hinged, and having a heel g, extending behind the said hinge, a chain M, or its equivalent connected to the lever L, and passing round the shive pulley N, is connected to the pivoted lever O, in combination with the spring Q, connected to the lever O, at one end and at its other end to some fixed point in the machine, substantially as and for the purpose specified. 6th. The lever L, pivoted on the pin on which the shoe E, is hinged, and having a heel g, extending behind the said hinge, a chain M, or its equivalent connected to the lever L, and passing round the shive pulley N, is connected to the pivoted lever O, in combination with a spring Q, and lever bracket S, independently pivoted on the same pivot as the lever O, and provided with a step h, designed to come in contact with the step j, formed on the said lever O, substantially as and for the purpose specified. 7th. A socket U, formed on a bracket connected to the knife B, and designed to receive the ball W, formed on the end of the pitman X, in combination with a concave cap Y, provided with a lip Z, extending from one side of it to fit into a hole m, and lug n, on its opposite side to receive the bolt o, substantially as and for the purpose specified.

No. 36,991. Grate. (*Grille.*)

William Haze Russell, Allegheny, and Jacob Greenawalt, Pittsburgh, both in Pennsylvania, U.S.A., 15th July, 1891; 5 years.

Claim.—1st. In a fire place heater, the combination, with the fire grate D, concaved to the front, of the damper C, correspondingly concaved and pivotally supported at its upper end and composed of a series of bars which correspond in size and number to the spaces between the grate bars, and means for swinging the damper on its pivotal supports to project the bars thereof in the spaces between the grate bars, substantially as described. 2nd. A fire place heater having enclosing sides, back, and top, and having a smoke escape at the front, and at the rear edge of the top, respectively, the combination of the concaved grate D, arranged to form a hot air space between it and the back of the fire place, the damper correspondingly concaved and composed of a series of bars corresponding in size and number to the spaces between the grate bars D, and pivoted at its upper end, the lever F, for operating the damper to project the bars thereof in the spaces between the grate bars D, the damper P, for closing the upper end of the hot air space, the lever for operating the damper P, and means for conveying the hot air from the said hot air space to an adjoining compartment or room, substantially as described.

No. 36,992. Holder for Pillow Shams.

(*Porte-tête d'oreiller.*)

Frank J. Waite and Edwin D. Fye, both of Leadville, Colorado, U.S.A., 15th July, 1891; 5 years.

Claim.—1st. In a pillow-sham holder, the combination, with eyelets attached to the head board of a bedstead, of a single wire connected with and journaled in said eyelets and between them formed into a spring and a sham-holding frame, substantially as and for the purpose set forth. 2nd. In a pillow-sham holder, the combination, with eyelets attached to the head board of a bedstead, of a single wire connected with and journaled in said eyelets, and between them being formed into interlacing curved portions which provide a spring and a sham-holding frame, substantially as and for the purpose set forth. 3rd. In a pillow-sham holder, the combination, with the eyelets C, of the wire D, having one end formed into a hook d', bent at right angles to d², formed into a curve d², brought back to the right angle d², looped thereabout, as shown at d¹⁰, and extending toward the right is formed into interlacing curves d¹¹, d¹², d¹³, and extending to the right of the upper portion of the curve d¹³ is formed into a loop d¹⁴, brought downward, formed into curve d¹⁵, and the end brought up and passed through the loop d¹⁴, and beyond said loop bent into a right angle, carried upward, and formed into a hook d¹⁶, substantially as and for the purpose set forth.

No. 36,993. Railway Car Roof and Other Roofs. (*Toiture de char et autres.*)

Peter Henry Murphy, East St. Louis, Illinois, U. S. A., 16th July, 1891; 5 years.

Claim.—1st. The combination, in a roof, of the angle strips 3, adapted to be secured to the sheeting 1, and having a flange 5, and the plates 6, having flanges 7, and 10, substantially as and for the purpose set forth. 2nd. The combination, in a roof, of the angle strips 3, with upright flanges 5, and the plates 6, having flanges 7, 8, 10, and 11, adapted for attachment to the angle-strips, substantially as set forth. 3rd. The combination, in a car roof, of the angle strips 3, the plates 6, having the flanges 7, 8, 10, and 11, and the corner caps 16, all constructed and adapted to each other, substantially as set forth. 4th. The combination, in a roof, of the angle strips 3, adapted for attachment to sheeting 1, and the plates 6, having marginal flanges adapted for engagement with the angle-strips, substantially as set forth. 5th. The combination, in a car roof, of the angle strips 3, adapted for attachment to the sheeting 1, the plates 6, with marginal flanges adapted for engagement with the strips 3, and the corner caps 16, having the studs 21, for engagement with the walk sleepers, substantially as set forth.

No. 36,994. Combined Expander and Flue Cutter. (*Expandeur et découpoir de leur combinés.*)

John Nichol Murray and Peter W. Shute, both of Ste. Marie, Michigan, U. S. A., 16th July, 1891; 5 years.

Claim.—The combination, with the stock having longitudinal apertures provided with radial grooves of V-shaped springs arranged in the recesses with portions engaging the pintles of rollers, and with their ends bearing against curved walls in the recesses and held in the bights of the springs, as set forth.

No. 36,995. Ditch Digger. (*Machines à creuser.*)

H. Alexandre A. Brault and Anselme Labrecque, assignees of Louis Arsene Déry, all of Montreal, Quebec, Canada, 16th July, 1891; 5 years.

Resumé.—1o. La combinaison de la charpente J les tracs N, N, les chaînes G, G, la courroie H, les roues m, et l'avant-train Y tel que décrit. 2o. La combinaison du fond R, du godet avec le crochet Q, tel que décrit. 3o. La combinaison du godet A et B, dont l'un creuse le centre et l'autre les cotés du trancher tel que décrit et pour les fins indiquées.

No. 36,996. Car Heating Apparatus.

(*Appareil de chauffage des chars.*)

Consolidated Car Heating Company, Wheeling, W. Virginia, assignees of Frank Pierce Foley, Albany, New York, all in U.S.A., 16th July, 1891; 5 years.

Claim.—1st. In a car heating apparatus of the kind described, the combination of the circulating pipes and the cross-over pipes, of a heater consisting of a coil applied in the vertical position of said cross-over pipes, substantially as described. 2nd. In a car heating apparatus of the kind described, the combination of the circulating pipes and the cross-over pipes of a vertical coil formed at one end of said cross-over, a casing around said coils and a steam pipe connecting with said casing, substantially as described. 3rd. In a car heating apparatus of the kind described, the combination with the circulating pipes and the cross-over pipes, of a vertical coil formed at one end of each of said cross-over pipes, of a casing around said coil and a steam pipe connecting with said casing, substantially as described.

No. 36,997. Temperature Regulator.

(*Regulateur de la température.*)

The Consolidated Car Heating Company, assignees of James Finney McElroy, all of Albany, New York, U.S.A., 16th July, 1891; 5 years.

Claim.—1st. In a temperature regulator, a thermostat consisting of a base plate, of two expandible rods connected by a lever, and acting upon the actuating levers connected to the valve, substantially as described. 2nd. In a temperature regulator, a thermostat consisting of a base plate, two expandible rods connected by a lever and acting towards a single point, and actuating levers connected by a spring bearing, substantially as described. 3rd. In a temperature regulator, a thermostat consisting of a base plate, two expandible rods connected by a multiplying lever and acting towards a single point, the bell crank lever F, having the adjustable yielding supported pin I, and the lever N, operating the valve, substantially as described. 4th. In a temperature regulator, a thermostat consisting of a base, two expandible rods connected by a lever, acting towards a single point, of two vertical vibrating levers supported entirely upon their pivots, and an adjustable yielding contact pin between, substantially as described. 5th. In a temperature regulator the lever F, having apertured lugs H, the pin I, engaging in the nut J, and the spring K, substantially as described.

No. 36,998. Temperature Regulator.

(*Regulateur de la température.*)

The Consolidated Car Heating Company, assignees of Finney McElroy, all of Albany, New York, U.S.A., 16th July, 1891; 5 years.

Claim.—1st. In a temperature regulator, the combination of a thermostatic device, a self-closing spring valve controlling the heating agent, and a multiplying lever, having its long arm connected to the valve stem of said valve, to move said valve stem only in the direction of opening said valve, and having its short arm connected to the thermostatic device to be moved in the same direction only, substantially as described. 2nd. In a temperature regulator, the combination of a thermostat, a self-closing spring valve, a multiplying lever having its long arm formed of two components elastically joined and connected to the valve stem to move the same only in the direction of opening the valve, and a thermostatic device connected to the short arm of said multiplying lever to move it in that direction only, substantially as described. 3rd. In a temperature regulator, the combination of a thermostatic device, a self-closing spring valve and a multiplying lever having its short and long arms respectively, connected to said thermostatic device and the valve stem of said valve, to receive the transmit motion from said thermostatic device to the valve in one direction only, to open said valve, said lever having its multiplying arm formed of two components elastically connected in the direction of said movement only, substantially as described. 4th. In a temperature regulator, a thermostat, connecting levers and a spring actuated valve closed only by the tension of the spring upon the expansion of the thermostat, substantially as described. 5th. In a temperature regulator, the combination of the rod A, the bell crank lever D¹, having the arms D, and I, a concave face in the arm D, and the convex face of

the nut G, engaging with said concave face, the spring R, and the lever J, connecting to the valve L, substantially as described. 6th. In a temperature regulator, the combination of the rod A, bell crank lever D¹, the spring R, the lever J, having the arms Q, Q¹, a concave bearing formed at the end of the lever J, and convex nut engaging with said bearing, the valve stem K, spring P, valve I, and yoke O, the parts being arranged to operate, substantially as described.

No. 36,999. Temperature Regulator.

(*Regulateur de la température.*)

The Consolidated Car Heating Company, assignees of James Finney McElroy, all of Albany, New York, U.S.A., 16th July, 1891; 5 years.

Claim.—1st. In a thermostat comprising a medium charged to saturation with a gas at or near the temperature desired to be maintained, of a vessel enclosing said medium, substantially as described. 2nd. A thermostat comprising a solid medium charged to saturation with a gas, at or near the temperature desired to be maintained, and a vessel enclosing said medium having a movable wall or diaphragm, substantially as described. 3rd. A thermostat comprising a body of charcoal charged to saturation with carbonic acid gas, at or near the temperature desired to be maintained, and a vessel enclosing said medium, substantially as described. 4th. In a thermostat, the chamber B, the diaphragm H, forming one wall of said chamber, the connections operated by the movement of said diaphragm, and a medium in said chamber charged to saturation with a gas adapted to be liberated upon an increase in temperature, substantially as described. 5th. In a thermostat, the chamber B, the diaphragm H, forming one wall of said chamber, the connections operated by said diaphragm, a medium in said chamber charged to saturation with a gas liberated upon an increase in temperature to move said diaphragm against a spring adapted to restore said diaphragm to its normal position upon the lowering of the temperature, substantially as described. 6th. The herein described method of making a thermostat of the kind described, consisting in heating an absorbent material (such as charcoal), next placing said material while hot in contact with a gas desired to be absorbed by said material, and allowing it to cool below the point at which it is desired to be liberated when in use, and finally confining said material in a chamber having a flexible wall, substantially as described.

No. 37,000. Coupling for Hose or Pipes.

(*Joint de boyau ou de tuyau.*)

The Consolidated Car Heating Company, Wheeling, W. Virginia, assignees of James Hale Sewall, Chicago, Illinois, U.S.A., 16th July, 1891; 5 years.

Claim.—1st. An intermediate hose or pipe coupling adapted to be placed between and to co-operate with two unlike couplings, one end of the said intermediate coupling being formed to co-operate with a coupling of one type, and the other end of the said intermediate coupling being formed to co-operate with a coupling of a different type, substantially as described. 2nd. An intermediate coupling section consisting of coupling heads of different systems connected together through the medium of a pipe or passage, substantially as described.

No. 37,001. Covering for Floors.

(*Couverture pour planchers.*)

Richard Frederick Flynn and John Guthrie, both of Kircaldy, Fife, Scotland, 16th July, 1891; 5 years.

Claim.—1st. A floor covering made of a residual hydrocarbonaceous material, with which is mixed or incorporated a quantity of coarsely granulated cork to form a homogeneous plastic mass spread upon a sheet of canvas jute or cloth, substantially as described. 2nd. A floor covering, consisting of a base of residual hydrocarbonaceous material, with the addition of coarse granules of cork, and a backing of canvas jute or other cloth, substantially as described.

No. 37,002. Power Press. (*Presse mécanique.*)

Albert Leonard Platt, Vespasian Warner and Henry Alfred Magill, all of Clinton, Ontario, Canada, 16th July, 1891; 5 years.

Claim.—1st. In a press, in combination, bed-plate, lateral wheel, and movable disc arranged in the order indicated, carrying-wheels adapted to operate between the bed-plate and the lateral wheel, cam-wheels adapted to operate between the lateral wheel and movable disc, and suitable mechanism, preferably as shown, for rotating the lateral wheel on its axis, substantially as set forth. 2nd. In a press, in combination, bed-plate, lateral wheel, and movable disc arranged in the order indicated and adapted to operate in parallel planes, carrying-wheels adapted to operate between the bed-plate and lateral wheel, and cam-wheels adapted to operate between the lateral wheel and movable disc, whereby such disc is actuated by rotating the lateral wheel and cam-wheels, substantially as set forth. 3rd. In a press, the combination, with bed-plate, lateral wheel, and gravity-disc arranged in the order indicated and adapted to operate in parallel planes, of a series of carrying-wheels and a series of cam-wheels, the former being adapted to operate between the bed-plate and lateral wheel, and the latter being adapted to operate between the lateral wheel and gravity-disc, substantially as set forth. 4th. In a press, the combination, with bed-plate, lateral wheel, and gravity-disc, carrying-wheels and cam-wheels arranged, respectively, between the bed-plate and lateral wheel and between the lateral wheel and gravity-disc, of upright shaft, spiders mounted on such shaft, the extremities of these spiders serving, respectively, as axles of the carrying-wheels and for the cam-wheels, substantially as set forth. 5th. In a press, in combination, bed-plate, lateral wheel, and

movable disc, carrying-wheels and cam-wheels arranged, respectively, between the bed-plate and lateral wheel and between the lateral wheel and movable disc, such cam-wheels having pockets on the faces thereof, the lateral wheel having pockets for engaging such sprockets of the cam-wheels, substantially as set forth. 6th. In combination, upright press-frame having bed and opposing top member and intermediate table, lateral wheel and gravity-disc located in the order indicated between the table and bed-plate, cam-wheels and carrying-wheels arranged, respectively, between the lateral wheel and gravity-disc and between the bed-plate and lateral wheel, and gravity-disc having a centrally-located upwardly-projecting hub, such hub being adapted to operate in a corresponding hole in the table and adapted to extend more or less above the table, substantially as set forth.

No. 37,003. Combined Nut Lock and Washer. (*Arrête-écrou et rondelle combinés.*)

William Cook Ayres and Louis Holt Jurey, both of New Orleans, Louisiana, U.S.A., 16th July, 1891; 5 years.

Claim.—1st. In a combined nut lock and washer, a bolt having its ends threaded in a reverse manner for adjusting nuts, in combination with two nuts E, and F, washer D, and a band or key G, which forms a lock in an automatic manner, as set forth. 2nd. In a combined nut lock and washer for reducing friction between a fish plate or other plate and rail or other device, a washer made of "papier mache" or other material, as set forth.

No. 37,004. Tool for Ornamenting Metallic Tubes. (*Outil à orner les tubes métalliques.*)

Charles Willmott and Charles Bosworth Ketley, both of Birmingham, England, 16th July, 1891; 5 years.

Claim.—The improved tools or appliances for ornamenting thin ductile metallic tubes, by forming by internal pressure knobs, elongated knots or like parts above the original surface thereof, hereinbefore described and illustrated by the accompanying drawings, that is to say the combination of the perforated tubular mandril adapted to fit in the tube to be ornamented, the pressure pieces fitting in the said perforations or in some of them, and the draw bar with its swell or swells all arranged and operating, substantially in the manner and for the purposes set forth.

No. 37,005. Fountain Ink Bottle.

(*Bouteille-fontaine pour l'encre.*)

Albert Edwin Dain, John H. Roney and John Quincy Everson, all of Pittsburg, Pennsylvania, U. S. A., 16th July, 1891; 5 years.

Claim.—1st. The combination of an ink well or bottle, a vertical internal tube F, fitted therein and having a rigid flared bowl, an elastic thimble secured at its ends to the mouth of the ink well, and the flared bowl of the internal tube, a rigid external cap fitted tightly over said elastic thimble at its point of attachment to the ink well and having an orifice in the upper end of the same through which said internal tube passes, and an adjustable ring carried by the flared bowl of the internal tube and movable freely within the orifice of the rigid external cap, which cap operates to limit the plug of the adjustable ring, and the internal tube to which it is attached, as and for the purpose described. 2nd. The combination of a bottle or receptacle, an internal tube provided with a flared rigid bowl, an elastic thimble attached to said bottle or receptacle and the bowl of the internal tube, an external ring carried by the internal tube and connected thereto so as to be moved up and down thereon, and a fixed external cap surrounding the elastic thimble and arranged in the path of the external ring to limit the downward movement of said ring, and the internal tube to which the ring is attached, substantially as and for the purposes described. 3rd. The combination of an ink well or receptacle, an internal tube F, provided with a transverse pin f, at an intermediate point of its length, and having the flared bowl at its upper end, said bowl having a filling aperture and a removable plug, an adjustable ring or band screwed on the flared bowl of the internal tube, an elastic thimble attached to the ink well, and the bowl of the tube, and a rigid cap D, which incloses the elastic thimble and receives the lower end of the adjustable band or ring, substantially as described.

No. 37,006. Lever for Moving Locomotives and Cars. (*Levier de mise en mouvement des locomotives ou chars.*)

William Henry Garlock, Seattle, Washington, U. S. A., 17th July, 1891; 5 years.

Claim.—In a lever device, the combination, with a bar or arm provided at its lower or working end with a convex bearing surface and near said end with a downwardly extended tapering projection serving as the fulcrum, of a foot block or support having in its upper surface a concavity or depression forming a seat or bearing for said fulcrum projection, and having on its under surface a series of teeth or spurs, or plates or clamps, pivoted at their opposite ends to said block and lever, respectively, substantially as described.

No. 37,007. Well. (*Puits.*)

John Owen Rice, Hutchinson, Minnesota, U.S.A., 17th July, 1891; 5 years.

Claim.—In combination, with a well, a reservoir provided at the bottom thereof and consisting of a single unbroken chamber having an opening near its top, a channel or pipe extending from said reservoir to or above the surface of the ground, the surface between the latter and the reservoir being filled with stone gravel and earth respectively, in the order named, substantially as and for the purpose set forth.

No. 37,008. Slide Valve. (*Tiroir.*)

Gustav Duvinage, Pasewalk, Prussia, German Empire, 17th July, 1891; 5 years.

Claim.—An almost entirely relieved three-ported slide-valve, characterised by a cylindrical valve which is enclosed in a cylindrical slide-valve casing, and has a curved working surface, the chamber *y*, of the valve being separated by dividing walls Z, from the steam space or spaces *x*, and the valve, opposite its working surface, being slit lengthwise in order that it may fit close against the interior of the slide-valve casing, substantially as hereinbefore described and shown on the drawings annexed.

No. 37,009. Combined Slide Valve and Distribution Slide Valve. (*Tiroir et tiroir de distribution combinés.*)

Gustav Duvinage, Pasewalk, Prussia, German Empire, 17th July, 1891; 5 years.

Claim.—The construction, combination and arrangement of a cylindrical main valve bored eccentrically provided with a longitudinal slot and fitting within a cylindrical valve chest, and an expansion valve having a transverse curvature to fit the bore of the main valve, and angular ends, substantially as described.

No. 37,010. Door Closer.

(*Appareil à fermer les portes.*)

Carl Lander, Wanzleben, Prussia, German Empire, 17th July, 1891; 5 years.

Claim.—A selflocking-apparatus for doors, windows, cupboards, and such like characterised by a squeezer F, made of pressed leather or soft metal, which is arranged on one wing of the object to be closed and the head, of which after closing, passes behind the peg E, whilst on the other wing is a trigger or counterpresser G, which acts against the head F, of the squeezer so as to lock automatically and to open itself by the gliding off, of the slack squeezer F, without application of force, substantially as described.

No. 37,011. Hearing Trumpet.

(*Cornet acoustique.*)

Frederick Wilhelm Aschendorf, Wiesbaden, Prussia, German Empire, 17th July, 1891; 5 years.

Claim.—In ear trumpets, the combination of two conoidal chambers *l*, and *m*, inserted one within the other, with rounded apices on their upper part and connected at the base however separated on all other parts, and of which the outer cone *l*, has a tube *p*, which may be inserted into the ear while the inner cone *m*, is entirely closed on its upper part, and provided with holes *r*, on the interior surface, substantially as described and represented in the accompanying drawings.

No. 37,012. Combined Shaft Support and Non-Rattling Device for Thill Couplings. (*Tuteur de limonière et appareil compensateur pour armons de limonières.*)

Adam Euler and Conrad George, both of Listowell, Ontario, Canada, 17th July, 1891; 5 years.

Claim.—A combined shaft support and non-rattling device for thill couplings, consisting of the curved springs E, one end of which abuts against the bearings of the thill coupling, while the other ends are connected to the shafts by the links encircling the same as specified.

No. 37,013. Heating Furnace. (*Calorifère.*)

Rudolph A. May, Akron, Ohio, U.S.A., 17th July, 1891; 5 years.

Claim.—1st. In a heating-furnace, the combination, with the fire-pot, of a segmental tube outside of, concentric with, and nearly surrounding the same, having two sets of branch tubes, one set arranged to enter the fire-pot directly above the surface of the fuel, and the other set arranged to enter it below said surface, substantially as shown and for the purpose specified. 2nd. In a heating-furnace, the combination, with the fire-pot, and a segmental tube outside of, concentric with, and nearly surrounding the same, having two sets of branch tubes, one whereof enters the fire-pot directly above the surface of the fuel, and the other below said surface, of a branch tube extending from said segmental tube outside of the furnace-case to provide air to said segmental tube, and provided with a door by which the amount of air may be shut off or regulated, substantially as shown and for the purpose specified.

No. 37,014. Driving Mechanism for Cars.

(*Mécanisme conducteur pour chars.*)

Caleb E. Healy, Detroit, Michigan, U.S.A., 17th July, 1891; 5 years.

Claim.—1st. In car-driving mechanism, a main shaft, as B, provided with clutches, as K¹, K², sleeves as C, and C¹, loose upon the shaft, the sleeve C, provided with the pinion D, and sleeve C¹, provided with spur-wheel I, and sprocket J, in combination with auxiliary shaft E, and gear and pinion F, and H, substantially as described. 2nd. In car-driving mechanism, means for changing the speed, consisting of an auxiliary shaft to the main shaft, gears upon the auxiliary shaft communicating with gears upon loose sleeves upon the main shaft, a driving wheel upon one of the sleeves, and

means for disconnecting the driving shaft from one or both of the sleeves, in combination with means for disengaging one or more of the gears on the auxiliary shaft from the corresponding gear on the main shaft when the reduction in speed is not required, substantially as and in the manner described.

No. 37,015. Car Coupler. (*Attelage de chars.*)

William Bentley, Lethbridge, North West Territory, Canada, 17th July, 1891; 5 years.

Claim.—1st. The combination, with a drawhead, of a vibratory draw bar having a draft pin on its lower side that enters a slot in the drawhead, and a transverse lever loosely connected with the draw bar, substantially as described. 2nd. The combination, with a drawhead, of a vibratory draw bar having a draft pin that enters a slot in the drawhead, a transverse lever loosely connected to the draw bar, and a spring latch bar which is moved by the drawhead, substantially as described. 3rd. The combination, with a drawhead, of a vibratory drawbar having a draft pin on its lower side that enters a slot in the drawhead, a transverse rocking lever loosely connected to the draw bar, a sliding latch bar which is moved by the drawhead, and a rock shaft which may be rocked from the side of the car and is adapted to move the latch bar from below the rocking lever, substantially as described. 4th. The combination, with a drawhead, of a vibratory draw bar having a draft pin that enters a slot in the drawhead, a transverse lever loosely connected to the draw bar, and a spring latch bar having a slot which is engaged at its rear end by a pin on the drawhead, substantially as described. 5th. The combination, with a drawhead adapted to slide longitudinally on the car frame, of a vertically-vibrating draw bar secured on the top of the drawhead and provided with a draft pin which enters a vertical slot in the drawhead, a latch bar moved automatically by the drawhead, a transverse rocking lever which engages the latch bar, a loose connection between the rocking lever and draw bar, and a rock shaft that is adapted to move the latch bar, substantially as described. 6th. The combination, with a drawhead and a vibratory draw bar on the drawhead which has a curved draft pin on its lower face that enters a vertical slot in the drawhead, of a hinged apron, a spring device therefor, and a transverse rocking lever that is adapted to lift the bar and apron simultaneously, substantially as described. 7th. The combination, with a drawhead that is forwardly and longitudinally apertured for a coupling link, and vertically slotted near its front end, of a draw bar which is secured on the top of the draw bar, having a curved depending draft pin that will enter the slot of the drawhead, and a device to guide a link into the drawhead, substantially as described. 8th. The combination, with a drawhead which is adapted to receive a coupling link, a vibratory draw bar secured on the drawhead, and a curved draft pin on the front end of the draw bar which pin enters a vertical slot in the drawhead, of a rocking lever, a rock shaft having a handle bar and a central cam toe, and a latch bar engaged by said toe and also by a pin on the drawhead, and which is spring-actuated and normally projected to support the rocking lever, substantially as described. 9th. The combination, with a drawhead that is forwardly and longitudinally apertured, and cushioned by a spring, and a spring draw bar on the drawhead having a curved draft pin which may engage a coupling link that enters the drawhead, of a spring projected latch bar, a transverse rocking lever which rests on the projected end of the latch bar, a transverse rock shaft that is adapted to slide the latch bar, a rock arm engaged by the rocking lever, and a pivoted apron connected to the rock arm, substantially as described. 10th. The combination, with a sliding drawhead and a spring to move it outwardly, of a sliding latch bar above the drawhead on the car frame, also spring-actuated outwardly, and a connecting link loosely secured to the drawhead and latch bar, so as to allow the latch bar to move independently of the drawhead when draft strain is upon the latter, substantially as described. 11th. The combination, with a drawhead supported to slide on a car frame longitudinally, a spring therefor and an elongated link that may enter the drawhead, of a latch bar supported above the drawhead and adapted to slide parallel therewith, a spring therefor to outwardly move it, an abutment plate engaged loosely by both the drawhead and latch bar, a bent slotted arm on the drawhead, a depending eye bolt on the latch bar, and a link between the arm and bolt, substantially as described. 12th. The combination, with a drawhead supported to slide longitudinally on a car frame, and a sliding latch bar above the drawhead, both forwardly actuated by spiral springs, and an abutment plate engaged by these parts, of a lifting lever pivoted transversely on the car end, a projecting arm on the lifting lever, a pendant coupling pin loosely connected with the arm of the lever and passing through holes in the top and bottom walls of the drawhead, and a supplementary tripping lever pivoted transversely of the car on its end extending oppositely from the tripping lever, and connected therewith by a link, substantially as described. 13th. The combination, with a drawhead held to slide on the frame of a car longitudinally, a spring therefor, an abutment plate, loosely engaged by the drawhead, a spring-actuated latch bar also engaging the abutment plate loosely and projecting its latching end forward of the car end, of a transverse lifting lever pivoted on the car end and adapted to latch on the latch bar when its inner end is vibrated upwardly to rest thereon, an outwardly-extending arm on the lifting lever at a right angle thereto, a pendant coupling pin clipped to a sliding block that is adapted to slide on the projecting arm of the lifting lever, and passed through holes in the top and bottom walls of the drawhead, and an elongated coupling link, substantially as described. 14th. The combination, with a drawhead on a car frame, a spring that actuates the drawhead outwardly, and means to support the drawhead and receive the impact of the rear end of the spring, of a latch bar above the drawhead parallel therewith, a spring that presses this bar outwardly, a bent arm on the drawhead slotted longitudinally to receive a link, a depending eye bolt on the latch bar, a link between the arm and the bolt, a lifting lever pivoted on the end of the car and extending to one side of the car frame, a pendant pin loosely connected to a projecting arm on the lifting lever, and adapted to pass through

aligning holes in the top and bottom walls of the drawhead when in lowered adjustment, and a pivoted tripping lever projected oppositely from the lifting lever on the car end, and a link connecting the adjacent ends of these levers, substantially as described. 15th. The combination, with a drawhead supported longitudinally on a car frame, and an apron pivoted on the sides of the drawhead to swing forwardly and hang downwardly, of a rocking arm above the drawhead hinged to the car end by one end and outwardly projected therefrom, a spiral spring on the outer end of the rock arm, a sliding block on the lower end of the spring having an anti-friction roller pivoted between parallel depending limbs of said sliding block, and a guide rod held projected from the side of the apron and loosely engaged by the sliding block and its roller, substantially as described.

No. 37,016. Hay Loader. (*Monte-foin.*)

Adolph Lasack and Albert Lasack, both of Oxford Junction, Iowa, U.S.A., 17th July, 1891; 5 years.

Claim.—1st. In a hay loader, feed arms constructed in sections connected by spring-controlled hinges, the pressure of the springs being exerted downward upon the lower or rear sections of the arms, and rake teeth connected with the spring-pressed sections of the arms, as and for the purpose specified. 2nd. In a hay loader, the combination, with a bed, of feed arms held to reciprocate over the bed, said feed arms comprising two sections, spring-controlled hinges connecting the sections of the arms, the springs of said hinges being arranged to exert downward pressure upon the rear sections of the arms, the downward movement of the said spring-pressed sections being limited to their forming essentially straight continuations of the upper sections, teeth projected downward from the upper faces of both sections of the arms, rake heads secured to the lower sections of the arms, and rake teeth secured to the said head, substantially as described. 3rd. In an implement of the character described, the combination, with the bed thereof, of feed arms adapted to longitudinally reciprocate over the bed, the said feed arms constructed of two sections connected by spring-controlled hinges, the lower section comprising two members throughout its length, and the upper section two members for a portion of its length, teeth projected downward from the lower faces of the arms, a rake head constructed integral with the lower end of the lower section of each arm, and rake teeth attached to the said head, substantially as shown and described.

No. 37,017. Nut Lock. (*Arrête-écrou.*)

Ithamar C. Hawes, New Milford, Connecticut, U.S.A., 20th July, 1891; 5 years.

Claim.—1st. The combination, with a bolt, of a nut provided with recesses in one face, having an under-cut wall, and a key shaped for engagement with the bolt and to enter the recesses of the nut, substantially as shown and described. 2nd. The combination, with a bolt having transverse intersecting slots in its threaded extremity, of a nut having recesses in one face at opposite sides of and communicating with its bore or aperture to register with said slots, the diagonally-opposite walls of said recesses being undercut, and a key adapted to be inserted in one of the slots and recesses when the same are in register, and adapted to be locked by turning the nut to bring the shoulders formed by the undercuts of the recesses over the ends of said key, substantially as shown and described. 3rd. The combination, with a bolt having transverse intersecting slots in its threaded extremity, of a nut having recesses in one face at opposite sides of and communicating with its bore or aperture, the diagonally-opposite walls of said recesses being undercut, and a flat key having its ends in the same plane at right angles to its intermediate or body portion and adapted to pass into said recesses and under their undercut walls, substantially as shown and described.

No. 37,018. Method of Securing Nuts to Screwed Bolts. (*Mode d'assujétir les écrous aux boulons taraudés.*)

Walter Harrington, Foley Park, Kidderminster, Worcester, England, 20th July, 1891; 5 years.

Claim.—1st. The improved means for securing nuts to screwed bolts, substantially as herein set forth and shown upon the accompanying sheet of drawings. 2nd. In locking nuts to bolts, the spring washer A, with a corrugation or corrugations such as a^1 , substantially as and for the purpose herein set forth and shown.

No. 37,019. Process for the Treatment of Sulphide Ore. (*Procédé pour la traitement des minerais sulfureux.*)

Alfred Kirby Huntington, King's College, London, England, 20th July, 1891; 5 years.

Claim.—The herein described process for treatment of sulphide ores by fusing them without preliminary roasting in a cupola or blast furnace, along with fluxing materials, when necessary, thus producing a matte from which the metals can be separated by the ordinary methods.

No. 37,020. System of Road Drainage.

(*Système de drainage de chemin.*)

Alexander Mitchell, Lohn, Texas, U.S.A., 20th July, 1891; 5 years.

Claim.—1st. A system of road drainage, comprising a drain arranged longitudinally under the road-bed, outlet pipes placed suitable distances apart and connected with the said drain, and branch air pipes also connected with the said drain and adapted to be connected at their outer ends with an air pump for discharging the air

from the said drain, substantially as shown and described. 2nd. A system of road drainage, comprising a drain arranged longitudinally under the road-bed near its middle, a series of outlet pipes leading from the said drain to one side of the road-bed, means for closing the outer ends of the said outlet pipes, and branch air pipes extending transversely from one side of the road-bed to the said drain, the outer ends of the said pipes being adapted to connect with an air pump for pumping the air out of the drain, substantially as shown and described. 3rd. In a system of road drainage, the combination, with a drain arranged longitudinally under the road-bed near its middle, of a branch air pipe extending transversely and connected with the said drain, the outer end of the said air pipe being adapted to connect with an air pump to discharge the air from the drain, substantially as shown and described.

No. 37,021. Elevator. (*Élévateur.*)

Angus Herbert McLean, John Kubik and Peter Herbek, all of Saginaw, Michigan, U.S.A., 20th July, 1891; 5 years.

Claim.—1st. In a device of the character described, the combination, with a frame provided with a trip and a closing bar, of a bucket held to slide vertically up and down in said frame, provided with a drop door hinged at its lower edge to swing downward, and a trip latch engaging said door, and a rope attached to said bucket and guided outward from the frame, substantially as shown and described. 2nd. In a device of the character described, the combination, with a bin provided with a out-off, and a frame provided with a trip and a closing bar, of a bucket held to slide vertically in said frame, provided with a drop door and a trip latch engaging said door, and a rope attached to said bucket and guided outward from the frame, substantially as shown and described. 3rd. In a device of the character described, the combination, with a bin provided with a chute having an auxiliary chute and a cut-off, and a frame provided with a trip and a closing bar, of a bucket held to slide vertically in said frame, provided with a drop door and a trip latch engaging said door, and a rope attached to said bucket and guided outward from the frame, substantially as shown and described. 4th. In a device of the character described, the combination, with the frame, a bucket held to slide vertically in the said frame and provided with a shaft journaled upon its upper front portion, having an attached latch and a crank arm, and a drop door adapted to be engaged by the said latch, of a trip attached to the frame, and a closing bar also attached to the frame below said trip, substantially as shown and described, whereby, when the bucket is elevated, the trip contacting with the shaft releases the door, and when the bucket is descending the closing bar automatically closes the said door, substantially as shown and described. 5th. In a device of the character described, the combination, with a frame, a bucket held to slide in the frame, provided with a shaft journaled upon its upper forward portion, having an attached latch and a crank arm, and a front drop door adapted for engagement with the said latch, of hoisting ropes or chains attached to the bail of the bucket and passing over guides in the frame outward in opposite directions therefrom, a trip located upon the frame adapted for contact with the bucket shaft, a closing bar also attached to the frame and adapted for contact with the drop door of the bucket when the latter descends, and a bin provided with a chute having an auxiliary drop-extension and adapted to deliver the material to the bucket, substantially as and for the purpose specified. 6th. In a device of the character described, a bin provided with an attached delivery chute, an auxiliary chute pivoted at its lower end to the outer end of the said main delivery chute to swing outward, and having weights at its hinged end to assist it in closing, a cut-off gate pivoted in the main chute, and means, substantially as shown and described, for raising and lowering the said gate the said auxiliary chute when closed being in the upward path of the gate, as and for the purpose specified. 7th. In a device of the character described, a bin provided with a downwardly-extending delivery chute, an auxiliary extension chute pivoted to the lower end of the main chute, the said extension chute being provided with attached weights at its inner end, a cut-off gate pivoted in the main chute, consisting of a series of downwardly-curved connected fingers, a crank shaft, and a connection between the said gate and the crank shaft, substantially as shown and described. 8th. In a device of the character described, the combination, with a bin provided with a downwardly-extending chute, a weighted extension chute pivoted to the lower end of the main chute, a gate consisting of a series of curved connected fingers pivoted in the main chute, and means, substantially as shown and described, for elevating the said gate, of a frame, and a bucket held to slide in the said frame and provided with a drop door, the said bucket in ascending being adapted to carry the auxiliary chute to the perpendicular position, as and for the purpose specified. 9th. In a device of the character described, the combination, with a bin provided with a downwardly-extending chute, a weighted extension chute pivoted to the lower end of the main chute, a gate consisting of a series of curved connected fingers pivoted in the main chute, and means, substantially as shown and described, for elevating the said gate, of a frame, a bucket held to slide in the frame and provided with a drop door, the said bucket being adapted, in ascending, to contact with the auxiliary chute, a shaft having a crank arm journaled upon the bucket and having an attached latch, a trip attached to the frame and adapted for contact with the crank arm of the bucket shaft, a closing bar or yoke also secured to the frame, adapted for contact with the drop door of the bucket when the latter is open, and means, substantially as shown and described, for elevating the said bucket, as and for the purpose specified.

No. 37,022. Marine Elevator and Dry Dock. (*Élévateur de marine et cale sèche.*)

Frank Bettes, Sault St. Marie, Michigan, U.S.A., 20th July, 1891; 5 years.

Claim.—1st. A marine elevator and dry dock, consisting of an adjustable bridge, a lever, and two grab hooks pivoted on each arm of the lever at equal distances from the fulcrum, a coiled spring hold-

ing said hooks in position, the said lever being fulcrumed on the frame of the adjustable bridge, and means for operating said lever, substantially as described. 2nd. In a marine elevator and dry dock, the combination of the adjustable bridge B, with the lever A, and the grappling hooks H¹ and H², pivoted to the lever A, at equal distances from the fulcrum K, and the coiled spring Z, connecting the hooks H¹ and H², holding them in position to catch into the chain I, alternately as the lever A is operated, and means for operating the said lever the whole adapted to be placed upon the deck of a vessel or dock, substantially as described. 3rd. In a marine elevator and dry dock, the combination of the adjustable bridge B, the lever A, fulcrumed to the frame of the bridge B, the hooks H¹ and H², and their connections H, H, secured to the lever A, on opposite sides, and equal distances from the fulcrum K, with the sprocket chain C, secured to the end of the long arm of the pulley A, at C', and the sprocket pulleys D, D, on opposite ends of the standard G, and the standard G', and the quadrant of a circle G'', through which the chain C, runs when moved by the crank N, thereby operating the lever A, substantially as described. 4th. In a marine elevator and dry dock, the combination of an adjustable bridge, a lever with hooks or grappling irons for engaging the chain I, pivoted to the lever and operated by it and means for operating the lever, substantially as described.

No. 37,023. Sling Pulley Block for Carriers.

(*Embrelage de poulie pour monte-charge.*)

Andrew B. McKay, London, Ontario, Canada, 21st July, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a pulley block A, provided with the extended and outwardly flaring cheeks or guides I, I, substantially as shown and described, and for the purpose specified. 2nd. The locking hooks C, C, pivotally secured to the pulley block A, substantially as shown and described, and for the purpose specified. 3rd. The locking hook C, provided with the weight G, and pivotally secured to the pulley block A, substantially as shown and described, and for the purpose specified. 4th. The locking hook C, formed with a shoulder H, and pivotally secured to the pulley block A, substantially as shown and described, and for the purpose specified. 5th. A pulley frame E, formed with the locking flanges or bars D, substantially as shown and described, and for the purpose specified. 6th. The dog M, spring O, trip rope P, and hook L, in combination with the pulley block A, substantially as shown and described, and for the purpose specified. 7th. The pulley block A, formed with the guides I, I, and provided with the pulley B, the pivotal locking hooks C, C, and hook L, the dog M, spring O, and trip rope P, in combination with the pulley frame E, formed with the locking flanges or bars D, D, and the sling K, substantially as and for the purpose set forth.

No. 37,024. Machine for Marbleizing Paper. (*Machine pour marbrer le papier.*)

Charles Harley Bellamy, South Hardley Falls, Massachusetts, U.S.A., 21st July, 1891; 5 years.

Claim.—1st. In a marbleizing machine, the combination, with a vat for containing a color-supporting liquid, of a support above said vat, a series of chambered color-holding receptacles on said support having openings in their lower extremities for the emission therefrom of the colors contained therein upon the liquid in said vat, for the purpose set forth. 2nd. In a marbleizing machine, the combination, with a vat for containing a color-supporting liquid, of a support above said vat, and means for imparting thereto vertical reciprocating motions, a series of color-holding receptacles on said support having openings in their lower extremities, rods passing vertically through said color-holding receptacles and adapted to be projected through and beyond the said openings, and means for imparting to said rods vertical reciprocating movements, whereby they may be projected to or below the surface of said liquid when the above named support is moved into its lowermost plane for the purpose set forth. 3rd. In a marbleizing machine, the combination, with a vat for containing a color-supporting liquid, of a support above said vat, and means for imparting thereto vertical reciprocating motions, a series of color-holding boxes having the apertured lower extremities, and provided with the vertical rods, horizontal shafts supported in bearings on said reciprocatory support, each comprising cam intermediately of its length, a series of rods supported by their ends on said cams and intermediately engaging the upper ends of said color-box rods, a pinton on each of said cam-carrying shafts, and a stationary horizontal rack-bar with which each of said pinton engagements, substantially as described. 4th. A color-holding box for the purpose set forth, consisting of a main body portion having a downwardly tapering extremity provided with an aperture in its lower end, and adapted to permit the entrance of liquid color into said receptacle, and a rod vertically movable through said receptacle and adapted to have a reciprocatory movement, whereby its end may be projected vertically beyond said aperture, and a spring applied for ensuring the projection of the extremity of said rod outwardly beyond said aperture, substantially as described. 5th. In a marbleizing machine, the combination, with a vat for holding a color-supporting liquid, of a mechanism for distributing color on the surface of the liquid in said vat, and a mechanism for conveying the paper to and presenting it upon the color supported on the liquid in said vat. 6th. In a marbleizing machine, the combination, with a vat for holding a color-supporting liquid, of a mechanism for distributing color on the surface of the liquid in said vat, a mechanism for conveying the paper to and presenting it upon the color supported on the liquid in said vat, and for conveying the paper from the liquid, for the purpose set forth. 7th. In a marbleizing machine, the combination, with a liquid vat, of a carriage adapted to support a sheet of paper thereon and movable over and away from over said vat, paper-gripping devices on the forward edge of said vat, and means for causing same to open to receive the edge portion of the paper from the carriage, whereby said paper will be held against move-

ment as said carriage retraces, for the purpose set forth. 8th. In a marblizing machine, the combination, with a vat for holding a color-supporting liquid, having paper gripping devices on the forward edge thereof, of a frame provided with the suitable supported carrier-cords adapted to be moved horizontally over and nearly to the rear end of said vat, a device for raising the rear portion of the paper on said liquid and over-turning such portion and placing it in the rear of said cord carrier, means for driving said carrier-cords as its supporting frame travels forward, and means for opening said gripping devices for the release of the paper, substantially as described. 9th. In a marblizing machine, the combination, with a paper supply roll and a carriage in advance thereof, another carriage in advance of said first carriage, a paper severing mechanism located intermediately of said carriages, paper-gripping devices on each of said carriages, means for securing the closing of said gripping devices on the first carriage, means for securing the movement of said first carriage over the next carriage for releasing its gripping devices for closing the gripping devices on the next carriage, and for retracting said first carriage, and means for securing the operation of the paper-severing mechanism, for the purpose set forth. 10th. In a marblizing machine, the combination with a paper supply roll and a carriage in advance thereof, a vat for holding a color-supporting liquid, and paper-conveying appliances between said first carriage and said vat, a paper-severing mechanism located between said first carriage and the secondary carrying appliances, mechanism for securing the movement of said first carriage to prevent the paper carried thereby to said secondary paper-carrying appliances, means for actuating said paper-severing mechanism, and a mechanism for securing the travel of said secondary carrying appliances to deliver the paper thereon upon the vat and for returning said appliances, for the purpose set forth. 11th. In a marblizing machine, the combination, with a paper supply roll having a clutch pulley thereon adapted to rotate freely on the journal of the roll in one direction, but to clutch same in the reverse direction, a carriage 1, in advance of said roll, and a feed screw with which said carriage has an engagement substantially as described, means for securing forward and backward rotations of said screw shaft, a shaft geared to said screw shaft having thereon a pulley and a belt around said pulley, and said clutch pulley, substantially as and for the purpose set forth. 12th. The combination, with a paper supply roll, a carriage 1, in advance thereof, and another carriage in advance of said carriage 1, vertical guiding ways, and a knife vertically movable in said ways and having projections thereon inclined at their upper portions the inclines 27, on said carriage 1, adapted to raise said knife as the carriage moves forward, a swinging lever having the knife supporting arm 29, and a stud located on said carriage 1, whereby as said carriage 1 moves rearwardly it will abut against and swing said lever, substantially as and for the purpose described. 13th. In a marblizing machine, in combination, a carriage 1, and another carriage in advance thereof, a feed screw shaft for each of said carriages, and with which they engage, having thereon sets of loose and fixed pulleys, reversely speeded belts around said pulleys, and belt shifters for each of said belts, having abutment dogs thereon, and the belt shifter for the forwardly driving belt for the second screw shaft being connected with a swinging lever which is in proximity to said carriage 1, an abutment stud 68, on said carriage 1, adapted to swing said lever, another abutment on said carriage 1, as its screw engaging nut to operate on certain of the belt shifter dogs to reverse the travel of carriage 1, and an abutment on said second carriage 2, for moving certain of the belt shifters to reverse the travel of said carriage, substantially as described. 14th. In a marblizing machine, the combination, with a vat for holding a color supporting liquid, a frame E, in advance thereof, and means for projecting same over and away from over said vat, and a sub-frame F, moving in conjunction with said frame E, of a carriage at the opposite side of said vat, and a feed screw shaft with which said carriage engages, having loose and fixed pulleys thereon, reversely speeded belts around said pulleys, and belt shifters for each of said belts having abutment dogs thereon, a pivoted lever 17, extended by one end into proximity to a dog on the shifter for the forwardly driving belt of said carriage, and a rod connected to said lever, which by its other end has an engagement, substantially as described, with a part of said sub-frame, all whereby as the frame E, moves forwardly to convey a sheet of paper from the vat, the said carriage will be started forwardly towards the vat, substantially as described. 15th. In a machine for marblizing paper, the combination, with a vat for holding a color supporting liquid, of a frame E, provided with paper carrying appliances located near one end of said vat, and a carriage 3, located near the other end of said vat, and means for projecting said carriage over and away from over said vat, and means for then also projecting said carrier frame E over and away from over said vat, substantially as described. 16th. In a machine for marblizing paper, the combination, with a vat for holding a color supporting liquid, of a frame E, provided with paper carrying appliances located near one end of said vat, and a carriage 3, located near the other end of said vat, having the sub-frame L, to move therewith feed screw shafts for said frame E, and carriage with which they engage, having thereon sets of loose and fixed pulleys, and reversely speeded belts around said pulleys, and belt shifters for each of said belts having abutment dogs, a pivoted pawl-ended and spring constrained lever 100, extended into proximity to the dog on the belt shifter for the rearwardly driving belt for said frame, and a rod 103, projected rearwardly beyond the end of said sub-frame L, provided on its end with a lug 104, with which said sub-frame may abut, all substantially as and for the purpose set forth. 17th. In a machine for marblizing paper, the combination, with the vat of the frame E, and means for imparting rearward and forward motions thereto, the rollers 121, 121, supported and journaled on said frame, the forward of said rollers having a pinion 122, thereon, endless carrier cords or tapes on said rollers, and the stationary rack bar of a length corresponding to but a portion of the run of said frame, and with which said pinion engages in the rearward portion of its to and fro travel, substantially as and for the purpose set forth. 18th. In a machine for marblizing paper, the combination, with the vat, of the frame E, and means for imparting rearward and forward motions thereto, the rollers 121, 121, supported and journaled on said frame, endless

carrier cords or tapes on said rollers, means, substantially as described, for driving the rollers for said endless cords during portions of the forward and backward travel of said frame E, and the set of endless carrier cords or tapes H, intersecting the plane of the carrier cords on said rollers 121, substantially as and for the purpose set forth. 19th. In a machine for marblizing paper, the combination, with the vat for holding a color supporting liquid, a jaw 83, overlying the forward edge of the vat, an upright support for said jaw, and movable inclines 94, for raising the supports for the upper jaw, substantially as described. 20th. In a machine for marblizing paper, the combination, with the vat for holding a color supporting liquid, of a jaw 83, overlying the forward edge of the vat, and an upright support for said jaw provided with the trap doors 97, and 99, the sub-frame L, provided with an incline 94, and the sub-frame F, provided with an incline 98, and means for imparting to said frames forward and rearward movements, substantially as described. 21st. In a machine for marblizing paper, the combination, with the vat for holding a color supporting liquid, of a lower jaw 84, resting on the forward edge of said vat, and an upper jaw 83, resting on said lower jaw, an upright support for each of said jaws, the one for the lower jaw provided with recesses 90, and 92, and the one for the upper jaw provided with the trap doors 97, and 99, the sub-frame L, provided with the inclines 94, and 95, the sub-frame provided with the inclines 98, and means for imparting to said sub-frames forward and rearward movements, substantially as and for the purpose set forth. 22nd. In a machine for marblizing paper, the combination with the vat, of a jaw overlying the forward edge of the vat formed in sections, each carried by uprights, a horizontal transverse supporting board for all of said sectional jaw-carrying uprights, vertically movable, and means, substantially as described, for raising and lowering said board, substantially as and for the purpose described. 23rd. In a machine for marblizing paper, the combination, with a carriage provided near its end with uprights having vertical ways therein, and apertures therethrough, spindles moving in said ways, carrying a gripper bar and each having a slot 78, therethrough, wedges passing through said spindle slots, and said apertures to secure when forced in one direction the movement of said spindles, and springs to force said spindles in the other direction when said wedges are reversely moved, for the purpose set forth. 24th. In a machine for marblizing paper, the combination, with the vat and the cord carrier, and means for projecting same rearwardly over the vat and withdrawing the said frame from over the vat of the journal studs, having the extensions carrying the transverse rod, and means for partially rotating said journal studs, for the purpose set forth. 25th. In a machine for marblizing paper, the combination, with the vat, the journal studs having the extensions 108, and intermediately thereof, the cross rod 109, a sheave on one of the journal studs, a chain or cord passed over said sheave having a weight on one end and a transverse bar 114 to which the other terminal portion of said chain is guided, and connected the sliding latch rod 115, having the lug 116, thereon, and the movable sub-frame F, having the incline 120, and the dogs 118, and 119, substantially as and for the purpose set forth. 26th. The combination, with the vat and the ways at the sides thereof comprising the inclined end slots 122, and 123, and the upper and lower longitudinal ways 124, and 125, and the switching fingers 128, located over the inclined slots 123, of the movable frame E, and the arms pivoted thereto, and provided with a brush having projections bearing in said ways, substantially as and for the purpose described. 27th. The combination, with the vat and the ways at the sides thereof, comprising the inclined end slots 122, and 123, and the upper and lower longitudinal ways 124, and 125, and the switching fingers located over the inclined slots 122, of a movable carriage and arms pivoted thereto, and provided with a comb or rake having projections bearing in said ways, substantially as and for the purpose set forth. 28th. In a machine for marblizing paper, the combination, with a vat for containing a color supporting liquid, of an apparatus for distributing color on said liquid, and a combing device carried on a suitable support, and means for moving said support for the purpose set forth. 29th. In a machine for marblizing paper, the combination, with a vat for holding a color supporting liquid, gripping devices at the forward end thereof, means for opening said gripping devices and causing them to close a carriage, and means for moving same over said vat to present the extremity of the paper thereon within said gripping devices, and for retracting said carriage, and a brush movable over and upon the surface of the paper, then resting on the said liquid, substantially as and for the purpose described. 30th. In a machine for marblizing paper, the combination, with the vat of a paper conveying carriage 3, and means for imparting to said carriage forward and backward movements, and gripping devices on the forward end of said carriage, comprising the uprights having vertical ways therein and apertures therethrough, wedges passing through said spindle slots and said apertures to secure when forced in one direction, the movement of said spindles and springs to force said spindles in the other direction when said wedges are reversely moved, and fixed studs to secure the movement of said wedges as the carriage reaches its forward limit, substantially as and for the purpose described. 31st. In a machine for marblizing paper, a stationary vat for containing a color supporting liquid, and a series of color receptacles supported above said vat, each color receptacle having a delivery orifice over the vat, the parts being combined and operating, substantially as described. 32nd. In a machine for marblizing paper, a stationary vat for containing a color supporting liquid, a support above said vat, a series of color holding receptacles carried by said vat, and a nozzle extending down from each color holding receptacle, all combined, substantially as described. 33rd. In a machine for marblizing paper, a stationary vat for containing a color supporting liquid, a color holding receptacle above said vat, a nozzle projecting down from said receptacle, and a movable finger passing through said nozzle, all combined, substantially as described. 34th. The combination, with the vat and a support for the color boxes provided with the rack bar 49, of a carriage, as the one 2, and a screw shaft with which it is engaged, and means for rotating said shaft both forward and rearwardly, a gear 57, on said screw shaft, a shaft 53, having thereon a gear meshing with said screw shaft gear, and also provided with a pinion engaging with said rack bar 49, substantially as and for the purpose set forth.

No. 37,025. Disk Harrow. (*Herse à disque.*)

Andrew George Hill, Prescott, Ontario, Canada, 21st July, 1891; 5 years.

Claim.—1st. In a disk harrow, the combination of a down hanger containing a curved and hooked lower end, with a disk gang axle journal containing a loop in its underneath side for engaging with said hook end, and a lug on its upper side, and a casting capable of vertical movement upon the down hanger having a recess on its lower side for retaining the lug of the disk gang axle journal, substantially as described. 2nd. In a disk harrow, a down hanger containing an upper end over which can be passed a casting for securing the upper portion of a disk gang axle journal when unbolted from the main frame or its attached casting, and a curved and hooked lower end for securing the underneath portion of the disk gang axle journal, substantially as described.

No. 37,026. Art of Obtaining Motive Power. (*Appareil pour l'obtention de la force motrice.*)

George John Altham, Swansea, Massachusetts, U.S.A., 21st July, 1891; 5 years.

Claim.—1st. The art of obtaining motive power from fluids, which consists in reducing the density of a fluid by intermixing therewith a second fluid of less density, both under pressure, whereby the energy of the lighter fluid may be imparted to the heavier fluid, and permitting the flow of the fluids so intermixed toward a space of less pressure, as set forth. 2nd. The art of obtaining motive power from fluids, which consists in reducing the density of a fluid by intermixing therewith a second fluid of less density, both under pressure, whereby the energy of the lighter fluid may be imparted to the heavier fluid, permitting the flow of the fluids so intermixed toward a space of less pressure, separating the fluids and increasing the pressure of the heavier fluid by centrifugal tendency, as set forth. 3rd. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity and transforming the velocity of the heavier fluid into pressure, as set forth. 4th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, as set forth. 5th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, separating the fluids and discharging the fluid of lighter density and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, as set forth. 6th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, separating the fluids and discharging the fluid of lighter density and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, and employing the pressure as a source of power, as set forth. 7th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, separating the fluids and discharging the fluid of lighter density and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, and employing the pressure as a source of power, and returning the said heavier liquid to be again energized, as set forth. 8th. The art of obtaining motive power from fluids, which consists in reducing the density of a fluid by intermixing the same with a lighter fluid, both under pressure, transforming the potential energy of the mixture into kinetic energy, developing the kinetic energy of the mixture into pressure of the heavier liquid, and at the same time restoring the original density of the heavier liquid, as set forth. 9th. The art of obtaining motive power from fluids, which consists in reducing the density of a fluid by intermixing the same with a lighter fluid, both under pressure, transforming the potential energy of the mixture into kinetic energy, developing the kinetic energy of the mixture into pressure of the heavier liquid, and at the same time restoring the original density of the heavier liquid, and employing the pressure as a source of power, as set forth. 10th. The art of obtaining motive power from fluids, which consists in reducing the density of a fluid by intermixing the same with a lighter fluid, both under pressure, transforming the potential energy of the mixture into kinetic energy, developing the kinetic energy of the mixture into pressure of the heavier liquid, and at the same time restoring the original density of the heavier liquid, and employing the pressure as a source of power, and returning the heavier liquid to be used again, as set forth. 11th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, separating the fluids and discharging the fluid of lighter density and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, employing the pressure as a source of power, intermixing air with the liquid and permitting the air to be discharged with the liquid, as set forth. 12th. The art of obtaining motive power from fluids, which consists in imparting the energy of a lighter fluid to a heavier fluid, permitting the energy to take the form of velocity, separating the fluids and discharging the fluid of lighter density and transforming the velocity of the heavier fluid into pressure by centrifugal tendency, employing the pressure as a source of power, compressing air to the working pressure of the apparatus by intermixing the air with the liquid and permitting the air to be discharged therewith, as set forth. 13th. In the art of obtaining motive power from fluids, the process of compressing air to the working pressure of the apparatus by intermixing the air with the liquid and permitting the air to be discharged therewith, as set forth.

No. 37,027. Wire Fence. (*Clôture en fil de fer.*)

John Walter Buchanan, Smithville, Ohio, U.S.A., 21st July, 1891; 5 years.

Claim.—1st. A wire fence having each of its wires provided with

a short length of chain at one end, substantially as and for the purpose set forth. 2nd. In a wire fence, the combination with two posts, one of which is provided with a series of apertures, of a series of wires having one end secured to one of the posts and their other ends provided with short lengths of chain, said chains being passed through the apertures of the posts and keys passed through the links of the chains, substantially as herein shown and described.

No. 37,028. Saw. (*Scie.*)

William Addison Bartholomew, Marengo, Iowa, U.S.A., 21st July, 1891; 5 years.

Claim.—1st. A saw provided with groups of rigid cutting teeth formed integral with the saw-blade, and clearer teeth arranged in recesses in the blade between the groups of cutting teeth, the said clearer teeth being adjustably secured within their recesses, substantially as and for the purpose set forth. 2nd. In combination with the saw-blade A, provided with the cutting teeth B, and with recesses or openings C, extending inward from the cutting edges of the saw adjustable clearer teeth mounted in said openings or recesses, said clearer teeth being adapted to be moved within the recesses toward and from the edges of the cutting teeth. 3rd. In combination with the saw-blade A, provided with cutting teeth B, and with openings or recesses C, extending inward from the cutting edge pivoted blocks E, F, and a clearer tooth D, pivoted to one of said blocks, all substantially as described. 4th. In combination with saw-blade A, provided with cutting teeth B, and with recesses C, extending inward from the cutting edge thereof, blocks E and F, pivotally connecting with each other, and clearer tooth D, pivotally connected to block E, and provided with a grooved heel b, as and for the purpose set forth. 5th. In combination with a saw-blade provided with the teeth B, and with the recesses C, block E and F, pivotally connected to each other and engaging with the walls of the recesses and a tooth D, pivotally secured to the block E. 6th. In combination with the saw-blade A, provided with cutting teeth B, beveled alternately on opposite edges and arranged in groups as shown, recesses C, formed in the blade between the groups of cutting teeth B, and pivoted clearer teeth D, mounted in said recesses and pointing alternately in opposite directions.

No. 37,029. Hot Water Heater.

(*Calorifère à eau.*)

William Kennedy, Newmarket, Ontario, Canada, 22nd July, 1891; 5 years.

Claim.—1st. A hot water heater, comprised of an outer casing having central top and bottom pipes, and a series of pipes or tubes radiating therefrom, substantially as and for the purpose specified. 2nd. A hot water heater, comprised of an outer casing with a convex bottom and fire box C, to receive the burner D, formed beneath it, in combination with the central top and bottom pipes or flues, and a series of pipes radiating therefrom, substantially as and for the purpose specified. 3rd. In a hot water heater, the combination of the upper and lower pipes E and I, with hollow collars F and H, connected thereto having pipe sockets f and h, to receive the radial tubes G, the outlet pipe J, inlet pipe K, and fire box C, containing burner D, all arranged as and for the purpose specified.

No. 37,030. Sash Lock. (*Arrête-croisée.*)

George Beale Sloan, Jr., Oswego, New York, U.S.A., 22nd July, 1891; 5 years.

Claim.—1st. In combination with the catch-plate provided with the hook a, the case A, latch L, pivoted to said case, a stop on the case adapted to detain the latch in its unlocked position, and a cam on the catch-plate adapted to throw the latch off from the aforesaid stop, as set forth. 2nd. In combination with the catch-plate C, provided with the hook a, the case A, provided with the slot c, and notch c', in the edge of said slot, the latch L, pivoted to the case and extending through the aforesaid slot, a spring arranged to force the latch toward the notch c', and the throw-off cam b, on the catch-plate, substantially as and for the purpose set forth. 3rd. In combination with the catch-plate C, provided with the hook a, and cam b, formed with rearwardly sloping backs, the case A, formed with the slotted tongue t, braced by the side bars t', t'', united by the cross bar t''', substantially as described and shown.

No. 37,031. Hame Snap. (*Ressort d'attelles.*)

Arthur Ardage (assignee of William James Creighton), both of Toronto, Ontario, Canada, 22nd July, 1891; 5 years.

Claim.—A receptacle A, fixed to one end of an open collar or hame, and having pivoted within it a pawl B, set at an acute angle from the mouth of the receptacle, a spring D, and a pin E, in combination with the hook F, formed upon or attached to the end of the collar or hame opposite to the receptacle A, substantially as and for the purpose specified.

No. 37,032. Method of Manufacturing Bolts or Pins. (*Mode de fabrication de boulon ou cheville.*)

Russell and Erwin Manufacturing Company, New Britain (assignees of Horace Kimball Jones, Hartford), both in Connecticut, U.S.A., 22nd July, 1891; 5 years.

Claim.—1st. The herein described bolt or pin, having the series of rolled circumferential enlargements ribs b, extending somewhat transversely to its axis, substantially as described and for the purpose specified. 2nd. The herein described bolt or headed pin, having at a point between the inside of its head and end a series of

rolled circumferential enlargement ribs extending somewhat transversely to its axis, substantially as described and for the purpose specified. 3rd. The herein described bolt or pin, having a series of circumferential enlargement ribs *b*, extending somewhat transversely to its axis at one portion, and a rolled screw thread at another portion, substantially as described and for the purpose specified. 4th. That improvement in the manufacture of bolts or pins, which consists in simultaneously rolling the screw threads and circumferential enlargement ribs in dies, said threads and ribs both extending around the bolt in lines non-parallel to its axis, substantially as described and for the purpose specified. 5th. That improvement in the manufacture of bolts or headed pins, which consists of rolling circumferential enlargement ribs extending somewhat transversely to the axis of said bolt in dies on the body of the pin or bolt, substantially as described and for the purpose specified. 6th. The improved compound die herein shown and described, consisting of a grooved portion for rolling the thread and a grooved portion with grooves out of parallel to a right angular transverse line through said dies, for rolling the circumferential enlargement ribs extending somewhat transversely to the axis of said bolts, the same being arranged side by side for simultaneously rolling said thread and enlargement ribs, substantially as described and for the purpose specified.

No. 37,033. Radiator. (*Calorifère.*)

George Burt Cobb, Chicago, Illinois, U. S. A., 23rd July, 1891; 5 years.

Claim.—1st. In combination, with a radiator, a support for the same, comprising the leg projecting downward from the base of the radiator and a foot extending horizontally forward from the lower portion of the leg, substantially as described. 2nd. In combination, with a radiator, the support for the same, comprising a leg projecting from the base downward, and to one side of the center of gravity and a foot projecting forward from the leg to the other side of the center of gravity, substantially as described. 3rd. In combination, with a radiator, a support for the same, comprising a leg projecting downward from the base, and a separable foot extending forward from the lower end of the leg, substantially as described. 4th. A radiator loop, provided with a leg integral with the loop extending downward to one side of the center of gravity, and a foot extending from said leg to the opposite side of the center of gravity, substantially as described. 5th. A radiator loop provided with a leg integral with the loop extending downward to one side of the center of gravity, and a foot separate from the leg and joined thereto as shown, extending from said leg to the opposite side of the centre of gravity, substantially as described.

No. 37,034. Transposing Keyboard.

(*Transposition de clavier.*)

James Merrill Gilbert, Putney, Vermont, U.S.A., 23rd June, 1891; 5 years.

Claim.—1st. A transposing keyboard, comprising a movable frame having finger keys pivoted therein, a rack and pinion movement for actuating the frame, and a locking device for the pinion, substantially as described. 2nd. A transposing keyboard, comprising a movable frame, a series of finger keys pivoted in the frame, said keys having guide pins, as shown, a vertically-movable bar extending transversely beneath the keys, means for raising the bar, a rack and pinion movement for operating the frame, and a locking device for the pinion, substantially as described. 3rd. A transposing keyboard, comprising a laterally-movable frame, having a series of keys pivoted therein, said keys having suitable guide pins as shown, a guide for the frame, a rack and pinion movement for operating the frame, and a locking device for the pinion, substantially as described. 4th. The combination, with the keys of a transposing keyboard and the frame in which they are pivoted, of a bar pivoted transversely below the keys, a rack on the frame, a pinion engaging the rack, and a lock for the pinion, which lock is also in engagement with the pivoted bar, substantially as described. 5th. A transposing keyboard, comprising a frame, a series of keys pivoted in the frame and provided with suitable guide pins, a transverse bar extending beneath the front ends of the keys, a rack and pinion movement for operating the frame, a pinion shaft having a perforated handle located beneath the case of the instrument, a spring having one end fixed to the instrument beneath the keyboard and having its free end provided with a stud adapted to enter the perforations of the pinion handle, and a pin extending through the instrument case, having its upper end impinging on the transverse bar and its lower end on the spring, substantially as described. 6th. The combination, with a piano, of a frame mounted above the piano keys and having a series of finger keys pivoted therein, suitable guides for the frame and for the keys, a vertically-movable bar extending transversely beneath the keys, said bar having a link connection with the frame, as shown, a rack and pinion movement for operating the frame, a pinion shaft having a perforated handle located beneath the case of the instrument, a spring having one end fixed to the instrument case and the free end provided with a stud to enter the perforations of the pinion handle, and a pin extending vertically through the case, its upper end impinging on the transverse bar and its lower end impinging on the spring, substantially as described. 7th. In a transposing keyboard, the combination, of a movable frame, blocks fixed to the rear rail of the frame and provided with depending tongues, and finger keys having slots therein to receive the tongues, substantially as described. 8th. In a transposing keyboard, the combination, of a movable frame, blocks fixed to the rear rail of the frame and provided with depending tongues, and finger keys having slots to receive the tongues, said keys being pivoted to the tongues and having their rear ends provided with weights, substantially as described. 9th. In a transposing keyboard, the combination, with a movable frame having finger keys pivoted therein, of a cross bar extending above the keys, and clips fixed to the cross bar and having their ends bent to embrace and guide the

end rail of the frame, substantially as described. 10th. In a transposing keyboard, the combination, of a movable frame, a rack and pinion movement for operating the frame, a perforated handle on the pinion shaft, and a spring fixed to the instrument case and provided at its free end with a stud adapted to enter the perforations of the pinion handle, substantially as described.

No. 37,035. Cuff Holder. (*Agrafe-poignet.*)

Alfred John Klein, Toronto, Ontario, Canada, 23rd July, 1891; 5 years.

Claim.—1st. The combination of the plate A, with the wire B, and the spring in the wire B, to allow the shank of a cuff button or stud to slide along between the two, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the plate A, and wire B, in the shape of an eye at each end to receive the cuff button C, and wrist band button H. 3rd. The combination of plate A, with fixed button and shank C, with movable head D.

No. 37,036. Wall for Buildings.

(*Mur pour édifices.*)

Edward Wilkes Rathbun, Deseronto, Ontario, Canada, 23rd July, 1891; 5 years.

Claim.—The use of hard hollow porous terra cotta, preferably, of ordinary red brick size as an inside layer or lining of outer walls, substantially as described.

No. 37,037. Compound for Insulating Electric Conductors. (*Composition pour isoler les conducteurs électriques.*)

James B. Williams, Oakland, California, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. An electric insulating compound, consisting of india rubber paraffine or similar wax, and a vegetable resin with or without the addition thereto, of an inert material such as silicious or bituminous matter, and with or without the addition of sulphur for vulcanization, and preferably in the proportions stated. 2nd. The process of making the insulating compound above described, vulcanized or not vulcanized, which consists in first dissolving india rubber in a volatile solvent, second in dissolving paraffine or similar wax in the resulting solution, third in distilling the volatile solvent from the solution, fourth adding thereto the resinous body, fifth incorporating the inert material with or without the addition of sulphur with the resultant compound of india rubber wax and resin, substantially as set forth.

No. 37,038. Hand Rubber for Washing Purposes. (*Main de caoutchouc pour laver.*)

Edward McGee and Peter Ryan, both of Toronto, Ontario, Canada, 23rd July, 1891; 5 years.

Claim.—Three or more fluted rollers A, journaled in the frame B, provided with a handle C, and splash plates D, and E, substantially as and for the purpose specified.

No. 37,039. Bolt Operating Device for Doors. (*Boulons.*)

Frank W. Wallace and George Ezekiel Ellis, both of Utica, Mississippi, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. In bolt-operating devices for doors and window shutters or blinds, the combination, with spring-actuated bolts oppositely arranged, of a carrier hinged to swing in a horizontal plane, a lever pivoted to the carrier to swing in a vertical plane, and wires or rods connected to the bolts and to the lever on opposite sides of its fulcrum, substantially as described. 2nd. In bolt operating devices, for doors and window shutters or blinds, the combination, with spring actuated and oppositely-arranged bolts B, of the carrier H, hinged by the vertical hinge *f*, the stop *g*, secured to the carrier, the lever G, pivoted in the carrier by the horizontal pivot *d*, and the wires or rods *e*, connected to the bolts and to the lever on opposite sides of its fulcrum, substantially as herein shown and described.

No. 37,040. Expansive Bustle.

(*Tournure expansible.*)

Isaac B. Kleinert, Falcon Street, London, England, 23rd July, 1891; 5 years.

Claim.—1st. The combination of the fabric spring strips, incorporated therewith intermediate bands, end joining device and extending device, substantially as set forth. 2nd. The fabric and the elastic spring strips, extending lengthwise of said fabric, with their ends brought together, in combination with end joining devices for securing one group of the ends of said spring strips, with the group of the opposite ends of said spring strips, substantially as set forth. 3rd. The fabric having a series of parallel slots or cases formed therein, and a series of elastic spring strips inserted in said slots or cases, said slots or cases after being fitted with said spring strips being brought together side-edge to side-edge, in combination with end tabs *c, c*, secured to said fabric after said slots or cases are brought together, and means for attaching said tabs to each other, substantially as set forth. 4th. The fabric having a series of parallel slots or cases formed therein and extending longitudinally, and a series of elastic spring strips inserted in said slots or cases, said slots or cases after being fitted with said spring strips being brought together side-edge to side-edge, whereby the intermediate bands *b, b*, of the fabric between said slots or cases are folded, in combination with end tabs *c, c*, secured to the ends of said fabric after said slots

or cases are brought edge to edge, means for attaching said end tabs to each other the side tabs *f, f*, and means carried by said side tabs for attaching the bustle or improver to the person of the wearer, substantially as set forth.

No. 37,041. Saw Set. (*Tourne à gauche.*)

Charles C. Taintor, Elizabeth, New Jersey, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. The combination, with the head, of a saw set having a guide for the edge of the saw, of an adjustable anvil adjacent to such guide, a punch with a punch lever pivoted upon the head to actuate the same, a bending lever pivoted upon the head and provided with a bending jaw, and a spring applied to such bending lever to prevent the movement until the punch has been shifted, as and for the purpose set forth. 2nd. The combination, with the head *A*, provided with an anvil, and a punch movable to and from the same, of the lever *B*, pivoted between lugs *f*, upon the head, and having the arm *a*, fitted to the punch, as set forth, and the lever *C*, forked to embrace the outside of the head by lugs *g*, and provided with the cross bar *d*, connecting the sides of the fork beneath the head, as and for the purpose set forth. 3rd. The combination, with the head, of a saw set having a guide for the edge, of a saw of an anvil adjacent to such guide, a punch with a punch lever pivoted upon the head to actuate the same, a bending lever pivoted upon the head and provided with a bending jaw and with the gage screw *w*, and the springs applied to the punch lever and bending lever, the whole arranged and operated to first press the punch upon the saw tooth against the anvil, and then to press the jaw upon the saw blade to bend the tooth and finally when the gage screw is in contact with the head to press the punch forcibly toward the anvil to bend the tooth positively at the desired angle. 4th. A saw set, comprising a head having a punch movable therein, a rotary die having a series of inclined facets of unequal length, and having a shank pivoted to the head obliquely to the movement of the punch with the facets in opposition thereto, a saw gage in a line with the inner ends of the facets, and means for pressing the punch toward the opposed facet and bending the saw teeth over the outer corner of the facet, as and for the purpose set forth. 5th. A saw set, comprising a head having a punch movable therein, a rotary die having a series of inclined facets of unequal length, and having a shank pivoted in the head, obliquely to the movement of the punch, with the facets in opposition thereto, a saw gage in a line with the inner ends of the facets, a lever to press the punch toward the opposed facet to clamp the tooth thereon, and a bending jaw for bending the tooth over the corner of the facet, substantially as herein set forth. 6th. A saw set, comprising the head *A*, the rotary die having a series of inclined facets of unequal length, with a shank pivoted obliquely in the head and provided with means for setting the die, the punch *t*, the gage notches *f*, upon the under side of the head in line with the top of the punch, and the inner ends of the facets, the lever *B*, for actuating the punch, and the lever *C* for bending the tooth over the outer corner of the facet, the whole arranged and operated, substantially as herein set forth.

No. 37,042. Animal Trap. (*Piège.*)

James F. Lyons, Crescent City, Iowa, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. The combination of a board having an opening, a receptacle below the opening, a horizontal shaft journaled across the same and provided with radial blades adapted to revolve through the opening, a yielding depending stop or pin engaging the vertical one of the said radial blades and adapted to hold it against rotation until a certain weight is placed upon one of the horizontal blades, substantially as described. 2nd. The combination of a board provided with an opening, a receptacle below the opening, a shaft journaled across the opening and provided with radial blades adapted to close the opening, a depending pin adapted to form a yielding stop against which the blades strike as they assume a vertical position, and an adjustable weight on the said pin, as and for the purposes described. 3rd. The combination of a board provided with an opening, rotating blades adapted to close the said opening, said blades being carried by a horizontal shaft extended across the opening, an automatic device for permitting the blades to rotate when a certain weight is placed on one of the horizontal blades, a casing placed over the upper blades, passages leading in through the casing to the inner end of one of the horizontal blades, and a bait holding device placed near the outer end of the said blade, substantially as described.

No. 37,043. Mica Cutter and Gage.

(*Tranche mica et jauge.*)

Charles B. Van Arsdale, Sydenham, Ontario, Canada, 23rd July, 1891; 5 years.

Claim.—The combination, with the cutter having a stationary blade *C*, and a movable blade *D*, hinged together near one end, of a cutter gage secured endwise to the cutter and at right angles to the blades, said gage consisting of the bracket *E*, having longitudinal parallel slots *H, H*, and a partition *J*, intervening said slots, and adjustable fences *K, K*, on opposite sides of the partition, each fence consisting of a series of plates laid one on top of another and diminishing in length upwardly, each plate having a longitudinal slot *M*, coinciding with the slot in the bracket and held adjustably by the clamping screw *N*.

No. 37,044. Artificial Denture.

(*Denture artificielle.*)

William Henry Marshall, Oxford, Mississippi, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. The combination, with a natural tooth or good root having a cap or crown, of a denture having a band adapted to fit

closely to the sides of said cap or crown and provided with a plate constituting the sole bearing of the denture under pressure, substantially as set forth. 2nd. The combination, with one or more natural teeth having crowns with parallel sides, of an artificial denture having a plate for bearing upon the gum and provided with a band arranged to slide upon said crown in a position above the gum, substantially as set forth. 3rd. The combination, with the natural tooth having a crown with parallel sides, of an artificial denture having a plate fitted to the gum, except at the neck of the crown, and supporting a band fitting closely but sliding upon the crown beyond the neck of the same, substantially as set forth. 4th. The combination, with a natural tooth having a crown with parallel sides and elongated in cross-section, of a denture having a plate fitted to the gum and provided with bands adapted to fit closely to the said crown beyond the neck of the same, substantially as set forth. 5th. The combination, with two or more natural teeth provided with crowns and having diverging faces, of a denture provided with a band adapted to each crown and to engage with said diverging faces and with a plate having its bearing upon the gum, substantially as set forth.

No. 37,045. Means for Preventing Induction in Electric Circuits. (*Moyens de prévenir l'induction dans les circuits électriques.*)

Stephen Curtis Drew, Boston, Massachusetts, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. In a telephonic circuit, the combination, with a telephone having primary and secondary circuits, of the induction coil *b, c*, the coil *b*, being placed in the above secondary circuit, substantially as and for the purpose above set forth. 2nd. In a telephonic circuit, the combination, with a telephone having primary and secondary circuits, of the induction coil *b, c*, the coil *b*, being placed in the above secondary circuit, and the secondary circuit being made adjustable so that it can be placed at a greater or less distance from the primary coil, substantially as and for the purpose above described. 3rd. A line and apparatus for telephonic communication, comprising a main line ground at either end and including in its circuit at either station the primary coil of one induction coil, and the secondary coil of another induction coil, combined with a receiving telephone and short local circuit therefor including the secondary coil of the first mentioned induction coil, and a local circuit including a battery microphone and primary coil of the other induction coil, the whole combined and arranged, substantially as and for the purpose above specified.

No. 37,046. Cultivator. (*Cultivateur.*)

Nicholas P. Lehr and Joseph W. Lehr, both of Fremont, Ohio, U.S.A., 23rd July, 1891; 5 years.

Claim.—1st. In a cultivator, the adjustable yoke composed of two parallel bars having integral therewith, the cross pieces or partitions with concave seats, in combination with the bent axles and the eye bolts, substantially as shown and described. 2nd. In a cultivator, the tooth formed of a single piece of metal and twisted near its upper end to form a securing end, in combination with the frame and the adjusting plate having flanges which overlap the tooth, and a series of adjusting apertures, substantially as shown and described. 3rd. In a cultivator, the beams having the offsets or bends and the straight sections, and the sections to the straight portion of which are secured the series of offsets carrying the fasteners to which are secured the teeth, substantially as shown and described. 4th. The combination, with the cultivator frame and the wheels of the tooth frame, having the straight portion to the rear ends of which are attached adjustable approximately L-shaped frames passing around the rear of the wheels and secured to the wheel spindles, and carrying the teeth on their outer ends, substantially as shown and described. 5th. The cultivator having the tongue provided with the right angular flanges on its rear end, the axles and the seat resting on said flanges and having notched brackets bearing against the axle, substantially as shown and described. 6th. In a cultivator, the combination of the horizontal bar connected to the upper side of the tongue, and the hangers connected to said bar by clamps slipped upon said bar, substantially as set forth. 7th. In a cultivator, the reversible point having the double ended taper or point, and means for holding it in operative position, substantially as set forth. 8th. In a cultivator, the combination, with the cultivator tooth, of the reversible double ended point having the keeper or socket on its rear side provided with a thumb or holding screw, substantially as specified.

No. 37,047. Steam Tow Boat. (*Remorqueur.*)

Alexander McDougall, Duluth, Minnesota, U.S.A., 23rd July, 1891; 5 years.

Claim.—In a steam tow boat, a hull having a curved top, spoon shaped bow and a skeag stern, and with a normally high load line, so that when pitching the bow or stern will be entirely submerged, whereby the weight of the water thereon offers a resisting force to the submerged portion, in combination with a propeller adjacent to the skeag and propelling mechanism.

No. 37,048. Kiddle. (*Pêcherie.*)

Franz Kluge, Barmen, Prussia, 24th July, 1891; 5 years.

Claim.—1st. A bow-net or fish pot characterized by a star-like arrangement of inlets accessible from every side, and at any level, operating by springy horizontal wires *G*, held in pre-determined position and attached to the parts *A* of the framing so as to be capable of being alternately turned to the right and the left and of returning to their normal condition, each wire turned to the right

on one upright meeting one turned to the left on the next thus forming the star-like entrance, hollow balls *W* being provided on the upper part of the bow-net or fish pot which when empty and hermetically closed serve to float the whole, but when full of water serve as weights to carry the whole down, substantially as described. 2nd. In a bow-net or fish pot, the combination of several doors *o*, arranged one above the other, and the panelling of each door consisting of wires *D*, vertically hinged to the top bar of the door, so as to yield access from the side, as well as radially, also all substantially as described. 3rd. In a bow-net or fish pot, the combination of the arrangement rods or wires *p*, suspended by sleeves *q*, and movable vertically and inwards only, which nets may be used not only for fish but also for animals, the rods giving free admission, and the rods *r* with the serrations *p*, substantially as described.

No. 37,049. Hydrocarbon Vaporizer and Burner. (*Appareil évaporatoire et brûleur à hydrocarbures.*)

Richard Thompson and Louis H. Graves, both of London, Ontario, Canada, 24th July, 1891; 5 years.

Claim.—1st. In a hydrocarbon vaporizer and burner, a conical divider *S*, in combination with a generating chamber *g*, in which an opening *o*, is formed, and a burner *B*, beneath, substantially as shown and described, and for the purpose specified. 2nd. In a hydrocarbon vaporizer and burner, a generating chamber *g*, in which an opening *O*, is formed, and around which opening an extension or ring flange *N*, is formed, and a burner beneath, substantially as shown and described, and for the purpose specified. 3rd. In a hydrocarbon vaporizer and burner, a T-shaped burner *B*, in the arms of the *T* of which openings *b*, *b'*, are formed, said burner being situated below, and in combination with a generating chamber, in which an opening *O*, is formed, substantially as shown and described, and for the purpose specified. 4th. In a hydrocarbon vaporizer and burner, a generator *G*, formed with a partition wall or walls *P*, for dividing said generator into two or more separate and distinct generating chambers *g*, *g*, substantially as shown and described, and for the purpose specified. 5th. In a hydrocarbon vaporizer and burner, a generator *G*, provided with partitions *P*, an oil pan *D*, and the tube *F*, formed with the branches *f*, *f'*, *f''*, and provided with the valves *V*, *v*, *v'*, *v''*, substantially as shown and described, and for the purpose specified. 6th. The combination of the generating and super-heating chambers *g*, *H*, in each of which the openings *O*, *o*, are formed, respectively, the super-heating passages or chambers *H*, *H*, partition wall *A*, and burner *B*, substantially as shown and described, and for the purpose specified. 7th. The combination of the generator *G*, having the partition wall or walls *P*, which form the separate generating chambers *g*, *g*, therein, in each of which openings *O*, and partition walls *A*, are formed, the extension or ring flange *N*, around the opening *O*, the super-heating chambers *H*, *H*, in which the openings *O* are formed, the conical divider *S*, and the super-heating chambers or passages *H*, *H*, the T-shaped burner *B*, in the arms of the *T* of which the openings *b*, *b'*, are formed, and the tube *F*, formed with the branches *f*, *f'*, *f''*, and provided with the valves *V*, *v*, *v'*, *v''*, substantially as shown and described, and for the purpose specified.

No. 37,050. Screw Elevator. (*Élévateur à vis.*)

Standard Screw Elevator Manufacturing Company, New York, State of New York, (assignees of Charles Wentz Fowler, Baltimore, Maryland), both in U.S.A., 24th July, 1891; 5 years.

Claim.—1st. In an elevator, the combination of a screw, a nut mounted upon said screw and moved by it, two sheaves journaled to the nut, a cord secured at both ends to a suitable part of the frame and each end passing under one of the sheaves secured to the nut, and the loop passing up and over another sheave which is connected with an elevator hoisting rope, whereby an elevator car may be raised or lowered, substantially as described. 2nd. In an elevator, the combination of a screw, a nut mounted upon said screw and moved by it, two sheaves journaled to the nut, a cord secured at both ends to a beam and each end passing under one of the sheaves secured to the nut, and the loop passing up and over another sheave which is suspended in a link in which are journaled two sheaves, the one over which the loop of the first rope passes, and another, and a rope secured to the upper end of a link and passing over a sheave journaled at a fixed point, thence down under the upper sheave of the link and then up to the elevator car, substantially as described.

No. 37,051. Steam Muffler.

(*Appareil pour assourdir la vapeur.*)

The Consolidated Car Heating Company, Albany, (assignees of Edwin Adelburt Leland, Brooklyn), both in New York, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. In a steam muffler having the water inlet and outlet and the steam inlet, of a porous medium closely surrounding the steam inlet pipe within said drum, and of an auxiliary water passage through said porous medium, substantially as described. 2nd. In a steam muffler, the combination, with the drum having the water inlet and outlet, and a steam inlet, of a porous medium closely surrounding the steam inlet pipe within said drum, and of an auxiliary water passage around said porous medium, substantially as described. 3rd. In a steam muffler, the combination, with the drum having the water inlet and outlet and a steam inlet, of a porous medium closely surrounding the steam inlet pipe within said drum, and of an auxiliary water passage around and through said porous medium, substantially as described. 4th. In a steam muffler, the combination, with a drum having an upper outlet and a lower inlet for water, of a steam pipe entering the upper portion and having its closed end terminated above the bottom of the drum, a plate of less diameter than the interior of the drum closely surrounding the closed end of the drum and having an upwardly turned flange, a plate of similar size surrounding the upper portion of the steam pipe and having a downwardly turned flange, ribbed rods packed closely together, and around a perforated portion of the steam pipe,

said rods being confined by the flanges of the plates and tubes having their open ends lying in openings in the lower perforated plate and the upper imperforated plate, the former being provided with brackets projecting radially and having supporting feet, substantially as described.

No. 37,052. Self Sealing Jar. (*Appareil automatique pour cacheter les jarres.*)

Samuel F. Glass, (assignee of Duncan F. Buchanan), both of London, Ontario, Canada, 24th July, 1891; 5 years.

Claim.—The jar *J*, formed with the socketed lugs or ears *E*, *E*, in combination with the cover *A*, formed with the locking recess *L*, and the flange *F*, the packing *B*, and the resilient clamp *C*, formed with the angular ends *c*, *c'*, substantially as shown and described, and for the purpose specified.

No. 37,053. Gas Cooking Stove.

(*Poêle de cuisine à gaz.*)

Samuel Stewart, Newark, and William Holzer, Elizabeth, both in New Jersey, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. The gas stove, consisting in the top *a*, having legs *b*, the legs *d*, and skeleton gratings *e*, *e'*, sustained between the legs at different heights, with rings to admit tubular burners, the pipes *l*, fixed beneath the grating *e*, transverse to the rings *e*, the thimbles *t*, fixed upon the pipes as described, and the sleeves *f*, provided with nettings *f'*, at their upper ends, and cocks in the pipes *l*, to supply the burners separately, the whole arranged and operated, substantially as herein set forth. 2nd. The gas stove, consisting in the top *a*, legs *d*, and skeleton gratings *e*, *e'*, sustained between the legs at different heights, with rings *e'*, to admit tubular burners, pipes *l*, fixed beneath the grating *e*, transverse to the rings, thimbles *t*, affixed to the pipes as described, and the movable sleeves *f*, provided with the opposite slots *f''*, in their lower ends and with the netting *f'*, in their upper ends, and vertically adjustable upon the thimbles *t*, as and for the purpose set forth.

No. 37,054. Body Battery and Attachment Therefor. (*Batterie de corps et appareil pour cet objet.*)

John Arthur Crisp and George Francis Webb, both of Jefferson, Ohio, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. A battery cell comprising a copper plate *F*, having notches *f*, *f'*, in its ends, a zinc plate *G*, bent upon itself and enclosing the copper plate, rivets passed through the members of the zinc plate and its notches to hold the copper plate in place, and an absorbent material between the copper and zinc plates, substantially as shown and described. 2nd. Battery cells each comprising a copper plate *F*, having notches *f*, *f'*, in its ends, a zinc plate *G*, bent upon itself and enclosing the copper plate, rivets passing through the members of the zinc plate and its notches to hold the copper plate in place, an absorbent material between the copper and zinc plates, copper hinges connecting the copper plate of one cell with the zinc plate of the next cell, and hooks connected respectively to the copper plate of one cell and the zinc plate of the opposite end cell, substantially as shown and described. 3rd. In a body battery, an electrode *P*, formed of a circular convex plate having its edge at opposite points bent over at *P*, *P'*, upon the concave side of the plate, one of the bent-over portions being provided with an aperture *p*, substantially as shown and described. 4th. The combination, with an electrode *P*, formed of a circular convex plate having its edge bent over at opposite points *P*, *P'*, upon the concave side of the plate, one of the said bent-over portions having an aperture *p*, of a snap hook *M*, constructed of spring wire, formed into a coil *m*, having a doubled member *m'*, terminating in a hook *m''*, and to the parallel members *m''*, extending between the wires of the doubled member *m'*, and terminating back of the hook *m''*, in coils *m'*, the hook *m''*, engaging the aperture *p*, from the inner side of the bent portion *P'*, of the electrode, and the coils *m'*, pressing against the concave side of the electrode, substantially as shown and described. 5th. The combination, with a case *D*, having attaching devices at its upper open end, and a water-proof pocket *E*, in said case, provided with a closing flap at its upper open end, of battery cells in said pocket, having hooks on the copper and zinc plates of the end cells, provided with bends to pass over the upper edges of the ends of the case, and eyes or rings exterior of the case for connecting the circuit wires, substantially as shown and described. 6th. The combination, with a battery, and a pocket for the same, of a hook having a bend to fit the pocket, said hook having one end connected with an element of the battery and the other end formed into a series of rings, substantially as shown and described. 7th. In a body battery of the character described, an adjuster constructed of spring wire, said adjuster having one end formed into a hook to fit the battery hinges, its central portion bent to fit over the battery pocket, and its outer end formed into a series of rings, substantially as shown and described. 8th. In a body battery of the character described, the combination, with the ringed hooks of the batteries and the perforated electrodes, of connecting wires and spring hooks attached to the wires, said hooks having an end coil, a doubled member extending from the end coil and terminating in a hook, and two spring members extending from the coil and through the doubled member, substantially as shown and described. 9th. The combination, with the battery, of a connecting wire formed into a loop, and bead-like electrodes mounted on the loop, substantially as shown and described.

No. 37,055. Mustache Guard.

(*Garde-moustache.*)

Isaac Gilmore Gross, Henryville, Alabama, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. As an improved article of manufacture, a mustache-guard provided at its rear edge with an upwardly-projecting flange,

and at its front edge with a recess lug or flanges projecting from the end edges of the latter and adapted to engage the inner surface of a cup or other article, and spring-arms adapted to bind against the outer surface of the latter, substantially as set forth. 2nd. As an improved article of manufacture, a detachable mustache-guard having its ends adapted to project over the sides of a cup or other article, downwardly-projecting lugs or flanges adapted to engage the inner surface of such article, and spring-arms adapted to bind against the outer surface of the latter said guard being provided with a recess between the lugs or flanges, substantially as set forth.

No. 37,056. Draft Generator and Spark Arrester. (*Générateur du tirage et arrête-étincelle.*)

Charles Albert Houston, Somerville, New Jersey, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. The combination, with a steam boiler having flues through it, a smoke-chamber into which said flues discharge, a smoke-stack leading from the latter, a gaseous jet for creating a forced draught through the flues, and a screen surrounding the jet and extending thence towards said smoke-stack, of a tubular shell within said chamber arranged to enclose the discharge end of the flues at one end, and extending thence to and surrounding the jet below said screen, and extending thence upwardly and surrounding said stack above said screen, said shell constructed with a contracted aperture for the escape of sparks in its forward side, whereby the draught created by the jet is confined within said shell, and the sparks entering said shell can escape through said aperture. 2nd. The combination, with a steam boiler having flues through it, a smoke-chamber into which said flues discharge, a smoke-stack leading from said chamber, a jet-nozzle discharging into said stack, and a tubular screen surrounding the jet nozzle and leading to said stack, of a tubular shell enclosing the ends of the flues at one end surrounding the jet-nozzle and extending thence upwardly and surrounding the lower end of the smoke-stack by a closed connection therewith, and said shell constructed with a contracted aperture in its upper and forward side for the escape of sparks, and with a contracted aperture in its lower and forward side, whereby the draught created by said jet-nozzle is confined within said shell, and the sparks in the lower part of the latter may escape through said lower aperture, and those in the upper part thereof may escape through the upper aperture. 3rd. The combination, with a steam boiler having flues through it, a smoke-chamber into which said flues discharge, a smoke-stack leading from said chamber, a steam nozzle discharging into said smoke-stack, and a tubular screen surrounding said nozzle and extending thence towards said stack, of a tubular shell within said smoke-chamber enclosing the ends of the flues at one end, and surrounding the jet-nozzle and extending thence upwardly, and closely surrounding the lower end of said stack, said shell constructed with a contracted aperture in its forward side communicating with said chamber for the escape of sparks, and a steam-jet discharging within said shell towards said aperture for expelling the sparks through it and into the smoke-chamber, whereby the draught created by the jet-nozzle is confined within said shell, and the sparks in the latter are expelled therefrom through said aperture by said steam-jet. 4th. The combination, with a boiler having flues through it and a smoke-chamber into which said flues discharge, of a smoke-stack leading from said chamber an exhaust steam-nozzle discharging into said stack, and a screen surrounding said nozzle, of a tubular shell enclosing the ends of the flues at one end, and surrounding said nozzle and extending thence upwardly towards said stack, said shell constructed with a contracted aperture for the escape of sparks in its forward side, and having an internal apron above said aperture, whereby sparks entering said shell may pass beneath said apron and escape through said aperture, and the draught created therein by said steam-nozzle is protected by said apron from said aperture. 5th. The combination, with a boiler having flues through it, and a smoke-chamber into which said flues discharge, of a smoke-stack leading from said chamber, an exhaust steam-nozzle discharging into said stack, and a screen surrounding said nozzle, of a tubular shell enclosing the ends of the flues at one end and surrounding said nozzle and extending thence upwardly towards the stack, said shell constructed with a contracted aperture for the escape of sparks in its forward side, and having an integral apron, and an auxiliary steam-jet within said shell and discharging beneath said apron and towards said aperture, whereby sparks within said shell are discharged by said jet through said aperture. 6th. The boiler A, having flues through it, smoke-box C, into which said flues discharge, smoke-stack E, tubular extensor E', thereof, exhaust nozzle D, and screen E'', and the shell F, enclosing the ends of the flues at one end and extending thence forward and surrounding the nozzle D, and screen E'', and surrounding the tubular extension E', by a closed connection therewith, said shell constructed with contracted apertures *f*, and *g*, and having internal apron G, in combination with the auxiliary jet-pipe H, constructed to take steam from the exhaust nozzle D, and discharge it in a jet beneath the apron G, all as and for the purpose set forth. 7th. The combination, with a steam boiler having flues through it, a smoke-chamber into which said flues discharge, a smoke-stack leading from said chamber, and a jet-nozzle discharging into said stack, of a tubular shell within said chamber enclosing the ends of the flues at one end surrounding the jet-nozzle by a closed connection and extending thence upwardly and surrounding the lower end of the smoke-stack by a closed connection therewith, whereby the draught created by said jet-nozzle is confined within said shell. 8th. The combination, with a steam boiler having flues through it, a smoke-chamber into which said flues discharge, a smoke-stack leading from said chamber, and a jet-nozzle discharging into said stack, of a tubular shell within said smoke-chamber enclosing the ends of the flues at one end, surrounding the jet nozzle and extending thence upwardly and surrounding the lower end of the smoke-stack by a closed connection therewith, and said shell constructed with a contracted aperture in its forward side for the escape of sparks, whereby the draught created by said jet-nozzle is confined within said shell and the sparks in the latter may escape through said aperture.

No. 37,057. Needle for Sewing Machines.

(*Aiguille de machine à coudre.*)

St. Croix Manufacturing Company, Hudson, Wisconsin, assignees of Eva Jennie Hall, Stillwater, Minnesota, both in U.S.A., 24th July, 1891; 15 years.

Claim.—1st. A needle having the open-sided eye, the spring for closing the side of the latter, and a slot into which the spring end projects adapted to allow a thread to be passed in over and beyond the spring end, substantially as and for the purpose specified. 2nd. A needle having the open-sided eye, the spring attached to the needle body below the eye and extending up past the open side of the latter, and a slot into which the spring projects beginning below and extending beyond the spring end, substantially as and for the purpose shown. 3rd. A needle having the open-sided eye, the spring attached to the needle body below the eye and extending up past the open side of the latter, and the spring end receiving slot extending upward and inward at an angle to the spring end, substantially as and for the purpose set forth. 4th. A needle having the enlarged portion or shank, and the reduced body with open-sided eye, the spring attached to the body below the latter and extending up past the open side of the same, and a slot into which the upper end of the spring projects extending into the thicker upper part of the needle and adapted to allow the passage of a thread up over and behind the spring end into position to be carried down behind the spring, to and into the needle eye, substantially as and for the purpose described. 5th. A needle having the open-sided eye, the spring for closing the opening into such eye, having its free end notched and a stop situated between the sides of the spring notch adapted to allow the passage of a thread between it and the spring end, substantially as and for the purpose specified. 6th. A needle having the open-sided eye, the spring for closing the opening into the latter having its end provided with a notch, a slot into which the spring end projects, and a stop between the sides of the spring notch to limit the movement of the spring end, substantially as and for the purpose shown. 7th. A needle having the open-sided eye, the spring for closing the opening into the latter having its free end notched, a slot into which the spring end projects, and a stop within such slot consisting of a portion of the needle body projecting down into the spring end notch, substantially as and for the purpose set forth. 8th. In a needle, in combination, with the body having the open-sided eye and an opening, the spring for closing the side of the eye having the tongue passing through the opening and headed down, substantially as and for the purpose specified. 9th. In a needle, in combination, with the body having the open-sided eye and a longitudinal groove or recess, the spring for closing the side of the eye attached to the needle body, and having on its attaching portion a thin longitudinal web fitting the groove in the needle body, substantially as and for the purpose shown. 10th. In a needle, in combination, with the body having the open-sided eye, the spring for closing the side of the latter having a tongue engaging an opening in the needle body, and an engaging projection and recess on the spring and body, respectively, tending to hold the spring body normally in line with the latter, substantially as and for the purpose set forth. 11th. In a needle, in combination, with the body having the open-sided eye, an opening below such eye and a longitudinal groove at the end of the opening, the eye side closing spring having the tongue, and a thin longitudinal web engaging, respectively, the opening and groove, substantially as and for the purpose described. 12th. In a needle, in combination, with the body having an opening through it, and a longitudinal groove, and a depression at opposite ends of the opening, the spring having the web engaging the longitudinal groove, and the tongue projecting through the opening and headed down into the depression on the further side of the needle body, substantially as and for the purpose specified.

No. 37,058. Means or Appliances for Guiding and Controlling Gas Holders. (*Moyen et appareil pour guider et contrôler les gascimètres.*)

Edward Lloyd Pease, of Pierremont, Darlington, Durham, England, 24th July, 1891; 5 years.

Claim.—1st. The combination of a gas holder, ropes attached to a plurality of points at the top and bottom thereof and a coupling device adapted to oscillate around the said holder, the said ropes being attached thereto, as and for the purposes described. 2nd. The combination of a gas holder, a ring adapted to oscillate therearound, and ropes attached to the said ring and to the top and bottom of the said holder at a plurality of points, the said ropes being branched off from the ring in directions dependent upon their connection with the top or bottom of the holder, as and for the purposes described. 3rd. The combination of a gas holder, a ring adapted to move around the said holder, pulleys arranged near the path of the said ring, and ropes attached to the said ring, passing over the said pulleys and attached to the top and bottom of the said holder, as and for the purposes described. 4th. In a controlling device for gas holders having a plurality of lifts, the combination of a ring adapted to move concentrically around the said holder, a rope attached to the said ring and to the top of one of the inner lifts, a pulley on the base of the outer lift and a rope secured to the said ring, passing around the said pulley and attached to the base of the said inner lift, as and for the purposes described. 5th. In a controlling device for gas holders having a plurality of lifts, the combination of a ring adapted to move around the said holder, a rope attached to the said ring and to the top of one of the inner lifts, a pulley on the base of the outer lift, a rope secured to the said ring, passing around the said pulley and attached to the base of the said inner lift and pulleys to secure the proper alignment of the ropes and the rings before their junction, as and for the purposes described. 6th. In a controlling device for gas holders having a plurality of lifts, the combination of a ring adapted to move around the said holder, a rope attached to the said ring and to the top of the lift intermediate between the outer and top or inner lift, a pulley on the base of the outer lift, a second rope

also eured to the said ring, passing around the said pulley and attached to the base of the said intermediate lift, a coupling rope, pulleys upon the base of the top lift, pulleys upon the top of the top lift carrying the said coupling rope, a rope attached to the said coupling rope and to the intermediate lift, and ropes attached to the said coupling rope, passing around the said pulleys upon the base of the top lift and attached to the intermediate lift, as and for the purpose described. 7th. In a controller for gas holders, the combination of a tank, a lift resting therein, bearings mounted upon said tanks, and a plurality of check ropes having their opposite ends attached to the opposite sides of the said lift, one of the said ends being brought up and connected to the lift, while the opposite end is carried down to be connected therewith as described. 8th. In gas holders, the combination, with a tank having a lift resting therein, of a check rope having its opposite ends attached to the opposite sides of the tank, and bearings mounted upon the upper portion of one side and upon the lower portion of an opposite side of the lift, over which bearings the check rope passes, it being adapted to play thereon as described. 9th. In gas holders, the combination of a tank, a lift resting therein, bearings mounted on the crown of the said lift and on one of its sides near its base, and a check rope passing around the said bearings and having one of its ends brought down from the top of the lift and connected to the tank, the opposite end of the said rope being brought down from the top of the lift around the bearings on its sides and again brought and connected to the tank, as described. 10th. In gas holders, the combination of a tank, a lift resting therein, pulleys mounted on the crown of the said lift and on the sides thereof near its base, holdfasts at the top of the tank, and a check rope passing over the pulleys on the crown of the lift, one end thereof being brought down from the said pulleys and connected to a holdfast, the opposite end of the said rope being brought down from the crown of the lift around a pulley upon its side and again brought up and connected to a holdfast distant from the holdfast to which its opposite end is connected, as described. 11th. In gas holders, the combination of a tank, an inner lift therein, a second lift concentric with the inner lift, bearings mounted on the crown of the inner and upon the top of the second lift at one side thereof and upon the sides of the said lifts near the bases thereof, and a check rope passing over the bearing upon the crown of the inner lift and having one of its ends brought down and around a pulley upon the side of the second lift, and carried up again and connected with the tank, the opposite end of the said rope being brought down and around the bearings upon the side of the inner lift and up around the bearing upon the top of the second lift, and being carried down and connected with the tank, as described. 12th. In gas holders, the combination of a tank, of a plurality of lifts nested therein, comprising an inner, an intermediate, and an outer lift, bearings mounted upon the crown of the inner lift upon the tops of the outer and intermediate lifts, and upon the sides of all the said lifts near the bases thereof, and a check rope passing over the bearings upon the crown of the inner lift, one end of the said rope passing down and around the bearings upon the base of the intermediate lift and up again and over the bearing at the top of the outer lift and connected to the tank, while the opposite end of the said rope is brought down from the crown of the inner lift, around the bearing upon its side, up and around the bearing on the top of the intermediate lift, and down and around the bearing at the base of the outer lift, and up again and connected with the tank, as described.

No. 37,059. Tubular Water Grate for Steam Boiler Furnaces. (*Grille à circulation d'eau dans des barreaux tubulaires pour foyers de chaudière à vapeur.*)

Robert Macfarlane, Magog, Quebec, Canada, 24th July, 1891; 5 years.

Claim.—1st. In combination, with a boiler furnace tubular grate bars connected together so as to provide continuous passage for water to enter at one side and flow through the tubes and out at the opposite side for the purpose of cooling the grate and preventing the formation of clinkers, as described. 2nd. In combination, with a boiler furnace, the bottom or grate upon which the fuel rests composed of parallel tubes almost in contact with each other, and connected together at the end by return-bend, forming a continuous passage for water or other fluid, as and for the purpose described. 3rd. In combination, with the water grate described, the arrangement of the check valves E, E, and the stop cocks E, E, E, as and for the purpose described. 4th. In combination, with the furnace grate just described return-heads F, F, having right and left screw threads out thereon, alternately as described. 5th. In combination, with a boiler furnace, a water grate composed of tubes arranged to form the base and extending up the sides of the furnace, such tubes being connected and disconnected with return-bends by means of right and left screw threads out on their respective ends, as described.

No. 37,060. Burner for Lamps. (*Bec de lampe.*)

Isaac Frankling Sterling, Texarkana, Texas, U.S.A., 24th July, 1891; 5 years.

Claim.—1st. The combination, in a lamp burner, of a base-plate and body parted across at one side of centre and hinged at one edge of the plate, the tube having an opening in one vertical side with flanges forming a portion of that side at the edges of the opening, and being secured to one portion of the said plate and body, and a cap secured to the other portion of the plate and body, and adapted to cover the said opening and to lap a little upon the flanged edges thereof when closed, substantially as set forth. 2nd. The combination, in a lamp burner, of a base plate and body each formed in two parts hinged at one edge of the former, a wick tube having an opening in one vertical side and flanged edges extending thereto, and a cap consisting of a vent tube adapted to cover the said opening, substantially as described.

No. 37,061. Machine for Making Bags.

(*Machine pour faire les sacs.*)

James C. Wilson, Montreal, Quebec, Canada, assignee of James Arkell, Canajoharie, New York, U. S. A., 24th July, 1891; 5 years.

Claim.—In a machine, of the type shown and described, for passing and folding down the bottom flaps of a satchel-bottom bag, the combination, with the cylinder on the face of which the bag-blank travels and has its bottom portions pasted and folded, of a detaining and turning finger operating to approach the periphery of the cylinder in a plane transverse to the axis of the latter and to recede from the cylinder in the same plane or path of motion after having partially turned over the flap to be folded, all in substantially the manner and for the purposes hereinbefore set forth.

No. 37,062. Delivery Mechanism for Paper Bag Machines. (*Appareil de livraison pour machines à faire les sacs à papier.*)

James C. Wilson, Montreal, Quebec, Canada, assignee of James Arkell, Canajoharie, New York, U. S. A., 24th July, 1891; 5 years.

Claim.—1st. The combination, with the delivery wheel or drum of a machine from which paper bags or other articles are discharged, of the intermittently-revolving wheel C, suitable carrier pieces or strips J, and the receiving table M, the whole arranged and operating together in substantially the manner and for the purposes hereinbefore set forth. 2nd. The combination, with the revolving wheel C, having two or more rims separated from each other, and the inclined table M, provided with stops n, or their described equivalent, of the skids J, located between the said rims and also between the said wheel and the delivery wheel or drum B, or its described equivalent, all substantially as and for the purposes set forth. 3rd. The combination, with the table M, the wheel C, provided with a circular rack, and the lever G, provided with a pawl engaging with said rack, of a revolving cam operating upon the free end of said lever, all substantially as and for the purposes set forth. 4th. The combination, with the drum B, or its described equivalent, the revolving wheel C, the skids J, and the inclined table M, provided with skid pieces L, and pins n, of the circular rack connected with said wheel, and a lever and pawl operating in conjunction with said rack, substantially as hereinbefore set forth.

No. 37,063. Device Operated by Edges of Moving Webs of Paper. (*Appareil actionné par les rebords latéraux de papier en mouvement.*)

James C. Wilson, Montreal, Quebec, Canada, assignee of James Arkell, Canajoharie, New York, U. S. A., 24th July, 1891; 5 years.

Claim.—In a machine through which a continuous web or strip of paper or other material is to be pasted, and in which paste or other material is to be applied to the surface of said web, the combination with the device by which the web of paper is supported and caused to travel of a roller or rollers, adapted to travel in contact with the surface of the web for applying thereto paste or other material, and guideways adapted to be actuated by the edges of the web of paper and operating to keep the said roller or rollers in given relative position to the traveling edge or edges of the web, all substantially in the manner and for the purpose hereinbefore set forth.

No. 37,064. Machine for Making Tubular Bag Blanks. (*Appareil pour faire les ébauches des sacs tubulaires.*)

James C. Wilson, Montreal, Quebec, Canada, assignee of James Arkell, Canajoharie, New York, U. S. A., 24th July, 1891; 5 years.

Claim.—The combination, with the pair of drawing rolls which also operate to sever the web of material into separate bag-blanks, of the device which by direct coaction, as explained, with that one of said rolls onto the periphery of which the material first passes prevents any recession of the leading end of the material relatively to said roll-periphery after the severance of the material, substantially as and for the purpose hereinbefore set forth.

No. 37,065. Handle for Umbrellas.

(*Manche de parapluie.*)

Frank Fremont Ward, Edgar E. Bronson, and Edmund S. Rankin, all of Kalamazoo, Michigan, U.S.A., 24th July, 1891; 5 years.

Claim.—An umbrella-holder, comprising the frame having the upper and lower bars loops attached to the upper bar, and the funnel-formed receptacles or holders attached in a vertical position to the lower bar with the larger end uppermost, substantially as set forth.

No. 37,066. Electric Switch.

(*Commutateur électrique.*)

The Automatic Switch Company, (assignees of George H. Whittingham), all of Baltimore, Maryland, U.S.A., 25th July, 1891; 5 years.

Claim.—1st. A switch, comprising an operating-lever carrying a circuit-closing plate, a resistance, and arm extending from the operating lever to the resistance and connected with a dash-pot, and a device connected with the operating-lever for maintaining the arm

against movement until said operating-lever is connected with the circuit which it is adapted to close, substantially as specified. 2nd. The combination with the lever and resistance, of a switch-bar and a latch arranged in the path of the lever to be operated in one direction, and a spring for operating the latch in the opposite direction, a keeper and a magnet for controlling the keeper, substantially as specified. 3rd. In a switch and electrically connected with the conductors thereof, a resistance, a resistance bar, mechanism, substantially as described, for automatically controlling its movement in one direction, the switch-lever proper, a latch having mechanical connection with said lever for movement in one direction, a spring or its equivalent for moving it in an opposite direction, and a keeper and magnet for automatically releasing the latch, substantially as specified. 4th. In a switch and in combination with its lever, a resistance-bar connected with the lever for its operation positively in one direction, and a governor for automatically controlling the operation of the resistance-bar in the opposite direction, substantially as specified. 5th. In a switch, the combination of the lever 29, having at its pivoted end a disk 25, having the lug 26, depending from the disk stud 24, for supporting the lever the resistance 7, and the bar 30, independently pivoted to said stud and extending to the resistance, substantially as specified. 6th. The combination of the resistance 7, its bar arranged to move over the resistance, a governing device, substantially as described, connected therewith, and the switch-lever 29, terminating in a disk 25, and having independent movement relative to the bar 30, and provided with means for moving said bar in the opposite direction to that of the movement produced by the governing device, substantially as described. 7th. The combination of the lever 29, bar 30, and disk 25, having lugs 26, and 28, and hook 41, the bar 30, and hook 41, being arranged in the path of said lugs, substantially as specified. 8th. The combination of the lever 29, disk 25, having lug 27, and latch 15, having notched disk 22, arranged in the path of said lug, substantially as specified. 9th. The combination of the magnet 13, keeper 17, latch 15, arranged to swing into the path of the keeper contact-plate 14, in the path of the latch, the non-conducting disk 22, on the latch, the lever 29, and its depending lug 27, in the path of the disk with conductor 8, substantially as specified. 10th. The combination, with the switch-lever 29, a resistance and resistance bar, and a governing device, substantially as described, of a hook adapted to take into said bar, and means substantially as specified for releasing said hook at about the time that the circuit is completed by the operation of said lever, substantially as specified.

No. 37,067. Trace Buckle. (*Boucle de trait.*)

Melbourne Walker, Florence, Ontario, Canada, 25th July, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a buckle frame F, formed with recesses R, to prevent the accidental movement lengthwise thereof, of the buckle tongue T, substantially as shown and described, and for the purpose specified. 2nd. As a new article of manufacture, a buckle tongue T, formed with projections or shoulders P, and with the flanges A', A'', to prevent the projection P, from becoming accidentally displaced, or falling out of the recess R, substantially as shown and described, and for the purpose specified. 3rd. The combination of a buckle frame F, and a tongue T, one having recesses R, and the other projections or shoulders P, and said tongue having flanges A', A'', substantially as shown and described, and for the purpose specified. 4th. The combination of a buckle frame F, formed with recesses R, and a tongue T, formed with the flanges A', A'', and projections or shoulders P, and the straps S, M, substantially as shown and described and for the purpose specified.

No. 37,068. Dish Washing Machine.

(*Laveuse de vaisselle.*)

Stevens Dish Washing Machine Company, (assignees of James Stephen Stephens and Charles Augustus Wood), all of Cleveland, Ohio, U.S.A., 25th July, 1891; 5 years.

Claim.—1st. In a dish washing machine, a supporting frame provided with legs and a separate tank set in said frame, substantially as described. 2nd. The supporting frame, the separate tank and means between said parts to hold the tank in position on the frame, substantially as described. 3rd. The supporting frame having projections at its corners, and a separate tank held in position by said projections, substantially as described. 4th. The tank formed of sheet metal and having a water deflector stamped therein near the upper edge of the tank, substantially as described. 5th. The tank having the water deflector on its inside about its upper portion and an inclined shoulder above said deflector, substantially as described. 6th. The tank having a deflector on its inside near its top and a shoulder above said deflector, and a cover with a skirting or flange extending down to said shoulder, substantially as described. 7th. The cover provided with hinge straps fixed rigidly thereon and free at their outer end, and the tank constructed to connect said hinges, substantially as described. 8th. The cover having elastic metal straps fixed thereon and provided with curved bearing portions and free ends, and the tank having wires or pins engaged by said straps, substantially as described. 9th. In a dish washing machine, a tank having a bottom formed of a single sheet of metal and provided with inclined sides and a gradually deepening and widening channel stamped into said bottom across the center thereof, substantially as described. 10th. The dish-rack frame consisting in a base portion rigid throughout and extending from end to end of the machine, and the top side racks pivoted thereon, substantially as described. 11th. The dish-rack frame having a rigid base portion resting on the bottom of the tank at its ends and extending above the paddle wheel, and side wings pivoted on said frame, substantially as described. 12th. The base of the dish-rack frame having cross rods at its top on opposite sides of its center, and a separate rack pivoted on each of said rods, in combination with a tank supporting the said frame and racks at its bottom and sides, substantially as described.

No. 37,069. Suspender for Garments.

(*Bretelles.*)

Annie Lange, Leicester, England, 27th July, 1891; 5 years.

Claim.—1st. Two or more connected or unconnected hooks A, secured to one part of the dress skirt and two or more connected or unconnected eyes or loops E, at a higher or lower part of the skirt and adapted to be engaged with the hooks, substantially as herein described. 2nd. Two or more hooks A, or eyes E, secured to one part of the dress skirt or equivalent and connected together by a rod or band B, of two parts which may be taken apart from each other the hooks or eyes being adapted to engage or be engaged with two or more eyes or hooks secured at a different height or level on the skirt, substantially as herein described and illustrated in the accompanying drawings. 3rd. Two or more hooks A, or eyes E, connected together by a rigid or jointed rod or band B, having attached to or formed in part with it two T-shaped pieces D, substantially as herein described and illustrated in the accompanying drawings.

No. 37,070. Baling Press. (*Presse d'empaquetage.*)

Henry Luther Whitman, St. Louis, Missouri, U.S.A., 27th July, 1891; 5 years.

Claim.—1st. In a baling press, the combination of a traverser, a pitman, a power shaft, a sweep mounted on the shaft, a cross head united to the sweep, arms mounted loosely on the shaft, one of said arms being adapted to bear against the outer end of the pitman, a trip secured to the other of said arms and adapted to be engaged by the cross-head, a pivoted link secured to the pitman and to the frame, and means for operating the trip, whereby the arm is disengaged from the cross-head when the traverser has reached the limit of its inward movement, substantially as specified. 2nd. In a baling press, the combination of a traverser, a pitman, a power shaft, a sweep mounted on the shaft, a cross-head united to the sweep, arms mounted loosely on the shaft, one of said arms being adapted to bear against the outer end of the pitman, a pivoted link secured to the pitman and to the frame, a pivoted spring actuated trip mounted on the other of said arms, and a cam for forcing the trip out of engagement with the cross-head, substantially as and for the purpose set forth. 3rd. In a baling press, the combination of a traverser, a pitman, a power shaft, a sweep mounted on the power shaft, a cross-head united to the sweep, arms mounted on the shaft, one of which is adapted to bear against the outer end of the pitman, a block pivoted to one of the arms, and provided with a friction roller to receive the cross-head, a cam for moving the trip out of engagement with the cross-head, and a link connecting the outer end of the pitman to a pivot located outside of the power shaft, substantially as and for the purpose set forth. 4th. In a baling press, the combination of a traverser, a pitman, a power shaft, a sweep located on the power shaft, a cross-head united to the sweep, arms located on the power shaft and one of which is adapted to bear against the outer end of the pitman, a trip located on one of the arms, a cam for throwing the trip out of engagement with the cross-head, a pivoted link connected to the outer end of the pitman and to the frame, a track 43, and a roller secured to the link and bearing on the track, substantially as and for the purpose set forth. 5th. In a baling press, the combination of the baling chamber provided with a traverser, a pitman, a power mechanism for operating the traverser and pitman, and a connection between the baling chamber and power end of the press, consisting of a sectional beam and a connecting device for the beam, consisting of the lower plate 4, the upper plate 5, rods 8, a standard 13, and rods 14, and 15, secured to and extending from the standard, substantially as and for the purpose set forth. 6th. In a baling press, the combination of a chamber provided with a feed hopper, a traverser having a shoulder 51, means for operating the traverser, a hinged flap 46, having a shoulder 50, and a chain 48, between the flap and the outside of the feed hopper, substantially as and for the purpose set forth. 7th. In a baling press, the combination of a baling chamber, a traverser, friction blocks 52, pivoted to the press, pivoted rods 54, hinged to the press, and sectional connecting rod 55, supported on the rods and provided with sleeve 56, and springs 57, substantially as and for the purpose set forth. 8th. In a baling press, the combination of the friction plates 60, shafts 70, having wheels 62, sleeves on the shafts provided with eccentrics 63, and springs 64, placed between the eccentrics and the plates 60, substantially as and for the purpose set forth. 9th. In a baling press, the combination of the baling chamber, a power device, a sectional beam for uniting the baling chamber to the power device, and means for joining the sectional beam, consisting of the lower plate 4, upper plate 5, strap 12, brace-rods 8, and clips 10, substantially as and for the purpose set forth. 10th. In a baling press, the combination of a traverser, a pitman, a pivoted link 40, connected to the pitman and to the frame, and a power device, consisting of an arm and a cross head and trip for moving the arm, said parts being so arranged that the outer end of the arm will bear against the end of the pitman when the traverser is in its outer position, and the point of bearing approach the center of the arm as the traverser advances, substantially as and for the purpose set forth.

No. 37,071. Pipe Coupling. (*Joint de tuyau.*)

John William Linzee, Jr., (assignee of Henry Bert Nichols), both of Boston, Massachusetts, U.S.A., 27th July, 1891; 5 years.

Claim.—The herein described means for connecting pipe sections, consisting of the continuous sleeve or collar a, adapted to fit partially around the sections when brought end to end and provided with an internal rib or flange d, extending around that portion of the interior of the sleeve or collar which fits upon the pipe sections and having its innermost edge or surface coincident with the interior surface of the pipe sections, and means, substantially as described, including a wedge block fitting around the portion of the exterior of the pipe not closely embraced by the collar and a wedge, both interposed between said sections and that part of the sleeve or collar which does not fit upon the outer surface of the pipe sections for securing said collar upon said section, as set forth.

No. 37,072. Electric Motor or Dynamo.
(*Moteur électrique ou dynamo.*)

Crocker Wheeler Electric Motor Company, New York, State of New York, (assignees of William Forman Collins, Chicago, Illinois), both in U. S. A., 28th July, 1891; 5 years.

Claim.—An armature core for an electric motor or dynamo electric machine formed with trapezoidal slots in its periphery of greater width at the bottom than at the top, the windings or conductors being contained in the slots, substantially as described.

No. 37,073. Electric Dynamo or Motor.
(*Dynamo électrique ou moteur.*)

The Crocker Wheeler Electric Motor Company, (assignees of Schuyler Skaats Wheeler), all of New York, State of New York, U. S. A., 28th July, 1891; 5 years.

Claim.—1st. A ring armature core formed with trapezoidal slots or openings in its periphery, and coils or windings laid in the slots and passing through the inside of the ring, the windings on the inside of the ring forming trapezoidal shaped coils or sections which fit against one another and fill the interior of the ring, and the slots being of the same shape and cross section so that the coils are symmetrical with respect to the outside and inside of the ring, substantially as described. 2nd. An electric motor or dynamo electric machine having an unsymmetrically fed field magnet as in the horse shoe type, the armature and field being so constructed on the side opposite the origin of the field magnetism as to cause an increased amount of magnetism to pass through the half of the armature and thereby more or less neutralize the tendency of the field magnet to draw the armature away from its axis of revolution resulting from the unsymmetry of the field, substantially as described. 3rd. An electric motor or dynamo electric machine having an unsymmetrically fed field magnet, as in the horse-shoe type, the pole pieces being formed so as to embrace the armature on the side opposite the origin of the field magnetism to a greater extent than on the other side, so that the tendency of the field magnet to draw the armature away from its axis of revolution resulting from the unsymmetrical field magnet is more or less neutralized, substantially as described. 4th. The method of forming field magnets of electric motors or dynamo electric machines, which consists in boring the yoke or base and trimming the end of the field forgings with reference to the centre of its concave part so that when assembled the parts form a true cylindrical space for the armature, substantially as described. 5th. The method herein described of constructing the field magnets of electric motors and dynamo electric machines, consisting in forming each core and pole piece in one portion, hollow milling the end of the core with reference to the concave face of the pole piece, and boring suitable holes in a bed plate or yoke at a fixed distance, so that when the cores are slipped into the bed plate their pole pieces form a true cylindrical space to receive the armature, substantially as described. 6th. The method herein described of constructing the field magnets of electric motors and dynamo electric machines, consisting in forming each core and pole piece in one portion, fixing the core and pole piece in a milling machine table in such a position that the axis of the core coincides with the axis of a hollow milling tool, and then hollow milling the end of the core to a definite point and fitting the cores thus milled into a bed-plate or yoke suitably bored to receive them and support them so that their faces will form a true cylindrical space to receive the armature, substantially as described. 7th. The described method of forming the field magnets of an electric motor or dynamo electric machine, consisting in maintaining the cores in a fixed position against a cylindrical block having the same diameter as the armature, and in trimming the ends of the core while thus held, then boring the yoke while held in a fixed position, and finally assembling the parts, substantially as described. 8th. The described apparatus for preparing field magnet cores preparatory to attaching said cores to their yokes, consisting of a cylindrical block having the same contour as the free end of the field magnet core, in combination with a support and clamp adapted to hold the core in a fixed position preparatory to milling the end which is to be fixed to the yoke, substantially as described. 9th. The described apparatus for boring the yoke of an electric dynamo or electric motor, consisting of a boring frame having drill bushing secured to a removable portion thereof, in combination with adjustable means for securing the yoke in position in the frame beneath the drill bushings, substantially as described.

No. 37,074. Pipe Wrench. (*Clé à tuyaux.*)

William O. Campbell, St. Louis, (assignee of Thomas Newman Poplar Bluff), both in Missouri, U. S. A., 28th July, 1891; 5 years.

Claim.—1st. A pipe wrench, consisting of an arm, and an angular jaw pivoted directly and permanently to the same, substantially as set forth. 2nd. A pipe wrench, consisting of an arm and an acute, bifurcated angular jaw, between which bifurcations said arm is interposed and pivoted directly and permanently to the same, substantially as set forth. 3rd. A pipe wrench, consisting of an arm the lower front terminal portion of which is provided with an indented parabolic marginal surface, and an angular jaw pivoted directly and permanently to the same, substantially as set forth. 4th. A pipe wrench, consisting of an arm the lower front terminal portion of which is provided with an indented parabolic marginal surface and a bifurcated angular jaw, between the bifurcations of said arm is pivoted directly and permanently to the same, substantially as set forth. 5th. A pipe wrench, consisting of an arm the lower front terminal portion of which is provided with an indented bulged surface, and an angular jaw, the inner surface of the upright portion of said jaw being provided with downwardly formed teeth, substantially as set forth. 6th. A pipe wrench, consisting of an arm the lower front terminal portion of which is provided with an indented bulged surface and an angular bifurcated jaw, the inner surface of the upright portion of said bifurcation being provided with downwardly formed teeth, substantially as set forth. 7th. A pipe wrench, consisting of an arm the lower front terminal portion of

which is provided with a bulged surface the same being provided with ratchet teeth, the lower surfaces of which teeth are parallel and also parallel to the straight upper face of said arm, and an angular bifurcated jaw, the inner surface of said bifurcations being likewise provided with ratchet teeth and interposed between the bifurcations thereof said arm is pivotally and permanently secured, substantially as set forth. 8th. A pipe wrench, consisting of the gripping jaws formed by the curved lower end of the lever arm or handle of the tool from a center or pivot outward, and the angular, bifurcated depending jaw pivoted thereto, said jaws being provided with ratchet teeth to grip and hold the pipe, substantially as shown and described.

No. 37,075. Guillotine Paper Cutting Machine. (*Machine à trancher le papier.*)

Leonard Upcott Gill and Alfred Bradley, both of London, Ontario, Canada, 28th July, 1891; 5 years.

Claim.—1st. In a cutting machine, the feeding and back stop or gauge arrangement, consisting of utilising a feed board on the side facing the flat side of the guillotine knife, and of a travelling gauge or stop on the opposite side of the cutter, the said gauge or stop being automatically moved away from the cutter, after the work has been clamped, during the continuance of the cutting stroke of the knife, so as to prevent jamming of the cuttings or shavings, and returning to position after or during the ascent of the cutter, substantially as hereinbefore described. 2nd. In a cutting machine, the combination, with such a movable back stop or gauge with travelling bands upon the usual table on the chamfered side of the knife to remove the cuttings or shavings as they fall from the knife, substantially as described. 3rd. In a cutting machine, the combination, with the guillotine knife, of an under steel face, past which the knife will shear, substantially as described. 4th. In a cutting machine, the combination, with the travelling back stop or gauge of a lifting cam and lever gear, and striking pawls and adjustable stop gear, to enable the position of the stop or gauge to be adjusted automatically by the motion of the knife bar, to produce a definite series of variable cuts, as may be desired, to suit the work in hand, substantially as described. 5th. The combination, in the cutting machine, of a knife cutter, fed from a feed board facing the flat face of a knife with gauge stops above or upon such feed board, relatively adjustable as to distance from and position to, the said knife, permitting the successive gauged feed of serials or other paper material to the said knife gauged by the sides opposite to those to be cut in a pre-determined series of variable cuts, substantially as described. 6th. The general arrangement of a modified guillotine cutting machine with automatically operated back stop travelling plate, with a feed board on that side of the knife that is flat, with scrap cutting clearing apparatus on the opposite side of the knife, with an under shearing knife plate, and with adjustable stops or gauges on or above the said feed board, by which the work may be set and fed to the knife by gauges setting the work by the edges opposite to those about to be cut, substantially as described and illustrated herewith.

No. 37,076. Draft Stopper and Nozzle.
(*Bouchon de bouteille et goulot.*)

Ernst Heyer, Seammonville, Kansas, U. S. A., 29th July, 1891; 5 years.

Claim.—The combination, with the bottle-stopper having the upper and lower plates *d*, and *e*, of the vent-tube *f*, extending down through the cork from the upper plate, the draft-tube *b*, extending up through the cork from the lower plate, the thumb-lever *h*, having its forward end *i*, adapted to close the draft-tube and fulcrum end of said tube the rod *o*, passing through the vent-tube with its upper end secured to the thumb-lever carrying the valve *m*, and the spring *l*, surrounding the rod carrying the valve and bearing at its lower end upon the cork and its upper end bearing against the under side of the thumb-lever as shown all adapted to operate, substantially as specified.

No. 37,077. Automatic Signalling Apparatus for Railways. (*Appareil à signal automatique pour chemins de fer.*)

Stanislaus Joseph Doucet, Shippegan, New Brunswick, Canada, 29th July, 1891; 5 years.

Claim.—1st. In a railway signal apparatus, the combination, with one electrically continuous rail and the other having a section insulated, of a series of contact-plates connected together and its opposite ends connected to the rail at each end of the insulated section whereby an electric alarm carried by a train and having a contact-brush adapted to make contact with the said plates may have its circuit completed, substantially as described. 2nd. In a railway-signal apparatus, the combination, with one electrically-continuous rail and the other having an insulated section, of a wire connecting the ends of the rail beyond the insulated section, and a series of contact plates differing in number connected to the wire near each end thereof, substantially as described. 3rd. In a railway-signal apparatus, the combination, with one electrically-continuous rail and the other rail having sections insulated, of a series of contact-plates located in proximity to the track and electrically connected together, and to different insulated rail-sections, said contact-plates differing in number in different locations and all located in the same line parallel with the rails, whereby a contact-brush carried by a train having suitable alarm apparatus and connections will cause a signal to indicate the direction of danger.

No. 37,078. Music Desk for Pianos or Organs. (*Pupitre à musique pour pianos et orgues.*)

John B. Mitchell, Bowmanville, Ontario, Canada, 29th July, 1891; 5 years.

Claim.—1st. The combination, with the piano case B, having an

opening H, to receive the desk A, consisting of two parts hinged together and adapted to close said opening H, substantially as specified, of the music desk A, hinged to the extension A', and centered to case front B, and supported by arms D, substantially as and for the purpose herein set forth. 2nd. The combination of the two parts A, and A', hinged together and made to extend down over the fall board, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the two parts A, and A', hinged together and made to extend down over the fall board F, and supported by arms D, when extended. 4th. The combination of the two parts A, and A', hinged together and centered in brackets C, and made to extend down over the fall board F, and held in position by arms D, and made to close up in recess in case front B, substantially and for the purpose hereinbefore set forth.

No. 37,079. Brush. (*Brosse.*)

Lancaster Z. Jenkins, Philadelphia, Pennsylvania, U. S. A., 29th July, 1891; 5 years.

Claim.—1st. A brush having a bridle connected therewith by means of hooks attached to the head of the brush, the ends of the cord comprising the bridle being hitched or otherwise secured to said hooks, substantially as described. 2nd. A brush having a cap, a bridle consisting of cords, and hooks having their shanks between the cap and the bristles of the brush and their hook portions between the cap and the bridle, the cord of the bridle being fastened at or near both of its ends to the said hooks, said parts being combined, substantially as described. 3rd. A brush having a cap, a bridle, and hooks, the latter having their shanks between the cap and the bristles of the brush and their hook portions between the cap and the upper edge of the bridle, and the cord of the bridle having an end piece F, adapted to embrace the bridle, said parts being combined, substantially as described. 4th. A brush having a flexible bridle consisting of cord secured at both ends to hooks at the upper end of the bridle, substantially as described.

No. 36,080. Radiator. (*Serpentin.*)

Hormidas Trepanier, Montreal, Quebec, Canada, 29th July, 1891; 5 years.

Claim.—The combination, with the sections of a radiator adapted to receive the nipple e, in the manner described, with the nipple e, having large screwed end smaller portion provided with a screwed end and nut, the whole, substantially as described.

No. 37,081. Stand for Supporting and Emptying Tanks. (*Plateforme pour supporter et vider les réservoirs.*)

Charles J. Williams, Hamilton, Ontario, Canada, 29th July, 1891; 5 years.

Claim.—The combination of the tank C, pivoted to the double cross stand A, by means of the longitudinal metallic strap D, provided with pivots D', the longitudinal braces B, the tank spout E, having a cap E', screwed thereon and the loop F, substantially as described and for the purpose hereinbefore set forth.

No. 37,082. Method of and Appliances for the Collection and Utilization of the Carbolic Acid Gas and Other Products Given off During the Process of Fermentation. (*Mode et appareil pour la collection et l'utilisation du gaz d'acide phénique et autres produits donnés durant le procédé de fermentation.*)

Charles Robert Clarke Tichborne, Alfred Edward Darley, Marquand Duke Francais Purcell, and Samuel Geoghegan, all of Dublin, Ireland, 29th July, 1891; 3 years.

Claim.—1st. A method for the collection and utilization of the carbonic acid and other gaseous products given off during the process of all fermentations, consisting of the withdrawal of the said gases by orifices and conduits through the walls or by pipes and expanded dishes within the gaseous area of a fermenting tun or vessel the separation from the carbonic acid and distinct collection of alcoholic or ethereal or other compounds by washing or chemical treatment in a scrubber or wash tower, and by an alternate compressing and refrigerating treatment, and the final collection of the carbonic acid gas alone in a compressed or liquefied form in suitable vessels for commercial sale, substantially as described. 2nd. In such a method of collection of gaseous products of fermentation, the combination of a fermentation tun or vessel provided with orifices and conduits or other internal collecting appliances and discharging accumulating gaseous products by its own internal pressure or by the gravity of the gas, with a scrubber or wash tower fed with water, sulphuric acid, or other chemicals, and through which the ejected gases of fermentation are passed to effect the separation of the carbonic acid gas from the alcoholic, ethereal, and other compounds mixed therewith, substantially as described. 3rd. In such a method of collection of gaseous products of fermentation, the combination of a fermentation tun or vessel provided with orifices and conduits or other internal gas collecting appliances, with a series of suction and condensing pumps, and refrigerators to effect the withdrawal and general condensation and refrigeration of the gaseous products, in order to separate and collect the same at distinct stages of condensation, compression and refrigeration, substantially as described. 4th. In such a method of collection of gaseous products of fermentation, a fermentation vessel provided with special orifices or conduits from the gaseous area and with collecting funnels and diaphragms therein to enable all gaseous products of fermentation to be collected without admixture of atmosphere for treatment, substantially as described.

No. 37,083. Wooden Pipe. (*Tuyau de bois.*)

Charles W. Dwelle, Denver, Colorado, U.S.A., 29th July, 1891; 5 years.

Claim.—1st. A wooden pipe formed of staves having their adjoining ends united by tongues and grooves, the tongues being formed integral with the staves and entirely across their ends, and the grooves formed by cutting out the abutting stave ends and fashioned to receive said tongues, substantially as described. 2nd. A wooden pipe formed of staves having their edges united by tongues and grooves, the tongues being of greater length than the depth of the grooves so that a space F shall be left between the shoulders of the adjoining edges, substantially as described and for the purpose set forth. 3rd. The combination, with two sections of built up wooden pipe of different diameters, of an intermediate section of pipe adapted to join said section, the intermediate section having one or more of its staves tapering to a point while the other staves remain of the same width throughout their length, substantially as described. 4th. The means herein described of joining two sections of wooden pipe to an intervening metal section, said means consisting of the metal part I, provided with lugs I3, rods I5, secured to the wooden sections of pipe at one extremity, the opposite extremity passing through the lugs I3, of the metal section and secured in place by nuts screwed thereon, substantially as described. 5th. A wooden pipe built up of staves of unequal length and surrounded by suitable hoops, said staves having their adjoining edges and ends united by tongues and grooves, the tongues being formed integral with the staves and throughout their length, the grooves being formed within the abutting edges of the staves and fashioned to receive the corresponding opposite tongues for the purpose of supporting the end joints of the staves between the hoops, substantially as described.

No. 37,084. Coating Iron, Steel or Other Metals or Materials with Portland or Other Cement. (*Mode de couvrir le fer, l'acier ou autres métaux avec du ciment de Portland ou autres.*)

Carl Kellner, Vienna, Austria, 29th July, 1891; 5 years.

Claim.—1st. The improvements in coating iron, steel or other metals or materials with Portland or other cement consisting in the combination with such metal or material and cement, of an intervening layer of ground slate and water glass, (or other equivalent form of silicate of alumina), substantially as and for the purposes specified. 2nd. A compound cement coating composed of a preparatory layer consisting mainly of silicate of alumina combined with a subsequent layer of ground slate, ground glass, and Portland cement, substantially as and for the purposes described.

No. 37,085. Shirt Collar. (*Faux-col de chemise.*)

George Cameron Caswell, Toronto, Ontario, Canada, 29th July, 1891; 5 years.

Claim.—A collar having one or more loops formed on it or its band to hold a neck-tie in position, substantially as and for the purpose specified.

No. 37,086. Cure for Erysipelas, Burns, etc.

(*Remède pour érysipèle, brûlure, etc.*)

William George Glendinning, East Luther, Ontario, Canada, 29th July, 1891; 5 years.

Claim.—A compound composed of any of the fats above mentioned, with slipping elm bark, skunk cabbage, plantleaf, mouse-ear, and sugar of lead, substantially in the proportions and for the purposes set forth.

No. 37,087. Manifold Memorandum Book.

(*Livret de memoires multiples.*)

Carter and Company, Niagara Falls, New York, assignees of Charles Edward Cosby, Minneapolis, Minnesota, both in U.S.A., 30th July, 1891; 5 years.

Claim.—The combination, in a manifold memorandum book, composed of a series of memorandum leaves piled in block-form, each of said leaves having one-half thereof formed with the top extension e, and the block being bound at said extensions of the leaves and folded sidewise with the shorter halves of the leaves over the longer halves thereof, substantially as described and shown.

No. 37,088. Method of and Apparatus for Maturing Liquors. (*Mode de et appareil de maturation des liqueurs.*)

The Mechanical Spirit Maturing Syndicate, London, assignees of James McKinless, Manchester, all in England, 30th July, 1891; 5 years.

Claim.—1st. A closed vessel having an upper finely perforated diaphragm upon which the liquor falls, and whence it descends in the form of a shower, and a finely meshed wire gauze diaphragm for receiving such shower and for breaking it up into spray, in combination with means for raising the liquor again and again to the top of the vessel and causing it to be repeatedly exposed to the air contained in the vessel until the essential oils in the liquor have become oxidized or converted into ether or bouquet, means being also provided for allowing the air to find its way rapidly to the top again or to tend to establish equilibrium, substantially as set forth. 2nd. A closed vessel A, having an upper finely perforated diaphragm B, a upon which the liquor falls, and through which it descends, and a

vent pipe K, on the said diaphragm to facilitate the reascend of the air, substantially as set forth. 3rd. A closed vessel A, having a finely perforated diaphragm B, with vent pipe K, for furthering the reascend of the air in the vessel, a finely meshed wire gauzed diaphragm C, and pipes L, and M, and a pump D, interposed between said pipes for circulating the liquor to be matured, substantially as set forth.

No. 37,089. Direct Process of Manufacturing Iron and Steel. (*Procédé direct de fabrication du fer et de l'acier.*)

Charles Adams, Pittsburg, Pennsylvania, U. S. A., 30th July, 1891; 5 years.

Claim.—1st In the art of reducing metallic ores, the improvement which consists in passing the reducing-gas in a substantially horizontal direction through the material under treatment, substantially as and for the purposes described. 2nd. In the art of reducing metallic ores, the improvement which consists in passing the reducing-gas back and forth in a zig-zag progressive course through the material under treatment, substantially as and for the purposes described. 3rd. In apparatus for reducing metallic ores by a gaseous reducing agent, a reducing-chamber for containing the material under treatment, said chamber having for the admission of gas into the material, and its discharge therefrom opposite ports on approximately the same horizontal plane, substantially as and for the purposes described. 4th. The process of manufacturing iron from the ore by placing the ore with or without admixture of solid carbonaceous material in a furnace wherein it is surrounded by checker-work arranged in separate chambers, introducing a reducing-gas into the checker-work and forcing it to pass back and forth through the mass of ore and into and out of the checker-work on its passage through the furnace, substantially as and for the purposes described. 5th. The method of manufacturing iron and steel direct from the ore by a continuous process, consisting of feeding the ore with or without admixture of solid carbon into and surrounding it, with checker-work within a furnace, introducing heated reducing-gas into the furnace and causing it to pass backwards and forwards through the ore from checker-work to checker-work, until the ore is deoxidized to the condition of sponge, and passing it while hot into a bath of melted carbide of iron in an open-hearth furnace, and subjecting it therein to the usual open-hearth treatment, substantially as and for the purposes described. 6th. A furnace for reducing oxide of iron, consisting of an outside shell divided internally by horizontal partitions into separate heat chambers, a central space for the reception of ore, the partitions being located at different levels on opposite sides of the furnace connected at the lower end with apparatus for supplying reducing-gas, and with an opening for the discharge of reduced ore, and at the upper end with a charging hopper and exit flue for the escape of the waste gas, the charging and discharging openings being provided with devices for the exclusion of the external atmosphere, substantially as and for the purposes described. 7th. The combination, with a pair of checker-work regenerators, and a source of supply of reducing-gas and suitable reversing valves and pipes, of a furnace containing checker-work surrounding a working space for reception of the charge, said checker-work being divided inside the furnace by imperforate partitions into separate chambers, with charging and discharging apertures provided with devices for the exclusion of the external atmosphere, substantially as and for the purposes described. 8th. In apparatus for the reduction of metallic ores, the combination of the upright reducing-chamber having opposite lateral flues or passages at alternate levels, a reducing-gas inlet at one end, and a reducing-gas outlet at the other, whereby the gas in its passage is caused to traverse the ore back and forth in a substantially horizontal direction and to pass progressively through the lateral flues or passages, substantially as and for the purposes described. 9th. A furnace for reducing oxides of iron, comprising a working space for the reception of ore, opposite lateral heat chambers through which the reducing-gas may pass into and from the body of ore respectively, and a gas inlet and outlet, substantially as and for the purposes described.

No. 37,090. Treatment of Refractory Gold and Silver Ores and in Apparatus Therefor. (*Traitement des minerais d'or et d'argent réfractaires et appareil pour cet objet.*)

Henry Hutchinson, London, England, 30th July, 1891; 5 years.

Claim.—1st. In a calcining furnace, the combination of a vertical calcining chamber, a vertical heating chamber communicating at its upper end with the upper part of said calcining chamber, gas and air inlet ports arranged at the lower end of said heating chamber, and air conduits located in said air heating chamber and arranged to deliver heated air to said calcining chamber, substantially as herein described. 2nd. In a calcining furnace, the combination of a vertical calcining chamber, a vertical heating chamber communicating at its upper end with the upper part of said calcining chamber, gas and air inlet ports arranged at the lower end of said heating chamber, a vertical air chamber and a series of air conduits arranged to traverse said heating chamber so as to be heated by the combustion of gaseous fuel therein, and each, in communication at one end with said air chamber, and at the other end with the interior of said calcining chamber, substantially as herein described for the purposes set forth. 3rd. In a calcining furnace, the combination of a vertical calcining chamber provided with a series of inclined surfaces or shelves, a vertical heating chamber communicating at its upper end only with said calcining chamber, gas and air inlet ports located at the lower part of said heating chamber, a series of air conduits traversing said heating chamber, and each, in communication at one end with said calcining chamber, and at the other with an air supply, and an inlet for ore or other substance located at the upper part of said calcining chamber, substantially as herein described for the purposes set forth. 4th. In a calcining fur-

nace, the combination of a vertical calcining chamber provided with a series of inclined surfaces or shelves, a vertical heating chamber connected at its upper part with the upper part of said calcining chamber, gas and air inlet ports located at the lower part of said heating chamber, a series of air conduits traversing said heating chamber and in communication with said calcining chamber, and a settling chamber in communication with the lower end of said calcining chamber, substantially as herein described for the purposes set forth. 5th. In a calcining furnace, the combination of a vertical calcining chamber, an air heating chamber in communication with the upper end of said calcining chamber, a settling chamber in communication with the lower end of said calcining chamber, a flue located above and arranged to be placed in communication with said settling chamber, a valve or door for controlling the communication between said flue and settling chamber, and a drying floor located above said flue, substantially as hereinabove described for the purposes set forth. 6th. In a calcining furnace, the combination of a calcining chamber, an air heating chamber in communication with the upper end thereof, a settling chamber in communication with the lower end of said calcining chamber, a flue located below the floor of said settling chamber, and a combustion chamber in communication with said flue, for the purpose set forth. 7th. In a calcining furnace, the combination of a vertical calcining chamber having an inlet at its upper part for material to be treated, a heating chamber in communication with the upper end of said calcining chamber, gas and air inlet ports at the lower end of said heating chamber, air conduits traversing said heating chamber and arranged to deliver heated air into said calcining chamber, a settling chamber, in communication with the lower part of said calcining chamber, a passage connecting the lower part of said calcining chamber with said heating chamber, and a valve or damper for controlling said passage, substantially as herein described for the purpose set forth. 8th. In a calcining furnace, the combination of a vertical calcining chamber provided with a series of inclined surfaces or shelves, and with an inlet at its upper part for material to be treated, a vertical heating chamber communicating at its upper end with said calcining chamber, inlet ports arranged to deliver air and combustible gas into the lower part of said heating chamber, a series of air conduits traversing said heating chamber and communicating with said calcining chamber, and a pipe or passage arranged at the lower part of said calcining chamber for the introduction of common salt to the lower part of said calcining chamber. 9th. In a calcining furnace, the combination of a vertical calcining chamber provided with a series of inclined surfaces or shelves, and with an inlet at its upper part for material to be treated, a vertical heating chamber in free communication at its upper end with the upper end of said calcining chamber, a passage located between the lower ends of said calcining and heating chambers, a valve that normally closes said passage, a series of horizontal air conduits traversing said heating chamber, and each, in communication at one end with an air chamber, and at the other end with the calcining chamber ports for admission of air and combustible gas to the lower end of said heating chamber, a settling chamber, in combination with the lower end of said calcining chamber and provided with walls or divisions extending alternately from the floor and roof of said settling chamber, a flue located above said settling chamber and arranged to be placed, in communication therewith, a valve for controlling said communication, a drying floor located above said flue, a lower flue located below said settling chamber, and a combustion chamber in communication with said lower flue, all substantially as herein described for the purposes specified.

No. 37,091. Flue and Fire Box for Steam Boilers. (*Tuyau et boîte à feu pour chaudières à vapeur.*)

Donald Barns Morison, Hartlepool, Durham, England, 30th July, 1891; 5 years.

Claim.—1st. A corrugated steam boiler flue or fire box in which the material between the outwardly projecting and supporting ridges on the water side of the furnace is disposed in the form of inwardly projecting corrugations of much less curvature than that of the said outwardly projecting and supporting ridges. 2nd. The improved corrugated steam boiler flue or fire box herein shown, which consists of a flue of circular cross section having outwardly projecting and supporting ridges A, on the water side of the furnace connected by intervening inwardly projecting corrugations B, of much less curvature than that of said outwardly projecting and supporting ridges, substantially as described. 3rd. The improved corrugated steam boiler flue or fire box, herein shown, which consists of a flue of circular cross section having outwardly projecting and supporting ridges A, on the water side of the furnace, connected by intervening inwardly projecting corrugations B, of much less curvature than that of said outwardly projecting and supporting ridges, said flue or fire box being made of greater thickness at the crowns of said outwardly projecting and supporting ridges A, than at the intervening parts, as described.

No. 37,092. Parasol Frame. (*Monture de parasol.*)

Henry R. Bothwell, New Market, Ontario, Canada, 31st July, 1891; 5 years.

Claim.—1st. A parasol frame, which can be opened or closed from the outside, consisting of a thimble or hollow sleeve to which the upper ends of the main ribs are connected, a socket formed in the lower or inner portion of said thimble, a sliding stem adapted to slide through said hollow sleeve or thimble to the lower portion of which stem are connected the inner ends of the supplemental ribs, which inner ends enter the socket in the lower end of said thimble when the parasol frame is in its closed position, and supplemental ribs attached to the stem and to the main ribs, substantially as described. 2nd. In a parasol frame, the combination of the thimble to which the upper ends of the main ribs are connected, an arm extending outwardly from said thimble and carrying at its outer end a socket provided with an elongated slot, a sleeve within said socket,

one end of which is rounded to form a ball for said socket, a bearing for the parasol rod within said sleeve, said bearing provided with a screw threaded stem, the outer end of which is fitted with a thumb nut, substantially as described. 3rd. In a parasol frame which can be opened or closed from the outside, the combination of a thimble to which the upper ends of the main ribs are attached, an arm rigidly secured to and extending outwardly from said thimble, carrying on its outer end a socket provided with an elongated slot, a sleeve within said socket, a bearing for the parasol rod within said sleeve, said bearing provided with a screw stem, the outer end of which is fitted with a thumb nut and a hand grip secured to the upper end of said thimble, substantially as described. 4th. A parasol frame which can be opened or closed from the outside, consisting of a thimble or hollow sleeve to which the upper ends of the main ribs are connected, a sliding stem adapted to slide through said thimble to the lower portion of which stem are connected the inner ends of the supplemental ribs and supplemental ribs attached to the stem and to the main ribs, an arm extending outwardly from said thimble and carrying on its outer end a socket provided with an elongated slot, the ball of said socket in the form of a sleeve rounded off at one end to form a ball for said socket, a bearing for the parasol rod within said sleeve fitted with a screw threaded stem extending through said elongated slot and fitted at its outer end with a thumb nut, substantially as described. 5th. In a parasol frame which can be opened or closed from the outside, the combination of a thimble or hollow sleeve fitted at its lower or inner end with a socket or recess, the upper ends of the main ribs connected to said thimble or sleeve, a sliding stem adapted to slide through the thimble, a collar secured to the lower portion of said stem and fitting into said socket when the parasol is in its closed position, the inner ends of the supplemental ribs connected to said collar, and their outer ends attached to the main ribs, substantially as described. 6th. A parasol frame which can be opened or closed from the outside, consisting of a thimble or hollow sleeve to which the upper ends of the main ribs are connected, a sliding stem adapted to slide through said thimble to the lower portion of which stem are connected, the inner ends of the supplemental ribs and supplemental ribs attached to the stem and to the main ribs, an arm extending outwardly from said thimble and carrying on its outer end a socket provided with an elongated slot, the ball of said socket in the form of a sleeve rounded off at one end to form a ball for said socket, a bearing for the parasol rod within said sleeve fitted with a screw threaded stem extending through said elongated slot, and fitted at its outer end with a thumb nut, a parasol rod passing through said bearing, said parasol rod fitted at its lower end with an adjustable clamp, substantially as described. 7th. An adjustable clamp for connecting the parasol frame to the parasol rod, consisting of a socket provided with an elongated slot, a ball within said socket, the depending portion of which is in the form of a sleeve to receive the bearing of the parasol rod, said bearing provided with a screw threaded stem extending through said sleeve and socket, the outer end of which is fitted with a thumb nut, and means for connecting said clamp to the parasol, substantially as described.

No. 37,093. Telegraphy. (Télégraphie.)

Benjamin B. Toye, Toronto, Ontario, Canada, 31st July, 1891; 5 years.

Claim.—1st. In a main line circuit, one pole changer arranged to reverse the currents in the usual way, in combination with one continuity-preserving transmitter, and one break-before-make transmitter arranged to send currents of different intensities in the same direction, substantially as and for the purpose specified. 2nd. In a main line circuit, the combination of a pole changer, three simple duplex relays arranged to close their local circuit on their back stops, a repeating sounder, a repeating relay with divided magnets acting as two relays with but one armature, two local batteries, one of which alternates between two circuits, substantially as and for the purpose specified. 3rd. In a main line circuit, a sending instrument arranged to reverse the battery current, a sending instrument arranged to act as an ordinary continuity-preserving transmitter, and a sending instrument arranged as a break-before-make transmitter to throw in a battery of a greater strength, in combination with a receiving instrument arranged to be affected by the reversal of a battery current, and two receiving instruments, one being affected by a battery current of greater strength than the other, substantially as and for the purpose specified.

No. 37,094. Water Wheel Bucket.

(Sceau de roue hydraulique.)

Willis G. Dodd, San Francisco, California, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. A water wheel bucket constructed upon such lines and curves as to allow of the utilized water escaping in its natural flow, so as to obviate reaction upon itself while within the bucket, substantially as set forth and for the purpose described. 2nd. A water wheel bucket having its outer wall or face constructed sigmoidally for the purpose of allowing of the utilized water to escape in its natural flow, substantially as and for the purpose described. 3rd. In a bucket or float for a hurdy-gurdy or impact water wheel, the combination of a sigmoidal bottom united with a sigmoidal front, as and for the purposes set forth. 4th. The buckets of a water wheel, having the curved bottoms meeting at an apex or sharp ridge and continuous with the inclined discharge sides, the bucket fronts formed concave-convex or sigmoidally curved so as to increase the length of the discharge sides from the top toward the bottom, as and for the purposes set forth. 5th. The buckets of a water wheel having the curved bottoms meeting at an apex or sharp ridge and continuous with the inclined discharge sides, the bucket fronts curved concave-convex or sigmoidal so as to allow of the water to be discharged from the sides below the impact line of the propelling jet, as and for the purposes set forth. 6th. A water wheel bucket having the curved bottom meeting at a central apex and provided with the sigmoidal front wall gradually increasing the discharge sides from top to bottom and having its discharges below the

line of impact, as and for the purpose set forth. 7th. A bucket or float for impact water wheels, having the curved bottoms meeting at an apex united with a sigmoidal front wall, thereby forming continuous discharge sides for the utilized water as and for the purpose set forth.

No. 37,095. Carriage for Street Railways.

(Voiture pour chemins à orniture.)

Edward C. Sessions, Oakland, California, U.S.A., 21st July, 1891; 5 years.

Claim.—1st. In a passenger-carriage for street-railways, with tiers of seats on top, the sides A, formed with angular inward stepped extensions B, B, providing foot-room for outside passengers below the roof C, constructed and arranged, substantially in the manner and for the purposes herein set forth. 2nd. In a passenger-carriage for street-railways, arranged with tiers of seats on top the angular inward step-shaped extensions B, B, of the main sides A, A, with a shelf H, projecting over the extreme width of the carriage, substantially as and for the purposes set forth and described. 3rd. In a passenger-carriage for street-railways arranged with tiers of seats on its top, the narrow stepped platform I, supported at its outer end from the roof, in combination with double ascending stairs N, and the sunken footway B, and the overhung shelf H, arranged and constructed, substantially in the manner and for the purposes herein described. 4th. In a passenger-carriage for street-railways arranged with double tiers of seats on top the narrow-stepped platform I, having a construction, substantially in conformity to the roof, and the contracted step-shaped portions of the sides, while the steps correspond to the portions B, B, and C, and double stairs N, leading to both sides of the roof from one or both ends of the carriage, substantially in the manner and for the purposes herein set forth and described. 5th. In a passenger-carriage for street-railways, arranged with double tiers of seats on top the double stairs N, the axial supporting-rod P, and the platform I, combined and arranged, substantially as and for the purposes specified.

No. 37,096. Registering Toy Bank.

(Banque-jouet à registre.)

William Robert Christie, New York City, New York, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. In a toy bank, the combination, with a rotary disk having diametrically opposite pockets formed therein, and a chute leading downward from one wall of the bank to the pockets, of a spring-actuated, curved throat plate held contiguous to one side of the disk and adapted to receive a coin from the pocket, as and for the purpose specified. 2nd. In a toy bank, the combination, with a rotary disk having diametrically opposite pockets formed therein and a shoot leading downward from one wall of the bank to the pockets, of a spring-actuated, curved throat plate held contiguous to one side of the disk, and an alarm actuated by the disk, substantially as shown and described. 3rd. In a toy bank, a money-receiving mechanism, comprising a rotary disk provided with diametrically-opposite pockets, curved arms projected from the disk, an alarm mechanism connected with the disk, and a curved spring-actuated throat plate held contiguous to one of the peripheral surfaces of the disk, substantially as and for the purpose specified. 4th. A money-receiving mechanism for toy banks, comprising a disk having produced therein diametrically-opposite pockets and peripheral recesses between the pockets, arms projected from the disk, an alarm device connected with the disk, a curved, spring-actuated throat plate held contiguous to the peripheral surface of the disk, provided with a pin adapted to enter one of the recesses between the pockets, and a striking mechanism connected with the throat plate and adapted to operate in conjunction with the alarm mechanism, as and for the purpose set forth. 5th. In a toy bank, the combination, with a money-receiving mechanism comprising a rotary disk provided with pockets, arms projected from the disk, an alarm mechanism connected with the disk, a spring-actuated throat plate held contiguous to one peripheral surface of the disk, and a striking mechanism attached to the throat plate and adapted to be vibrated by the said arms, of horizontal arms projected from the upper surface of the disk, registering disks having figures arranged upon their outer faces and spaced pins projected from their inner faces, and spring-actuated pawls engaging with the pins of the several registering disks, all combined to operate, substantially as shown and described. 6th. In a toy bank, the combination, with a money-receiving mechanism comprising a rotary disk provided with diametrically-opposite pockets, curved arms projected from said disk, a pawl attached to the disk, a curved, spring-actuated throat plate held contiguous to one peripheral surface of the disk, and a hammer attached to the said throat plate, capable of being vibrated by the said arms, of horizontal arms projected from the rotating pocket disk, an upper and a lower registering disk, having produced upon their outer faces series of numbers and provided with a series of pins upon their inner surfaces and peripheral teeth, one registering disk being adapted to contact with the other, and spring-actuated pawls contacting with the teeth of each of the said registering disks, substantially as and for the purpose specified. 7th. In a toy bank, the combination, with a money-receiving mechanism comprising a rotary disk provided with diametrically-opposite pockets, curved arms projected from said disk, a bell secured to the disk, a curved, spring-actuated throat plate held contiguous to one peripheral surface of the disk, and a striking device attached to the throat plate capable of being vibrated by the arms, of horizontal arms projected from the pocket disk, registering disks arranged one above the other, having figures produced upon their outer faces, pins projected from their inner faces, corresponding in number to the figures and provided with peripheral teeth arranged substantially as described, the teeth of one registering disk being adapted to engage with the teeth of the other, spring-actuated pawls engaging with the pins of the registering disks, the pawl of the upper disk being provided with an elongated head, a plate adapted to close an opening in the bank, and a lock bar controlled by the upper disk and controlling the closing plate of the bank, as and for the purpose specified.

No. 37,097. Process of Separating Magnetic from Non-Magnetic Particles.
(*Procédé de séparation des particules magnétiques des particules non-magnétiques.*)

Gurdon Conkling, Glens Falls, New York, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. The process herein described of separating magnetic and non-magnetic particles, which consists in causing a liquid stream containing such particles to travel downward from a higher to a lower level, and while so traveling subjecting the stream to the uninterrupted action of a stationary magnet, and moving the magnetic particles upward out of the magnetic field while the liquid stream with the non-magnetic particles is descending, substantially as described. 2nd. The process herein described of separating magnetic and non-magnetic particles, which consists in causing a liquid stream containing such particles to travel downward over a magnet, and while the liquid is so traveling over such magnet, moving the magnetic particles upward in a direction opposite to that in which the liquid with the non-magnetic particles is traveling and spraying the magnetic particles, substantially as set forth. 3rd. The process herein described of separating magnetic and non-magnetic particles, which consists in causing a liquid stream containing such particles to travel downward and while so traveling subjecting the stream to the uninterrupted action of stationary magnets, and moving the magnetic particles upward out of the magnetic field while the liquid stream with the non-magnetic particles continues to descend and exposing the moving particles after they have been carried upward out of the descending liquid, and before they leave the magnetic field to a descending spray of water, substantially as set forth.

No. 37,098. Handle for Augers.
(*Manche de tarière.*)

Lemuel H. Sargent, Jr., Mason, West Virginia, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. In an auger-handle, the combination, with the central plates having the opening, the hollow stud mounted for rotation in the opening and bored to receive an auger or other similar tool, and between the plates provided with a ratchet-boss, of a pair of pawls pivoted between the plates and spring pressed into engagement with the ratchet, a pair of binding-screws mounted in one of the plates and bearing against the pawls, and opposite handles connected with the plates, substantially as specified. 2nd. In combination, with the opposite plates, the blocks located between the opposite ends of the same and having threaded openings, one of said blocks having its opposite sides recessed, the hollow stud mounted for rotation in the openings of the plates and provided between the plates with a ratchet-boss, a pair of pawls pivoted in the recesses at their front ends, and engaging the ratchets and at their rear ends extended beyond their pivots, small coiled springs interposed between the rear ends and the inner wall of the recess, the opposite set-screws passed through threaded perforations formed in one of the plates and adapted to bear upon the pawls in rear of their pivots, the opposite handles, the disks secured to the handles, and the threaded studs passed through the disks and taking into the threaded openings in the blocks and bearing upon the pawls in rear of their pivots, substantially as specified.

No. 37,099. Telescopic Draw Bridge.
(*Pont-levis télescopique.*)

David Herbert Andrews, Boston, Massachusetts, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. In a draw-bridge, a movable section, a pit or pocket thereunder, and a draw-span retractible into the pit or pocket, substantially as described. 2nd. In a draw-bridge, a counter-balanced movable section, a pit or pocket thereunder, and a draw-span retractible into the pit or pocket, substantially as described. 3rd. In a draw-bridge, a movable section, a pit or pocket thereunder, and a counter-balanced draw-span retractible into the pit or pocket, substantially as described. 4th. In a draw-bridge, a counter-balanced movable section, a pit or pocket thereunder, and a counter-balanced draw-span retractible into the pit or pocket, substantially as described. 5th. In a draw-bridge, a vertically-movable section means for synchronously moving all parts thereof, a pit or pocket, and a draw-span retractible into the pit or pocket, substantially as described. 6th. In a draw-bridge, in combination, a vertically movable section abutting against the draw-span when the bridge is closed, a pit or pocket thereunder, and a draw-span retractible into the pit or pocket, substantially as described. 7th. In a draw-bridge, in combination, a vertically movable section, a pit or pocket thereunder provided with a track, and a retractible draw-span provided with a truck adapted to run upon the track in the pit, substantially as described. 8th. In a draw-bridge, in combination, a counter-balanced vertically-movable section, means for synchronously moving all parts thereof, a pit or pocket thereunder provided with a track, a draw-span provided with a truck adapted to run on the track and means for moving the draw-span, substantially as described. 9th. In a draw-bridge, a draw-span having lateral bracing and retractible into a pit or pocket, in combination with a vertically-movable section over the pit or pocket, substantially as described. 10th. In a draw-bridge, a suitably counterpoised vertically movable section composed of the girders B, B, secured together by the cross beams C, C, the girders B, B, being adapted to rest throughout their length on the walls of a pit or pocket when in their lowest position. 11th. In a draw bridge, a draw span composed of girders as A, A, stayed or braced by diagonals as U, U', balanced upon a truck running on rails in a pit or pocket formed under a vertically moving section, whereby the draw-span may be withdrawn into the pit or pocket, substantially as described. 12th. In a draw-bridge, in combination, a suitably counterpoised vertically-movable section composed of the girders B, B, adapted to rest in their lowest position on the walls of a pit or pocket, and secured together by cross-beams C,

C, means for raising and lowering such section, and a draw-span composed of girders A, A, braced by diagonals U, U', and balanced upon a truck running upon rails in the pit or pocket with suitable means for retracting and projecting the draw-span into and out of the pit or pocket, substantially as described.

No. 37,100. Apparatus for Treating Ores.
(*Appareil de traitement des minerais.*)

John Ketcham Hallowell, Chicago, Illinois, U.S.A., 31st July, 1891; 5 years.

Claim.—1st. A device for drying ore while pulverizing it, having a pulverizing machine, a furnace having a chimney, and a conduit connecting the pulverizing machine with the chimney and leading the waste hot products of combustion from the furnace into the pulverizer, substantially as described. 2nd. A device for drying ore while pulverizing it, comprising, in combination, a pulverizing machine *t*, having air inlets *t'*, a furnace *w*, having a chimney *w'*, provided with a false partition *w''*, forming a passage in the chimney open near its base, a cover *r*, on top of the chimney, a conduit *u*, leading from the chimney and provided with pockets *a*, and internal screens *s'*, and branches *u'*, leading from the conduit into the pulverizing machine and provided with dampers *u''*, substantially as described. 3rd. An ore separating device, comprising, in combination, with an inclosure containing a pulverizer *t*, bins formed with partitions in the inclosure extended successively higher from the pulverizer to define a gradually rising plane, an exhaust-fan *p*, communicating with the inclosure containing the partitions near the upper end of the inclined plane, a screen *m'*, in the lowermost bin, and a return-pipe *m''*, leading from the screen *m'*, back to the pulverizer, substantially as described. 4th. An ore concentrating device having a rocking frame formed with uprights *l*, pivotally supported at their bases and each provided with supporting arms *l'*, and intercommunicating covered screens *h*, adapted to discharge from their ends, and supported to extend, one above the other lengthwise between the uprights on the said arms to be rocked laterally in the planes of the arcs described by the rocking uprights, and inclining successively in opposite directions, substantially as described. 5th. An ore concentrating device, comprising, in combination, a rocking frame formed of the pivotally supported uprights *l*, connected together at their upper ends, a driving shaft *i*, connected with the frame and adapted to be connected with suitable driving power, supporting arms *l'*, and stop arms *k''*, on the uprights, stops *k'*, at the bases of the uprights for the arms *k''*, intercommunicating inclosed screens *h*, supported to extend between the uprights on the arms *l'*, and inclining successively in opposite directions, and a receptacle *z*, into which the screens discharge, substantially as described. 6th. A device for collecting the dust of pulverized ore, having, in combination, with a fan *p*, communicating with the dust-supply, a chamber *g*, into which the fan discharges through a conduit *u*, and containing a series of hoppers *g'*, dividing it into an upper sifting chamber provided with an escape outlet and a lower collecting chamber, the conduit *u*, leading into the sifting chamber and discharging therein in an upward direction, and a series of cloth covered frames *f*, suspended in the sifting chamber over the mouth of the conduit, substantially as described. 7th. A device for collecting the dust of pulverized ore, comprising, in combination, with a fan *p*, communicating with the dust supply, a chamber *g*, into which the fan discharges through a conduit *u*, and containing a series of hoppers *g'*, dividing it into an upper sifting chamber and a lower collecting chamber, the conduit *u*, leading into the sifting chamber and discharging therein in an upward direction, a series of connected cloth covered spring controlled frames *f*, suspended over the mouth of the conduit, and a screen-covered tower *E*, communicating through a screen-covered opening *e*, with the sifting chamber and containing a knocker *d'*, and alternating hinged shelves *d*, connected together and with said knocker, and a knocker *c'*, for the screen *e*, substantially as described. 8th. An apparatus for treating ore to successively pulverize, separate and concentrate it and save the dust therefrom, comprising in combination an inclosure containing a pulverizer communicating with the chimney of a furnace *w'*, a separator having a compartment into which the pulverizer discharges and containing partitions rising to successively increasing altitudes and forming a series of bins adapted to discharge from their bases, a fan *p*, above the final bin operating to draw the material from the pulverizer up an inclined course, a rocking-screen concentrator *B* below the base of each bin, and a dust saving apparatus *D* into which the fan discharges, the whole being constructed and arranged to operate, substantially as described. 9th. An apparatus for treating ore to successively pulverize, separate and concentrate it and save the dust therefrom, comprising, in combination, an inclosure containing a pulverizer *t*, a furnace *w*, with the chimney *w'*, of which the pulverizer communicates controllably through a conduit *u*, having pockets *s*, and containing screen dampers *s'*, and through branches *u'*, leading from the conduit and having cold air inlets *t'*, a separator having a compartment into which the pulverizer discharges and containing partitions rising to successively increasing altitudes and forming a series of bins having hopper bottoms, the bin nearest the pulverizer having a screen over its hopper and a return pipe leading to the pulverizer, a fan *p*, above the final bin of the series operating to draw the material from the pulverizer up an inclined course, a rocking-screen concentrator *B*, below each said bin and comprising intercommunicating screens *h*, supported one above the other to slant alternately in opposite directions and extend lengthwise between uprights *l*, pivoted at their lower ends to rock the screens endwise, means for rocking the uprights, and a receptacle *z*, into which each screen discharges, and a dust saving apparatus *D*, comprising a compartment *g*, divided internally by hoppers *g'*, forming below them a dust-collecting chamber and having suspended above the hoppers concentric sifting cloths *f*, on interconnected frames *f*, adapted to be jolted, a tower *E*, communicating with the chamber *g*, above the cloths and containing tilting shelves *d*, and knockers for screens *e*, and *c*, operated from suitable ropes, a conduit *u*, leading from the fan into the chamber *g*, below the sifting cloths and having an upward extending mouth, and a distributing cone *y* suspended over the mouth of the conduit, substantially as described.

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

2221. THE MASSEY MANUFACTURING COMPANY, (assignees), 2nd five years of No. 24,458, from the 7th day of July, 1891. Improvements in Belt Gearing, 2nd July, 1891.
2222. HARRY A. CONNELL, 2nd five years of No. 24,626, from the 2nd day of August, 1891. Improvements in Shingle Jointers, 3rd July, 1891.
2223. WILLIAM SANDERSON GILL, 2nd five years of No. 24,664, from the 7th day of August, 1891. Improvements in Brake Shoes for Braking the Wheels of Railway Cars and other Car Wheels, 3rd July, 1891.
2224. GEORGE WILKINSON, 2nd five years of No. 24,438, from the 6th day of July, 1891. Improvements in Jaws and Clevises for Ploughs, 6th July, 1891.
2225. THOS. D. GALLOWAY, 3rd five years of No. 13,126, from the 18th day of July, 1891. Improvements in Self Dumping Horse Rakes, 7th July, 1891.
2226. WESLEY STRINGER, 3rd five years of No. 13,077, from the 9th day of July, 1891. Machine for Registering the Measurement of Grain from Threshing Machines, 7th July, 1891.
2227. ARTHUR O. NORTON, 2nd five years of No. 24,590, from the 30th day of July, 1891. Improvements in Lifting Jacks, 7th July, 1891.
2228. ORTON PETERSON PECKHAM, 2nd and 3rd five years of No. 30,399, from the 14th day of December, 1891. Improvements in the Gear of Four Wheeled Vehicles, 8th July, 1891.
2229. D. LAMB, 2nd five years of No. 24,597, from the 13th day of July, 1891. Improvements on Bed Bottoms, 8th July, 1891.
2230. PERCIVAL EVERITT, 2nd five years of No. 24,515, from the 17th July, 1891. Improvements in Weighing Machines, 8th July, 1891.
2231. JACOB STEINMETZ THORN, 2nd five years of No. 24,514, from the 17th day of July, 1891. Improvements in Metallic Roofing Tiles, 11th July, 1891.
2232. JACOB STEINMETZ THORN, 2nd five years of No. 24,513, from the 17th day of July, 1891. Improvements in Metallic Roofing Tiles, 11th July, 1891.
2233. JOHN SPRINGER, 2nd five years of No. 24,627, from the 3rd day of August, 1891. Improvements on Heating Drums and Ventilators, 13th July, 1891.
2234. THE WATERMAN, CHAPMAN and BANELL MACHINE COMPANY, (assignees), 2nd five years of No. 24,579, from the 28th day of July, 1891. Improvement in Machines for Cutting Sheet Staves, 13th July, 1891.
2235. HIRAM JOSEPH LIVERGOOD, 2nd five years of No. 24,669, from the 7th day of August, 1891. Improvements in Machines for Cleaning Wheat, 14th July, 1891.
2236. PETER KELLS DEDERICK, 2nd five years of No. 25,232, from the 27th day of October, 1891. Improvements in Baling Presses, 17th July, 1891.
2237. ALFRED WATTS and ROBERT HENRY, 2nd five years of No. 24,554, from the 21st day of July, 1891. Improvements in Machines for Waxing Paper, 17th July, 1891.
2238. WILLIAM BENNETT RICKMAN, 2nd five years of No. 24,535, from the 20th day of July, 1891. Method of and Apparatus for Lighting Railway Trains or Tram-cars by Gas, 17th July, 1891.
2239. WILLIAM BENNETT RICKMAN, 2nd five years of No. 24,536, from the 20th day of July, 1891. Method of and Apparatus for Lighting by Gas, Floating and Detached Lights, such as Buoys, Lightships, Pile Lights, and the like, 17th July, 1891.
2240. SARAH A. PARKE, 2nd five years of No. 24,619, from the 21st day of July, 1891. Improvements in Saw Swaging Machines, 24th July, 1891.
2241. DAVID JOHNSON, 2nd five years of No. 24,692, from the 10th day of August, 1891. Improvements in the Manufacture of Explosives, 24th July, 1891.
2242. BERNARD LAUTH, 2nd five years of No. 24,674, from the 7th day of August, 1891. Improvements in the Method of Reducing old Railroad Rails to Steel Plates, 24th July, 1891.
2243. JAMES ADAMS, 3rd five years of No. 13,220, from the 8th day of August, 1891. Improvements in Wagon Axles, 24th July, 1891.
2244. SOPHRONIA TAMMY LEWIS, 2nd five years of No. 24,576, from the 28th day of July, 1891. Improvements on Dress Charts, 24th July, 1891.
2245. A. BOWER and A. S. BOWER, 3rd five years of No. 13,531, from the 12th day of October, 1891. Improvements on effecting the Protection of Iron and Steel Surfaces in the Furnaces Employed Therein, 27th July, 1891.
2246. ISAAC GARDINER and SAMUEL WALTON, 2nd five years of No. 24,756, from the 18th day of August, 1891. Improvements in Harvester Knife Grinders, 27th July, 1891.
2247. SAMUEL CRONE, 2nd five years of No. 24,617, from the 31st day of July, 1891. Improvements in Fences, 30th July, 1891.
2248. ALEXANDER LOGAN, 2nd five years of No. 24,707, from the 11th day of August, 1891. Improvements in Machines for Extracting Stumps, 31st July, 1891.

JULY LIST OF TRADE MARKS.

Registered at the Department of Agriculture—Copyright and Trade Mark Branch.

4088. GEORGES ELIE AMYOT, Quebec, Que. Corsets, 2nd July, 1891.
4089. JEAN DAMIEN ROLLAND, President de la Compagnie de Papier Rolland, de Montreal, Que. Papier, 2 Juillet, 1891.
4090. FOISY FRERES, de Montreal, Que. Pianos, 3 Juillet, 1891.
4091. WILLIAM FROST SMITH, of Montreal, Que. Cigars, 4th July, 1891.
4092. THE FARBENFABRIKEN, vormals. FRIEDRICH BAYER & CO., of Elberfeld, Empire of Germany. A New Pharmaceutical Product, 6th July, 1891.
4093. THE NASHUA MANUFACTURING COMPANY, of Nashua, New Hampshire, U.S.A. Woven Fabrics, particularly Cotton Goods, 7th July, 1891.
4094. JAMES B. SHERRIFF, of Glasgow, Scotland. Distilled Liquors, particularly Jamaica Rum, 8th July, 1891.
4095. GEORGE A. MOORE, of St. John, N. B. Liquid Medicine for Internal and External Use, 8th July, 1891.
4096. HEMMING BROTHERS COMPANY, (Lt'd), of Toronto, Ont. Tooth Powder, 11th July, 1891.
4097. THEODORE HERBERT MEADER, of North Orillia Township, Simcoe Co., Ontario. A Compound Extract of Ginseng, 11th July, 1891.
4098. G. R. SOMERVILLE, of London, Ont. Chewing Gum, 15th July, 1891.
4099. JOSEPH MIZAEI FORTIER, of Montreal, Que. Cigars, 17th July, 1891.
4100. F. REDDAWAY & CO., of Manchester, Lancashire Co., England. Belting, 18th July, 1891.
4101. THE J. B. PACE TOBACCO COMPANY, of Richmond, Virginia, U.S.A. Manufactured Tobacco of all classes, whether Cut, Granulated or Plug, 21st July, 1891.
4102. } GUSTAVE MARTINEAU, de Saintes, France.
4103. } Eaux-de-vie, 23 Juillet, 1891.
4104. MARIA PASSMORE CARD, of Guelph, Ont. A Condiment, 27th July, 1891.
4105. SCOTT & BOWNE, of 132 and 134, South Fifth Avenue, New York, N. Y., U.S.A. Emulsion of Cod Liver Oil with Hypophosphites of Lime and Soda, 28th July, 1891.
4106. JOHN MORRISON, of Toronto, Ont. Valves, 29th July, 1891.
4107. JOHN HECTOR McKAY and EDWARD LAURANCE, of Truro, N.S. Porter, 30th July, 1891.

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5998. THE LITTLE TYCOON LANCERS. Arranged by Charles Bohner. Whaley, Royce & Co., Toronto, Ont., 2nd July, 1891.
5999. SONS OF ENGLAND. Patriotic Song. Words by R. W. Gyle. Music by Celian Kottaun. The Anglo-Canadian Music Publishers' Association, (Limited), London, England, 2nd July, 1891.
6000. A TRIP TO ENGLAND, by Goldwin Smith, D.C.L. (Second Edition). Williamson & Co., Toronto, Ont., 3rd July, 1891.
6001. THE BREEDING OF HORSES AND OTHER DOMESTICATED ANIMALS IN CANADA, by H. Quetton St. George. (Second Edition Revised). Williamson & Co., Toronto, Ont., 3rd July, 1891.
6002. HURRAH FOR THE FLAG. Patriotic Song. by James Lumsden Barron, London, Ont., 3rd July, 1891.
6003. STORY OF THE GREAT DISASTER AT SPRINGHILL MINES, NOVA SCOTIA, FEBRUARY 21st, 1891, by Robert A. H. Morrow, St. John, N.B., 3rd July, 1891.
6004. ILLUSTRATED TORONTO, by G. Mercer Adam, (book). John McConniff, Montreal, Que., 6th July, 1891.
6005. THE McRAES (print.) Duncan D. McRae, Gamebridge, Ont., 7th July, 1891.
6006. DRAWING of a Lady seated at the side of a vessel looking over water with a field glass, and called "GLIMPSES OF NATURE'S BEAUTY." Samuel Leavitt Swett, Montreal, Que., 7th July, 1891.
6007. TIES, HUMAN AND DIVINE, by B. L. Farjeon.
6008. THE WORLD, THE FLESH, AND THE DEVIL, by Miss M. E. Braddon. }
The National Publishing Co., Toronto, Ont., 7th July, 1891
6009. PLANE TRIGONOMETRY, for the use of Colleges and Schools, by I. J. Birchard, M.A., Ph. D. Wm. Briggs, (Book Steward of the Methodist Book and Publishing House), Toronto, Ont., 9th July, 1891.
6010. HILL'S INDISPENSABLE DRY GOODS CHECK. James I. Hill, Port Lambton, Ont., 9th July, 1891.
6011. MAY DAY. Rustic Dance (for the Piano), by L. V. Williams. I. Suckling & Sons, Toronto, Ont., 9th July, 1891.
6012. THE GOLDEN BAR. Song. Words by F. E. Weatherly. Music by Frederic Bevan. Chappell & Co., London, England, 9th July, 1891.
6013. PLAN OF THE CITY OF QUEBEC AND ENVIRONS, 1891. Boulanger & Marcotte, Quebec, Que., 9 Juillet, 1891.
6014. LANGUAGE EXERCISES FOR JUNIOR CLASSES, by Peter Smith, Principal Madoc Model School. The Copp, Clark Company, (Limited), Toronto, Ont., 11th July, 1891.
6015. THE RECORDER, (booklet). Allen & Co., Toronto, Ont., 11th July, 1891.
6016. THE BELL TELEPHONE COMPANY OF CANADA, HAMILTON AND DUNDAS EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, JULY, 1891. The Bell Telephone Company of Canada, Montreal, Que., 11th July, 1891.
6017. THE CANADIAN PARLIAMENTARY COMPANION, 1891. Edited by J. A. Gemmill, Ottawa, Ont., 13th July, 1891.
6018. REPORTS OF CASES ARGUED AND DETERMINED IN THE COURT OF QUEEN'S BENCH, MANITOBA, with Table of Cases and Principal Matters. Vol. III, 1886. Edited by John S. Ewart, Q.C. The Law Society of Manitoba, Winnipeg, Man., 13th July, 1891.
6019. REPORTS OF CASES ARGUED AND DETERMINED IN THE COURT OF QUEEN'S BENCH, MANITOBA, with Table of Cases and Principal Matters. Vol. IV, 1887. Edited by John S. Ewart, Q.C. The Law Society of Manitoba, Winnipeg, Man., 13th July, 1891.
6020. REPORTS OF CASES ARGUED AND DETERMINED IN THE COURT OF QUEEN'S BENCH, MANITOBA, with Table of Cases and Principal Matters. Vol. V, 1888-89. Edited by John S. Ewart, Q.C. The Law Society of Manitoba, Winnipeg, Man., 13th July, 1891.
6021. REPORTS OF CASES ARGUED AND DETERMINED IN THE COURT OF QUEEN'S BENCH, MANITOBA, with Table of Cases and Principal Matters. Vol. VI, 1889-90. Edited by John S. Ewart, Q.C. The Law Society of Manitoba, Winnipeg, Man., 13th July, 1891.
6022. COUPON REDEEMABLE IN SILVERWARE AT REGISTRANT'S STORE. Henry G. Beckwith, Toronto, Ont., 15th July, 1891.
6023. RECITS ET SOUVENIRS, par Joseph Marmette, Ottawa, Ont., 16 Juillet, 1891.
6024. CITY OF TORONTO, ONTARIO, Vol. I. (Insurance Plans). Charles Edward Goad, Montreal, Que., 17th July, 1891.

6025. MAGUIRE'S NAN. (Temporary Copyright), which is now being preliminarily published in separate articles in "THE SATURDAY GLOBE." TORONTO, ONT. William Wilfred Campbell, Ottawa, Ont., 17th July, 1891.
6026. CHROMO LITHOGRAPH *re* TROTting MATCHES. David C. Barclay and Thomas J. Clark. (Barclay, Clark & Company), Toronto, Ont., 23rd July, 1891.
6027. HER ASSOCIATE MEMBERS, by "Pansy." }
 6028. ALONE IN THE WIDE, WIDE WORLD. A Musically Illustrated Service, by }
 Rev. J. R. Andrews. Wm. Briggs, (Book Steward of the }
 Methodist Book and Publishing House), Toronto, Ont., 23rd }
 July, 1891.
6029. DAMON. A Pastoral Gavotte, by Seymour Smith. }
 6030. ORAZIONE, by Carle Thorne. }
 The Anglo-Canadian Music Publishers' Association, (Lt'd.) }
 London, England, 23rd July, 1891.
6031. THE BELL TELEPHONE COMPANY OF CANADA. MONTREAL EXCHANGE, }
 SUBSCRIBERS' DIRECTORY, AUGUST, 1891. The Bell Tele- }
 phone Company of Canada, Montreal, Que., 24th July, 1891.
6032. ADA TRISCOTT, by Captain Andrew Haggard, (book). Wm. Bryce, Toronto, Ont., }
 24th July, 1891.
6033. OTTAWA DIRECTORY, 1891-92. The Might Directory Company, Toronto, Ont., }
 25th July, 1891.
6034. OVER THE PRAIRIE. Valses for the Piano. }
 6035. MAY FLOWERS. Schottische for the Piano. }
 By Henry E. Kayll, Virden, Man., 28th July, 1891. }
6036. EVER CONSTANT. Song, with violin obligato. Words by Derwent Miall. }
 Music by Leslie Conyers. }
 6037. M. R. S. Ballad. Words by A. Horspool. Music by Henry Pontet. }
 I. Suckling & Sons, Toronto, Ont., 29th July, 1891. }
6038. VESPER WALTZ, by R. S. Ambrose. A. & S. Nordheimer, Toronto, Ont., 29th }
 July, 1891.
6039. ATMA. A Romance, by A. C. F. }
 6040. LOVELL'S MONTREAL DIRECTORY, 1891-92. John Lovell & Son, Montreal, }
 Que., 30th July, 1891.

THE

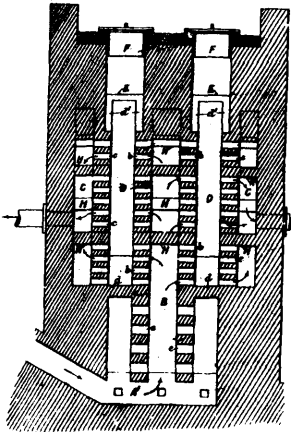
CANADIAN PATENT OFFICE RECORD

ILLUSTRATIONS.

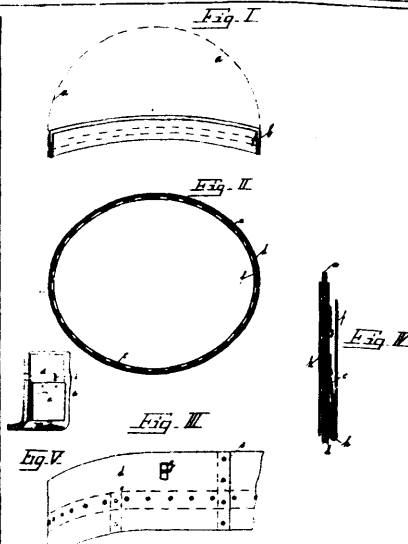
Vol. XIX.

JULY, 1891.

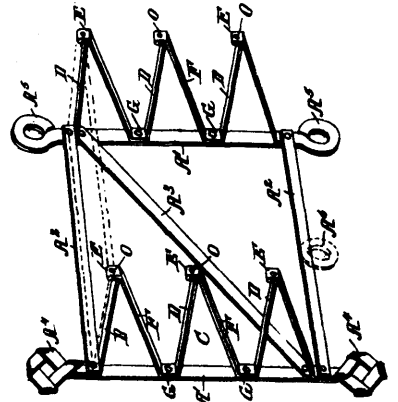
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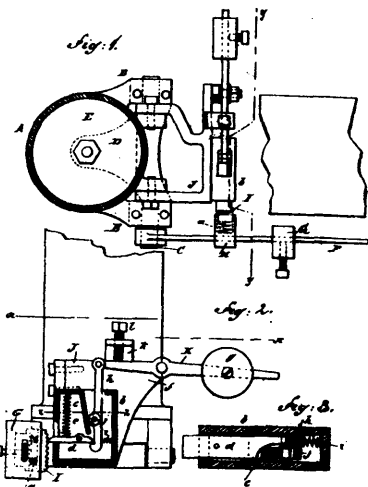
36913 Jones' Apparatus for Producing Coke for Foundries.



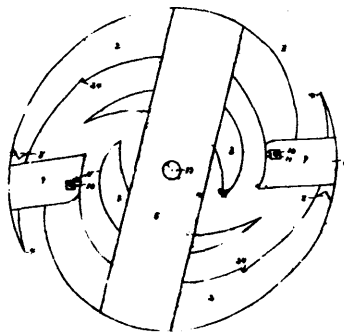
36914 Hubner's Sweat Band for Hats.



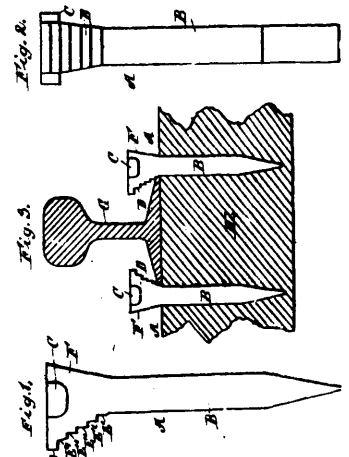
36915 Wegener's Shelf Support.



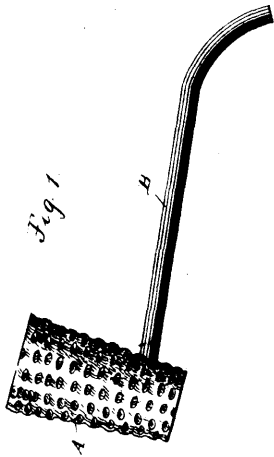
36916 Shepherd's Automatic Discharge Valve for Sewer Pipes.



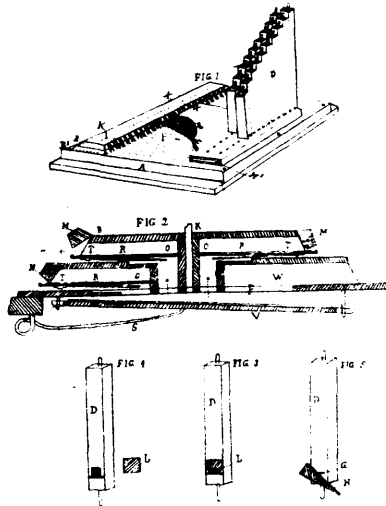
36917 Eokhai It's Stone Grinding Wheel.



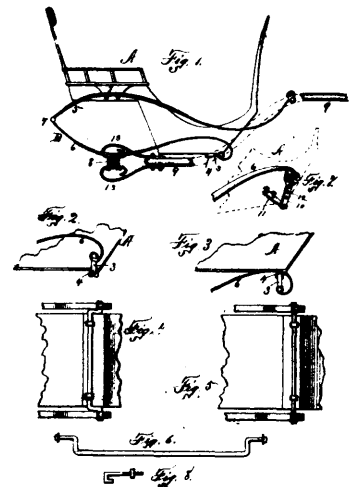
36918 Hammond and Gordon's Railroad Spike.



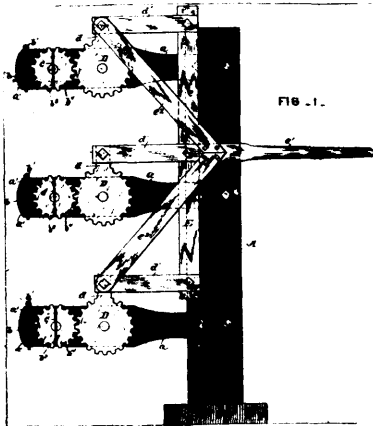
36919 McGill's Pipe



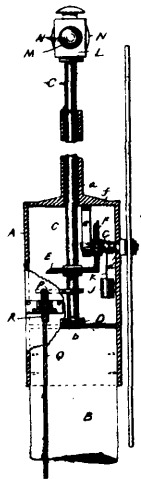
36920 Scribner's Reed Organ.



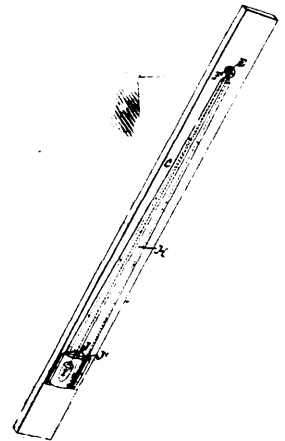
36921 Pike and Sykes' Road Cart.



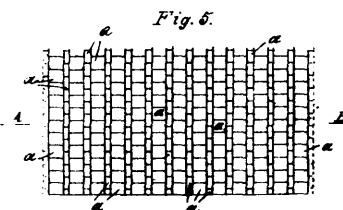
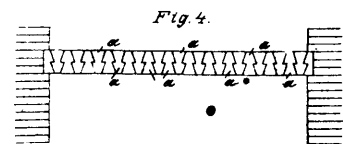
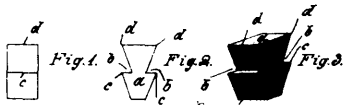
36922 Smith's Fence Making Machine.



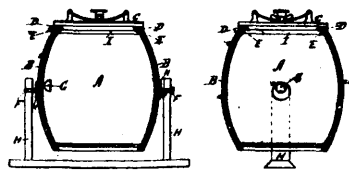
36923 Tisdale's Electric Railway Signal.



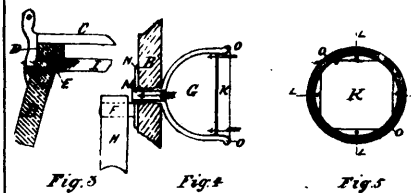
36924 Workman's Plumb for Builders.



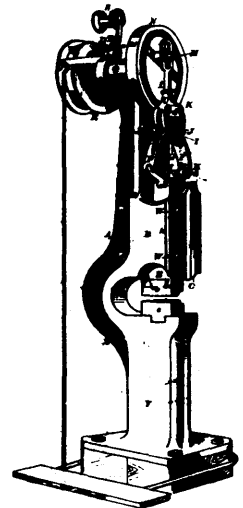
36925 Bohme's Form Piece.



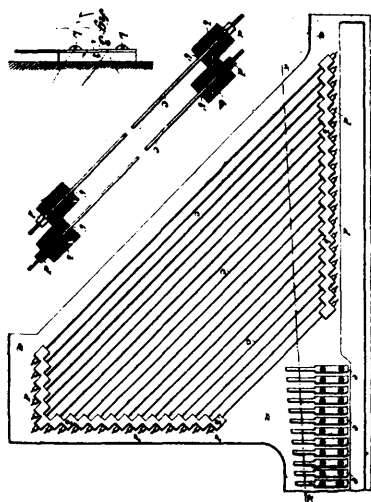
36926 Dowell's Revolving Churn.



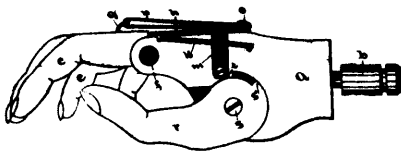
36927 Dupont's Coil Spring Power Hammer.



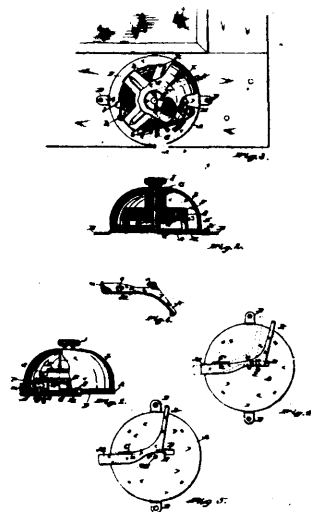
36927 Dupont's Coil Spring Power Hammer.



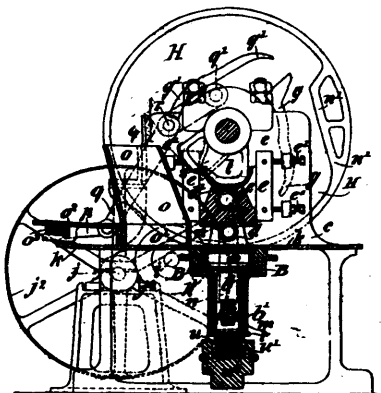
36928 Steck's Piano.



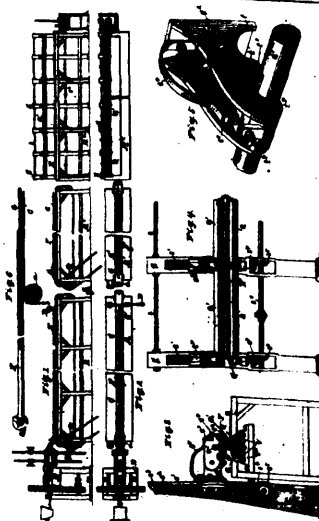
36929 Lucas' Artificial Hand.



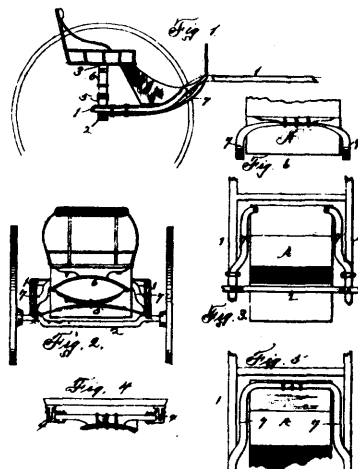
36930 Arter's Burglar Alarm.



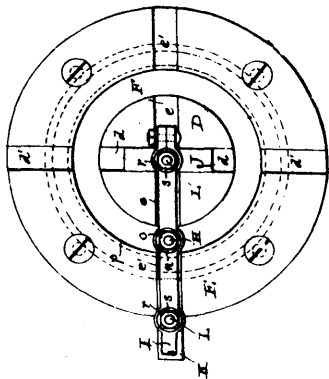
36931 Johnson's Moulder and Presser for Clay, etc.



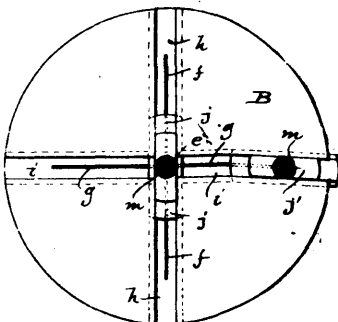
36935 Foote's Apparatus for Making Seamless Rubber Lined Hose.



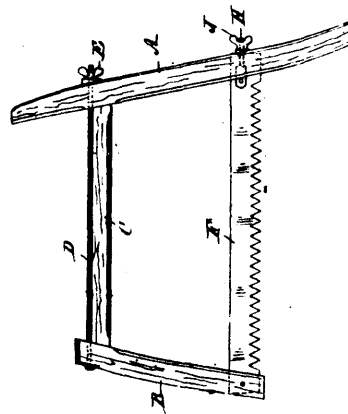
36936 Pike's Road Cart.



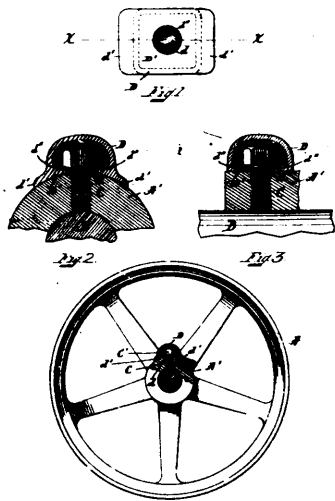
36937 Edlerblute's Mechanical Movements.



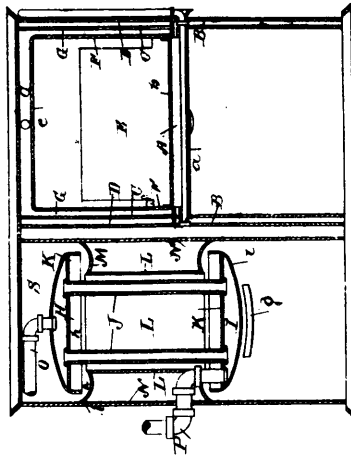
36938 Edlerblute's Mechanical Movements.



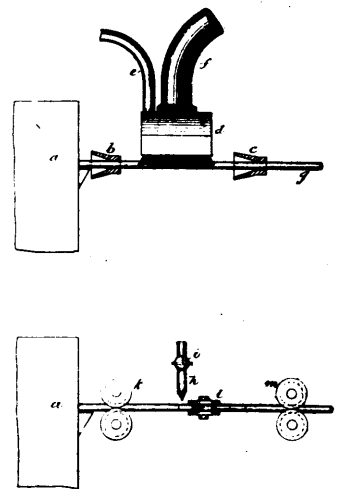
36939 Cruickshank's Buck Saw Frame.



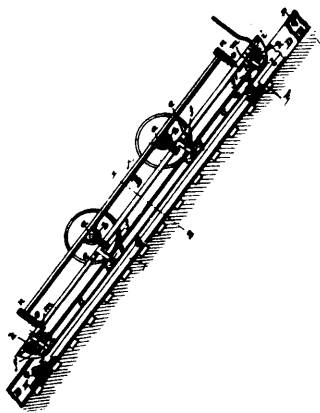
36940 Walmaley's Set Screw Protector.



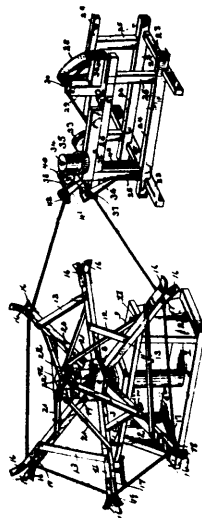
36941 Spencer's Gas Stove.



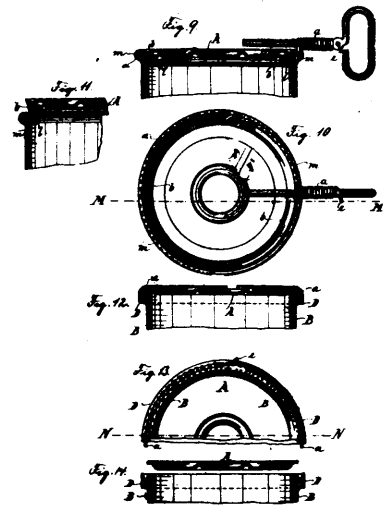
36942 Howard's Method of Manufacturing Iron and Steel Tubes.



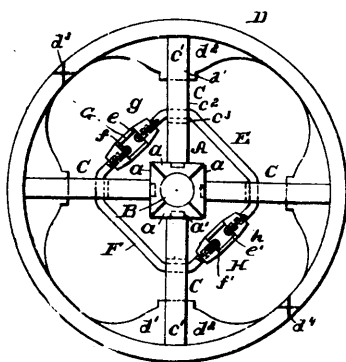
36943 Saville and Winspear's Electric Conductors.



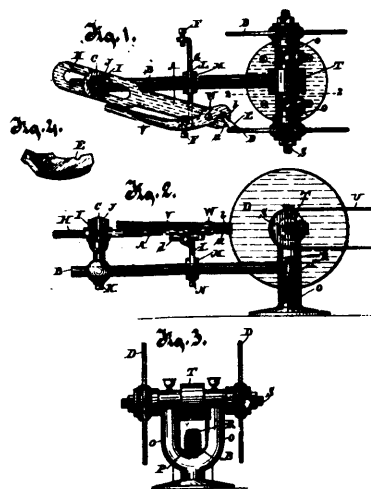
36944 Clement's Horse Power.



36945 Kirsch's Device for Closing Tin Cans, etc.



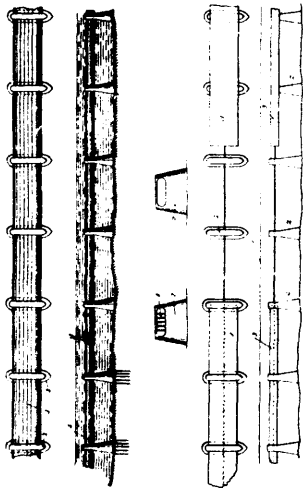
36946 Coddington's Separable Pulley.



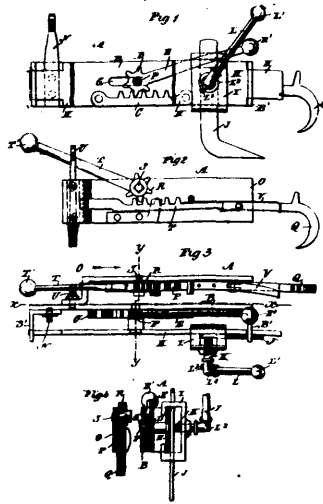
36948 Beach's Machine for Sharpening and Holding Insertable Saw Teeth.



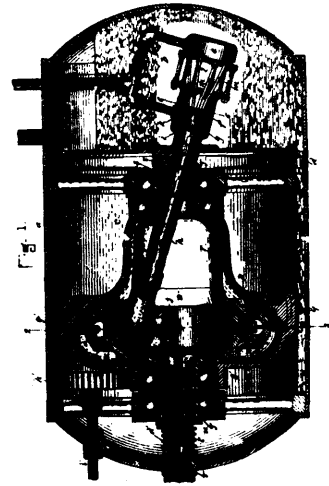
36949 Dunn's Rake.



36950 Strom's Subaqueous Viaduct.



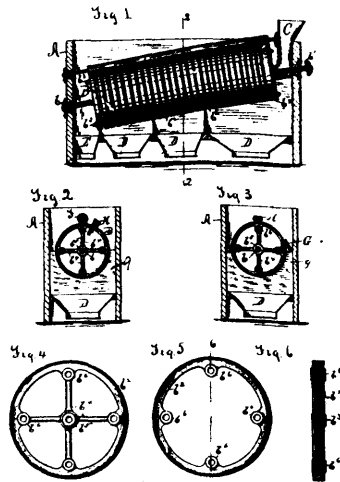
36951 Miller's Saw Mill Dog.



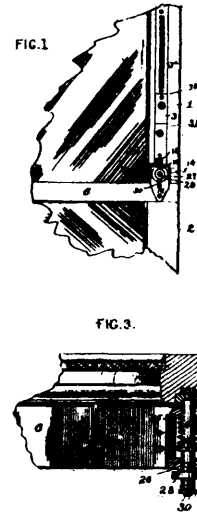
36952 Altham's Motor.



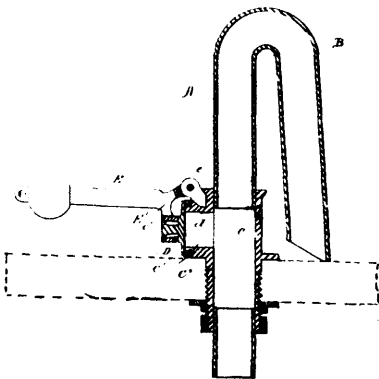
36953 Mcsner's Separator for Steam Boilers, etc.



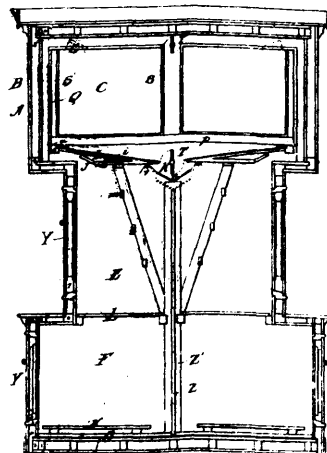
36954 Eich's Grain Grader.



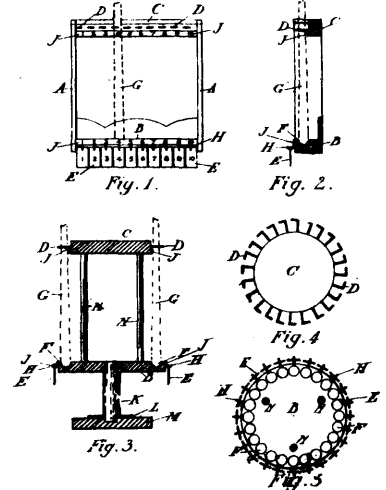
36955 Doty's Sash Lock.



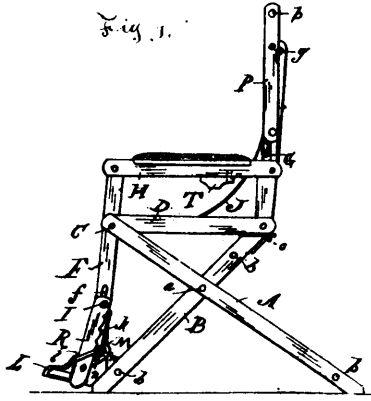
36956 Meadowcroft's Siphon Valve for Cisterns.



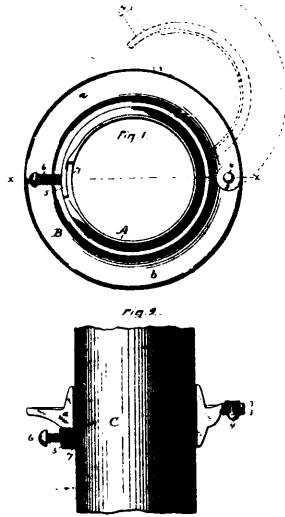
36957 Lambert and Freniere's Ice House.



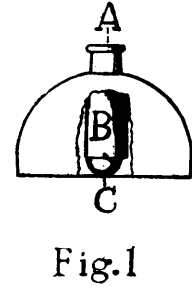
36958 Corrigan's Whip Stand for Hotels.



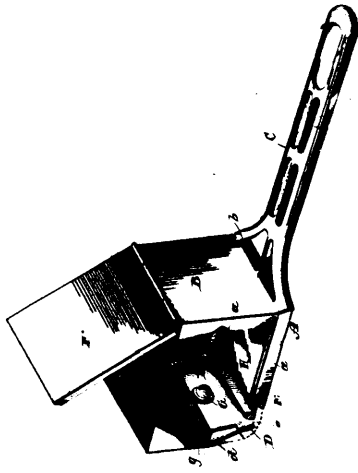
36850 Brodeur's Adjustable Chair.



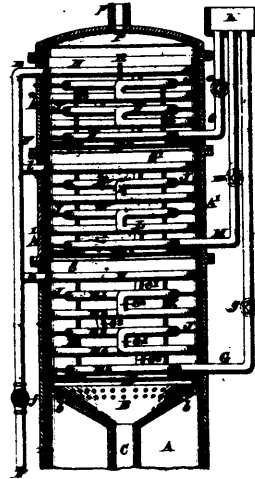
36860 Beaton's Ceiling Plate for Pipes.



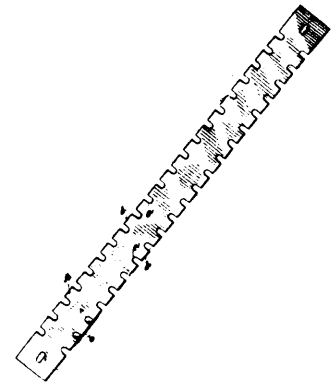
36861 Cummins' Float for Fishing.



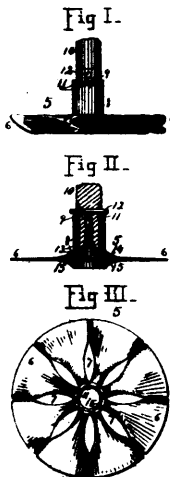
36962 Opita's Ice Shaver.



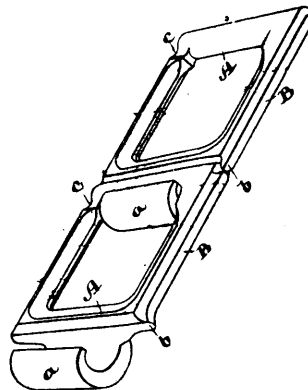
36963 Bolton's Distilling Columns and Condenser.



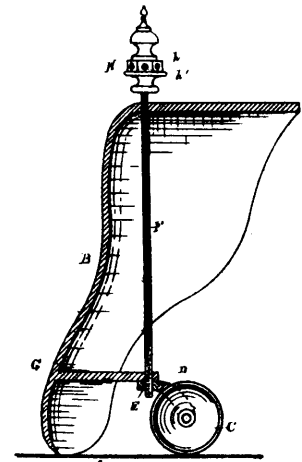
35964 Snarr's Stone Saw.



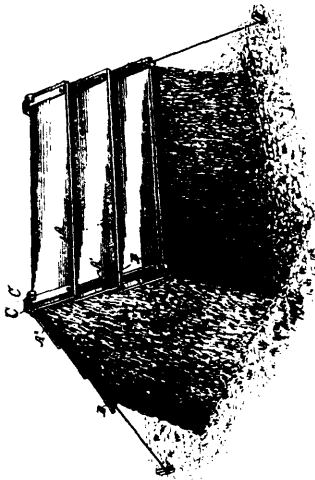
36965 Sterling's Churn Dasher.



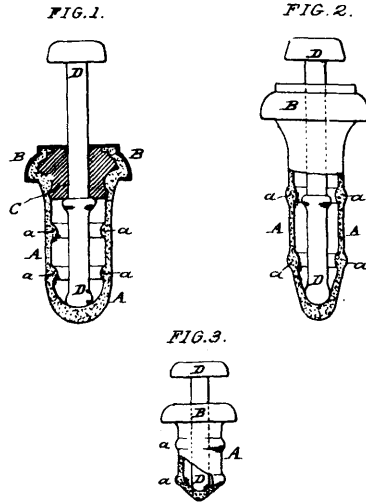
36966 Storte's Drive Chain.



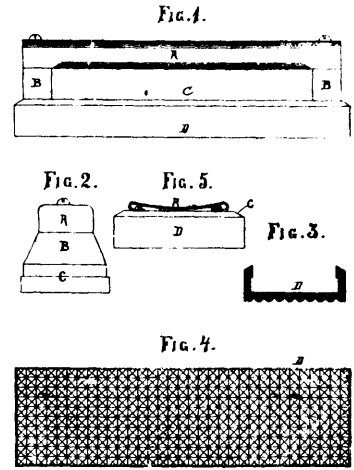
36967 Phillips' Stove Leg.



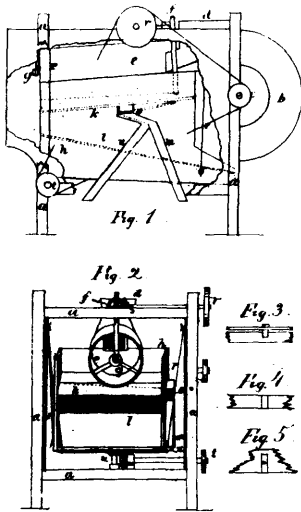
36968 Broughton's Stack Cover.



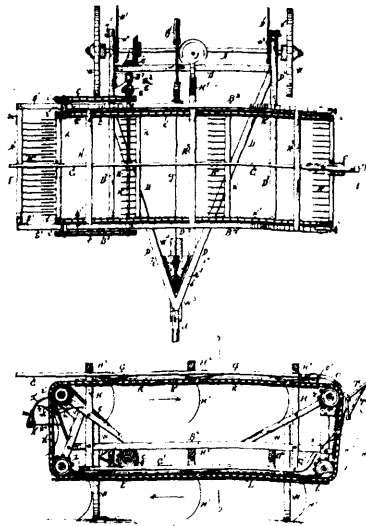
36969 Brooks' Self-Adjusting Bottle Stopper.



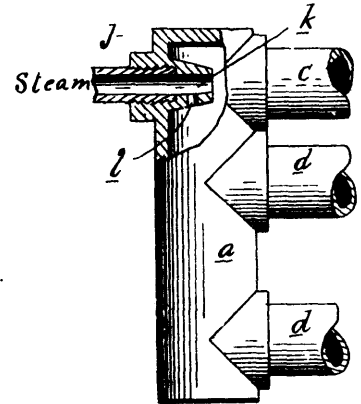
36970 Churchill's Implement for Washing Bottles.



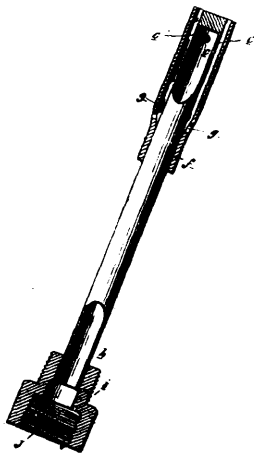
36971 Marsh's Fanning Mill.



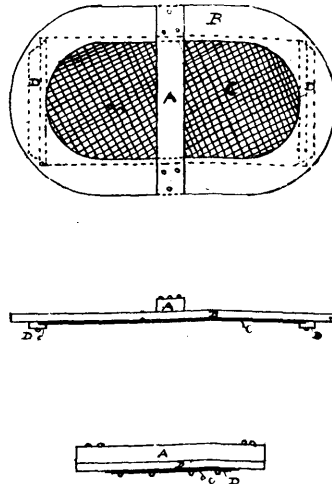
36972 McPherson's Hay Rake



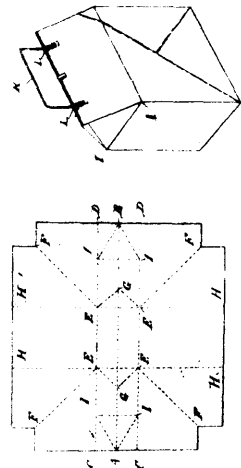
36973 McElroy's Steam Heating System.



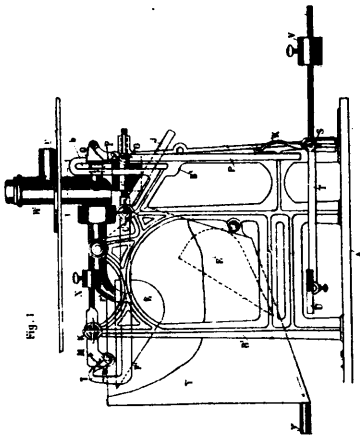
36974 McElroy's Car Heating Apparatus.



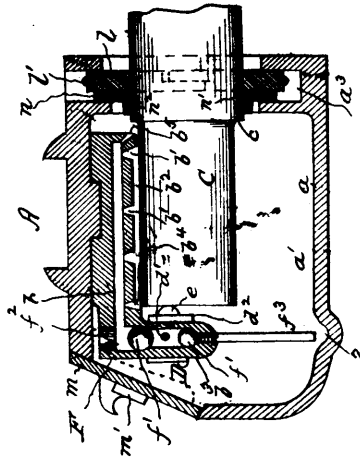
36975 Williams' Cover for Fruit Baskets.



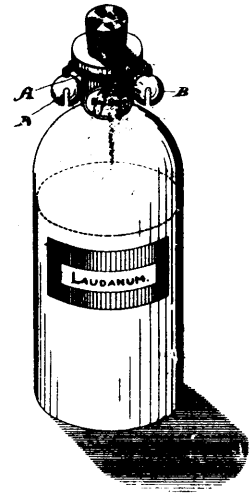
36976 Wynn and Martin's Oyster Bag.



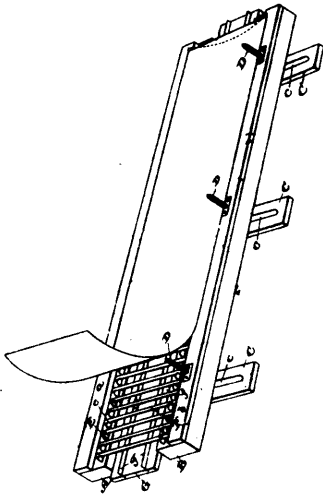
36977 Schloosing and Degremont's Apparatus for the Automatic Delivery of Liquid.



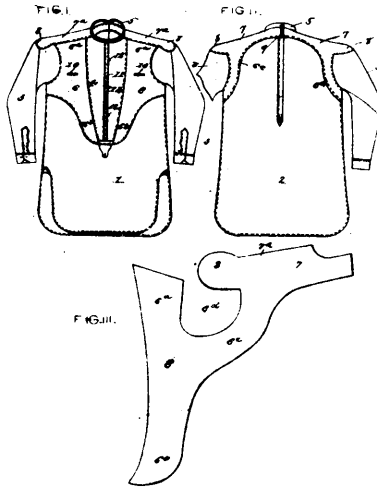
36978 Godley's Car Axle Box.



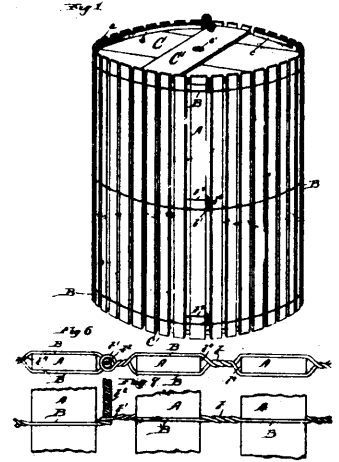
36979 Le Maitre's Device for Identifying a Bottle Containing Poison



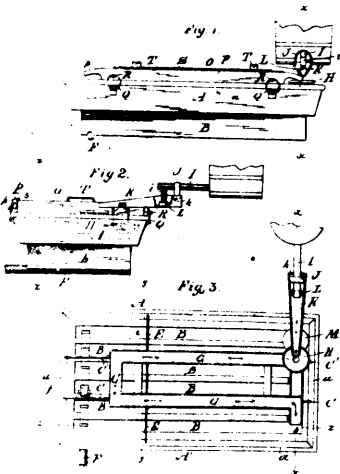
36980 Crompton's Machine for Making Garment Stays.



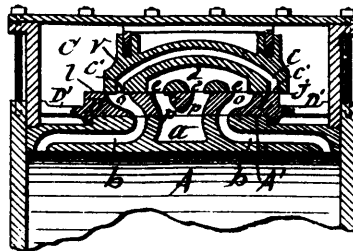
36981 Hyman's Shirt.



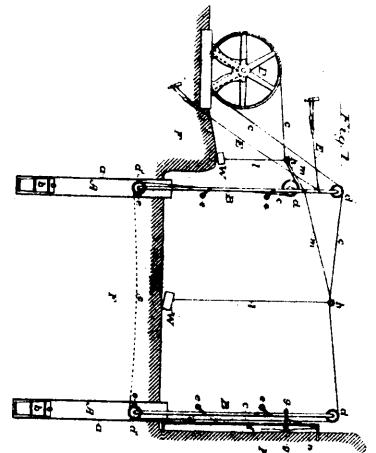
36982 Cadwell's Shipping Package.



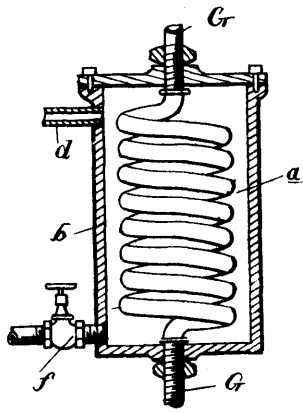
36983 Ball's Evaporator for Liquids.



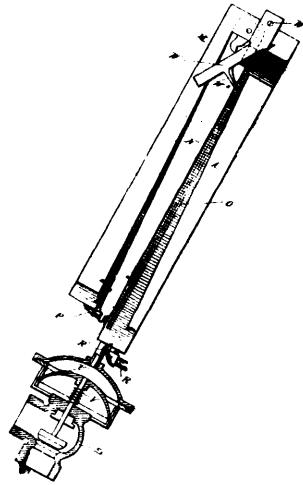
36984 Watkeys' Valve for Steam Cylinders.



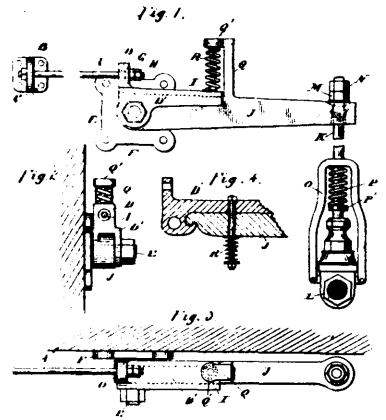
36985 Clark's Apparatus for Sawing Stone



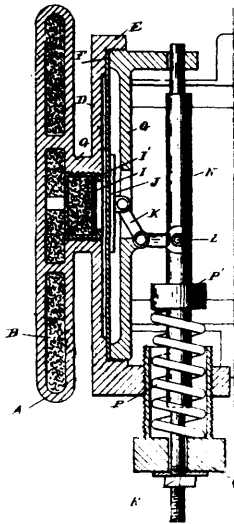
36996 Foley's Car Heating Apparatus.



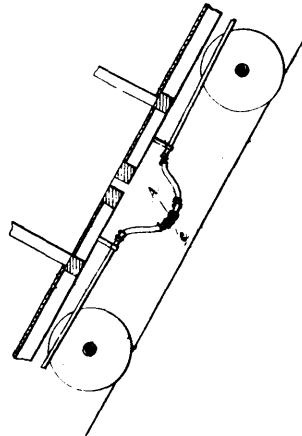
36987 McElroy's Regulator for Temperature



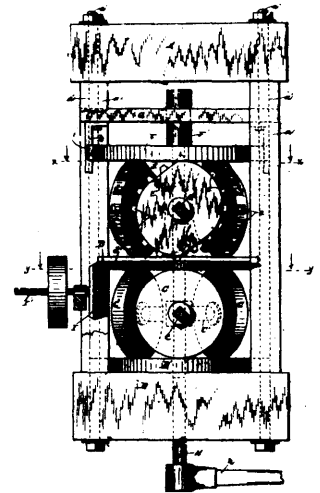
36998 McElroy's Regulator for Temperature.



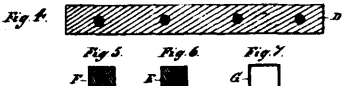
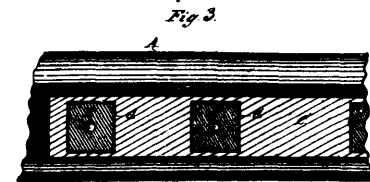
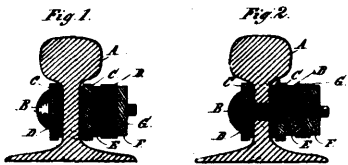
36999 McElroy's Regulator for Temperature.



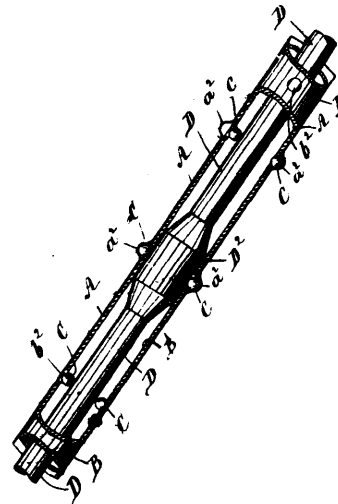
37000 Sewall's Coupling for Hose.



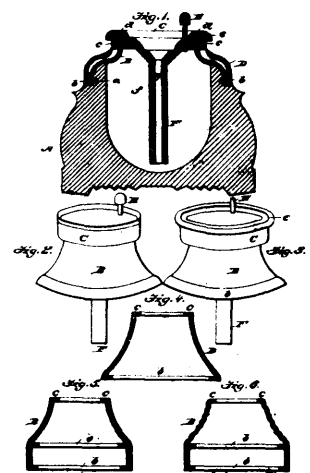
37002 Platt's Power Press.



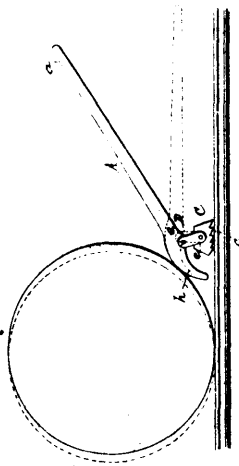
37003 Ayres' Nut Lock and Washer.



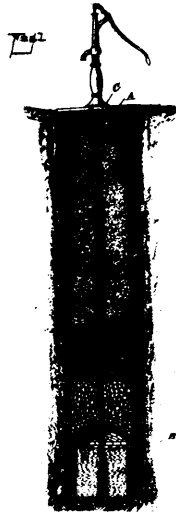
37004 Willmott and Ketley's Tool for Ornamenting Metal Tubes.



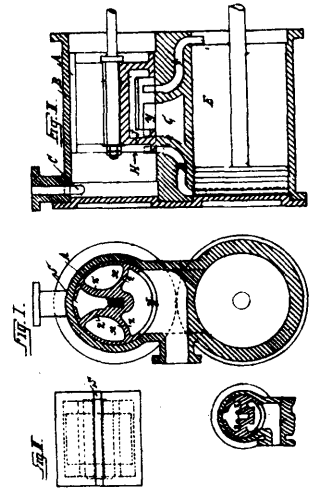
37005 Dain, Roney and Quincey's Fountain Ink Stand.



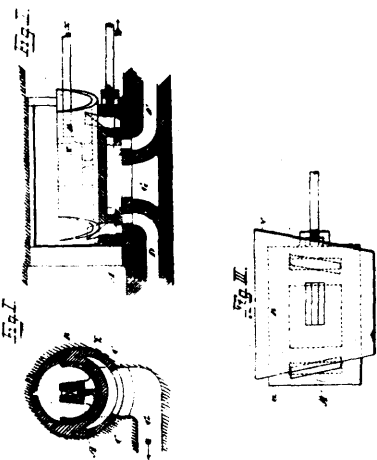
37006 Garlock's Lever for Moving Locomotives and Cars.



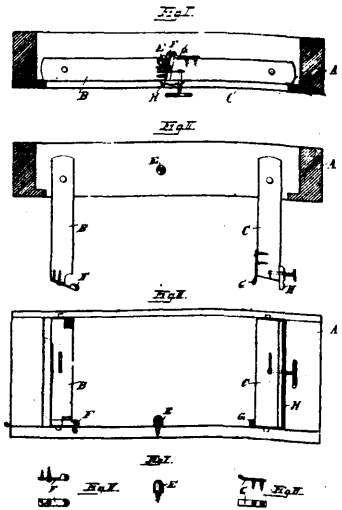
37007 Rice's Well



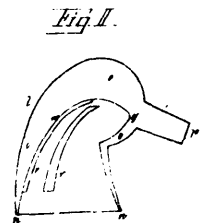
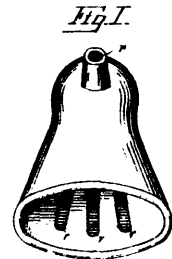
37008 Duvinage's Slide Valve.



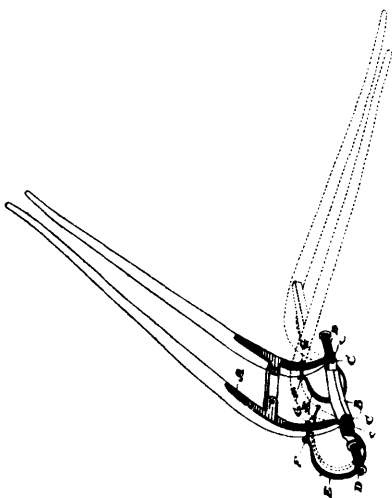
37008 Duvinage's Distribution Slide Valve.



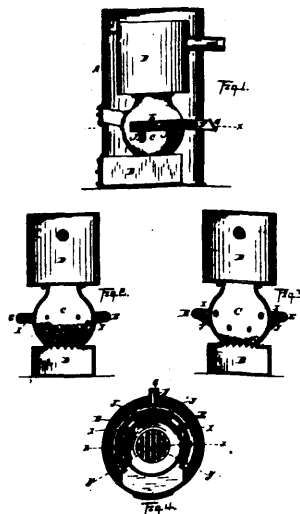
37010 Lander's Door Closer.



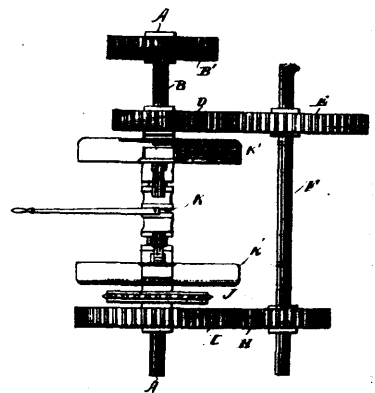
37011 Aschendorf's Hearing Trumpet.



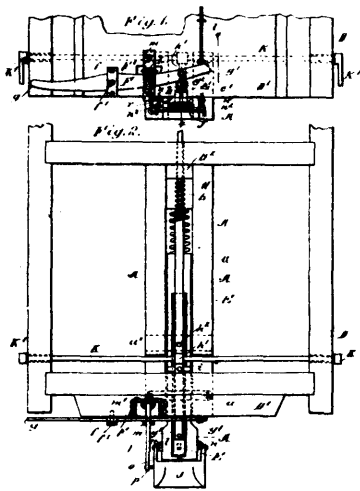
37012 Euler and George's Combined Shaft Support and Non-Battling Device for Thill Couplings.



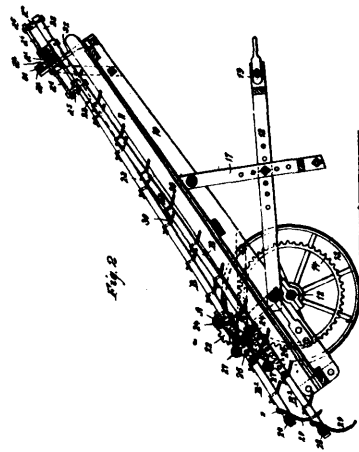
37013 May's Heating Furnace.



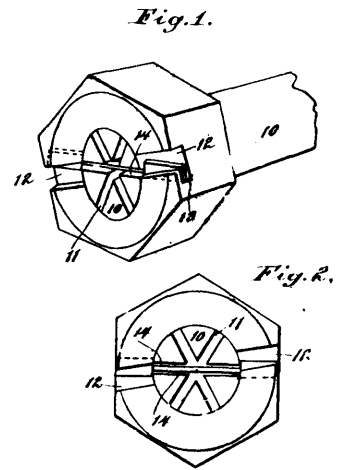
37014 Healy's Driving Mechanism for Cars.



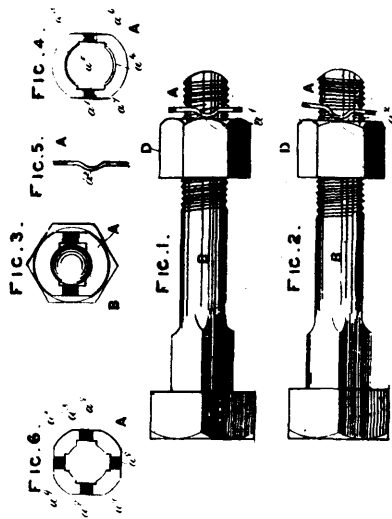
37015 Bentley's Car Coupling.



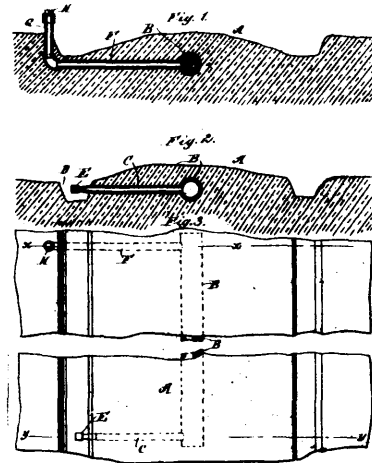
37016 Lasack's Hay Loader.



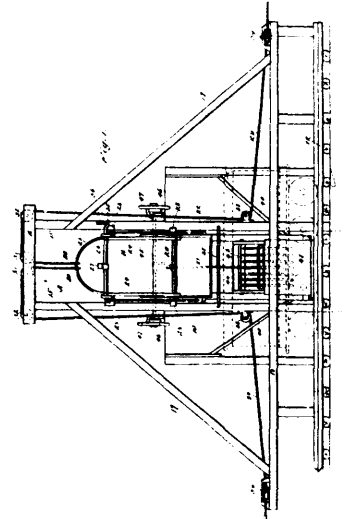
37017 Hawes' Nut Lock.



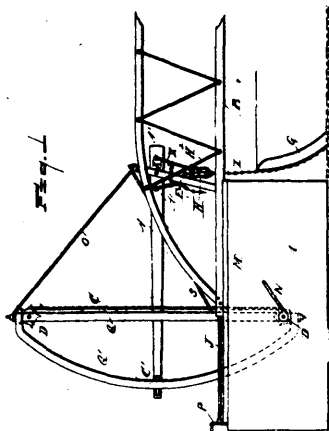
37018 Harrington's Device for Securing Nuts to Screwed Bolts.



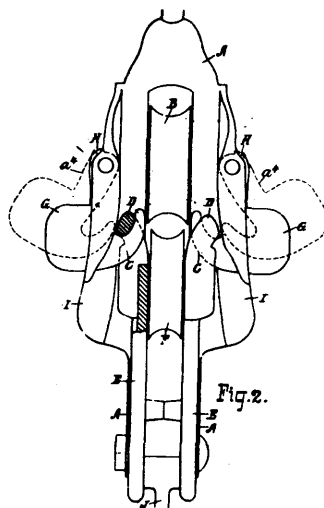
37020 Mitchell's System of Road Drainage.



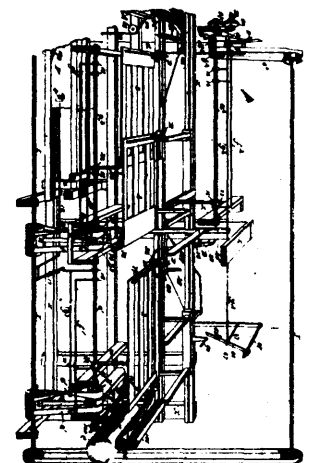
37021 McLean's Elevator.



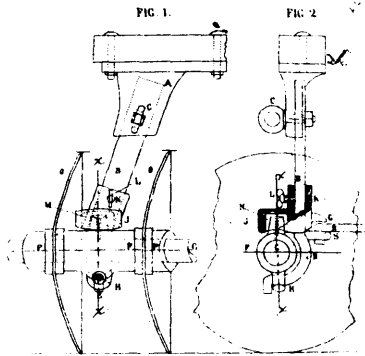
37022 Bettos' Elevator and Dry Dock.



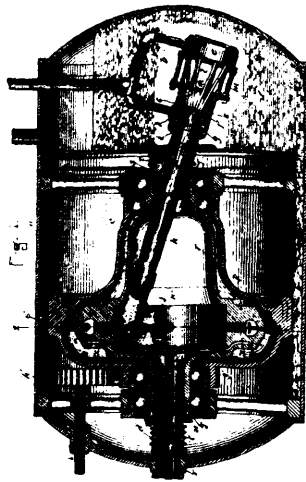
37023 McKay's Sling Pulley Blocks for Carriers.



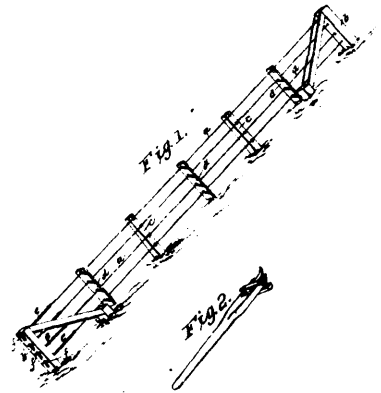
37024 Bellamy's Machine for Marbleizing Paper.



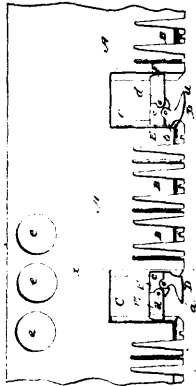
37025 Hill's Disk Harrow.



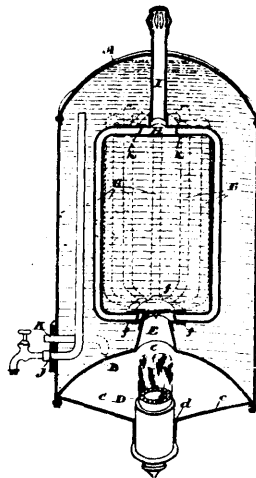
37026 Altham's Art of Obtaining Motive Power.



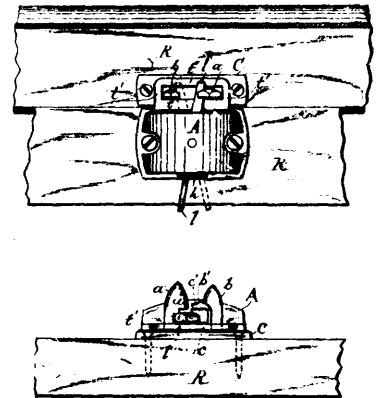
37027 Buchanan's Wire Fence.



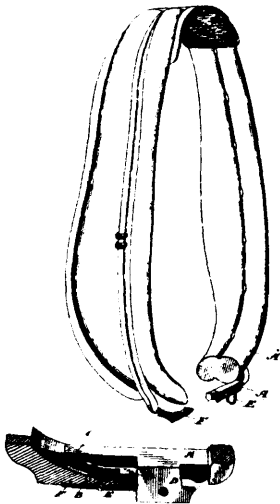
37028 Bartholomew's Saw.



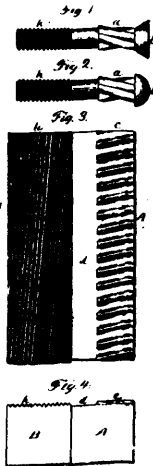
37029 Kennedy's Hot Water Heater.



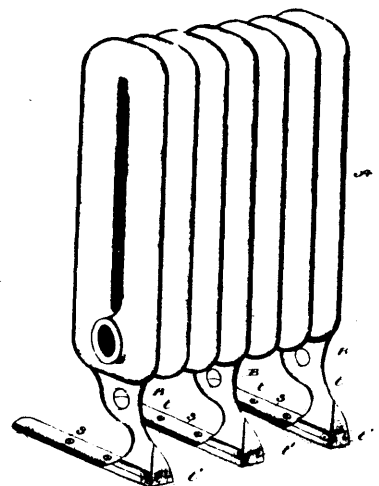
37030 Sloan's Sash Lock.



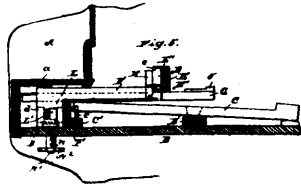
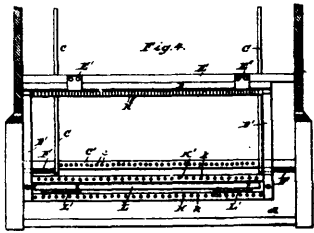
37031 Creighton's Hame Snap.



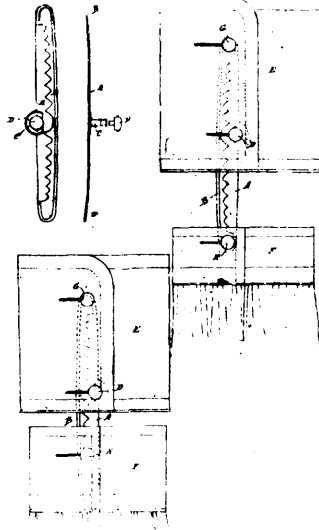
37032 Jones' Bolt or Pin.



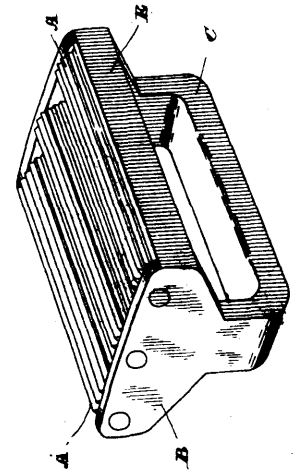
37033 Cobb's Radiator.



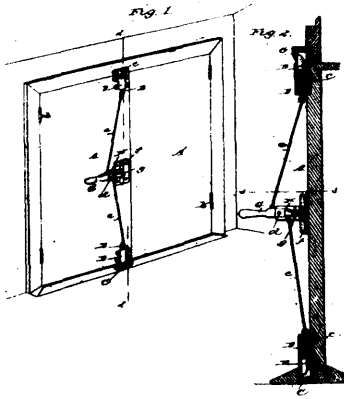
37034 Gilbert's Transposing Keyboard.



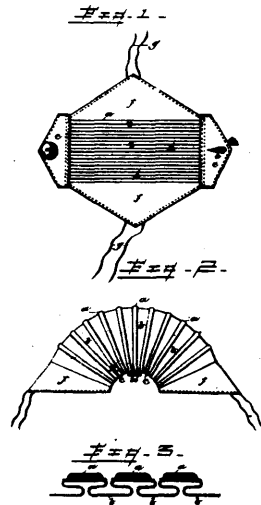
37035 Klein's Cuff Holder.



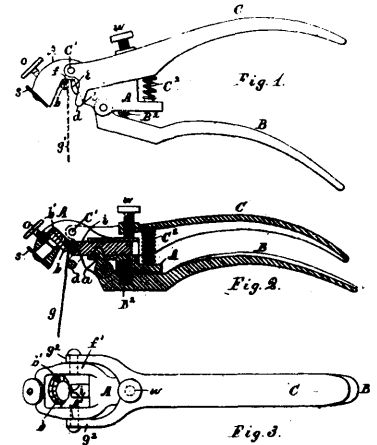
37038 McGee's Rubber for Washing.



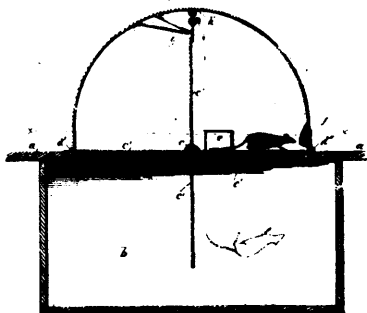
37039 Wallace's Bolt Operating Device for Doors, etc.



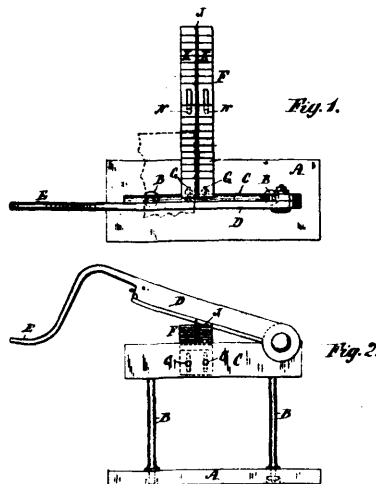
37040 Townsend's Bustle.



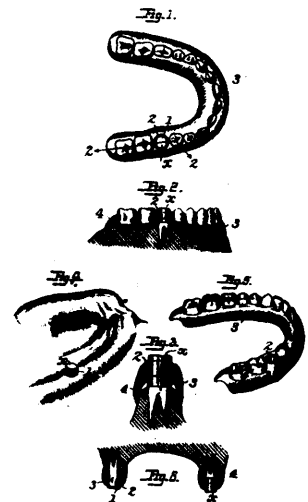
37041 Taintor's Saw Set.



37042 Lyons' Animal Trap.



37043 Van Aredeale's Mica Cutter and Gage.



37044 Marshall's Artificial Denture.

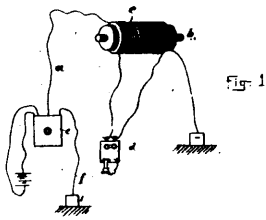


Fig. 1

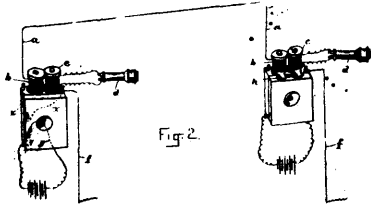
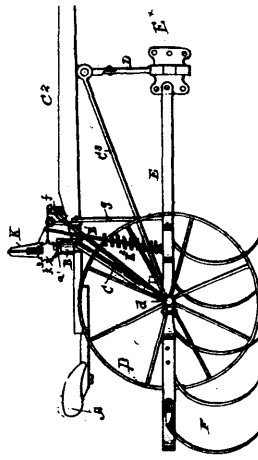


Fig. 2

37045 Drew's Means for Preventing Induction in Electric Circuits.



37046 Lebr's Cultivator.

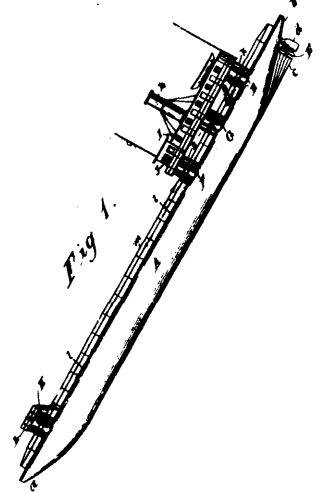


Fig. 1

37047 McDougall's Steam Tow Boat.

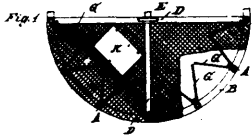
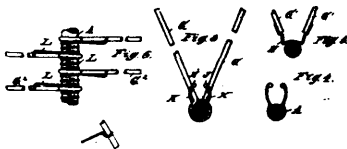


Fig. 2



37048 Kluge's Kiddle.

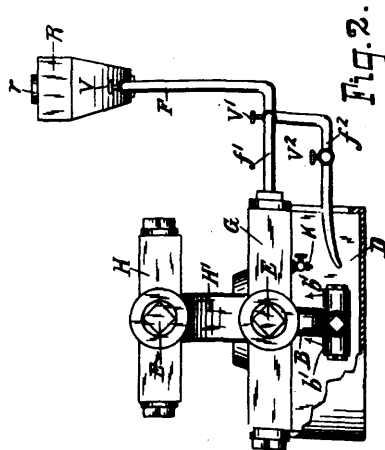
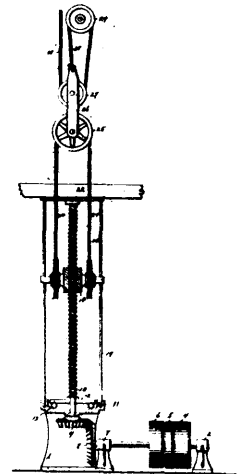
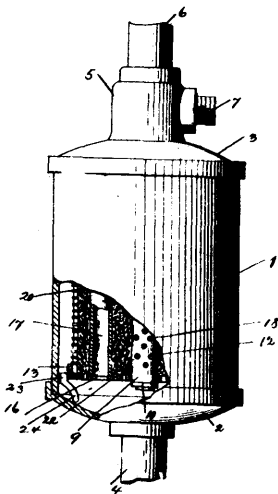


Fig. 2.

37049 Thompson and Graves' Hydrocarbon Vaporizer and Burner.



37050 Fowler's Screw Elevator.



37051 Leland's Steam Muffler.

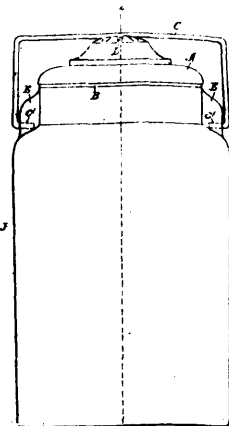


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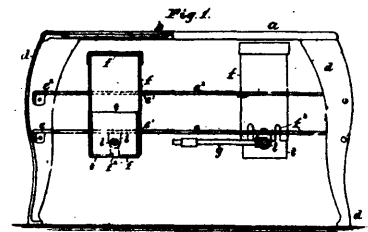


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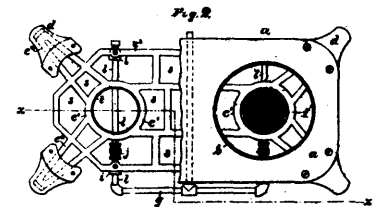
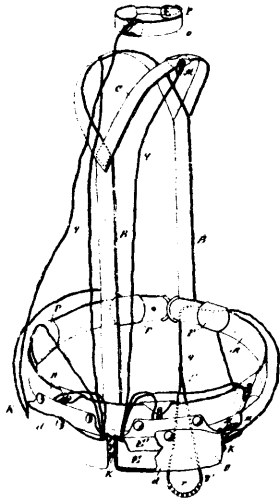
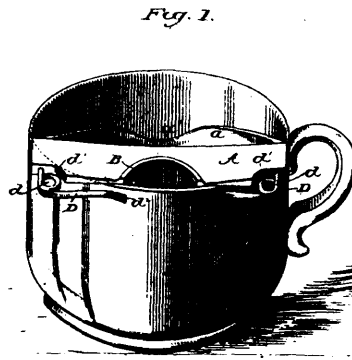


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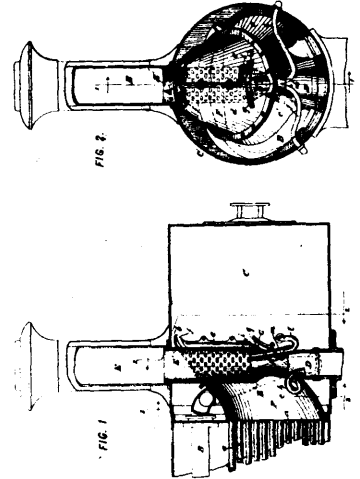
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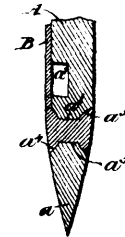
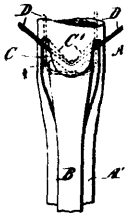
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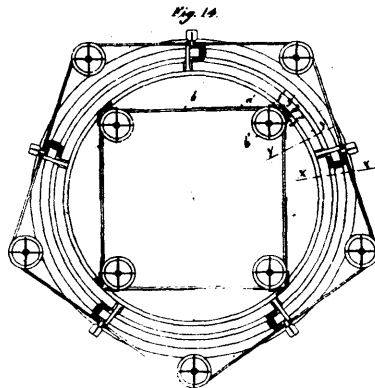
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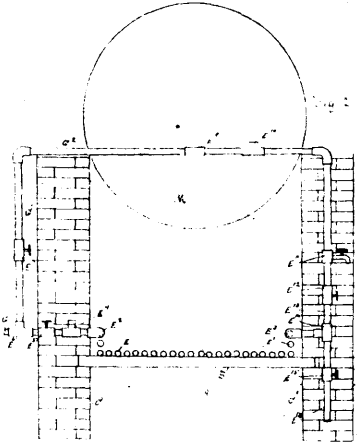
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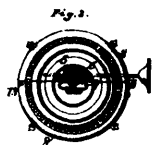
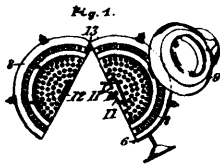
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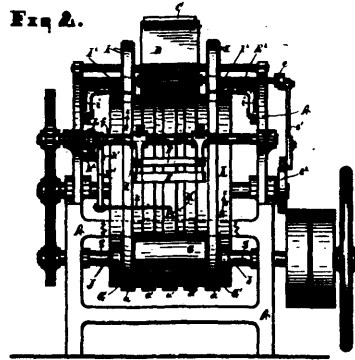
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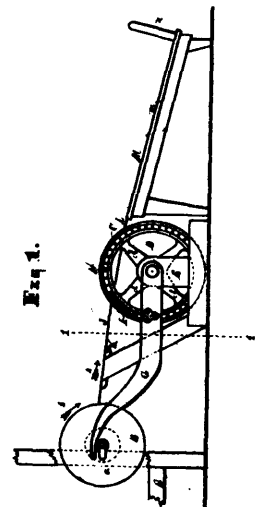
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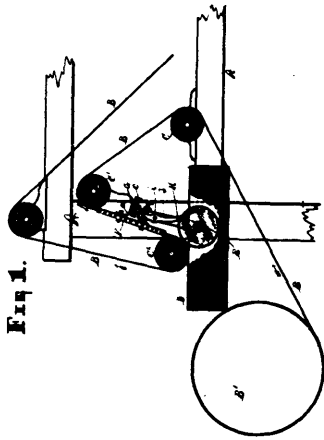
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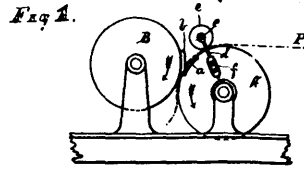
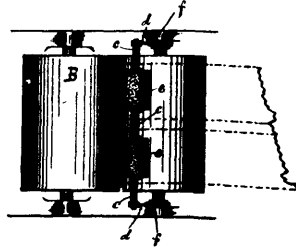
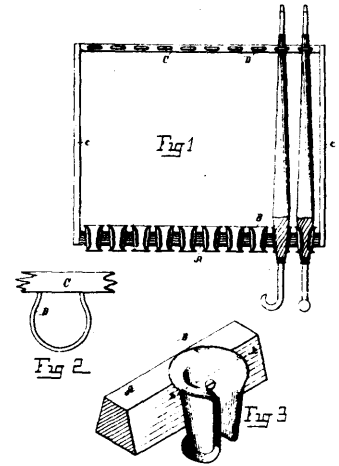


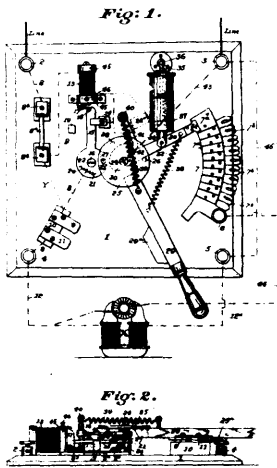
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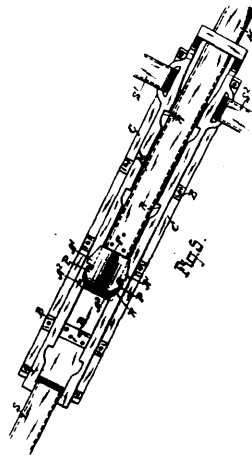
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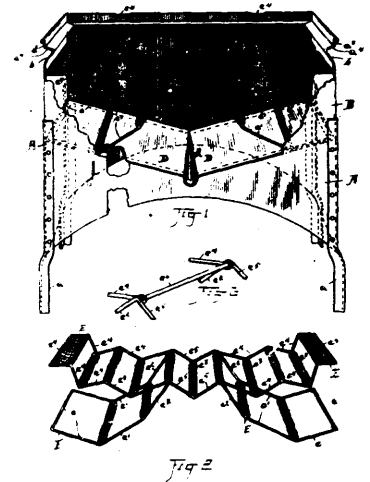
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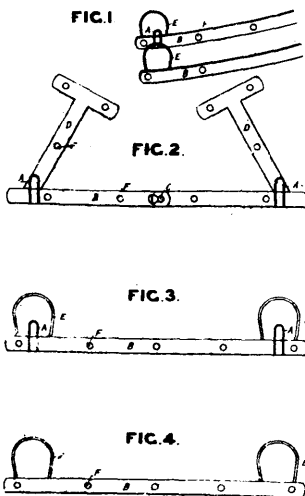
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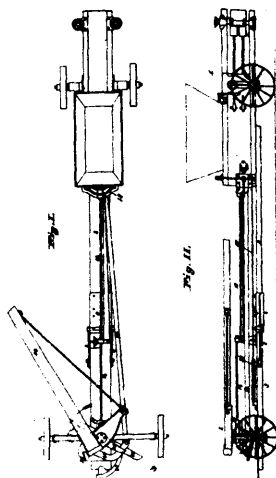
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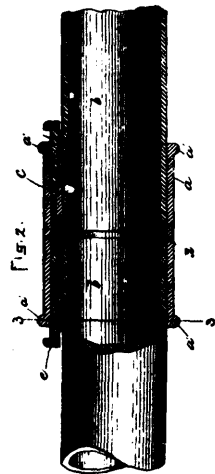
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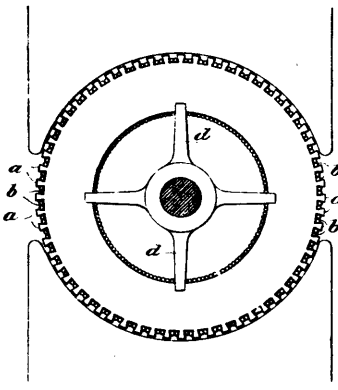


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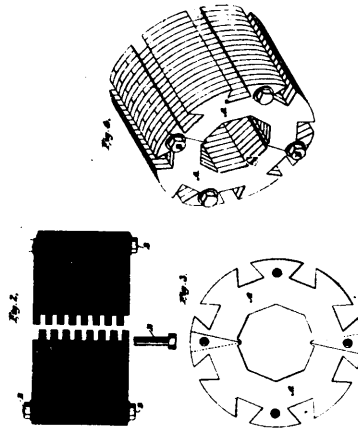


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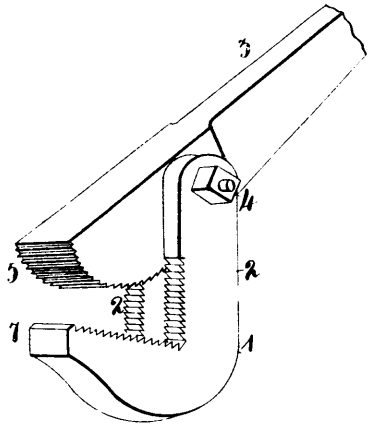
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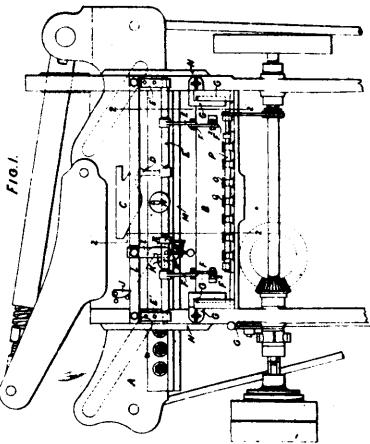
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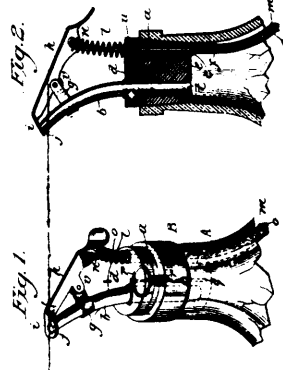
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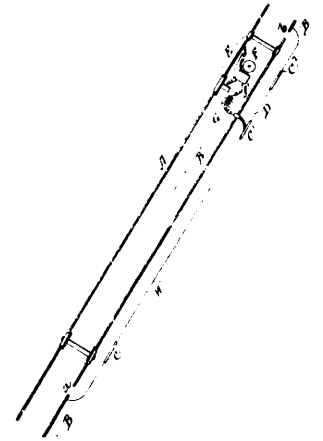
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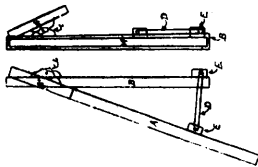
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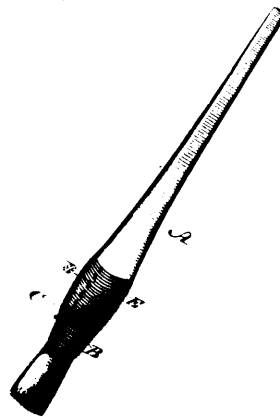
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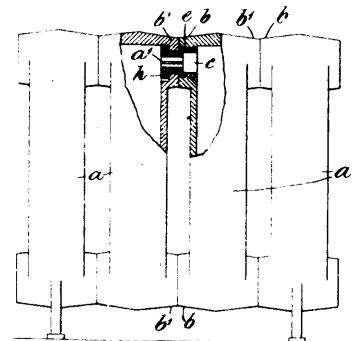
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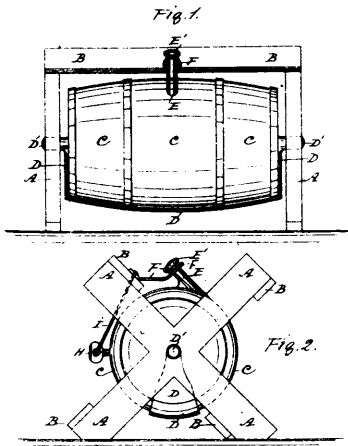
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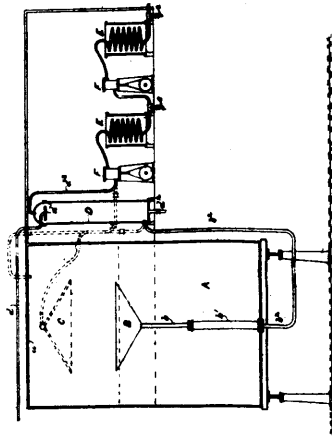
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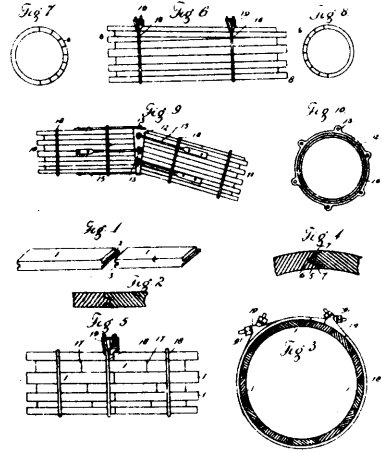
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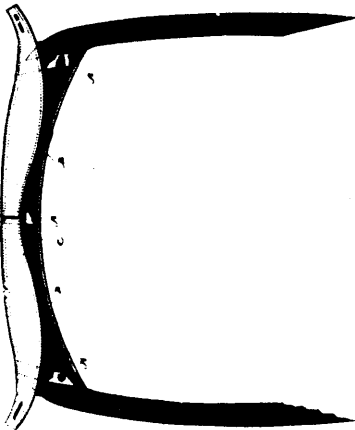
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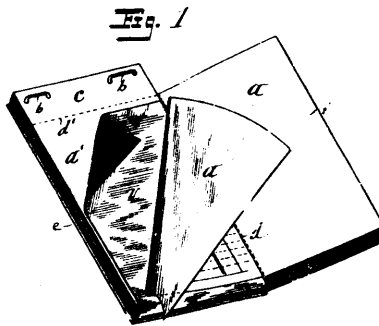
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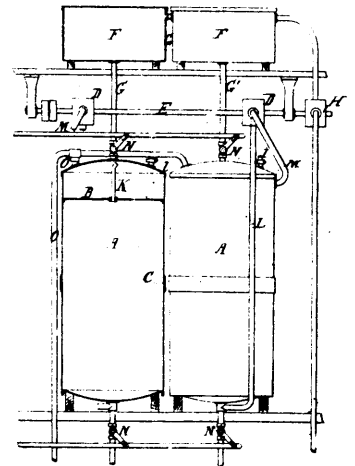
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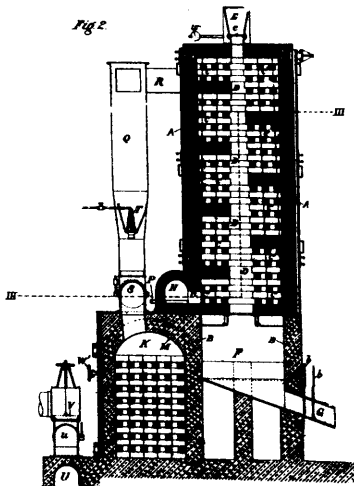
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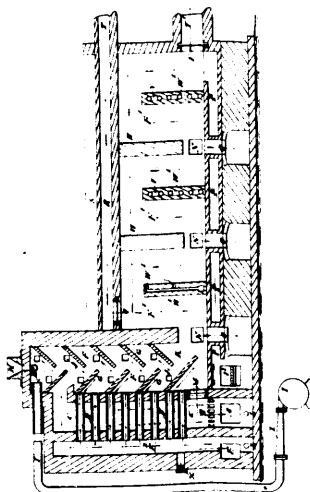
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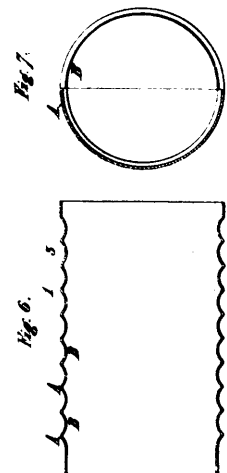
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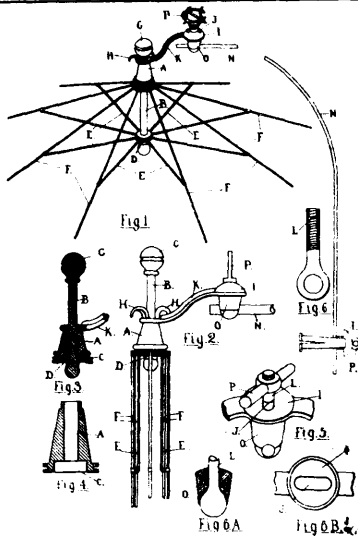
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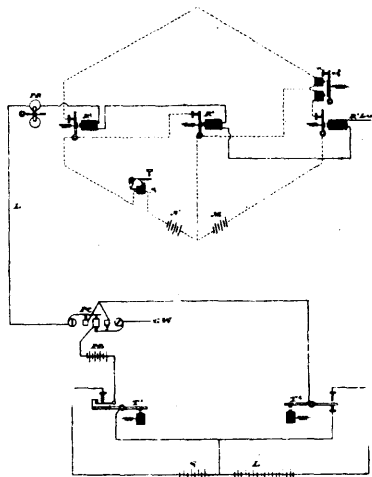
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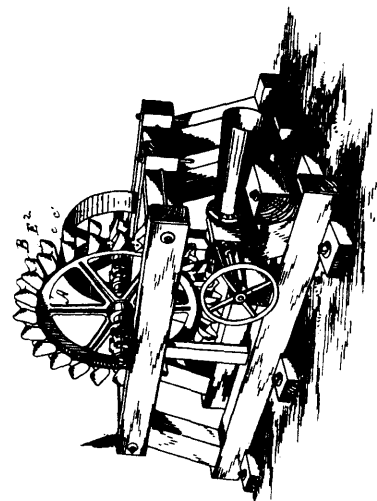
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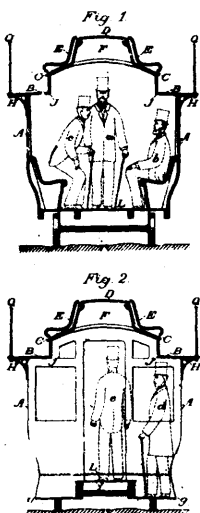
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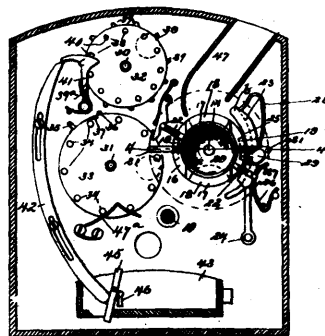
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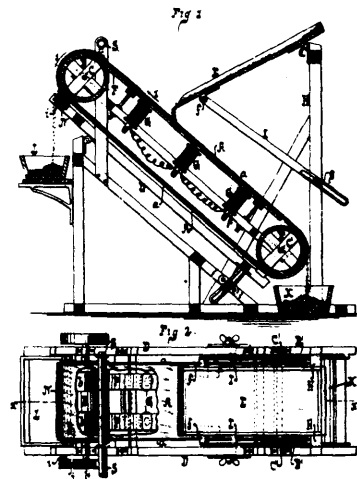
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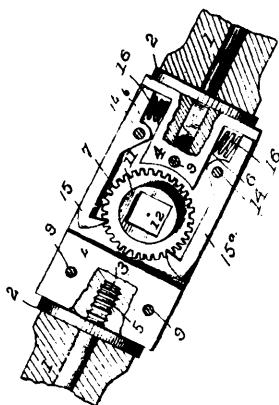
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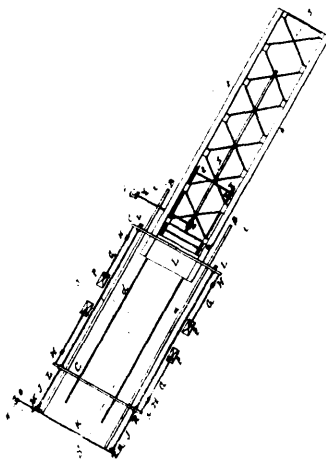
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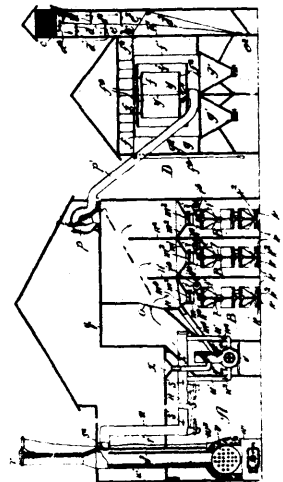
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