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The Canadian Patent Office

RECORD

Vol. XVII.—No. 9.

SEPTEMBER, 1889.

{ Price in Canada \$2 50 per An.
United States - \$2 50 "

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. 32,171. Village Cart. (*Cabrouet.*)

Lewis Burg, Farmington, Iowa, U. S., 2nd September, 1889; 5 years.

Claim.—1st. In a two-wheel vehicle, the combination, with thills and spring cushioned seat, of seat bars extending from the latter, and having yielding connection at or near one end, with the vehicle, substantially as set forth. 2nd. In a two-wheel vehicle, the combination, with the thills and spring cushioned adjustable seat, of devices extending from the seat and having yielding sliding connection with the thills, substantially as set forth.

No. 32,172. Whiffletree Snap.

(*Crochet de palonnier.*)

Adam H. Eysaman, Mohawk, N.Y., U.S., 2nd September, 1889; 5 years.

Claim.—1st. The combination of the flattened whiffletree A the casing B, the hook pivoted in the casing having a notch E, a flattened end H, and a lip I, and a spring F secure I in the casing and engaging the notch E, as set forth. 2nd. The combination of the casing B, the hook C having the lip I and a tongue J, and the spring F, as specified.

No. 32,173. Dust Pan. (*Porte-ordure.*)

Lewis Angevine, Sweden Valley, Penn., U.S., 2nd September, 1889; 5 years.

Claim.—1st. A handle for dust pans comprising two members adapted to clamp the pan, the outer members having the overhanging lip L, and the upper end of the inner member engaging under said lip and held thereby, as set forth. 2nd. A handle for dust pans comprising the member B, having the tubular portion D provided with a lip L, a stem depending from the tubular portion, and a fork extending from the end of the stem, and a smaller member having the stem engaging under the lip L, and adapted to bear against the stem of the member B, and a fork projecting from said stem adapted to bear upon the fork of the other member, as set forth. 3rd. The improved handle comprising the member B having the tubular portion D, the stem F, and the fork G, and the overhanging lip L at the angle of the stem, and the tubular portion and the member C having a stem adapted to engage under the lip L, and provided with a spur or pin M and the fork extending from the said stem, the ends of the forks of the two members being provided with openings adapted to receive scouring rivets, as set forth.

No. 32,174. Art or Process of Refining Petroleum by Distillation. (*Art ou procédé de raffinage du pétrole par la distillation.*)

Ernst C. C. Mengel, Bay, Mich., U.S., 2nd September, 1889; 5 years.

Claim.—1st. The herein described process of refining petroleum and analogous oils, which consists in introducing into the vapors arising from the still during the process of distillation natural gas or ordinary illuminating gas produced or manufactured from coal in a heated condition equal to the temperature of the oil vapors, by passing the same together through pipes, boxes or other conduits of sufficient length and suitably heated to prevent condensation, and allowing the necessary chemical action to take place before conducting them into the condensers, substantially as described. 2nd. The process of refining petroleum and analogous oils, which consists in introducing by mechanical means into the vapors arising from the still during the process of distillation natural gas or ordinary illuminating gas produced or manufactured from coal, and heating these to a temperature

equal to the distilling temperature of the vapors in the still, and then mixing such vapors, conducting them through pipes, boxes or other conduits suitably heated to prevent condensation in order to allow the chemical action necessary to take place, and then conducting the mixed gases and vapors into the condenser the oil condenses and the gas escapes, substantially as described.

No. 32,175. Pen Guide or Rest. (*Appui-plume.*)

Ignace Bergmann, Fort Madison, Iowa, U. S., 2nd September, 1889; 5 years.

Claim.—1st. In a pen-guide, the ring or band to encircle the finger, and the elastic holder on the ring or band to receive the pen-holder, substantially as set forth. 2nd. In a pen-guide, the combination of the open-sided ring or band having eyes or knobs on its free ends, and the ring-shaped holder on the ring or band to receive the pen-holder, substantially as specified. 3rd. In a pen-guide, the combination, with a ring or band to encircle the finger, of an elastic holder loosely connected to and sliding on the ring or band, and adapted to receive the pen-holder, substantially as specified. 4th. In a pen-guide, the combination of a split ring or band, the elastic loop or ring engaging the free ends of the ring or band to draw them together, and the elastic ring-shaped holder, connected to the ring or band to receive the pen-holder, substantially as specified.

No. 32,176. Automatic Gate.

(*Barrère automatique.*)

Duncan McDonell, Glen Robertson, Ont., 2nd September, 1889; 5 years.

Claim.—In an automatic gate, the combination, of a hinge post A having brackets AIII, catch post AI having catch aI, side posts AII having catches aII, a gate B, III, BII having a mitre wheel on the hinge stile, a mitre wheel C on the hinge stile, mitre wheel CII carried upon a shaft C provided with a drum CII, and gearing in the mitre wheel C, the levers D pivoted in the brackets AIII and connected by straps d coiled upon the drum to the latter, the bell crank lever G having a wide part g and engaging a lever F, the lever F pivoted to the gate and operating the latch, and the latch E, substantially as set forth.

No. 32,177. Axe. (*Hache.*)

William C. Kelly, Louisville, Ky., U. S., 2nd September, 1889; 5 years.

Claim.—As a new article of manufacture, an axe having the blade tapering from the eye to the cutting edge, and having its body compressed or cut away each side of the centre comparatively abruptly, as shown at c, to form a well-defined step terminating in or joining the inclined depressed surface d, substantially as and for the purposes set forth.

No. 32,178. Apparatus for Securing the Ends on Cans. (*Appareil pour poser les fonds des boîtes métalliques.*)

Thomas Davidson, Montréal, Qué., 2nd September, 1889; 5 years.

Claim.—In combination, with a vessel containing molten solder, a buoyant disc resting on the surface of such solder, as and for the purposes set forth.

No. 32,179. Mechanical Annunciator.

(*Indicateur mécanique.*)

Charles Wilmot and Manly C. Rose, (assignees of Russel Mason and Charles Miller, Newcastle, Ont., 2nd September, 1889; 5 years.

Claim.—1st. A mechanical annunciator, constructed substantially as herein shown and described, and consisting of a box or frame of proper dimensions having a face-plate or dial perforated with suitable apertures to expose the words or figures on the upper parts of slides, which continually covers these apertures being double their size, so that when in their normal position the lower blank half only of each slide is visible, but which, when operated by the mechanism,

drops to a lower level, thus exposing said words or figures which correspond with the bell-push or button in the case of each, a hinged shelf which acts to ring a bell when any one of these slides are moved, a roller to raise these slides up again to their normal level, and an operating mechanism, as set forth. 2nd. In a mechanical annunciator, the combination, with the box A having the slides and apertures 15, the latches 13 held down by springs 6, the roller X having the crank W, and stop V, the hinged or pivoted shelf D, and the signalling mechanism of the wire 16 having the bulbs 10, the spiral springs 12 and the bell-push C in the case of each, substantially as herein shown and described, whereby the slide 15 is caused to drop to such a level as exposes its lettered or numbered half at its proper aperture in the face-plate, as set forth. 3rd. In a mechanical annunciator, the combination, with the box A, the roller X and an operating mechanism, of the wire 14 having the plate 3, the slide 15 having the ways 1, the bracket 4, the tube 5, and notch 7, whereby the said slide is raised to position after being released and allowed to drop, as set forth. 4th. In a mechanical annunciator, the combination, with the box A provided with the face-plate or dial B, the roller X, and shelf D, substantially as herein shown and described, having the bell-cord 2, of the latch 13 having the pivot 9, the hook 8 and the hole 11 through which passes the wire 16, whereby, by its bulb 10 the free end of the latch 13 is raised to release the hook and allow the slide to drop, and an operating mechanism, as set forth. 5th. In a mechanical annunciator, the combination, with the face-plate B, and the box A, of the slide 15 having the upper part of its face side lettered or numbered, and its lower part blank or painted, whereby through the aperture in the said face-plate which it continually covers may be read the words or figures upon the upper half of the slide when operated upon by the mechanism, as set forth. 6th. In a mechanical annunciator, the combination, with the box A having the dial B, the roller X, and shelf D, substantially as herein shown and described, of the bell-push C having the chain 19, the sheaves 18 and 17, whereby the motion imparted to the said bell-push C will be continued through the wire 16 to the latch 13, the slide 15, the shelf D, and the bell U through the cord 2 and an operating mechanism, as set forth. 7th. In a mechanical annunciator, the combination, with the box A having the dial or face-plate B, and roller X, substantially as herein shown and described, of the wire 14 having the plate 3 to engage with the piece 5 attached to the slide 15, whereby said slide is raised to place when desired by the rotation of the crank W, as set forth.

No. 32,180. Sling Lock. (*Loquet.*)

Samuel G. Emerson, Belleville, (assignee of William Garrett, Tweed), Ont., 2nd September, 1889; 5 years.

Claim.—1st. The combination of the spring *b* and the latch *a*, with the piece *d*, substantially and for the purpose hereinbefore set forth. 2nd. The staple K attached to the part *d*, substantially and for the purpose hereinbefore set forth. 3rd. The manner in which the ledge *p* comes under the piece *e*. 4th. The slot in the latch *a*, substantially and for the purpose hereinbefore set forth.

No. 32,181. Generating Wood Gas.

(*Production du gaz de bois.*)

Jose F. Toraya, Havana, Cuba, (assignee of John D. Averell, Brooklyn, N.Y., U.S.), 2nd September, 1889; 5 years.

Claim.—1st. In a wood gas generating apparatus, the combination, with a closed retort, of an imperforate wood carriage case having an open inner end, and adapted to removably rest in said retort, and leave heating spaces between the cartridge and inner wall of the retort, and a steam supply pipe extending into said retort between its inner wall, and the cartridge to discharge steam at or near the inner open end of the cartridge, for the purpose set forth. 2nd. The process for manufacturing wood gas which consists first in charging an imperforated cartridge with wood, then inserting said cartridge in a closed horizontal retort, then highly heating said retort, then admitting steam into said cartridge for disintegrating and softening the wood for more readily extracting the gases, then superheating and fixing the gases by passing them to the rear open end of the cartridge and back between the cartridge and the retort, and then admitting oil with the wood gas in a separate retort, substantially as described. 3rd. The process for manufacturing wood gas and its residuum, which consists, first, in charging an imperforated cartridge with wood, then inserting said cartridge in a closed horizontal retort which is highly heated, then admitting steam into said retort, and cartridge for disintegrating and softening the wood for more effectually extracting the gases therefrom, then superheating and fixing the gases by passing them to and through the rear open end of the cartridge, and from there forward between said cartridge and the wall of the retort, and finally, after the gases are extracted from the charge to open the retort and extracting the cartridge quickly, sealing its open end and smothering the residuum while closed from the air, substantially as and for the purpose set forth.

No. 32,182. Grain Drill. (*Semoir en ligne.*)

Charles Fockler, Dubuque, Iowa, U.S., 2nd September, 1889; 5 years.

Claim.—1st. In a seeder, a series of independent levers B pivoted on a transverse bar of the frame, each provided with a toothed segment and a pawl, and connected severally to the runners by rods and springs, substantially as described. 2nd. In combination with the main lifting bar A, a series of levers B pivoted thereon, and connected severally to the runners, toothed segments on the bar A to hold the pawls of the levers B, and a lever and pawl on the bar A, with toothed segments on a frame, where all of the runners may be moved separately or all together, substantially as described. 3rd. In combination with the runners or shoes of a seeder, the presses, wheels, and the spring-rods connecting the wheels and runners, all substantially as described. 4th. In combination with the presses, wheel and runner of a seeder, a spring connecting rod, said spring rod having its end connected adjustably to the runners or fluke whereby the pressure

may be regulated, all substantially as described. 5th. In combination with the presses, wheels and runners, the spring connecting rod C, coiled about the stud F, and having its end projecting beyond said stud, and bearing on a fastening device, all substantially as described. 6th. In combination with the wheels and runners of a seeder, of the spring rod G, one upon each side of the wheel, the spring rods having a spring coil between the wheels and runners, substantially as described. 7th. The series of levers B mounted upon the main adjusting bar, and rods H, having spring A, and lugs upon the fluke to receive lower ends of the rods H, whereby the runners *m*, in whatever position, are always the same pressure, substantially as described.

No. 32,183. Electric Drill. (*Foret électrique.*)

Imle E. Storey, Boulder, Col., U.S., 2nd September, 1889; 5 years.

Claim.—1st. In an electric drill, a main frame provided with traoks or ways, and having an upwardly-extending water reservoir, a supplemental frame mounted within the main frame, adapted to slide back and forth the full length of the main frame, an electric motor and its main shaft mounted in said supplemental frame, the said shaft of the motor being hollow and extending through both ends of the main and supplemental frames and entering the water chamber, and a drill tool attached to the end of the shaft opposite the water chamber, substantially as described. 2nd. A main frame, provided with a water chamber, in combination with supplemental frame adapted to slide within said main frame, and an electric motor mounted within said supplemental frame, the shaft of the frame being hollow and extending beyond said supplemental frame, and entering the water chamber in said main frame. 3rd. The combination, with the sliding frame carrying the rotating tool, of a pair of friction discs and suitable worm gearing geared to the rotary shaft and to the sliding frame, in such a manner that the rotation of such shaft will cause the sliding movement of said frame, as set forth.

No. 32,184. Ratchet Drill. (*Foret à rochet.*)

Peter R. Erickson, Ishpeming, Mich., U.S., 2nd September, 1889; 5 years.

Claim.—1st. The combination, with a spindle, a chuck secured at one end, having an inner toothed surface, a detachable cap at the other end, provided with an inner toothed surface, a supporting device carried by the cap and collars loosely mounted upon the spindle, of a housing toothed rings interiorly secured to the same, a shifting lever pivoted in the housing, and means, substantially as described, for actuating said lever, as and for the purposes set forth. 2nd. The combination, with a spindle, a chuck secured at one end having an inner toothed surface, a detachable cap at the opposite end, provided with an inner toothed surface, a supporting device carried by the cap and collars loosely mounted upon the spindle of a housing, toothed rings interiorly secured to the same, a bifurcated shifting lever pivoted in the housing, an actuating dog engaging said lever, and means, substantially as described, for manipulating and controlling the dog, as and for the purposes herein set forth. 3rd. The combination, with a spindle, a chuck secured at one end of the spindle, having an inner toothed surface, a detachable cap held upon the opposite end of said spindle, provided with an inner toothed surface, a supporting device carried by the cap and collars loosely mounted upon the spindle of a housing, toothed rings interiorly secured to the same, a bifurcated and recessed shifting lever pivoted in the housing, an actuating dog engaging said lever, a handle secured to the housing, containing a spring, and a shouldered pin bearing upon said spring and against said dog, substantially as and for the purposes herein set forth. 4th. The combination, with a hollow interiorly-threaded spindle, a chuck secured at one end of said spindle, having an inner toothed surface, a detachable cap secured at the other end of said spindle, having also an inner toothed surface, a supporting device sustained by said cap and collars loosely mounted upon the spindle of a housing, provided with a slot in one face, toothed rings interiorly secured to the same, a bifurcated shifting lever pivoted in the housing, an actuating dog engaging said lever, a headed pin attached to said lever and projecting through the slot in the housing, a handle attached to the housing, a spring coiled in said handle, and a shouldered pin resting upon said spring and bearing against the dog, substantially as shown and described.

No 32,185. Churn. (*Baratte.*)

William A. Martin, Milltown Lot, P.E.I., 2nd September, 1889; 5 years.

Claim.—1st. The combination of the multiplying gear A, crank B and pitman C, with the churn staff and dash, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with the churn, churn-staff, multiplying gear, crank and pitman, of a removable frame D, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, with the main fixed dash G, of one or more other movable dashes G', G'', etc., on the same staff, substantially as and for the purposes hereinbefore set forth.

No. 32,186. Electric Drinking Vessel.

(*Vaisseau électrique pour boire.*)

Frederick W. Flint, Mount Airy, Ga., U.S., 2nd September, 1889; 5 years.

Claim.—1st. A drinking vessel, constructed partly of a non-conducting and partly of a conducting material, and provided with a suitable battery connection, the said vessel being adapted to contain a beverage or liquid, which will serve in connection with the said vessel as an electrode for establishing a circuit through the body or system of the drinker when imbued, substantially as specified. 2nd. A drinking vessel, constructed partly of non-conducting material, and partly of conducting material, the latter having a suitable battery connection, in combination with an electrode applied to the handle thereof, whereby an electric current may be established

through the body or system of the drinker during the act of drinking from the said vessel, substantially as described. 3rd. A drinking vessel, constructed of non-conducting material, having an internal electrode adapted to be brought into contact with the contents of the vessel, and an external electrode to be grasped by the hand during the act of drinking to complete the circuit through the body of the drinker, substantially as specified.

No. 32,187. Machine for Cutting and Crimping Cartridge Shells. (*Machine à tailler et ourler les étuis des cartouches.*)

George D. Hunter, Auburn, Ill., U.S., 2nd September, 1889; 5 years.

Claim.—1st. In a machine for cutting and crimping cartridge shells, the combination of a standard or support A formed with a segment gear B upon its face, a vibratory hand lever D pivoted to said support, a pivot or stud bolt D₁ supported upon said lever and adapted to fit in a central axial recess, formed in a revolving pinion G and crimping or chuck-wheel G₁, said pinion and wheel having a circumferential groove g₁ formed intermediate thereof, and a movable plate D₂ also supported upon said lever and adapted to fit into said groove, substantially as described. 2nd. In a machine for cutting and crimping cartridge shells, the combination of a vibratory hand lever D, a cartridge carrier K mounted upon and adapted to slide transversely of the same, a grip lever M and cord l₂ connected with said carrier for moving it in one direction, and a spring N₁ arranged intermediate of said hand-lever and the outer end of said carrier for positively moving the latter in the opposite direction, substantially as described. 3rd. In a machine for cutting and crimping cartridge shells, the combination of a vibratory hand lever D, a revolving crimping G₁, or chuck-wheel H₁ mounted thereon, a cartridge carrier K, mounted and adapted to slide upon said hand-lever, a cord l₂ and grip lever M connected with said carrier for moving it in one direction, and a guide-rod N and spiral spring N₁ for moving said carrier in the opposite direction, substantially as described. 4th. In a machine for cutting and crimping cartridge shells, the combination of the vibratory hand-lever D, a movable cartridge-carrier K, mounted and adapted to slide thereon, a grip-lever M and sheave-pulley L also mounted upon said lever, and a cord l₂ secured at one end to said carrier, and at the other end to a compound hinge-joint l₅ secured to said grip lever, substantially as described. 5th. In a machine for cutting and crimping cartridge shells, the combination of the vibratory hand-lever D, a cartridge carrier K mounted and adapted to slide thereon, a grip-lever M and sheave pulley L also mounted thereon, and a cord l₂ secured at one end to the grip-lever, and at the other end to a screw-threaded thimble l₃ fastened at the outer end of said carrier by a screw bolt, substantially as described. 6th. In a machine for cutting and crimping cartridge shells, the combination of a vibratory hand-lever D, a revoluble chuck-wheel H₁ supported thereon, gearing B and H for revolving said chuck-wheel by the movement of said lever, a cartridge-carrier K mounted and adapted to slide upon said lever, and provided with an abutment K₂ at its outer end, having an opening K₅, and a knife P supported upon said abutment, substantially as and for the purpose described. 7th. In a machine for cutting and crimping cartridge shells, the combination of a vibratory hand-lever D, a revoluble chuck-wheel H₁ mounted upon said hand-lever, a cartridge carrier K also mounted upon and adapted to slide transversely of said lever, and provided with an open abutment K₂ at its outer end, and a knife P pivoted to said abutment and provided with a laterally-projecting guide-flange p₁ and thumb piece p₃, substantially as described. 8th. In a machine for cutting and crimping cartridge shells, a revoluble chuck-wheel H₁, provided with an encircling spring H₂, which is secured at one end to the periphery thereof, and which is free or disconnected at its opposite end and adapted to grip and firmly hold a cartridge, and prevent the same from independently turning while being revolved, substantially as described. 9th. In a machine for cutting and crimping cartridge shells, a revoluble chuck-wheel H₁, provided with an encircling spring H₂, which is secured at one end to the periphery thereof, and which is free or disconnected at its opposite end, and provided with a spur h₁ adapted to grip the rim of a cartridge and hold the same, when turned, in one direction, and to release the same, when turned, in the opposite direction, substantially as described. 10th. In a machine for cutting and crimping cartridge shells, a revoluble chuck wheel H₁, provided with an encircling spring H₂, which is secured at one end to the periphery thereof, and which is free or disconnected at its opposite end, and provided with a spur h₁ having an outwardly-inclined lip h₃, and a shoulder h₄, said spring being also provided on its lower portion with an upwardly-inclined lip h₂, substantially as and for the purpose described. 11th. In a machine for cutting and crimping cartridge shells, the combination of the standard or support A, provided with the segment gear B, the vibratory hand lever J pivoted thereto, the revoluble chuck-wheel H₁ and pinion H adapted to be supported upon said hand-lever, a sliding cartridge-carrier K also supported upon said hand-lever, and provided at its outer end with an abutment K₂, having a central opening K₅, a knife P pivoted adjacent to said opening, and an adjustable gauge-plate O mounted upon said carrier, substantially as and for the purpose described. 12th. In a machine for cutting and finishing cartridge shells, the combination of the standard or support A provided with the segment gear B, and also with abutment surfaces b, b' located at the ends of the cogged rim of said gear, the vibratory hand-lever D pivoted to said support, and provided with a lateral extension d₃, adapted to contact with said abutment surfaces, and a pinion G or H adapted to rotate a crimping G₁, or a chuck-wheel H₁, by engagement with said segment gear and the vibration of said hand-lever, substantially as and for the purpose described.

No. 32,188. Process of Reducing Zinc Ores.

(*Procédé de réduction des minerais de zinc.*)

Gustaf M. Westman, New York, N.Y., U.S., 2nd September, 1889; 5 years.

Claim.—The herein described process of reducing zinc ores, consisting of subjecting the zinc ores in mixture with coal to the action

of highly heated carbonic oxide, condensing the zinc from the outgoing carbonic oxide, and subsequently reheating and returning the gas through the charge, substantially as shown and described.

No. 32,189. Vacuum Evaporating Apparatus. (*Appareil évaporatoire à vide.*)

Homer T. Yaryan, Toledo, Ohio, U.S., 2nd September, 1889; 5 years.

Claim.—1st. In combination with a heating cylinder of an evaporating apparatus, the inclosed evaporating coils composed of tubes having their ends connected by closed return bends or cells, so as to form continuous closed conduits from their inlet to their outlet ends, and a feed pipe connecting with the inlet end of each coil, whereby liquid to be evaporated may be subjected to an increased length of heating surface without danger of overflowing, till it is properly heated and discharged at the outlet end of the coil. 2nd. The heating cylinder of an evaporating apparatus containing evaporating tubes set in tube sheets at each end, in combination with a return bend head provided with intersecting partitions forming cells to connect the ends of the tubes applied to the inlet end of the cylinder, the liquid supply-pipes piercing such head, and a separating chamber connecting with the cylinder at the discharge end of the tubes for receiving the heated liquid and vapor. 3rd. In combination with the heating cylinder of an evaporating apparatus, a separating chamber connecting with one end thereof, the sets of evaporating coils inclosed in the heating cylinder and each opening into the separating chamber at one end, and a feed supply pipe connecting with the inlet end of each coil, for the purpose described. 4th. In combination with the heating cylinder containing evaporating tubes set in the tube-sheets at each end, the return-bend heads provided with intersecting partitions forming cells to connect the ends of the tubes and form sets of coils, for the purpose described. 5th. In combination, with the heating cylinder containing evaporating tubes set in the tube-sheets, the return-bend head C₁ provided with intersecting partitions forming cells and openings e₁ for connecting the supply pipes, and the return-bend head T having partitions r, and outlet openings t₁, for the discharge of liquid. 6th. In combination with a heating cylinder, the horizontal coils composed of sets of two or more connected tubes extending through the heating cylinder, and a contracted liquid feed duct connecting with the inlet end of each coil, whereby a reduced number of feed-ducts are required, and whereby the size of the ducts may be increased so as to avoid the danger of their being clogged with solid matter. 7th. In combination with the evaporating coils and inclosing heating cylinder, the externally-arranged manifold and contracted liquid-feed ducts connecting with the inlet ends of the coils, for the purpose described. 8th. In combination with the series of evaporating coils, the liquid feeding apparatus consisting of a pump, a suction pipe connecting it with a feed-box, and having an automatic valve, a manifold and contracted liquid ducts connecting therewith and with the inlet ends of the coils, whereby each coil of the series may be fed by a single pump with the desired quantity of liquid. 9th. In a vacuum evaporating apparatus, the combination, with an evaporator of any one effect and degree of vacuum, of a liquid transfer pipe leading therefrom past one or more of the successive effect evaporators to an evaporator beyond having a greater degree of vacuum than the intervening evaporator or evaporators for securing the advantage of a better vacuum to facilitate the transfer and circulation of liquid from one evaporator to the other. 10th. In a vacuum evaporating apparatus, a primary evaporator and a connected liquid-feed pump, in combination with a transfer pipe for partially reduced liquid leading from such evaporator past one or more of the succeeding evaporators to the feed-pipe of an evaporator having a greater degree of vacuum than the intermediate evaporator, whereby improved feed and circulation of liquid are secured. 11th. In a multiple-effect vacuum evaporating apparatus, a primary evaporator having a separating chamber in combination with a liquid feed pump connecting with the inlet end of the evaporator, a liquid transfer pipe for partially reduced liquid leading from the separating chamber of the primary evaporator past the second evaporator to the inlet end of the third evaporator of the series, a vapor pipe connecting each evaporator with the next one in succession from the first to the last, and an exhaust device connecting with the last evaporator of the series, for the purpose described. 12th. In a multiple effect vacuum evaporating apparatus, a series of evaporators each having a separating chamber, a series of vapor pipes connecting the evaporators in successive order from first to last, and an exhaust device connecting with the last evaporator of the series, in combination with a liquid feed pump connecting with the inlet ends of the first and second evaporators of the series, and a liquid transfer pipe leading from each separating chamber past the next succeeding evaporator into the inlet end of the third evaporator from the starting point throughout the series, for the purpose of securing the advantages of a greater number of degrees of vacuum, for facilitating the flow and circulation of partially reduced liquid from one evaporator to the other, whereby an increased number of evaporators may be used in a series and more economical results secured. 13th. A separating chamber provided with numerous small open-ended tubes and an arresting plate placed near their discharge ends for separating liquid or solid matter from the vapor arising from the liquid being evaporated. 14th. In combination with a separating chamber A₁ having the evaporating coils discharging into one end, the tube-sheet r placed near such end and carrying open tubes n, and arresting-plate h₁ placed in front of the discharging ends of tubes n for the purpose described. 15th. A catch-all chamber E₁ having tube-sheet o placed near its vapor-inlet end, and carrying open tubes extending to near its opposite end plate, and outlet pipe d₁ extending back from the rear end plate, and connecting with outlet vapor-pipe D₁, for the purpose described. 16th. In combination with two or more vacuum evaporators, each composed of a heating chamber containing evaporating tubes or coils, and a separating chamber, the catch-all chambers containing small tubes, and arresting-plates, and connected with the vapor-pipes leading from each separating chamber to the heating chamber of the adjacent evaporator, for the purpose described. 17th. In a multiple effect vacuum evaporating apparatus, the combination, with the last two evaporators of the series, and their separating chambers, as A³ and A⁴, of the liquid transfer pipe B, con-

neeting the separating chambers together, and a liquid discharge pipe leading directly from the last separating chamber of the series, whereby the finished liquid of the two chambers may be mingled, cooled and discharged together. 18th. In a multiple effect evaporating apparatus, the combination, with the last two evaporators, of the series, and their separating chambers, of a liquid transfer pipe connecting the two separating chambers, a liquid discharge or tail-pipe leading from the last separating chamber, a connected tail-pump for drawing off the liquid, and a vapor exhaust device also connecting with the last separating chamber, for the purpose described. 19th. In a multiple effect vacuum evaporating apparatus, the last two evaporators, of the series and their separating chambers, in combination with liquid supply pipes connecting with the inlet ends of the evaporators, an exhausting device connecting with the last separating chamber, and a liquid transfer pipe connecting the two separating chambers, whereby the finished liquids of the two may be mingled, cooled to the same temperature, and together subjected to the vaporizing effect of the exhausting device preparatory to discharge from the apparatus.

No. 32,190. System of Electrical Distribution. (*Mode de distribution électrique.*)

Marmaduke M. M. Slattery, Fort Wayne, Ind., U.S., 2nd September, 1889; 15 years.

Claim.—1st. In a system of electrical distribution and in combination, an alternating current dynamo, and converters electrically connected with the main line conductors in multiple arc, and organized to transform the current in the main conductors into currents of less potential and greater quantity in the secondaries, each converter made with a primary coil containing such length of wire exposed to magneto-electric induction, that when operated by the dynamo with which it is to be used with its secondary current open, the electrical pressure and counter pressure in its primary circuit shall be equal with incandescent lamps or other translating devices in the secondary circuits, substantially as and for the purposes set forth. 2nd. In a system of electrical distribution and in combination, an alternating current dynamo, and converters organized to transform the current in the main conductors into currents of less potential and greater quantity in the secondaries electrically connected with the main conductors in multiple arc, the dynamo and the converters of the system so adjusted to each other by mutual adaptation of their magnetic fields and the length of wire upon the armature of the dynamo, and the primary coils of the converters respectively, that when supplied with the full normal current of the dynamo, the secondary circuits of the converters being open, the electrical pressure and counter-pressure in their primary circuits shall be equal with incandescent lamps or other translating devices in the secondary circuits, substantially as and for the purposes set forth. 3rd. In a system of electrical distribution and in combination, an alternating current dynamo, and converters organized to transform the current in the main line conductors into currents of less potential and greater quantity in their secondaries, and electrically connected with the main conductors in multiple arc, each converter containing in its primary coil, a length of wire exposed to effective magnetic induction substantially equal to the electrical or circuit length of wire exposed to like effective magnetic induction upon the armature of the dynamo operating the system with incandescent lamps or other translating devices in the secondary circuits, substantially as and for the purposes set forth. 4th. In a system of electrical distribution, and in combination, an alternating current dynamo, and converters organized to transform the current generated by the dynamo into currents of less potential and greater quantity at or near the points of consumption, electrically connected with the main line conductors in multiple arc, and having their primary circuits constantly closed, each converter adapted to the dynamo operating the system by making its primary coil of such length, that when supplied with its full proportion its share of the entire normal current of the machine, its secondary circuit being open, the electrical pressure and counter-pressure in its primary circuit shall be equal, with translating devices in the secondary circuits of the converters to be cut out of the circuit when not in use without the introduction of any resistance in the place of them, substantially as and for the purposes set forth. 5th. In a system of electrical distribution, and in combination, an alternating current dynamo and converters organized to transform the current generated by the dynamo into currents of less potential and greater quantity at or near the points of consumption, electrically connected with the main line conductors in multiple arc, and having their primary circuits constantly closed, and their secondary circuits constantly open, except when, and as closed through translating devices at work, each converter containing a soft-iron core weighing substantially one pound for each twenty-five Watts normally produced by the system by making its primary coil of such length, that when supplied with its full proportionate share of the entire normal current of the machine, its secondary circuit being open the electrical pressure and counter-pressure in its primary circuit shall be equal, with translating devices in the secondary circuits, substantially as and for the purposes set forth. 6th. In a system of electrical distribution, and in combination, an alternating current dynamo, and converters organized to transform the current generated by the dynamo into currents of less potential and greater quantity at or near the points of consumption, electrically connected with the main line conductors in multiple arc, and having their primary circuits constantly closed, and their secondary circuits constantly open except when and as closed through transforming devices at work, each converter containing a soft-iron core weighing substantially one pound for each twenty-five Watts, normally produced in the secondary circuit, and containing in its primary coil a length of wire exposed to effective magnetic induction substantially equal to the electrical or circuit length of wire exposed to like effective magnetic induction upon the armature of the dynamo, operating the system with incandescent or other translating devices in the secondary circuits, substantially as and for the purposes set forth.

No. 32,191. Swimming Machine.

(*Machine pour nager.*)

Jean Malo, Montréal, Qué., 2nd September, 1889; 5 years.

Résumé.—1o. Dans une machine à nager, la combinaison du ressort S, les flotteurs F, la tige T et le plateau N, tel que décrit pour les fins mentionnées. 2o. La combinaison de la pièce A, B, la tige T, et l'arbre de couche C, avec figure F, tel que décrit pour les fins mentionnées. 3o. La combinaison de l'arbre de couche C, roue R et hélice H, et les manivelles m, m, le tout tel que décrit pour les fins mentionnées.

No. 32,192. Rock Drill and Analogous Machines. (*Foret de mine et machines simi. laires.*)

Abraham J. Sypher, Iron Mountain, Mo., U.S., 3rd September, 1889; 5 years.

Claim.—1st. A steam rock-drill or analogous machine having a cylinder A, provided with a cushioning steam-passage in addition to the passages which lead from the valve-chamber to the cylinder, and used for supplying the steam to the cylinder for driving the piston, said cushioning steam-passage being independent of said other steam-passages, substantially as described. 2nd. The combination of the valve-chamber, the cylinder, the passages F, F₁, the port I, the passage H, and the piston having the two recesses d, d₁, substantially as described. 3rd. The combination of the cylinder A having the cushioning steam-passage H, as described, and the piston having two recesses d, d₁, substantially as and for the purpose described. 4th. The combination of the valve-chamber, the port I, the cushioning steam-passage H, as described, and the piston having the two recesses d, d₁, substantially as described. 5th. The combination of the cylinder and the piston, said cylinder having the port I, and the passages K, K₁, and said piston having the recesses d and d₁, substantially as and for the purpose described. 6th. The combination of the cylinder, the valve-chamber, the valve, and the piston, said cylinder having the port I, said valve-chamber having the valve-seat, and the spaces b₁₅, b₁₆, said valve having the disks e, e₁, said piston having the recesses d, d₁, and said cylinder and valve-chamber together having the ports K, K₁, substantially as described. 7th. The combination of the valve-chamber, the valve-seat, the spaces b₁₅, b₁₆, the recesses e, e₁, substantially as and for the purpose described. 8th. The combination of the valve-chamber, the valve-seat, and the valve, said chamber having the inlet b, the exhaust-outlet b₁, the live-steam outlet b₁₂, the recesses and spaces b₇, b₈, b₉, b₁₀, b₁₁, b₁₃, b₁₄, b₁₅, b₁₆, and said valve consisting of the stem and the four disks, substantially as described. 9th. The combination of the valve-chamber having the bridges b₃, b₄, b₅, b₆, with the longitudinally-moving valve having the stem and the disks e, e₁, the steam-inlet b, and the passages F, F₁, substantially as described. 10th. The combination of the valve-chamber having the recesses b₇, b₈, b₉, b₁₀, b₁₁, b₁₃, b₁₄, the bridges b₄, b₅, and the outlet b₁, with the longitudinally-moving triple-spool valve, and the ports F, F₁, substantially as described. 11th. The combination of the valve-chamber having the spaces and recesses b₇, b₈, b₁₀, b₁₁, b₁₃, b₁₄, b₁₅, b₁₆, the bridges b₄, b₅, and the outlet b₁, with the longitudinally moving triple-spool valve, and the ports F, F₁, substantially as described.

No. 32,193. Stencil Drum. (*Tambour à patron.*)

Jane Parish, Leicester, Eng., 3rd September, 1889; 5 years.

Claim.—1st. In a stencil drum, the combination of the polygon frame, and the stencil strip or plates secured thereto. 2nd. In a stencil drum, the combination of the polygon frame, the stencil strip or plates secured thereto, and an inking device, all substantially as shown and described and set forth in the drawing hereunto annexed.

No. 32,194. Manufacture of Sheet Metal.

(*Fabrication du métal en feuille.*)

Edwin Norton, co-inventor with John G. Hodgson, Maywood, and Oliver W. Norton, Chicago, Ill., U.S., 3rd September, 1889; 5 years.

Claim.—1st. The process or improvement in the art of manufacturing sheet metal in continuous strips, consisting in pouring molten metal in a continuous unbroken stream between two rollers or wheels revolving together, with a space between them equal to the thickness of the sheet metal to be produced, and at a sufficiently great surface speed to offer no obstruction to the flowing stream of molten metal, and thus pass between the rollers as fast as it flows, and without permitting the molten metal to collect in a body above and between the rollers, substantially as specified. 2nd. The process or improvement in the art of manufacturing sheet metal, consisting in pouring molten metal in a thin, wide, flat stream between, and in contact with, two smooth revolving chilling rollers, and in a direction tangential to both said rollers, and while said rollers revolve together with a space between them equal to the thickness of the sheet metal to be produced, and at a surface speed equal to or exceeding the velocity of the flowing stream of molten metal, substantially as specified. 3rd. The apparatus or machine for manufacturing sheet metal, consisting in a pair of smooth revolving chilling rollers or wheels, with a space between their peripheries at their meeting line equal to the thickness of the sheet metal to be produced, and a pouring nozzle or vessel having a discharge opening or slot at its lower end or bottom directly above, and extending parallel to said space between the peripheries of said rollers, so that the stream of molten metal issuing from said pouring nozzle or vessel may flow in a direction tangential to both said rollers, substantially as specified. 4th. The combination of two revolving chilling rollers, a pouring nozzle above and between them, and means for driving or revolving said rollers at a greater surface speed than the velocity of the flowing stream of molten metal, substantially as specified. 5th. The combination, with a pouring nozzle or vessel having a long narrow discharge opening, of a pair of chill-

ing rollers revolving with a space between them equal to the thickness of the sheet metal to be produced, and at a sufficient surface speed in respect to the space between the rollers, the size of the discharge opening and the velocity of the stream of molten metal, so that the molten metal cannot collect above and between the rollers, substantially as specified. 6th. The combination, with a pair of revolving rollers, of a pouring nozzle or vessel above and between them, and a heater for heating said vessel, substantially as specified. 7th. The combination, with a pair of revolving rollers, of a pouring nozzle or vessel above and between them, a heater for heating said vessel, and a crucible or vessel for holding molten metal, and a pipe or conductor leading therefrom to said pouring vessel or nozzle, substantially as specified. 8th. The combination, with a pair of revolving rollers, of a pouring nozzle or vessel above and between them, a heater for heating said vessel, a crucible or vessel for holding molten metal, a pipe or conductor leading therefrom to said pouring nozzle or vessel, and a heater for heating said pipe or conductor, substantially as specified. 9th. The combination, with a pair of revolving rollers, of a pouring nozzle or vessel above and between them, and a heater for heating said vessel, said heater consisting of gas burners, substantially as specified. 10th. The combination, of a pair of revolving wheels or rollers having a space between them equal to the thickness of the metal to be produced, a pouring nozzle or vessel, and a crucible connected with said pouring nozzle or vessel, substantially as specified. 11th. The combination, with a pouring nozzle having a long narrow discharge slot or opening, of a pair of hollow revolving rollers or wheels having a space between their peripheries at their meeting line into which the stream of molten metal issuing from said pouring nozzle is directed, said wheels revolving at an equal or greater surface speed than the velocity of said flowing stream of molten metal, the shafts of said wheels or rollers being hollow and communicating at one end with an inlet water pipe and at the other with an outlet water pipe, substantially as specified. 12th. The combination, with a pouring nozzle having a long narrow discharge slit or opening, of a pair of hollow revolving rollers or wheels having a space between their peripheries at their meeting line, into which the stream of molten metal issuing from said pouring nozzle is directed, said wheels revolving at an equal or greater surface speed than the velocity of said flowing stream of molten metal, the shafts of said wheels or rollers being hollow, and communicating at one end with an inlet water pipe, and at the other end with an outlet water pipe, the inlet water pipe communicating with the interior of the roller near its centre, and the outlet near its periphery, substantially as specified. 13th. The combination, with a pair of revolving or milling wheels or rollers, of a pouring nozzle or vessel above and between them, one or both of said wheels or rollers being mounted on adjustable bearings to regulate the thickness of the sheet of metal produced, substantially as specified. 14th. The combination, with a pair of revolving wheels or rollers B, B, pouring nozzle or vessel D having discharge openings *d*, and support F for said vessel mounted on one or more adjusting screws, substantially as specified. 15th. The combination, with a pair of revolving rollers, of an adjustable pouring nozzle above and between them, substantially as specified. 16th. The combination, with the revolving rollers B, B, of pouring nozzle D above and between them, having discharge openings *d* at its lower end, support F, and four adjusting screws *f*, *f*₁, *f*₂, *f*₃, substantially as specified. 17th. The combination, with revolving rollers B, B, of pouring nozzle or vessel D located above and between them, and made of a curved or wedging shape to permit the lower end of said nozzle to project down near the meeting line of said revolving rollers, substantially as specified. 18th. The combination, with revolving rollers B, B, of pouring nozzle or vessel D located above and between them, a gas or other heater for projecting flame against said pouring nozzle or vessel, and a hood, as D₁, surrounding said vessel to confine the heat, substantially as specified. 19th. The combination, with revolving rollers B, B, of pouring nozzle or vessel D having discharge slot or opening *d* at its lower end, and a valve or gate *d*₁ to regulate the discharge orifice, and an adjusting handle or lever for said valve, substantially as specified. 20th. The combination, with revolving rollers B, B, of pouring nozzle or vessel D, having discharge slot or opening *d* at its lower end, and a valve or gate *d*₁ to regulate the discharge orifice, and an adjusting handle or lever for said valve, and *e*, sliding block *e*, and adjusting screw *e*₂, substantially as specified. 21st. The combination, with a pair of revolving rollers B, B, of a pouring nozzle or vessel D above and between the same, and a discharge orifice N below said rollers, substantially as specified. 22d. The combination of a pair of revolving rollers having smooth unflanged peripheries, and having a space between them equal to the thickness of the sheet of metal to be produced, with a pouring nozzle or vessel located above and between said rollers, whereby any inequalities in the flow of the metal in respect to the velocity of the revolving wheels is compensated for by variations in the width of the strip of metal produced, and the sheet metal made of uniform thickness, substantially as specified. 23rd. The combination, with a pair of revolving wheels or rollers having smooth and unflanged peripheries, of a pouring nozzle above and between them provided with a valve or gate for regulating the size of the issuing stream, whereby sheet metal strips of different widths may be produced on the same machine, substantially as specified.

No. 32,195. Knitting Machine.

(*Machine à tricoter.*)

William Esty, Charles A. Busiel, John T. Busiel and Frank E. Busiel, Laconia, N.H., U.S., 3rd September, 1889; 5 years.

Claim.—1st. The combination in a knitting machine, of two straight and parallel rows of reciprocating needles, a reciprocating yarn carrier having two yarn-guiding eyes, and constructed and arranged to be semi-rotated or have its ends reversed, and thereby transfer each yarn carried thereby from one row of needles to the opposite row of needles at each end of its traverse, the reversing mechanism having provision for acting upon said yarn-carrier to reverse it, adjustable stops for controlling the operation of the said reversing mechanism, pattern-cams to control the position of the said stops to automatically effect the reversal of the yarn-carrier at predetermined times, and mechanism, substantially as described, connecting said adjustable stops and cams. 2nd. The two parallel rows of needles, means

having provision for reciprocating said needles, a reciprocating yarn-carrier having two yarn-guiding eyes arranged upon opposite sides of its axis of revolution, and a rack and pinion for reversing said yarn-carrier, combine with a pair of movable stops one at each end of the machine to operate said rack, and pattern-cams to move the said stops into and out of the path of said rack, according as it may be desired to reverse said yarn-carrier, to cross the yarn from one set of needles to the other, or to deliver the same yarn to the same set of needles for two or more courses in succession. 3rd. The two parallel rows of needles, means having provision for reciprocating said needles, a reciprocating and reversible yarn-carrier having two yarn-guiding eyes arranged upon opposite sides of its axis of revolution, a pinion and two rack bars engaging therewith upon opposite sides for reversing the said yarn-carrier, combined with two movable stops for operating said racks, and pattern-cams for moving said stops from the path of said rack bar to the path of the other rack-bar, and *vice-versa*, substantially as and for the purposes described. 4th. The two parallel rows of needles, means having provision for reciprocating said needles, a reciprocating and reversible yarn-carrier having two yarn-guiding eyes arranged upon opposite sides of its axis of revolution, yarn-carrier reversing mechanism having provision for acting upon said yarn-carrier to reverse the same, and the locking-mechanism having provision for retaining the said yarn-carrier in position at the conclusion of each semi-rotation thereof, combined with a pair of movable stops arranged one at each end of the traverse of said yarn-carrier, and pattern-cams for moving the said stops into position to operate said reversing mechanism or to prevent the operation of said reversing mechanism according to the work to be done.

No. 32,196. Black Leaf Check Book.

(*Calepin à feuille noire.*)

James L. Morrison, (in trust,) Toronto, Ont., (assignee of Thomas McDowell, Niagara Falls, N.Y., U.S., 3rd September, 1889; 5 years.

Claim.—1st. A carbon sheet D attached to the spring B, which is connected to the cover A, and located below the perforations *a* which separate the stub E from the main leaf, substantially as and for the purpose specified. 2nd. A book fitted into a pocket A formed on the end of the cover A₁, in combination with the spring B attached to the cover A₁, and extending across the book at a point below the perforations *a*, substantially as and for the purpose specified. 3rd. A book fitted into a pocket A formed on the end of the cover A₁, in combination with the carbon sheet D attached to the spring B, which is attached to the cover A₁, and extends across the book at a point below the perforations *a*, substantially as and for the purpose specified.

No. 32,197. Water Closet. (*Latrines.*)

David L. Dwinell and Miller Brothers and Mitchell, Montreal, Que., 3rd September, 1889; 5 years.

Claim.—1st. In the construction of water-flushes for the bowls and hoppers of water-closets, etc., the combination of a tank provided with a standard or constant normal level of water, with a syphon arranged with said tank, as described, said syphon being provided with an obstructor, and an exhaustor to exhaust the air in the syphon and prevent its return, the whole substantially as described. 2nd. The combination, in an apparatus for flushing the bowl and hoppers, etc., of closets with water, of a tank B supplied with a standard level of water, as described, syphon A provided with body 3, cap 4, cup 5, and ball 8, and with an exhaustor, the whole substantially as described. 3rd. The combination, with a syphon, of the body 3, cap 4, cup 6, and ball 8, the whole constructed, arranged and operating with an exhaustor, substantially as described.

No. 32,198. Horse Collar. (*Collier de cheval.*)

George W. Chapman, (co-inventor with Abraham C. Jacobs), Hillsborough, Wis., and George W. Griswold, Chicago, U.S., 3rd September, 1889; 5 years.

Claim.—In combination with a horse collar, the plates B, and the pad C formed and secured substantially as set forth.

No. 32,199. Construction of Stoppers or Covers for the Mouths or Openings of Bottles, Pots, Jars and other Hollow Vessels. (*Fabrication des bouchons ou couvercles de bouteilles, pots, jarres et autres ustensiles.*)

Henry L. Phillips, South Hornsey, Eng., 6th September, 1889; 5 years.

Claim.—1st. In stoppers or covers for bottles, jars, cans, or other hollow vessels, the method of forming a continuous screw-thread by means of parallel grooves or depressions made upon one or more flat or curved strips of metal or other material, bent into a cylinder and fitted and fixed into the flange of a corresponding cap, with or without the introduction between the cylinder and the flange of a cylindrical strip of metal, or of cement or other backing, substantially as described and shown. 2nd. A stopper or cover having two or more pieces fitted and fixed into a cap and having parts of a continuous screw-thread or other equivalent locking device formed upon them, as shown. 3rd. The screwed cover consisting of two or more parts, each having parts of a continuous screw-thread formed in its flange by means of curved dies, and all the parts being afterwards united together, as described. 4th. The method of forming the cap or cover from a disc having projecting pieces, such pieces being then turned down, and some or all of them having parts of a screw-thread formed upon them, and the remainder being either plain, or milled, or fluted, as described. 5th. The combination, with the cap or cover, of the milled or fluted ring or band *i* for the purpose of strengthening the caps or covers, and affording a better hold in screwing or unscrewing them, as described.

No. 32,200. Sled. (Traineau.)

Adolph Tode, Monroe, N. Y., U. S., 6th September, 1889; 5 years.

Claim.—1st. A sled, having its runners turned upward and backward at their forward ends to form a pair of foot-receiving recesses above the foot board, substantially as specified. 2nd. The combination of mortised runners *b*, with foot boards *a* received by the mortises, the runners *b* being turned upward and backward at their forward ends to form the lips *b*¹, and the recesses *b*² above the foot board, substantially as specified.

No. 32,201. Process of and Apparatus for Treating Hides, Skins or Scraps in Liquids. (Procédé et appareil de traitement des peaux ou déchets par les liquides.)

Charles W. Cooper, Brooklyn, N. Y., U. S., 6th September, 1889; 5 years.

Claim.—1st. The method of agitating or treating hides in liquids, which consists in treating said hides in a receptacle, through the sides and bottom of which the liquid has egress and ingress respectively, by alternately elevating said hides therein by the introduction of gaseous fluid beneath them, and permitting them to sink by the action of gravity, as specified. 2nd. The method herein described, of agitating hides and liquids contained in a vat, which consists in alternately causing said hides to rise therein by means of a current of air entering the bottom of said vat beneath them, and by the cessation of such current of air, permitting them to descend by gravity, substantially as set forth. 3rd. The method herein described, of agitating hides and liquids contained in a vat, which consists in inducing an upward current of said hides and liquid by means of a gaseous fluid introduced into said tank beneath them, permitting part of said liquid to escape from above said hides, and to re-enter the vat at a lower point and beneath the hides, and by interrupting the flow of said gaseous fluid and permitting said hides to sink by gravity through the liquid, as specified. 4th. In an apparatus for treating hides in water or other liquid, in combination, a tank adapted to contain the hides, having liquid outlet orifices formed therein at or near the top thereof, and provided with a slatted bottom, an exterior tank enclosing said hide containing tank, means for supporting said inner tank within said enclosing tank and clear of the walls thereof, and air pipes discharging into said hide containing tank at or near the base thereof, substantially as set forth. 5th. In an apparatus for treating hides in water or other liquid, a tank adapted to contain the hides, liquid inlet and outlet orifices formed therein, at or near the bottom and top thereof respectively, an exterior tank enclosing said hide containing tank, and an air pipe furnished with outlet provided branches situated at the base of the hide containing tank, all said outlets discharging within a space co-extensive and coincident with the slatted or perforated bottom of said hide containing tank, substantially as set forth. 6th. In an apparatus for treating hides in water or other liquid, a tank adapted to contain the hides, liquid inlet and outlet orifices formed therein, at or near the bottom and top thereof respectively, an exterior containing tank between the walls of which and the perforated walls of the inner tank are liquid spaces, an air pipe discharging into the base of said hide containing tank, a liquid supply pipe and a drawing-off cock, as specified. 7th. In an apparatus for treating hides in water or other liquid, a tank adapted to contain the hides, liquid inlet and outlet orifices therein at or near the bottom and top thereof respectively, and which open exteriorly into a common reservoir, an air pump, an air pipe leading from said air pump to and discharging into the base of the hide containing tank, a valve applied to the air pipe, and a reservoir in communication with the air pipe, at a point between the engine and the air pipe valve, as specified. 8th. In an apparatus for treating hides in water or other liquid, a tank adapted to contain the hides, liquid inlet and outlet orifices formed therein at or near the bottom and top thereof respectively, and which open exteriorly into a common reservoir, an air pump, an air pipe leading from said air pump to and discharging into the base of the hide containing tank, a valve applied to said air pipe, a lever arm attached to said valve by the raising and lowering of which the valve is operated, a wheel having a pin projecting from its face, adapted in the rotation of the wheel to operate said lever, and means for rotating said wheel, as specified. 9th. In an apparatus for treating hides in liquor, in combination, a tank adapted to contain the hides having liquid outlet orifices formed therein, at or near the top thereof, and provided with a slatted bottom, an exterior tank enclosing said hide containing tank, means for enclosing said inner tank within said enclosing tank, so as to leave spaces between the opposing walls thereof, an air pipe discharging into said hide containing tank at or near the base thereof, a valve adapted to open and close said pipe, means for automatically operating said valve, an air pump and a reservoir in communication with said air pump, as specified.

No. 32,202. Watch Stand. (Porte-montre.)

Richard Brasch, Leipzig, Germany, 6th September, 1889; 5 years.

Claim.—A portable watch stand, comprising, in combination, a frame, a slotted holder adapted to receive the neck of the bow of a watch, and two legs adapted to be protruded from the frame for supporting a watch, substantially in the manner described.

No. 32,203. Ballot Box. (Boîte à scrutin.)

Charles M. Taylor, Toronto, Ont., 6th September, 1889; 5 years.

Claim.—1st. A ballot box, having a ball chamber provided with a transparent face, whereby the result of the ballot can be seen through said transparent face. 2nd. In a ballot box, the combination, with a suitable case, of a ball chamber having a transparent face, a removable covering for said face, and a hinged or removable bottom for said ball chamber, substantially as and for the purpose specified. 3rd. In a ballot box, the combination with the case, of the glass front *F*, flap *L*, mouth or funnel *G*, ball chamber *H*, hinged bottom *K* and catch *K*, substantially as and for the purpose set forth.

No. 32,204. Wire Working Apparatus.

(Tréfilerie.)

David Rawson, Pittsburgh, Penn., U. S., 6th September, 1889; 5 years.

Claim.—1st. In a wire-working apparatus, the combination of a delivery drum mechanism for operating on the wire, a mechanism for exerting a pull on the wire, and a continuously rotating drum having a surface speed equal to or greater than the speed of the pulling mechanism, and having one or more coils or turns of the wire thereon, substantially as set forth. 2nd. In a wire drawing apparatus, the combination of a delivery drum, a drawing die, a mechanism for exerting a pull on the wire, a continuously rotating drum, having a surface speed equal to or greater than the pulling mechanism, and having one or more coils or turns of the wire thereon, substantially as set forth.

No. 32,205. Nail Feeding and Distributing Machine. (Machine d'alimentation et de distribution du clou.)

Freeman F. Raymond, 2nd, Newton, Mass., U. S., 6th September, 1889; 5 years.

Claim.—1st. In a nail feeding and distributing machine, the combination of a delivery reel for holding a nail-carrying strip, a nail strip feeding device, comprising a feed roll or rolls, having teeth to mesh with projections upon the strip, and a feed-way provided with holes through its bottom, through which nails are forced from the strip, and a gang or group of reciprocating ejectors to simultaneously enter the pockets or holders of said strips, and force nail therefrom through said holes, as and for the purposes specified. 2nd. The combination of a nail strip feeding device, comprising one or more feed-rolls, having spur teeth adapted to engage projections upon the side of a nail-carrying strip, and means for rotating it or them, a plate or roll for holding a nail strip in the feed way, and in contact with the teeth of the feed roll or rolls, a block or plate *B* having holes *b* of the same arrangement as the pockets or holders of the nail-carrying strip, and a reciprocating gang or group of ejectors, substantially as described. 3rd. The combination of the reciprocating gang of ejectors *C*, the delivery reel *A*, the feed-rolls *a*, at, having spur-teeth *a*₃, the feedway *a*, the pressure roll *a*₂, the block *B* having the holes *b*, the tubes *b*₁ having the distributing passages *b*₂, the gear *a*₂ and the ratchet wheel carried thereby, and lever *d* having a pawl to engage the ratchet, as and for the purposes described. 4th. The combination of a feed having teeth to engage the strip and feed it and a gang of ejectors.

No. 32,206. Automatic Valve for Steam and Air Engines. (Soupape automatique pour les machines à vapeur et atmosphériques.)

Henry C. Sergeant, New York, N. Y., U. S., 6th September, 1889; 5 years.

Claim.—1st. In a reciprocating engine, means for opening and closing the supply ports thereof, comprising a pair of valve-actuating pistons driven by the motive fluid, independently of the movement of the main piston, substantially as described. 2nd. In a reciprocating engine, the combination, with the main supply ports and cylinders, of two valves arranged to move in alternation and to control the necessary supply ports, and passages to produce said alternating motion independently of the movement of the main piston, substantially as described. 3rd. In a reciprocating engine, valve-operating mechanism therefor, consisting of two similar reciprocating pistons, the first of which is connected to and moves the main valve of the engine, and the second of which operates a similar valve controlling the movements of the first one independently of the movement of the main piston, substantially as described. 4th. In a reciprocating engine, the combination, with the main supply valve thereof, and a steam-actuated or air-actuated piston for reciprocating the same, of an auxiliary valve and a steam-actuated or air-actuated piston for operating the same, and ports and passages in the steam chest, whereby the first-mentioned valve is made to control the movements of the last-mentioned piston, the whole operating independently of the movement of the main piston to control the movement of the latter, substantially as described. 5th. A reciprocating engine, having a steam-actuated or air-actuated piston, and a valve operated thereby to open and close the main supply and exhaust ports independently of the movement of the main piston, an auxiliary piston which controls ports and passages for actuating the main valve piston, and a valve or valves for contracting one or more of the passage or passages for regulating the speed of the valve piston, substantially as described. 6th. In a reciprocating engine, the combination of pistons *M*, *N*, main valve *m* attached to piston *M*, and an auxiliary valve *n* attached to piston *N*, main supply ports and an auxiliary set of ports controlled by the piston *N*, and valve passages leading from said auxiliary ports, to actuate the piston *M*, and passages leading from the main ports to give motion to the piston, substantially as described. 7th. In a reciprocating engine, the combination of cylinders *D*, *D*¹, *E*, *E*¹ and pistons *M*, *N*, main valve *m* attached to piston *M*, and an auxiliary valve attached to piston *N*, main supply ports and an auxiliary set of ports controlled by the piston *N*, and valve passages leading from said auxiliary ports to actuate the piston *M*, and contractible passages leading from the main ports to the cylinders *E*, *E*¹, substantially as and for the purpose herein described. 8th. The valve-actuating pistons *M*, *N*, in combination with the steam chest *J*, having oppositely located cylinders to receive the pistons, and an enlarged or open central portion to permit the free passage of steam or air to the ports, substantially as described.

No. 32,207. Running Gear for Vehicles.

(Train de voiture.)

Frank Dupee, Helena, N. Y., U. S., 6th September, 1889; 5 years.

Claim.—1st. In a vehicle gear, the combination of the frame, the transverse bars *F* journaled in bearings secured to said frame and

having their longitudinal arms loosely connected to the headblock and rear axle, and the coiled springs surrounding said bars, having their inner ends secured to the sill frame, and their outer ends secured to arms outstanding from collars rigidly fixed to said bars F, substantially as specified. 2nd. In a vehicle gear, the combination of the frame A, the bars F journaled in bearings secured to said frame, and provided with outstanding arms / having their ends loosely connected to the head block and rear axle respectively, the coiled springs H having their inner ends secured to the lower surfaces of the frame A, and the collars G secured on the bars and provided with the outwardly standing arms g, having the perforations ρ , through which the outer ends of the corresponding springs pass, substantially as specified. 3rd. The combination, with the rectangular sill-frame A, having the transverse rails B, and the journal blocks β secured to the lower surfaces of the side sills α , of the transverse bars F having the journals f thereon, and squared or made angular at the inner sides of said journals, the collars G having squared or angular openings to fit on the squared portions of said bars F and not turn thereon, and the springs H secured at their inner ends to the bars or rails B, and having their outer ends inserted in perforations ρ in the arms g of said collars. 4th. The combination, with the rectangular sill-frame A, the bearing blocks β , the head block c and the rear axle C, of the clips D attached to the head block and front axle, and provided with the transverse eyes d , the metal loops E, the transverse bars F, having the arms f provided at their ends with the transverse eyes f , the collars G having the perforated arms g and the coiled springs H, all constructed and arranged substantially as and for the purpose described.

No. 32,208. Lubricator. (*Graisneur.*)

Benjamin A. Burgess, William D. Edy, James N. Edy and David Rutherford, London, Ont., 9th September, 1889; 5 years.

Claim.—1st. The combination of oil cup R, having partition R₃ and stem S, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of tube T, body B, body C, valve V, and tube Tr, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the oil cup R, having partition R₃, stem S, tube T, body B, body C, valve V, tube Tr, and brace A, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the oil cup R, hollow stem S, tube T, body B, body C, valve V, tube Tr, brace A, brackets B₁, B₂, valve V₂, and glass tube G, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the oil cup R, having partition R₃, stem S, tube T, body B, body C, valve V, tube Tr, brace A, brackets B₁, B₂, valve V₂, and glass tube G, substantially as and for the purpose hereinbefore set forth.

No. 32,209. Busk or Dress Stay.

(*Busc de corset.*)

William H. Williamson, Toronto, Ont., 9th September, 1889; 5 years.

Claim.—As a new article of manufacture, a metal busk or dress stay, hermetically sealed within a stockinette covering, lined with soft rubber, substantially as and for the purpose specified.

No. 32,210. Disintegrating Fibres and Manufacturing Paper Pulp. (*Broyage des fibres et fabrication du papier.*)

Henry Blackman, New York, N.Y., U.S., 9th September, 1889; 5 years.

Claim.—1st. The improvements in the art of disintegrating fibrous substances, which consists in charging them with fluid under pressure and at a high temperature, and forcing them in a reduced stream into a partial vacuum, whereby the expansion of the fluid when liberated in the vacuum disrupts the fibres. 2nd. The improvement in the art of disintegrating fibrous substances, which consists in softening the fibres by digesting them in a closed vessel, charging the softened fibres with fluid under pressure and at a high temperature and forcing them through a contracted nozzle or inlet into a partial vacuum, whereby the expansion of the fluid when liberated in the vacuum disrupts the fibres. 3rd. The improvement in the art of disintegrating fibrous substances, which consists in softening the fibres by chemical treatment, charging the softened fibres with fluid under pressure and at a high temperature, and forcing them through a contracted nozzle or inlet into a partial vacuum. 4th. The improvement in the art of disintegrating fibrous substances, which consists in softening the same by treatment with liquid in a closed digester, charging the softened fibres with liquid under pressure, and at a high temperature, and forcing the fibres and liquid through a contracted nozzle or inlet into a vacuum chamber. 5th. The improvement in the art of disintegrating fibrous substances, which consists in charging the fibres with fluid under pressure and at a high temperature, forcing them through a contracted nozzle or inlet into a vacuum chamber, and continually drawing off the contents of said chamber at a rate sufficient to prevent the accumulation of a pressure therein. 6th. The improvement in the art of disintegrating fibrous substances, which consists in forcing the same with liquid under heat and pressure through a contracted nozzle or inlet into a vacuum chamber, condensing the steam therein, and drawing off the contents of said chamber at a rate sufficient to maintain a partial vacuum therein. 7th. The improvement in the manufacture of paper pulp, which consists in first softening a fibrous substance by treatment with liquid, then disrupting the fibres by liberating them under heat and pressure in a closed chamber, and then forcing the fibres with water through an extended passage containing agitating obstructions, whereby the fibres are separated. 8th. The improvement in the manufacture of paper-pulp, which consists in first softening a fibrous substance by treatment with liquid, then disrupting the fibres by liberating them under heat and pressure in a closed chamber, and subsequently separating the heavier particles by precipitation from the fluid pulp. 9th. The improvement in the manufacture of paper-pulp, which

consists in first softening a fibrous substance by treatment with liquid, then disrupting the fibres by liberating them under heat and pressure in a closed chamber, and finally washing the pulp through screens to remove the coarser particles. 10th. The improvement in the manufacture of paper-pulp, which consists of the following succession of steps: first, softening the fibrous substance by treatment with liquid; second, disrupting the fibres by liberating them under heat and pressure in a closed chamber; third, forcing the fibres with water through an extended passage containing agitating obstructions; fourth, separating the heavier foreign particles by precipitation, and fifth, separating the coarser particles by washing through screens. 11th. An apparatus for disintegrating fibrous substances, consisting of the combination of a digester, a vacuum chamber, an outlet passage from the digester to said chamber, and a valve in said passage, substantially as set forth. 12th. The combination of a digester, a vacuum chamber, an outlet passage from the digester to said chamber, a valve in said passage, and an exhausting apparatus connected to said chamber, and adapted to maintain a vacuum therein, substantially as set forth. 13th. The combination of a digester, a vacuum chamber, an outlet passage from the digester to said chamber, a valve in said passage, and a condenser arranged and adapted to condense the steam in said chamber, substantially as set forth. 14th. The combination of a digester, a vacuum chamber, an outlet-valve to the digester, a discharge pipe or passage leading thence to said chamber, and a steam jet pipe or injector in said passage, substantially as set forth. 15th. The combination of a digester, a vacuum chamber, an outlet passage from said digester to said chamber, a contracted nozzle terminating said passage and entering said chamber, and a pump with its exhaust connected to said chamber, substantially as set forth. 16th. The combination of a digester, a vacuum chamber, a valved passage connecting them, a pump connected to said chamber, and a coil of pipe through which the pulp and water are discharged and in which the fibres are subjected to agitation, as described. 17th. The coil of pipe for agitating the fibres having within the same helices of metal, in combination with a pump to force the pulp through the coil and helices, substantially as set forth. 18th. In a pulp-making apparatus, a separator for precipitating heavy particles consisting of a succession of vessels provided with alternate downwardly-projecting partitions under which the liquid must flow, and dams over which it must flow, substantially as set forth. 19th. The combination of the pump, the agitating-coil, and the separator for precipitating the heavier particles receiving the pulp as it leaves said coil, substantially as set forth. 20th. In a pulp-making apparatus, a screen or device for separating coarse particles, consisting of one or more fine screens over which the pulp is flowed, with sprinklers arranged to shower water thereon, and an endless travelling apron receiving the pulp as it passes through said screen and adapted to drain it of water, substantially as set forth.

No. 32,211. Oil Tank. (*Caisse à huile.*)

Elmer N. Bachelier and Fred E. Lovejoy, Portland, Me., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination, with a reservoir, of a scale beam fulcrumed below the reservoir, a weighing tank supported upon one arm of the scale beam, a catch pivoted upon the extremity of the other arm of the scale beam, a weight carrier engaging with the said latch, means for tripping the latch, and a connection between the reservoir and the weighing tank, substantially as shown and described. 2nd. The combination, with a reservoir, and a scale beam fulcrumed below the said reservoir, a latch pivoted upon the outer extremity of the longer arm of the said beam, and a weight carrier supported by said latch, of a tank attached to the other arm of the scale beam, provided with a valved opening in its bottom, and a valve connection between the reservoir and the weighing tank, and means substantially as shown and described for tripping the pivoted latch, as and for the purpose specified. 3rd. The combination, with a reservoir, a scale beam fulcrumed below the same, having its longer arm provided at the extremity with an essentially hook-shaped pivoted latch, and a weight carrier notched to receive one end of the said latch, of a tank supported upon the short arm of the weighing beam, provided with an outlet aperture in its bottom, a valve adapted to close the said outlet aperture, having a jointed stem hinged to the lower surface of the reservoir, a trip post or stud held horizontally above the latch of the scale beam, an outlet tube extending from the reservoir into the weighing tank, a valve adapted to close the lower end of the said outlet tube, and a connection, substantially as shown and described, between the weighing tank and the said valve of the outlet tube, all combined for operation as and for the purpose specified. 4th. The combination, with a reservoir, a scale beam fulcrumed beneath the same, having an essentially hook-shaped latch pivoted to the outer extremity of the longer arm, a weight carrier provided with a notch in its vertical rod capable of engagement with the inner end of the latch, and a trip piston stud horizontally supported above the outer end of the said latch, of a tank supported upon the shorter arm of the scale beam, provided with an outlet aperture in its bottom, a valve adapted to close said outlet aperture, provided with a jointed stem hinged to the under surface of the reservoir, an outlet tube projected from the reservoir and extending downward within the tank, a valve capable of closing the lower end of the said outlet tube, a lever fulcrumed upon the top of the reservoir, a stem connecting one end of the lever, and the valve of the reservoir outlet tube, and a pitman pivoted to the other end of the lever, and hinged to the bottom of the weighing tank, all combined for operation substantially as shown and described.

No. 32,212. Flexible Driving Shaft.

(*Arbre de couche flexible.*)

Frederick Y. Wolsley, Sydney, N. S. W., 9th September, 1889; 5 years.

Claim.—1st. A flexible driving shaft consisting of a core of suitable cord or rope, in combination with a spiral wire, and an outer flexible casing, substantially as described. 2nd. The manufacture and use of the improved flexible driving shaft hereinbefore described and illustrated in Fig. 1 of the accompanying drawing.

No. 32,213. Press Drill for Planting Grain.*(Semoir en ligne.)*

John W. Rhodes, Havana, Ill., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination of the runner frame A, the rear frames A', the axes B, the weight distributing bar b, and the rock arm c, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the front frame A, and the rear frames A', of the seat beam D, and the seat supports e, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, with the axes B, the wheels C, and the runners A, of the main beam E, substantially as and for the purposes hereinbefore set forth. 4th. The combination of the runner C, and presser m, as and for the purposes hereinbefore set forth.

No. 32,214. Die for Impressing Ornamental Designs on Metal Tubes.*(Etaupe pour imprimer des dessins d'ornement sur les tubes en métal.)*

John Burkhardt and William H. Jackson and Company, New York, N.Y., U.S., 9th September, 1889; 5 years.

Claim.—1st. Die plate in combination with radially grooved disks or plates, as described for the purpose specified. 2nd. Counter dies D, D', in combination with die plates A, and grooved plates B, substantially as and for the purpose specified. 3rd. The sectional chamber counter dies D, spring G, and tubular plates holders J, in combination with die plates B, substantially as described for the purpose specified. 4th. The series or set of die plates, retained in vertical position respectively by retracting spring wires y, working in holes F of the die plates, and grooves in the inner faces of the disk plates B, in combination with counter dies D, D', as described. 5th. The triple faced die plates, with three series of edge or race configuration P, Q, R, for gradually forming indented designs or ornamental configurations upon the perimeters of tubes or analogous bodies, substantially as described.

No. 32,215. Harrow. (Herse.)

Gustavus A. Paddock, Beaver Dam, Wis., U.S., 9th September, 1889; 5 years.

Claim.—1st. In a harrow, a section containing two or more tooth bars rigidly secured together, with slanting teeth and semi-reversing attachments, substantially as and for the purposes described. 2nd. In a harrow, two sections, with slanting teeth and semi-reversing attachments, substantially as and for the purposes described. 3rd. In a harrow, two independent sections attached to a draw-bar, the teeth of each slanting directly out from the other, substantially as shown. 4th. In a harrow, a draw bar adjustable to two adjacent sides of a section, said section containing two or more tooth bars rigidly connected, substantially as described. 5th. In a harrow, the combination, with a draw-bar, of two sections having slanting teeth and semi-reversing attachments, substantially as described. 6th. In a harrow, the combination, with two sections M and N, having their teeth slanted outward from each other, of semi-reversing attachments, substantially as described. 7th. In a harrow, the combination, with two sections, of a draw-bar adjustable to two adjacent sides of each section, substantially as described. 8th. In a harrow, the combination, with two sections, each of said sections containing two or more tooth bars, connected without joints, of a draw-bar adjustable to two adjacent sides of each section, substantially as and for the purposes described. 9th. In a harrow, the combination, with two sections, each containing two or more tooth bars, connected without joints, and each having its teeth slanted outward from the other, of a draw-bar adjustable to two adjacent sides of each section, substantially as described.

No. 32,216. Indestructible Fire Lighter.*(Allumoir indestructible.)*

William Eacrett, London, Ont., 9th September, 1889; 5 years.

Claim.—1st. In a lighter, consisting of a case filled with absorbent, incombustible material, a staple A passing through the same, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the casing, constructed of foraminous reticulated sheet metal, united at its edges by suitable clips f, the staple A passing through the same, substantially as and for the purpose set forth.

No. 32,217. Process of Making Alloys of Chrome, Iron and Manganese.*(Procédé pour faire des alliages de chrome, de fer et de manganèse.)*

Heinrich Fohardt, Dortmund, (Germany), Eugene Nirnheim, David P. Palmado and Joseph Sachs, New York, N. Y., U.S., 9th September, 1889; 5 years.

Claim.—1st. The herein described process of producing alloys of chrome, iron and manganese, which consists in mixing chrome ore with the slag of the acid Bessemer process, and subjecting the mixture to the reduction process, substantially as set forth. 2nd. The process herein described, of producing alloys of chrome, iron and manganese, which consists of mixing ores of chrome and manganese with the slag of the acid Bessemer process, and subjecting the mixture to a reduction process, substantially as set forth. 3rd. The herein described process of producing alloys of chrome, iron and manganese, which consists in mixing the chromium ore, in manganese ore and the slag of the acid Bessemer process in a finely ground state with a freeed of water, and reducing the pasty mass in the form of briquettes in a blast or reverberatory furnace, substantially as set forth. 4th. In the process of making ingot iron, the application of alloys of chrome, iron and manganese, produced in hearth, blast or reverberatory furnaces, substantially as set forth.

No. 32,218. Steam Boiler.*(Chaudière à vapeur.)*

The Dominion Safety Boiler Company, Montreal, Que. (assignee of Allan Stirling, New York, N. Y., U.S.), 9th September, 1889; 5 years.

Claim.—1st. A water tube boiler, consisting of the single mud drum A, the two elevated steam and water drums A', A'', the water tubes B' connecting the water spaces of the steam and water drums, the steam tubes B'' connecting the steam spaces of said steam and water drums, and two sets of water tubes B, B', directly connected respectively at their upper ends with the steam and water drums, and both sets connected at their lower ends with the single mud drum, substantially as described. 2nd. A water tube boiler, consisting of a furnace structure, a single mud drum A, the two elevated steam and water drums A', A'', having their steam and water spaces respectively placed in communication, two sets of water tubes B, B', directly connected respectively at their upper ends with the steam and water drums, and both sets connected at their lower ends with the single mud drum, the fire-brick arch D, extending over the fire-plate from the wall of the furnace structure to the front set of water tubes, and the fire brick partition C inclined between the two sets of water tubes and located between the single mud drum and the two steam and water drums, substantially as described.

No. 32,219. Explosive. (Explosif.)

Frederick A. Abel, K., London, and James Dewar, Cambridge, Eng., 9th September, 1889; 5 years.

Claim.—1st. The manufacture of blasting gelatine or other gelatinous explosive, by the use, in combination with nitro-glycerine, of the most highly nitrated cellulose, such as gun cotton, along with a solvent, such as acetone or acetic ether, in substitution wholly or partly for the less highly nitrated soluble cellulose usually employed. 2nd. In the manufacture of gelatinous explosives, the addition of tannin, or its analogous or compounds to the usual ingredients, so as to obtain a tough, hard product. 3rd. The manufacture of explosive for ammunition, by pressing gelatinous explosives through holes to form rods or wires capable of being coiled or packed in bundles or sheaves.

No. 32,220. Trace. (Trait.)

George W. Foul, Bethany, Mo., U.S., 9th September, 1889; 5 years.

Claim.—As an improvement in traces and belting, the combination, with the pair of straps forming a trace connected by stitching along their eyes, of a metallic chain interposed between said straps, said chain being composed of flat double-leaved links, each of which has a perforation in its solid portion, each alternate link being secured to one of the straps by a rivet passing through its perforation, and the perforations in the intermediate non-riveted links registering with perforations for the buckle tongue in both straps, substantially as set forth.

No. 32,221. Animal Drinking Fountain.*(Abrevoir pour les animaux.)*

Francis E. Merriman, Boston, Mass., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination of a vessel, having inlet and outlet openings, a valve controlling the outlet, and having its stem operated by the movement of the cap, which closes the inlet opening, and a supply cup or trough communicating with the discharge opening in the vessel, substantially as herein described. 2nd. The combination, with the vessel, of a cap having the inlet and outlet openings, of a cap closing the inlet opening and provided with a projection or arm, a valve closing the outlet, and a rod between the valve stem and screw cap provided with means for withdrawing the valve when the cap is fitted in position. 3rd. The combination, with the vessel, having the inlet at its top, a discharge tube and a trough into which the tube discharges, of a vertical rod movable on its axis, and provided with an upper and lower laterally-projecting arm, a screw cap fitted over the inlet at the top of the can, having an arm or projection which engages and axially moves the vertical rod when the screw-cap is turned, a horizontally-moving valve stem, actuated by the lower arm of the rod, and a conical valve adapted to be seated in the discharge tube, and to be withdrawn therefrom when the screw cap is turned, substantially as herein described. 4th. The vessel A, having the surrounding trough, the inlet at its top and the discharge tube entering into the trough, in combination with the horizontally moving valve stem, the valve thereon adapted to be seated in the discharge tube, a spring surrounding the valve stem, a vertical rod movable on its axis and having upper and lower lateral arms, and a screw cap fitted over the inlet to the vessel, having an arm extending outwardly and engaging the upper arm of the vertical rod, whereby said rod is moved on its axis, and the valve withdrawn by the lower arm of said rod engaging the valve stem, substantially as herein described. 5th. The combination, with the vessel having an inlet and outlet, and a trough into which the outlet discharges, of a horizontally-moving conical valve for closing said outlet, a screw cap for closing the inlet and provided with a projection, an axially moving rod engaged by the projection on the screw-cap to withdraw the valve when the cap is fitted in position, and a spring for returning the valve and closing the outlet when the screw cap is removed for filling the vessel, substantially as herein described. 6th. The vessel having the heating chamber beneath the trough surrounding the vessel, the tube discharging into the trough and the inlet at the top of the vessel, in combination with a screw cap having the arm projection, the vertical rod having its upper bent end engaged thereby, and having a laterally projecting arm at its bottom, the standards, the horizontally-moving valve-stem mounted therein, having a conical valve adapted to automatically close the discharge when the screw-cap is removed, and a spring for closing the valve to its seat, said valve stem being actuated and the valve withdrawn when the screw-cap is fitted and position, substantially as herein described.

No. 32,222. Brake for Locomotives, etc.*(Frein pour les locomotives, etc.)*

Frank Lansberg, St. Louis, Mo., U.S., 9th September, 1889; 5 years.

Claim.—1st. In a brake for locomotives, etc., the combination of a fixed piston, a movable cylinder, and connection between the cylinder and brake-shoes, substantially as and for the purpose set forth. 2nd. In a brake for locomotives, etc., the combination of a fixed piston, a movable cylinder, brake-shoes, and connection between the brake-shoes and cylinder, consisting of a strap or yoke and links, substantially as and for the purpose set forth. 3rd. In a brake for locomotives, etc., the combination of a fixed piston, a movable cylinder brake shoes, a strap or yoke connected to the cylinder, the cross-head secured to the lower ends of the shoes, a link secured to the cross-head, and links connecting the shoes to the link of the cross-head, substantially as and for the purpose set forth. 4th. In a brake for locomotives, etc., the combination of a bracket 2 secured to the frame of the locomotive, and having a flange or table 5, the piston secured to the flange, an air or steam-pipe extending up through the piston, a movable cylinder fitting over the piston, a strap or yoke secured to the cylinder by means of a pin 19, and a cap 20, a cross-head secured to the lower end of the strap, brake-shoes and links connecting the shoes to the cross-head, substantially as and for the purpose set forth.

No. 32,223. Barrel Head Sawing Machine.*(Machine à scier les fonds des barils.)*

Joseph A. Mumford, Hantsport, N.S., 9th September, 1889; 5 years.

Claim.—1st. The combination with the saw N, of the substantially horizontal clamps for the head movable toward and from the saw, and consisting of the upper rotating clamp K, and the free lower clamp K₁ on which the head is placed, and means for bringing said clamps together, substantially as described. 2nd. The combination, with the saw arbor shaft B, and the casting A in which it is mounted, of the frame E adjustably connected to said casting, and carrying the head clamps K, substantially as described. 3rd. The combination, with the saw arbor shaft B, and the pivoted head clamps K, of the supporting bar or post D, and the casting A carrying said clamps adjustably mounted on said post, substantially as described. 4th. The combination, with the casting A, the saw N mounted therein, the shaft H, and connections between said saw and shaft, of the frame I pivotally hung on said shaft, and having arms i, ii, the clamps K journalled in arm i, and driven from shaft H, and the clamp K₁ journalled in arm ii, substantially as and for the purpose specified. 5th. The combination with the substantially vertical saw N, of the substantially horizontal clamps K and K₁ for the head, mounted in frame I, and swinging below the level of the saw, substantially as and for the purpose specified.

No. 32,224. Rabbet and Carpet Tacker.*(Machine à clouer les feuillures et les tapis.)*

Elizabeth A. Rogers, Toronto, Ont., 9th September, 1889; 5 years.

Claim.—1st. In a carpet tacker, the falling cover D, as shown and described for the purpose set forth. 2nd. In a carpet tacker, the parts A, B and C, combined as described for the purpose set forth. 3rd. In a carpet tacker, the parts A and B, in combination with the cover D, all arranged as shown and described for the purpose set forth.

No. 32,225. Air Valve. (Soupape atmosphérique.)

George M. Davis, Chicago, Ill., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination, with a steam-radiator, of an automatically operating air-valve having the expansion-tube thereof projecting into the steam-chamber of said radiator, substantially as and for the purpose set forth. 2nd. In an air-valve, the combination, with a radiator, of the valve-tube projecting inside of the steam-space, and provided in the inner end with an inlet opening, and exteriorly with an e-escape-opening, and the expansion-tube inserted in said tube, and closing said inlet-opening by expansion after the cold air is expelled and uncovering the same when the steam is shut off, substantially as and for the purpose set forth. 3rd. In an air-valve, the combination, with the expansion-tube projecting inside of the radiator, and having the outer enlarged mouth-end a threaded interiorly, and the exteriorly threaded part a₂, of the expansion-screw inserted in said tube, and provided with the threaded head a₁ engaging with the correspondingly threaded mouth-part, substantially as and for the purpose set forth. 4th. In an air-valve, the combination, with the vented expansion-tube provided exteriorly with the threaded part a₂, and having the expansion-end extending inside of the steam-space of a radiator, and the expansion-tube provided longitudinally with a number of grooves and inserted in said tube, substantially as and for the purpose set forth.

No. 32,226. Furniture Drawer.*(Tiroir de meuble.)*

Joseph H. Knaus, Fayette, Mo., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination, with the case and drawer, of the bar K pivotally connected at one end to a fixed point in the case, and having the pin or screw N at its free end, the bar H secured to the drawer, and having the slot I at one end engaged by the pin or screw N, and the link rod connecting the opposite end of the bar H, with the centre of the bar K, substantially as described. 2nd. The combination, with the case and the drawer, of the cleats F secured to the latter, the bar H rabbeted in recesses in the upper edges of said cleats, and having the slot I at one end of a fixed point in the case, and having the pin or screw N at its outer end working in the slot I, and the link rod connected to the end of bar H opposite said slot, and also

connected to the centre of bar K, substantially as described. 3rd. The combination, with the case and drawer, of the loosely connected rod O, and the bar K, the latter having a pin or screw at its free end working in a slot formed in a part secured to the drawer, and at its other end having a spring held pivot L, whereby the drawer is adapted to be removed, substantially as and for the purpose set forth. 4th. In devices for equalizing the pressure on the sides of drawers, when they are moved in ways or in a case, the pivoted levers or bars, and the slotted bar provided with pins, screws or bolts, in combination with the drawer provided with recesses or notches to receive said pins, substantially as described.

No. 32,227. Self-Closing Water Tap.*(Robinet d'eau automatique.)*

Francis H. Hyde, Toronto, Ont., 9th September, 1889; 5 years.

Claim.—A self-closing tap constructed with a valve seat a⁶ in the lower part of the water chamber A, and provided with a special chamber A¹ having an inner chamber B, the combination of the stem a² constructed with a plunger c having a groove for soft packing c₁, and a valve face a⁵ on the upper face of said plunger, a seat washer a⁷, a stuffing box a³ and a spiral spring a¹⁰, the whole constructed and arranged and operating as set forth.

No. 32,228. Clasp for Bands for Securing Papers, Envelopes and the like in Bundles.*(Agrafe pour les bandes à empaqueter les papiers, enveloppes et les objets semblables.)*

Edward J. Hall and Harrison I. Norton, Bennington, Vt., U.S., 9th September, 1889; 5 years.

Claim. The combination, with a file-band clasp comprising upper and lower frames a, a₁, adapted by their rear portions to be secured to one end of a file-band, of a lifter or handle attached to said upper frame, substantially as and for the purpose described.

No. 32,229. Suspender End and Clasp Button.*(Garnie de bretelle et bouton-agrafe.)*

William L. Doran, Niagara Falls, Ont., 9th September, 1889; 5 years.

Claim.—1st. In a suspender end, the combination, of two doubled cords A, each forming a button hole loop a₁, and twisted over each other at the point a, and connected by stitching the leather A₁ to which the cords A are secured, and the ring A₁₁ held in said leather, substantially as set forth. 2nd. The combination, of the suspender end A a₁, and the plates B and C hinged together, and the swivel D pivoted to the plate B, and carrying the button D₁, and locking the two plates, substantially as set forth. 3rd. In a clasp button, the combination of a plate B having teeth b, notches b₁₁ and b₁₂ forming lugs b₄, the plate C having teeth c, shoulder c₁₁, perforation c₁₂, rim c₄, slot c₅, shoulder c₆, and indent c₇, and the swivel D pivotally secured upon the plate B by rivet d₁₁, and having bend d, indentation d₇, and carrying a button D₁, with shank d₁, substantially as set forth. 4th. In a clasp button, the combination, with a back plate C having a shoulder c₁₁, perforation a₁₂, rim c₄, and slots c₅, of a front plate B having notches b₁₁, and lugs b₄ pivotally interlocked by the notches b₁₁, a mark or device b₁, and the swivel D pivotally secured to said plate, substantially as set forth.

No. 32,230. Vulcanizer. (Vulcanisateur.)

Edward B. Crane, California, Mo., U.S., 9th September, 1889; 5 years.

Claim.—1st. In a vulcanizer, the combination, of a suitable casing adapted to hold the flasks, a disk adapted to rest on the flasks, a sleeve to which the disk is secured, a shaft secured to the sleeve, a button on said shaft, and a spring located within the sleeve and bearing against said button, substantially as and for the purpose set forth. 2nd. In a vulcanizer, the combination, of a suitable casing adapted to hold the flasks, a sleeve fitting in the hollow neck of the casing and to which the disk is secured by a ball-and-socket joint, a shaft having threaded connection with the said neck, and to which the sleeve is connected by a button or flange 17, and a spring 18 located within the sleeve, substantially as and for the purpose set forth. 3rd. In a vulcanizer, the combination, of the casing adapted to hold the flasks, and provided with a hollow neck, a sleeve fitting within the neck, a disk secured to the lower end of the sleeve, and adapted to rest on the flasks with a spring pressure, a shaft having threaded connection with the neck, and a ball-and-socket joint between the sleeve and the shaft, substantially as and for the purpose set forth. 4th. In a vulcanizer, the combination, of a suitable casing adapted to hold the flasks, a disk, a sleeve, a nut securing the disk to the sleeve, a spring within the sleeve, and an operating shaft, said nut being provided with perforations, substantially as and for the purpose set forth.

No. 32,231. Shoe for Horses and other Hoofed Animals. (Fer pour les chevaux et autres animaux à sabots.)

Charles J. Judson and Frederick A. Poupard, London, Eng., 9th September, 1889; 5 years.

Claim.—1st. A nailless horse shoe, consisting of a shoe and toe pillar solid therewith, and provided with a spring at the inner base of the pillar, in combination with bands, as described, engaging on stamped hooks at rear of shoe, and with a stud or studs, or equivalently projecting ridge or ridges upon the tread of the shoe and recessed in the under face of the hoof, one or more being immediately behind the toe pillar, one on each flank of the shoe converging radially, and two or more placed diagonally on the rear face of the tread, the angle of the faces of these rear studs or ridges converging

to a point at the front of the shoe, substantially as and for the purposes described. 2nd. In a nailless horse shoe, the combination of a toe pillar, provided with a spring at its inner base, with a tread stud recessed into the hoof placed immediately behind the said pillar to effect the locking of the shoe upon the hoof, substantially as described. 3rd. In a nailless horse shoe, the construction of the tightening band in three or more pivoted pieces, and with corrugations for elasticity, to admit of better adaptation of the band to the surface of the hoof and ease in removal, substantially as described. 4th. In a nailless horse shoe, the construction of the pillar, with a fork at its upper end, and a prong, between which latter may be bent over the band to secure it in place, substantially as described. 5th. In a nailless horse shoe, the construction by stamping of hooks F with or without protecting ridge, stamped from the solid metal of the shoe, substantially as described.

No. 32,232. Air Compressor.

(*Machine de compression pour l'air.*)

Henry C. Sergeant, New York, N.Y., U.S., 9th September, 1889; 5 years.

Claim.—1st. The combination, in an air compressor, of two single-acting cylinders of unequal caliber, arranged in line with each other, and having a valve-controlled communication between their outer ends for the passage of air from the larger to the smaller one, and discharge valves at the outer end of the smaller cylinder, and two pistons connected together and fitting said cylinders, substantially as and for the purpose herein described. 2nd. The combination, in an air compressor, of two single-acting cylinders of unequal caliber arranged in line with each other, and having heads at their outer ends, an inlet valve to the outer end of the large cylinder, a valve-controlled communication between the outer ends of the two cylinders, discharge valves at the outer end of the smaller cylinder, the pistons connected together and fitted to the said cylinders, a stuffing box in the outer head of the larger cylinder, and a rod common to both pistons passing through said stuffing box, substantially as herein described. 3rd. The combination, in an air compressor, of two single-acting cylinders of unequal caliber, arranged in line with each other and having heads at their outer ends, and an air-passage or conduit to form communication between said ends, two pistons connecting together and fitting said cylinders, an inlet valve in the larger piston, discharge valves between the outer end of the larger cylinder, and the said passage or conduit, inlet valves to the smaller cylinder between the said cylinder and said passage or conduit, and discharge valves at the outer end of the smaller cylinder, substantially as herein described. 4th. The combination, in an air compressor, of two single-acting cylinders of unequal caliber arranged in line with each other, being in free intercommunication with each other, and with the atmosphere at their inner or adjacent ends, and having heads at their outer ends, a passage or conduit between the said heads, a discharge valve in the head of the larger cylinder between the cylinder and said passage or conduit, an inlet-valve, the head of the smaller cylinder between the said cylinder and said passage or conduit, two connected pistons fitted to said cylinders, an inlet-valve in larger piston opening towards the outer end of its cylinders, and discharge valves in the head of the said cylinders, substantially as herein described.

No. 32,233. Elevated Railway.

(*Chemin de fer aérien.*)

Lorenzo J. Cody, Sault Ste. Marie, Mich., U.S., 9th September, 1889; 5 years.

Claim.—1st. In an elevated rail-way, a two-rail road-way having each rail independently adjustably supported above the road-way, substantially as described. 2nd. In an elevated rail-way, the combination of the following elements: The two rows of posts A on opposite sides of the road-way, the bracketing devices E secured on the top thereof, the rail-supporting girders F secured to the inner ends of the bracketing devices, the rails G independently adjustably supported, and the overhead cross trusses provided with the hangers H supporting the bracketing devices, substantially as described. 3rd. In an elevated railway, the combination, of the following elements: the two rows of posts on opposite sides of the road-way, the bracketing devices E vertically adjustably secured on top thereof, the bearings E₁ laterally adjustably secured to the ends of the bracketing devices, the rail-supporting girders F secured thereto, the track-rails G supported thereto, the over-head cross-trusses, and the hangers H from said cross trusses adjustably supporting the ends of the bracketing devices, substantially as described. 4th. In an elevated rail-way, the combination of the following elements: the posts A on opposite sides of the road-way, the brackets E provided with fittings E₁ adjustably clamped to the posts, the inwardly curved or inclined extensions N on the top of the posts, the hangers H secured to said extensions, the cross-trusses connected to the upper ends of said hangers, the fittings I adjustably connecting the lower ends of the hangers to the ends of brackets, and the bearings J adjustably secured to said fittings, and having bolting flanges to which rail-supporting girders F are bolted, substantially as described. 5th. In an elevated rail-way, the combination of the following elements: the posts A provided with the base B bolted to the foundation C, the brackets E provided with fittings E₁ adjustably clamped to the posts, the curved extensions N on the posts, the hangers extended from said extension, the fittings adjustably securing said hangers to said extensions, the cross-trusses vertically adjustably secured to the hangers, the fittings adjustably connecting the hangers and brackets, the bearings laterally adjustably supported by the bracketing devices, and the rail-supporting girders secured to such bearings, substantially as described.

No. 32,234. Force Pump. (*Pompe foulante.*)

James W. Anderson, Barrie, Ont., 9th September, 1889; 5 years.

Claim.—1st. The combination of the cylinders F, F, with the air chamber E, substantially as and for the purpose hereinbefore set

forth. 2nd. The combination of the handle B, with the rods c, c, and the outside cylinders D, D, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the handle B, with the rods c, c, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the cylinders F, F, with the cylinders D, D, substantially as and for the purpose hereinbefore set forth.

No. 32,235. Wind Engine. (*Moulin à vent.*)

Arthur S. Clark, Saline, Mich., U.S., 9th September, 1889; 5 years

Claim.—In a wind engine, the combination of the main wheel F, upper turn-table D, lower turn-table C, an inner tube, an outer tube, a sliding cam sleeve R, and two lugs or rollers i and j respectively, substantially as described. 2nd. In a wind engine, the combination of the upper and lower turn-tables C, D, an outer tube N and inner tube P respectively, two lugs or rollers i, j, a cam sleeve R, a wedge-shaped cam N and lifter S, all arranged substantially as described.

No. 32,236. Step or Platform.

(*Marche pied ou plateforme.*)

Frank H. Stanwood, Englewood, Ill., U.S., 9th September, 1889; 5 years.

Claim.—1st. The reticulated or open-work step or platform, consisting of a support or hanger, a stiff frame secured to the support or hanger, and separate strips of sheet or like thin sharp-edged metal forming the tread, and arranged edgewise in and supported by said frame without being welded to or made integral therewith, substantially as specified. 2nd. The step or platform, consisting of thin metal strips bent alternately to either side of a straight line with their apices abutting, and with interlocking ribs f stamped therein at such apices, the strips being placed edgewise in a suitable surrounding frame, substantially as specified.

No. 32,237. Car Heater. (*Calorifère de char.*)

Thomas M. Morton, Baltimore, Md., U. S., 9th September, 1889; 5 years.

Claim.—1st. In a heater, such as described, the combination, with an outer metal box or chest, its interior forming an air chamber, and an air supply pipe communicating with said air chamber, of a steam chest located within the air chamber, and having a porous non-metallic block or slab arranged within said steam chest, substantially as shown and described, as and for the purpose set forth. 2nd. In a car heater, such as described, the steam pipes extending through the car and provided with a lining of non-metallic material, substantially as shown and described, as and for the purpose set forth. 3rd. In a car heater, the combination, with the heater, consisting of the outer chest E forming an air chamber, and air supply pipe O communicating with said air chamber, a steam chest F located within said air chamber, and having a porous non-metallic slab or block G arranged within said steam chest, of a perforated casing or trough K extending through the car, steam pipes L located within the casing K and communicating with the steam chest F, and suitable inlet and outlet steam pipes communicating with the steam chest F and steam pipe L, all constructed, arranged and operating substantially as shown and described. 4th. In a car heater, the combination, with the heaters arranged at diagonally opposite corners of the car, and consisting of the outer chests E forming air chambers, air supply pipes O communicating with said chambers, steam chests F located within said air chambers, and having porous non-metallic slabs or blocks G arranged within said steam chests, of perforated casings or troughs K extending along the sides of the car and communicating with the air chambers of the heaters, and provided with short branch pipes P extending toward the centre of the car, steam pipes L, provided with a lining of non-metallic material and located within the casings K and communicating with the steam chests F, and suitable inlet and outlet steam pipes communicating with the steam chests F and steam pipes L, all constructed, arranged and operating substantially as shown and described.

No. 32,238. Slat Fastener.

(*Assemblage des lames.*)

Miley B. Wesson, Forth Worth, Texas, U. S., 9th September, 1889; 5 years.

Claim.—1st. The combination, with a shutter, provided with pivoted slats, of a flat spring metal fastening plate provided with a slot for clearing the slat pivot, and projections upon its surface for engaging with the end of the slat, and having its rear end secured to the shutter frame, and its front end projecting beyond the plane of the shutter frame and forming a thumb piece for operating said spring-plate, substantially as set forth. 2nd. A slat fastener, consisting of a flat spring metal plate, provided with slot d, the lugs d₁ at its rear end, the concave-convex projections upon its surface, and the thumb-piece e at its front end, substantially as and for the purpose set forth.

No. 32,239. Manufacture of Sleds.

(*Fabrication des traîneaux.*)

Lyman B. Pickett and Daniel Sayre, Montrose, Penn., U. S., 10th September, 1889; 5 years.

Claim.—The runners A, constructed of metal tubing and provided with metal shoes and platform C, in combination with the knees B and cross-bar D secured to the tubular runners, substantially as and for the purpose herein set forth.

No. 32,240. Game Apparatus.*(Appareil de jeu.)*

Ferdinand C. Roberts, Chicago, Ill., U. S., 10th September, 1889; 5 years.

Claim.—1st. A set of game blocks, having the different characters, denominations and suits represented in a pack of playing cards indicated on the faces thereof, substantially as and for the purpose set forth. 2nd. A game-board, provided with a number of connecting and intersecting grooves or paths, as described, for the reception of a set of blocks, having playiug characters indicated on the faces thereof, and adapted to be moved along said grooves, substantially as and for the purpose set forth. 3rd. In a game apparatus, the combination, with a board A, of the moulding *b* and blocks *b*, both secured to said board, and so spaced as to form a number of connecting and intersecting grooves or paths, and both provided with overlapping edges and the card blocks inserted in said grooves, substantially as and for the purpose set forth. 4th. A set of game blocks, provided with playing characters on the face thereof, and having the surface enameled, substantially as and for the purpose set forth.

No. 32,241. Toy. (Jouet.)

Frederick Oakley, Toronto, Ont., 10th September, 1889; 5 years.

Claim.—1st. As a new toy, the concave-convex disc-shaped perforated plates A, in combination with the strings B, arranged substantially as specified. 2nd. As a new toy, the concave-convex disc-shaped perforated plates A, having a fan E pivoted between them, in combination with the strings B, arranged substantially as specified. 3rd. As a new toy, the concave-convex disc-shaped, perforated plates A, having a reed F arranged between them, in combination with the strings B, substantially as specified. 4th. As a new toy, the concave-convex disc-shaped perforated plates A, having a fan E pivoted between them, and the reed F arranged substantially as and for the purpose specified.

No. 32,242. Presser Foot Hemmer.*(Ourluse à pied de biche.)*

Alice La G. Mayo, Great Falls, M. T., U. S., 10th September, 1889; 5 years.

Claim.—1st. In a sewing machine attachment, the combination, with a body bar, constituting a presser foot, of a hem former attached thereto, substantially as shown and described. 2nd. In a sewing machine attachment, the combination, with a body bar constituting a presser foot, of a hem former secured to the said body bar, and a gauge held to slide upon said bar, substantially as described. 3rd. In a sewing machine attachment, the combination, with the presser foot provided with a heel extension, of a hem former secured to the presser foot between the centre and the toe, and a gauge adjustably attached to the heel extension, substantially as described. 4th. In a sewing machine attachment, the combination, with a presser foot, provided with an attached hem former and a heel extension, of gauge bars held to slide upon the presser foot, capable of lateral adjustment, the said gauge bars operating in unison, substantially as shown and described. 5th. As an improved article of manufacture, a sewing machine attachment, consisting of a presser foot, having an attached hem former and heel extension, and a gauge bar or bars adjustably secured to the foot, substantially as and for the purpose specified. 6th. In a sewing machine attachment, the combination, with the presser foot and a gauge bar adjustably *u*, on the said presser foot, provided with an angular arm at one end, of a hem forming arm parallel with the angle arm of the gauge bar, and a pivoted connection between the said arm and gauge bar, all combined for operation substantially as shown and described. 7th. The combination, with the body bar A, provided with an apertured post for the reception of the presser bar, and a hem former secured to the said bar, of an adjustable frame, consisting of a slotted side bar B having an integral guide bar D, an opposing side bar B₁, provided with an integral retaining bar E engaging the guide bar, and a pivoted cross bar C, all adapted to operate substantially as and for the purpose specified. 8th. The combination, with a body bar A, provided with an apertured post adapted to receive the presser bar, and a hem former H secured to said body bar, of an adjustable frame, consisting of a slotted gauge bar B, adjustably secured to the body bar, a transverse angled bar D secured to said gauge bar, an opposing narrower side bar B₁, sliding in the body bar, a transverse retaining bar secured to said narrower side bar engaging the under face of the guide bar, and a cross bar C pivotally secured to one end of the side bars, all operating substantially as shown and described.

No. 32,243. Sewing Machine Attachment.*(Disposition aux machines à coudre.)*

Alice La G. Mayo, Great Falls, M. T., U. S., 10th September, 1889; 5 years.

Claim.—1st. An attachment for sewing machines, consisting of a presser foot or block, provided with a rear extension or heel, for the purpose specified. 2nd. The combination, with a presser foot or block having a rear extension, of a gauge or guide bar held to slide upon the said extension, substantially as shown and described. 3rd. The combination, with a presser foot or block, having a rear extension, of a gauge or guide bar held to slide upon the said extension, substantially as shown and described. 3rd. The combination, with a presser foot or block, having a rear extension, of a guide bar held to slide upon the said extension, and provided with a gauge arm or arms, substantially as shown and described. 4th. The combination, with a presser foot or block adapted for attachment to the presser bar of the machine, and provided with a rear extension, of a longitudinally slotted guide bar held to slide transversely upon the extension of the presser foot or block, an arm integral with one or both extremities of the guide bar, and a set or thumb screw clamping the guide bar to the presser foot, substantially as and for the purpose

specified. 5th. The combination, with a presser foot or block, provided with a side recess, a sleeve supported above the said side recess, adapted for the reception of the presser bar of the machine, and a needle slot or opening in the forward end of a longitudinally slotted guide bar held to slide transversely across the presser foot or block to the rear of the sleeve, and provided with a scale or scales thereon, and a gauge arm or arms projected at a right angle from the said guide bar parallel with the longitudinal axis of the presser foot or block, all combined for operation substantially as shown and described.

No. 32,244. Pipe Coupling. (Joint de tuyau.)

The McElroy Car Heating Company, Detroit, (assignee of James F. McElroy, Lansing), Mich., U. S., 11th September, 1889; 5 years.

Claim.—1st. In a pipe-coupling for railway cars, the combination of the two train pipes B, with the hose C formed as shown, and metal couplings, substantially as described. 2nd. In a pipe-coupling for railway cars, the combination of the train-pipes B flexible connections C formed as shown, of two like coupling heads provided with handles *h*, and disconnecting cables O, substantially as described. 3rd. In a coupling for railway cars, the connections C formed as shown, and two coupling heads H₁ and H, substantially as described. 4th. In the combination in a pipe-coupling, of the head H₁, thimble I, ring sections J, stud K, pits L, and collar M, substantially as described. 5th. The combination in a pipe-coupling, of a head thimble I, ring sections J, stud K, pits L, collar M, and mortice and tenon engagement between the ring and collar, substantially as described. 6th. The combination in a pipe-coupling, comprising two similar half couplings H₁, H₁ secured to flexible connections C, packing ring *a*, hooks *c*, grooves *e*, and collar *f*, substantially as described. 7th. The combination in a pipe-coupling, comprising two similar half couplings H₁, H₁ secured flexible connections C, packing ring *a*, hooks *c*, grooves *e*, collar *f*, and handles *h*, substantially as described. 8th. The combination in a pipe coupling comprising two similar half couplings, the bushing *b*, the hooks *c*, recesses *e*, collars *f*, flanges *k*, recesses *i*, and handles *h*, substantially as described.

No. 32,245. Machine for the Manufacture of Paper Boxes. (Machine pour la fabrication des boîtes en papier.)

James W. Hutt and William R. Draper, Toronto, Ont., 11th September, 1889; 5 years.

Claim.—1st. The combination of four rolling formers operated in conjunction with a reciprocating plunger, arranged substantially as and for the purpose specified. 2nd. The combination, with a reciprocating plunger, of rolling formers, and finishing rollers arranged in connection and operated with each other by mechanism, arranged substantially as specified. 3rd. The plunger A supported from the cross-head B, and deriving a reciprocating motion through the vertical rods C from the cam E fixed to the driving shaft D, in combination with the forming rollers G and H, suitably journaled and deriving motion through the shafts J and K from the driving shaft D, substantially as and for the purpose specified. 4th. The plunger A, and forming rollers G and H deriving motion, as described, in combination with the finishing rollers M and N supported on the movable plates O, which derive motion through the rods R and T, and rock-shaft S from the cam U fixed to the shaft D, substantially as and for the purpose specified.

No. 32,246. Oil Heating Stove.*(Poêle de chauffage à huile.)*

August F. Zimmerling, John A. Dutcher and Pierpont E. Dutcher, Milwaukee, Wis., U. S., 11th September, 1889; 5 years.

Claim.—1st. The combination in an oil heating stove, of an annular base A, reservoir N located within the opening of said base A, an annular wall J, cylindrical wick tube C located within said annular wall J, the centre of which wick tube forms an air space communicating from the exterior air through the annular base A to the combustion chamber above the wick tube, inlet cold air duct E located centrally within said wick tube C at a slight distance therefrom, forming thereby an air space I between said wick tube C and said air duct B, drum or exterior cylinder F resting at its lower end upon the base A exterior to said wick tube, interior drum or cylinder E communicating at its lower end with the upper end of the said cold air duct B, and its upper end through the perforated cover G, cover G, annular air chamber B₁ affixed to the upper end of said drum F and having communication therewith through the apertures D₁, said annular chamber B₁ being provided with air escape aperture E₁ communicating with the room, and with air duct T communicating with the exterior air, substantially as and for the purpose specified. 2nd. In an oil stove for heating purposes, the combination of the base A, drums or air ducts E and F arranged one within the other forming thereby an annular combustion chamber C₁, communicating at its lower end with the base A upon the respective sides of the wick tube, and at its upper end with the annular chamber B₁, whereby the air passage is formed on either side of said wick tube, and also thereby forming a central hot air duct E communicating from the base A through the centre of the flame, with the perforated cover G, cover G, annular chamber B₁ provided with a series of apertures E₁, air controlling slide F₁, and air escape pipes T provided with air controlling damper G₁, substantially as and for the purpose specified.

No. 32,247. Letter Post Marking and Cancelling Machine. (Machine à timbrer les lettres et à maculer.)

The International Postal Supply Company, New York, (assignee of August Bertram, Brooklyn), N. Y., U. S., 11th September, 1889; 5 years.

Claim.—1st. The combination with the rotating drum of a marking device, and a clutch mounted on the marking device and engaging the drum, said clutch consisting of pawls pivoted to the marking device, a bar connecting the pawls, springs tending to hold the pawls in engagement with the drum, and a lug secured to one of the pawls, whereby they may be released, substantially as described. 2nd. In a letter marking device, the combination of a letter-feed, an intermittently-operating letter-marker, a pivoted pawl which stops said letter-marker, a pivoted trip having an arm projecting into the path of the letter and connected with said pawl, said trip and pawl being movable on their respective pivots to permit the stopping of the letter-marker before the letter has completely passed the arm of the trip, substantially as described. 3rd. In a letter-marking device, the combination of a letter-feed, an intermittently-operating letter-marker, a pivoted pawl which stops said letter-marker, and a pivoted trip connected with said pawl to withdraw it from engagement with the marker, and having a sliding arm permitting the pawl to come into position for stopping the marking device before the letter has passed the arm, substantially as described. 4th. In a letter-marking device, the combination of a letter-feed and intermittently-operating letter-marker, a pivoted pawl which stops the letter-marker, a spring which tends to force said pawl into position to stop the marker, and a pivoted trip connected with said pawl to withdraw it from engagement with the marker, having a sliding arm projecting into the path of the letter, said sliding arm permitting the pawl to be moved by the spring into position for stopping the marking device before the letter has passed the arm, substantially as described. 5th. In a letter-marking device, the combination of a letter-feed, an intermittently-operating letter-marker, a pawl which stops said letter-marker, a spring which tends to force the pawl into position to stop the marker, a trip consisting of a pivoted portion, and a sliding arm secured thereto extending into the path of the letter, said trip being connected with the pawl, substantially as described. 6th. In a letter-marking device, the combination of a letter-feed, an intermittently-operating letter-marker, a pivoted pawl which stops the letter-marker, a spring which tends to hold said pawl in position to stop the marker, a trip consisting of a pivoted portion connected to the pawl, and a sliding portion extending into the path of the letter, and a spring bearing against said sliding portion of the trip to force it into the path of the letter, substantially as described. 7th. In a letter-marking device, the combination of a letter-feed, an intermittently-operating letter-marker, a pivoted pawl which stops the letter-marker, a trip having a pivoted portion connected to said pawl, and a sliding arm projecting into the path of the letter, a spring connected to the sliding portion of the trip and tending to force the pawl into position to stop the marker, and another spring bearing against the end of the sliding arm and tending to force it into the path of the letter, substantially as set forth. 8th. In a letter-marking device, the combination of a letter-feed, a continuously-rotating shaft, a letter-marking cylinder loosely mounted thereon, a clutch interposed between said shaft and cylinder having friction-faces, a spring which tends to force said friction-faces into engagement with the opposing bearing-faces, a stopping pawl adapted to engage with a projection carried by the clutch to compress said spring and release the frictional faces, and a trip operated by the letters for withdrawing the pawl, substantially as described. 9th. The tripping device consisting of a pivoted pawl, a lever connected to the pawl, a sliding arm mounted on the lever, a spring bearing upon the end of the lever, and a spring connected to the sliding arm, substantially as described. 10th. In a letter-marking device, the combination of a letter-feed, a continuously-rotating shaft and intermittently-rotated printing-cylinder mounted thereon, a stop projecting from said cylinder, and a catch pawl with which said stop engages after being released from said shaft, substantially as described. 11th. In a letter-marking device, the combination of a letter-feed, a continuously rotating shaft, a marking-cylinder mounted thereon, a clutch device interposed between the shaft and cylinder, a pin carried by the cylinder, a catch-pawl with which said pin engages after the cylinder is released from the clutch, and a spring which forces said pawl into the path of the pin, substantially as described. 12th. In a letter-feeding device for a letter-marker, a movable frame provided with a feed-roller, a guide-plate carried by said frame and a trip having an arm resting adjacent to said guide-plate, substantially as and for the purpose set forth. 13th. In a feed for a letter-marking device, a movable frame provided with a feed-roller, and a guide-plate carried by said frame and having formed therein a groove, in combination with a letter-trip having an arm resting in said groove, substantially as and for the purpose set forth. 14th. The combination, with separable feed-rollers, of separable impression and printing cylinders, and a controller between the feed rollers and the impression and printing cylinders, whereby the position of the feed-rollers controls the position of the impression and printing cylinders, substantially as described. 15th. The combination, with a marking-roller, an impression-roller having spring-actuated journals, and a feed-roller journaled in a swinging spring-actuated frame, of a lever actuated by the swinging feed-roller, and another lever connected thereto and arranged between said lever, and the impression roller for pressing the latter back from the marking-roller as the feed-rollers swing aside substantially as and for the purpose set forth. 16th. In a letter-marking device, the combination of a printing-roller, and impression-roller held toward the printing-roller by a spring feed ng-rollers, a lever adapted to be operated when the feeding-rollers are unusually separated as by a letter of usual thickness, another lever bearing against the support of the impression-roller, and a link connecting said levers, whereby the printing and impression rollers are separated by the separation of the feeding-rollers. 17th. In a letter-marking device, the combination of the stationary portion of the printing surface, the removable portion seated in the stationary part, a catch for confining said removable portion in its seat, and a spring under compression when the removable portion is in place, and tending to force it out of its seat when released, substantially as described. 18th. A removable type-holder having a type-cell, the inner wall of the type-cell being grooved, and the side-wall being perforated, and a key seated in said groove and in corresponding grooves in the types, and having an end projecting through said aperture by which it may be easily withdrawn, substantially as described.

No. 32,248. Machine for Separating and Feeding Letters. (*Machine à séparer et alimenter les lettres.*)

The International Postal Supply Company, New York (assignee of Matthew J. Dolphin, Brooklyn, N. Y., U.S., 11th September, 1889; 5 years.

Claim.—1st. An automatic letter-feeding receptacle, consisting of a straight wall, a wall partially curved and obliquely-moving bottom feed-belt, whereby letters placed in the receptacle are guided, one slightly in advance of the other, and deflected toward feeding rollers, substantially as specified. 2nd. The combination, with a letter separator and feed rollers, of an automatic letter-feeding receptacle, consisting of a straight wall, a wall partially curved and a moving bottom belt, whereby the moving letters are automatically arranged, one slightly in advance of the other, and are guided and deflected toward and into contact with the feed rollers, substantially as specified. 3rd. The combination, with a letter separator, of an automatic letter-feeding receptacle, having a wall partially curved for guiding the letters, one a little in advance of the other, an obliquely-moving bottom feed belt for deflecting the letters toward the feeding rollers, and a supporting feed roller, substantially as specified. 4th. In an intermittent letter-feeding and separating machine, the combination of the feed-roller J₁ and rollers J₂, J₃ arranged to interlap between the rollers J₂ and J₃, all of said rollers rotating in the same direction, substantially as and for the purpose set forth. 5th. In a letter-separating machine, the combination, with the feed rollers J₂, J₃ mounted on a shaft journaled in stationary bearings, of the separating rollers mounted on a shaft journaled in yielding bearings, said shaft connected by a universal joint to a shaft journaled in stationary bearings, substantially as specified. 6th. The combination of the stationary journaled feed-rollers, the separating rollers journaled in yielding bearings, and connected by a universal joint to the driving shaft H, the pulleys O, and the spring belt P, substantially as specified. 7th. The combination, with an automatic letter-feeding receptacle, of a yielding journaled hinderance or check and pressure roller, and interlapping feed rollers, substantially as specified. 8th. The combination, with an automatic letter-feeding receptacle, a check and pressure roller, and an interlapping feed-roller, of a letter separator and feed-rollers, substantially as specified.

No. 32,249. Adjustable Self Locking Gate.

(*Barrière mobile automatique.*)

William H. Ardiell, London, Thp., Ont., 13th September, 1889; 5 years.

Claim.—1st. An adjustable self-locking gate, supported on rollers E, E₁ and wheel F, said rollers and wheel being adjustably attached to the gate-posts and bars, substantially as shown and specified. 2nd. The automatic locking device, consisting of latch J, having screw or projection c in its larger end, catch K pivoted to gate post B, at any point, lug pivoted pin e, and engaging with notch on end of bar A, all arranged and operating substantially as shown and specified. 3rd. In combination, with rollers E, E₁, the spring H adjustably attached to end of gate frame, as and for the purpose specified.

No. 32,250. Gas or Oil Stove.

(*Poêle à gaz ou à huile.*)

Benjamin G. Davoe (co-inventor with Thompson A. Dull), Chicago, Ill., U.S., 14th September, 1889; 5 years.

Claim.—1st. The combination, with the open-ended cylinder C, having a base R, of the cylinder B, having a hood to fit over the top of cylinder C, and the cylinder A fitting on base R, as and for the purpose set forth. 2nd. The combination of air cylinder C, drip-pan K and the pipe D, and means whereby the same may be raised or lowered to regulate the amount of air admitted to the fire, as and for the purpose set forth. 3rd. In an oil stove, the combination, with the oil pipe Y, of the air-valve L and mixer M, as and for the purpose set forth. 4th. The combination, with cylinders A, B, C, and burner or mixer M, of the adjustable top or dome P and pipe Y, as and for the purpose set forth. 5th. The stove, having the dome P, provided with the air passage, in combination with the drip-pipe Y and mixer M located within the stove and beneath the pipe, as and for the purpose set forth.

No. 32,251. Type Writer. (*Graphotype.*)

Elliott G. Thorp, Boston (assignee of Harry E. Tileston, Randolph, Mass., U.S., 14th September, 1889; 5 years.

Claim.—In a type-writer, in which the imprint of the type is secured by the direct impact of a device, such as a printing lever D thereon, the combination of a stud or toe a free to move on said lever, and a spring f backing said toe, substantially as described for the purpose specified.

No. 32,252. Adjustable Water Wheel.

(*Roue hydraulique variable.*)

The Universal Water Power Company, London, (assignee of Hortensius C. Simpson, Shrewsbury), Eng., 14th September, 1889; 5 years.

Claim.—1st. The hereinbefore described improved means of rendering the height of water-wheels adjustable to suit different water levels, consisting in carrying the water-wheel axle by a lever frame which may or may not be counterbalanced, and which can be moved about the fixed driving shaft as a centre, the said water-wheel shaft and the fixed driving shaft being geared to revolve together, substantially as hereinbefore set forth. 2nd. The combination, with a water-wheel, of a counterbalanced lever frame supporting the water-

wheel axle, and movable about the driving shaft as a centre, the water-wheel shaft and the fixed driving shaft being geared to revolve together in any of the several ways, substantially as hereinbefore set forth. 3rd. The combination, with a water-wheel, of the counter-balanced lever D supporting the water-wheel axle at each side of the water-wheel, and movable about the driving shaft as a centre, the water-wheel shaft and the fixed driving shaft being geared together by chains running within the lever D, substantially as described.

No. 32,253. Elevator and Conveyor.

(*Elevateur à godets.*)

Charles J. Seymour, Brookline, Mass., U.S., 14th September, 1889; 5 years.

Claim.—1st. The combination, with a vessel or other receptacle, of an elevator leg at one end thereof, and an endless chain of buckets and pans constructed and arranged to travel up over and down said elevator leg, and to-and-fro in a way or ways formed in the vessel or receptacle, whereby the contents of the vessel may be taken therefrom, carried to and up the elevator leg, and discharged with a single "handling," as set forth. 2nd. The combination, with a vessel or other receptacle, provided with a trough or way beneath the floor and above the keel, of a vertically arranged elevator frame at the end of such trough or way, and endless chain of buckets and pans arranged in said trough or way and on said elevator frame, and wheels to move and guide said chain, whereby the coal or contents of the vessel may be taken therefrom and directly carried up the elevator frame, as set forth. 3rd. The combination, with a vessel or other receptacle, provided with a trough or way beneath the floor and above the keel, of a vertically arranged elevator frame at one end of said trough or way, said elevator frame being provided with an overhanging head *c*, an endless chain of buckets and pans arranged in said trough or way and on said elevator frame, and wheels or pulleys, and tracks *t* to move and guide said chain of buckets and pans, as set forth. 4th. The combination, with a vessel or other receptacle, provided with delivering holes or ports in its floor, of movable sections *q* of the floor, hinged at points *a* or near said delivering holes or ports, and leaves or shelves *b* hinged to the side of the vessel, with their free edges in contact with said hinged sections of flooring, as set forth. 5th. The combination, with a vessel or other receptacle, provided with delivering holes or ports in its floor, of movable sections *q* of the floor, hinged at points *a* or near said delivering holes or ports, leaves or shelves *b* hinged at the side of the vessel, with their free edges in contact with said hinged sections of flooring, and partitions *i* between each two sections, as set forth. 6th. The combination, with a vessel or other receptacle, provided with delivering holes or ports in its floor, of covers or cut-offs for said holes or ports, said covers or cut-offs being pivoted beneath the floor, and provided with tables whereby they may be swung around to close the ports or holes, or be moved in the opposite direction to open the same tracks *N* beneath the free ends of the covers, of cut-offs to support the same, and stops to limit the movement of the covers or cut-offs, as set forth. 6th. The combination, with the partitions *i*, and the sections *q* cut away at their corners, as described, of the fixed protuberances formed to fit the cut away portions of the sections *q*, and prevent the lodgement of coal at said corners, as set forth.

No. 32,254. Process of Refining Oil.

(*Procédé de raffinage de l'huile.*)

Jesse A. Dubbs, Allegheny, Penn., U.S., 14th September, 1889; 5 years.

Claim.—As an improvement in the art of refining oils containing sulphur, the herein described method which consists in charging into the still with the oil arsenium or its salts, and then subjecting the compound to a volatilizing heat, and then condensing the vapor so produced, substantially as set forth.

No. 32,255. Clasp. (*Agrafe.*)

Frederick B. Spooner, Brooklyn, N.Y., U.S., 14th September, 1889; 5 years.

Claim.—1st. A clasp for garments, substantially as set forth, comprising two parts consisting of a slotted plate, and a cam slotted latch pivoted to said plate and adapted to be operated by the stud, eye, or shank which it secures. 2nd. A clasp adapted to be operated by a stud, substantially as set forth, comprising a stationary slotted plate with an unattached bent over end, and a cam slotted latch pivoted thereto, and whose bent over end encloses the front part of said latch. 3rd. A clasp adapted to be operated by, and secure a stud eye, or shank, substantially as set forth, consisting of a plate constructed of a piece of doubled sheet metal having a slot therein for the reception of the stud eye, or shank, and a cam slotted latch pivoted to said plate and enclosed thereby. 4th. A clasp adapted to be operated by, and secure a stud eye, or shank, comprising a doubled sheet metal plate having a slot therein, and a latch pivoted thereto having an operating guard, hooked end, and a slot with a cam projection. 5th. A clasp, substantially as described, comprising a slotted plate, and a latch pivoted thereto having an open slot with a cam projection, in combination with an adjacently situated stud for operating and engaging said latch. 6th. A clasp adapted to be operated by a stud, substantially as set forth, comprising a slotted plate with a bent over unattached end, and a cam slotted latch pivoted thereto having an overhanging hooked end provided with a front curved edge. 7th. A clasp comprising a slotted plate, a latch having an open slot, with a cam projection pivoted to said plate below the slot thereof, and an adjacently situated stud or its equivalent adapted to engage the slot in said plate and latch, and close said latch independent of spring action, substantially as described. 8th. A corset fastening having studs or equivalents on one steel thereof, and slotted plates secured to the opposite steel in alignment with the said studs, each plate having a cam slotted latch pivoted thereto and operating through said slotted plate, adapted to be actuated by and

secure said studs, substantially as described. 9th. A clasp comprising a doubled sheet metal plate, provided with a slot in its doubled position for the entrance of a stud or analogous device, and a locking latch mounted in said plate and inclosed thereby, substantially as described.

No. 32,256. Ocean Signal. (*Signal océanique.*)

Walter Thompson and Alfred Gartner, Newark, N.J., U.S., 14th September, 1889; 5 years.

Claim.—1st. The electric ocean danger signal herein described, consisting of a metallic rotating drum carrying a funnel provided with a diaphragm and metallic brush, an insulator drum provided on its outer periphery with carbon or metallic projections, a post supporting said rotating and insulating drums, and adapted to serve as a conductor from a battery and a frame supporting said parts, and an electric battery, all said parts being so arranged that when the metallic brush and the carbon projection come in contact the electric circuit will be closed, as described and for the purposes set forth. 2nd. The electric ocean danger signal herein described, consisting of a frame carrying an annunciator, a conducting post supported in said frame, an insulated drum on said post provided with carbon projections on its outer periphery, a metallic drum adapted to rotate on said post, provided with an arm carrying a diaphragm and metallic brush, a funnel connected with said diaphragm, an annunciator provided with openings in its face, and indicating discs adapted to reciprocate within the annunciator by magnetic action, all said parts being so arranged and combined that, when the metallic brush is in contact with a carbon projection, the electric circuit is closed, as described and for the purpose set forth. 3rd. In an electric ocean danger signal or metallic revolving drum, an arm connected with said drum, diaphragm connected to said arm, a metallic brush secured to said diaphragm, a funnel secured to said arm, and means for revolving said drum, as described and for the purpose set forth. 4th. In an electric ocean danger signal, in combination with a suitable supporting frame, of a metallic drum, an arm connected with said drum, a diaphragm connected to said arm, a metallic drum secured to said diaphragm, a funnel secured to said arm, means for revolving said drum, an insulated drum on said frame provided with carbon or metallic projections on its outer periphery, and electric connections with an annunciator, as described and for the purpose set forth. 5th. In an electric circuit for electric ocean danger signal, an annunciator provided with a series of two or more openings in its upper face, and reciprocating indicating discs within said annunciator, and discs being connected by bell crank levers with armatures adapted to be operated by magnets in such annunciator, as described and for the purpose set forth.

No. 32,257. Steam Engine. (*Machine à vapeur.*)

William Geib, Wickliffe, Ky., U.S., 14th September, 1889; 5 years.

Claim.—1st. In a steam engine, the combination of the oscillating shaft, the oscillating wheel rigidly mounted on said shaft, the curved stationary cylinder, the piston rod projecting out of each end of the cylinders, and curved on a plane smaller than the rim of said wheel, the two radial arms, one attached rigidly to each end of said piston-rod, the free ends of said arms being pivotally attached to the rims of the oscillating wheel at points diametrically opposite each other, a cranked power shaft, and a connecting rod pivotally attached at one end to the rim of said wheel, and to the crank of the power shaft at the other end, substantially as set forth.

No. 32,258. Steam Engine. (*Machine à vapeur.*)

Joseph A. Mumford, Hantsport, N.S., 14th September, 1889; 5 years.

Claim.—1st. In a steam engine, the combination with the cylinder A, crank shaft C, piston D, and rod D¹ connecting said shaft and piston, of the cylinder head L₂ having the steam passages E₁ therein, and the valve casing F united to said head and located to one side of the cylinder in line with the crank shaft, substantially as described. 2nd. In a steam engine, the combination, with the cylinder A, crank shaft C, piston D, and rod D¹ connecting said shaft and piston, of the cylinder head L₂ having the steam passages E₁ therein, and the valve casing F formed integral with said head L₂ and located to one side of the cylinder in line with the shaft C substantially as described. 3rd. In a steam engine, the combination, with the cylinder A, crank shaft C, piston D, and rod D¹ connecting said shaft and piston, of the cylinder head L₂ having the steam passages E₁ therein, the two valve chambers F₁ formed integral with said head, the governed valve G₁ located in one of said casings, and the slide valve G in the other casing, substantially as described. 4th. In a steam engine, the combination, with the high pressure cylinder A, crank shaft C, piston D, and connecting rod D¹ uniting said piston and shaft, of the removable cylinder head L₂ having the low pressure cylinder E₂, and valve casings I, I₁ mounted thereon, valves G₁, K, and direct connections between said valves, and the crank shaft and steam passages F, E₁ in said head for opening communication between the steam supply and high pressure cylinder, and the high pressure cylinder and low pressure cylinder, and the exhaust, substantially as described. 5th. The combination, of a steam engine of twin cylinder type, and the removable cylinder head L₂ having the low pressure cylinder E₂, and valve casings I, I₁ mounted thereon in line with the crank shaft C, of the low pressure piston E₃ connected to one of the high pressure pistons, and the valve K controlling the admission of steam to and from said cylinders, substantially as described. 6th. In a steam engine, the combination, with the cylinder, piston, and cylindrical trunk, piston D having the connecting rod D¹ pivoting therein, of the annular oil chamber d₁ surrounding said trunk, and the packing rings B₂ below said oil chamber, substantially as described. 7th. In a steam engine, the combination, with the cylinder A, the piston D having the downwardly extending enlargement or trunk, and the connecting rod D¹ pivoting therein, of the annular oil chamber d₂ surrounding said trunk, and the trap M for the water of condensation communicating with said chamber, substantially as

described. 8th. In a steam engine, the combination, with the cylinder A, the piston D having the downwardly extending cylindrical portion or trunk, and the connecting rod Dr pivoting therein, of the annular oil chamber *d* surrounding said trunk, the trap M for the water of condensation, and the vapor pipe for conducting away the steam entering said chamber, substantially as described.

No. 32,259. Potato Digger.

(*Scarificateur à patates.*)

Alexander Wilkin, London Thp., Ont., 14th September, 1889; 5 years.

Claim.—1st. The digging blade *z*, and the pivotal vibrating fingers *a* extending through and having a portion *a*₂ resting on said digging blade or other suitable support, in combination with the sliding bar Y, means for operating the same, and the bracket or guide *y*₂, substantially as and for the purpose set forth. 2nd. The digging blade *z*, and the swinging vibrating fingers *b* secured to and in combination with the pivotal bar Y₁, and means for operating the same, substantially as and for the purpose set forth. 3rd. The digging blade *z*, and the swinging vibrating fingers *b* formed with curved ends *b*₂, in combination with the bar Y₁ formed with the sockets O₁, substantially as and for the purpose set forth. 4th. The digging blade *z*, the pivotal vibrating fingers *a*₁, and the vibrating fingers *b*₁, in combination with the sliding bar Y, guide or bracket *y*₂, and the pivotal bar Y₁, and means for operating the same, substantially as and for the purpose set forth. 5th. The combination, of the guard or shoe *z*₁, with the sliding bar Y, guard or bracket *y*₂, and the digging blade *z*, substantially as and for the purpose set forth. 6th. The combination, of the guard or shoe *z*₁, with the pivotal bar Y₁, and the digging blade *z*, substantially as and for the purpose set forth. 7th. The digging blade *z*, guard or shoe *z*₁, the pivotal vibrating fingers *a*₁, the vibrating fingers *b*₁, sliding bar Y, guide or bracket *y*₂, pivotal bar Y₁, rocking standard U having arms *x*, *z*₁ and U₁, and means for operating the same, in combination with the standard B and frame A, substantially as and for the purpose set forth. 8th. The digging blade *z*, the standard B secured thereto at one side, and the plate W having inclined edges *b*₂, and the frame A, in combination with the bell-crank lever V having a knife V₂ secured thereto, and means for operating the latter, substantially as and for the purpose set forth. 9th. The digging blade *z*, the standard B secured thereto at one side, the frame A, the bracket *o*, shaft N having crank *n*₁, upright R, connecting bar Q and pickers P, and means for operating the same, substantially as and for the purpose set forth. 10th. The digging blade *z*, the guard or shoe *z*₁, vibrating fingers *a*₁, sliding bar Y, guide or bracket *y*₂, pivotal bar Y₁, rocking standard U having arms *x*, *z*₁ and U₁, and means for operating the same, in combination with the standard B, frame A, bell-crank lever V, and knife V₂, and means for operating the same, substantially as and for the purpose set forth. 11th. The digging blade *z*, the guard or shoe *z*₁, vibrating fingers *a*₁, sliding bar Y, guide or bracket *y*₂, pivotal bar Y₁, rocking standard U formed with arms *x*, *z*₁ and U₁, and means for operating the same, in combination with the standard B, frame A, bracket *o*, shaft N having crank *n*₁, upright R, connecting bar Q, and picker P, and means for operating the same, substantially as and for the purpose set forth. 12th. The supplemental frame F, the wheels H having flanges H₁ formed thereon, shaft C, the frame A, and sleeve C₃, in combination with the connecting bar *n*₂, lever *d*₁, and means for holding the lever at the position to which it is adjusted, substantially as and for the purpose set forth. 13th. The wheels H having flanges H₁ formed thereon, frame F toothed wheels G, and pinions G₁, shaft C, and frame A, in combination with the ratchets *k*, *k*₁, stud pin M, and spring L, substantially as and for the purpose set forth. 14th. The guards J secured to the flanges *f*₂ on the frame F or other suitable support, in combination with wheels H, toothed wheels G and pinions G₁, substantially as and for the purpose set forth.

No. 32,260. Trace Holder. (*Crochet de palonnier.*)

George L. Hydorn, Lacona, N.Y., U.S., 16th September, 1889; 5 years.

Claim.—1st. A trace holder consisting of a wire coiled, then bent to form an arch, and then bent to form a handle, and means for securing the same to the whiffletree, substantially as described. 2nd. A trace holder consisting of a handle, an arch adjacent to the handle, a spring adjacent to the arch and rearward arms, all constructed from a simple piece of wire, and means for securing the arms to the whiffletree.

No. 32,261. Berth and Seat for Ships and Railway Cars. (*Lit et siège pour les navires et les chars de chemins de fer.*)

James G. W. Aldridge, Southampton, Eng., 16th September, 1889; 5 years.

Claim.—1st. The arrangement of springs and operating mechanism between a bed or seat frame and a skeleton frame, by means of which the bed or seat frame can either be made to rest directly upon the skeleton frame, or be raised and supported upon the springs, consisting of spring battens between a top frame and a skeleton frame, and having their ends resting in shoes, which can be drawn together or be allowed to move apart by the cams and connecting rods, substantially as described. 2nd. The arrangement of springs and operating mechanism supporting a skeleton frame, itself supporting a bed or seat frame, by means of which the skeleton frame can either be raised and supported upon the springs or be lowered, consisting of the spring battens below the skeleton frame, and having their ends resting in shoes, which can be drawn together or allowed to move apart by the cams and connecting rods, substantially as described. 3rd. The arrangement of springs and operating mechanism, by means of which a bed or seat frame can either be raised upon a skeleton frame and supported upon the springs or be lowered, and the skeleton frame can be lowered on to the floor or other support, or be raised upon the springs, substantially as described. 4th. Supporting

a frame carrying a bed or seat, by spring battens upon a skeleton frame supported upon brushes, substantially as described and for the purposes set forth. 5th. The combination of the berths and seats, substantially as described, with reference to the drawings.

No. 32,262. Car Brake. (*Frein de char.*)

Earl A. Wescott and Edmund R. Bristol, Minneapolis, Minn., U.S., 16th September, 1889; 5 years.

Claim.—In a car truck, the combination of the frame, rock-shafts journaled therein and having intermediate arms projecting transversely therefrom, and trip arms projecting from near the ends thereof, ports suspended from the frame in suitable guides, carrying buffer wheels or beams on their lower ends, and provided with suitable nuts on their upper ends for engagement with said trip-arms, straps connecting the several rock-shafts together, and another strap connecting one of said rock-shafts with the valve lever of the air-pipe, substantially as shown and described.

No. 32,263. Hot Water Heater.

(*Calorifère à eau.*)

Archibald Brake, Toronto, Ont., 16th September, 1889; 5 years.

Claim.—1st. The wrought metal tubes F, connected by expansion to the tube sheets E and H, in combination with the water crown section C, and upper water section I, bolted respectively to the tube-sheets E and H, substantially as and for the purpose specified. 2d. The fire-box section B, having a corrugated interior wall, the water crown section C bolted to the section B, in combination with the tube sheet E, tubes F and upper water section I, arranged substantially as and for the purpose specified. 3rd. The fire box section B, having a corrugated interior wall, the water-crown section C bolted to the section B, in combination with the tube-sheet E, tubes F, upper water section I and casing formed by the outer plates J, arranged substantially as and for the purpose specified.

No. 32,264. Hammock and Hammock Support. (*Hamac et châssis de hamac.*)

William Challenger, Toronto, Ont., 16th September, 1889; 5 years.

Claim.—1st. The canvas A, having a bar B fixed to each end, in combination with the cord C threaded through hems made on each side of the canvas A, and made sufficiently long that when the ends of the cord are spliced together, a loop will be formed extending beyond each end of the said canvas, substantially as and for the purpose specified. 2nd. The canvas A, having a bar B fixed to each end, the cord C threaded through hems made on each side of the canvas A, and made sufficiently long that when the ends of the cord are spliced together a loop will be formed extending beyond each end of the said canvas, in combination with the hook E, pivoted legs F and bracing cords G, substantially as and for the purpose specified.

No. 32,265. Rectifying Chemical or Technological Fluid Products and Apparatus belonging thereto. (*Rectification des produits fluides chimiques ou technologiques et appareil pour cet objet.*)

Bogdan Hoff, Iaroslav, Austria, 16th September, 1889; 5 years.

Claim.—1st. A process, wherein a mixture of vapors of several fluids of a different boiling point is passed through a tank with a single distillation, in which tank are arranged bodies containing salicic acids or minerals, as pebble stones, chippings, or rubbles, in a quantity to be ascertained in an empiric way without the use of water for the rectification, so that the vapors of the fluids of higher boiling points are condensed, whilst the vapors of the fluids of a lower boiling point are allowed to escape still in the shape of vapor, and are subsequently condensed as a pure product in the condenser, substantially as shown and described. 2nd. The tank or tanks A₁, A₂, A₃, A₄, necessary for the performance of this process with the connecting pipes H, the admission pipe E, the discharge or exhaust pipes D and F, and the sifters C with the condensing bodies, consisting of bodies containing salicic acids or minerals arranged thereon, substantially as shown and described.

No. 32,266. Mechanical Movement.

(*Moteur à mouvement d'horlogerie.*)

Henry Pinous and Oakley Selleck, New York, N.Y., U.S., 16th September, 1889; 5 years.

Claim.—1st. The combination, substantially as herein described, of a motor, a display wheel mounted loosely on a shaft of said motor, a spiral spring having one end secured to the display wheel, and the other end secured to said shaft, an escape wheel secured to the display wheel, an escape lever, a shifting arm connected with said lever and a crank arm connected with the shifting arm, for the purpose set forth. 2nd. The combination, substantially as herein described, of a motor, a display wheel mounted loosely on a shaft of said motor, a suitable spring having one end secured to the display wheel and the other end secured to said shaft, an escape wheel secured to the display wheel, an escape lever, a shifting arm connected with said lever, and a crank arm connected with the shifting arm, for the purpose set forth.

No. 32,267. Burial Casket. (*Cercueil.*)

Mary E. Ripson and William A. Frazer (assignees of John D. Ripson), Suspension Bridge, N. Y., U.S., 16th September, 1889; 5 years.

Claim.—1st. A casket lid, having the foot and centre panels made in a single piece of sheet-metal or other thin material fastened to the plate of the said lid, in combination with a head panel made of

sheet-metal or other thin material, and slidingly held in a groove made in the said plate, substantially flush with the bottom of the centre panel, as and for the purpose specified. 2nd. A casket lid, having the foot and central panels made in a single piece of sheet-metal, or other thin material, fastened to the plate of the said lid, in combination with a head-panel made of sheet-metal or other thin material, and slidingly held in a groove made in the said plate, substantially flush with the bottom of the centre panel, and of a glass slidingly held in a groove made in the plate parallel with the groove carrying the head panel, substantially as and for the purpose specified. 3rd. A casket lid, having a sliding panel and a sliding glass in different horizontal planes, in combination with a catch having a substantially vertical portion, adapted to engage the end of both said panel and glass for holding the two closed, substantially as and for the purpose specified.

No. 32,268. Electrical Measuring Instrument. (*Instrument de mesurage de l'électricité.*)

The Thomson-Houston International Electric Company, Boston (assignee of Elihu Thomson, Lynn), Mass., U. S., 16th September, 1889; 5 years.

Claim.—1st. The combination, with an electric conductor, carrying an electric current, and a mass of iron adapted to forming a partial magnetic circuit around the same, and movable in the general longitudinal direction of the conductor to positions where it will gradually effect a change in the degree of closure of the magnetic field around the conductor, as and for the purpose described. 2nd. The conductor C, having its mass at the outer or open side of the armature modified or varied, as and for the purpose described. 3rd. The combination, with an electric conductor or a U-shaped armature, or its equivalent, as described, movable in the general longitudinal direction of the conductor, as described, to positions where it may effect a variable closure of the magnetic circuit around the conductor, as set forth. 4th. The combination of a conductor and an armature, which partially embraces and encloses the magnetic circuit around the conductor, or said conductor or armature, one or both being movable with relation to one another in the general direction of the axis of the conductor, as and for the purpose described. 5th. The combination, substantially as described, of an electric conductor and a U-shaped armature partially surrounding the conductor, and mounted, as described, so as to be movable over the conductor in the general direction of the axis of the same. 6th. The combination, with the electric conductor, of a mass of iron partly encircling the same, said conductor and mass of iron being movable with relation to one another, as described, in the general direction of the conductor's longitudinal axis at a slight angle, so that the conductor may be gradually included more and more within the iron, as and for the purpose described. 7th. The combination, as described, of a curved conductor and a pivoted armature partly encircling the same, and having a line of swing, whose curve is eccentric to the curve of the conductor, as and for the purpose described. 8th. The combination, with the two conductors C, of the two armatures partly encircling the same, and mounted on a common support in proper manner to balance one another. 9th. The combination, with the curved conductor C, of the index and connected armature forming an iron mass partially surrounding the conductor, and mounted on a pivot eccentric to the curved conductor, as and for the purpose described. 10th. The conductor C, having its mass near the open side of the armature, or just in advance of the same, reduced or contracted, as and for the purpose described. 11th. The conductor C, having on its outer side a web of varying depth, in combination with the armature whose magnetic circuit is closed across or around said web. 12th. The combination, with an electro responsive device, of the incandescence lamp or lamps placed in circuit therewith, as an artificial resistance and run at a low degree of incandescence, as and for the purpose described.

No. 32,269. Feed Mechanism for Chain Link Machines. (*Mécanisme d'alimentation pour les machines à maillons de chaînes.*)

James D. Storis, Oshawa, Ont., 16th September, 1889; 5 years.

Claim.—1st. The combination, with the hopper A and elevator B, having fingers or hooks thereupon, of the well or chamber A₁ having a slotted front through which said fingers project, for the purpose described. 2nd. The combination, with the hopper A and elevator B having fingers or hooks thereupon, of the well or chamber A₂ adjustable horizontally and having a slotted front, substantially as and for the purpose specified. 3rd. The combination, with the frame and an elevator having hooks or fingers for carrying drive chain links, of a brush adapted to adjust the links upon said hooks, substantially as and for the purpose specified. 4th. The combination, with the elevator having hooks or fingers for carrying drive-chain links, of a comb arranged at the upper end of said elevator, and adapted to remove such links from said hooks or fingers, substantially as and for the purpose set forth. 5th. The combination with the elevator B, having fingers or hooks b, b, of the comb b₅, chute b₆, and a trough or receptacle for the links, substantially as set forth. 6th. In a drive-chain link feeding machine, the combination, with a feeding chute, of the trough C constructed with adjustable bevelled blocks c, c, and adjustable sloping inner walls c₂, c₂, substantially as and for the purpose described. 7th. In a drive-chain link feeding machine, the combination, with a way along which the links travel, of means for raking or pushing said links forward towards the point of delivery. 8th. In a drive-chain link feeding machine, the combination, with a guiding way or track along which the links travel, of a reciprocating bar carrying pivoted raking or pushing bars, or teeth, adapted to engage with the links, for the purpose specified. 9th. The combination, with the trough C, of the reciprocating rakers C₁, substantially as and for the purpose specified. 10th. The combination, with the rails D₁, D₂, of the reciprocating rakers E, substantially as and for the

purpose specified. 11th. In a drive-chain link feeding machine, the combination, with a rail adapted to be embraced or straddled by the hook portions of the links, and with means for causing said links to move upon said rail, of means for lubricating the rail, where y the interior of the locking knuckles or hooks may also be lubricated, substantially in the manner set forth. 12th. In a drive-chain link feeding machine, the combination with the track or way along which the links travel, of a device for scraping and cleaning the insides of the hooks, substantially described. 13th. The combination, with the track upon which the links travel, of the comb W, for the purpose set forth. 14th. The combination, with a rail for conveying the links, of the hollow raker-bar E₁, hollow perforated pivots e and hollow rakers E, whereby a lubricant is conveyed from the raker-bar to the rail, substantially as and for the purpose described. 15th. In a drive-chain link feeding machine, the combination, with a rail for conveying the links and raker for moving same thereon, of the friction plate d₅, for the purpose described. 16th. In a drive-chain link feeding machine, the combination, with a guide-way, in which the links travel with their heads uppermost, of two rails diverging from said guide-way, and adapted to catch the links, whose hooks are turned towards them, substantially as and for the purpose specified. 17th. In a drive-chain link feeding machine, the combination, with a guide-way, in which the links travel with their heads uppermost, of two rails diverging from said guide-way, and adapted to catch the links whose hooks are turned towards them, and right and left twisted spouts arranged to turn two series of links and deliver them through a single spout, with their hooks turned all in the same direction, substantially as and for the purpose specified. 18th. In a drive-chain link feeding machine, the combination, with a delivery spout or conductor, of an overflow device whereby surplus links will be thrown out and only a regulated quantity delivered at the end of the spout, substantially as and for the purpose specified. 19th. The combination, with the double twist spouts D₅, D₆, of the single spout G having the overflow opening g₁, for the purpose specified. 20th. In a spout or chute for delivering links having a device for stopping its outlet end, the overflow opening g₁, for the purpose described. 21st. In combination with the spout G having an overflow opening, the hopper H₂, and return spout g₂, for the purpose described. 22nd. In combination with a guide-way for drive-chain links, the shield d for throwing out misplaced links, arranged substantially as described. 23rd. The combination, with the guide-way D, and shield d, of the hopper d₁, and return spout d₂, for the purpose described. 24th. The combination, with the rails for delivering and spouts for receiving the links, of the strikers K, K₁, and means for operating same, substantially as and for the purpose described. 25th. The combination, with the strikers K, K₁, operated as described, the pivoted lever K₂, and driving shaft L of the cam l, substantially as and for the purpose set forth. 26th. In a drive-chain link feeding machine, the combination, with the rakers, and means for driving same, of a spring adapted to compensate for the movement of said rakers, when the latter are held stationary from any accidental cause, substantially in the manner described. 27th. The combination, with the raker-bar E₁, and rakers connected thereto, and with the rod N, and means for working same, of the coiled spring n, substantially as and for the purpose specified. 28th. The combination, with the driving shaft L having a crank wheel or disc thereon, rod P, lever O having a pawl shaft b₁ having a ratchet thereon, elevator B, and shaft b₃, all combined substantially as and for the purpose described. 29th. The combination of the raker-bar C₂ carrying rakers and having the fork g₁, of the pivoted bridle q, rod Q, and lever O, operated as described, all substantially as and for the purpose described. 30th. The combination, with the rails D₁, D₂, of the knife edges d₃, d₄, for the purpose set forth. 31st. The oilpan F, in combination with the rails D₁, D₂, rakers E, and hollow raker-bar E₁, as described.

No. 32,270. Hoof Trimmer. (*Paroir de maréchal.*)

Giles Bowler, Dundalk, Ont., 16th September, 1889; 5 years.

Claim.—A hoof-trimmer composed of the legs A, B, connected together like an ordinary pair of tongs, the end of the leg A being sharpened while the end of the leg B has a flange b formed on it, substantially as shown and described.

No. 32,271. Gas Burner. (*Bec à gaz.*)

Alfred P. Jacob, Patterson, N. J., U. S., 16th September, 1889; 5 years.

Claim.—1st. The combination of a main gas burner, with an auxiliary burner opening therefrom, a short inverted cup-shaped valve loosely held entirely within said main burner, and free to move vertically therein, and passages to the main and auxiliary burners controlled by said valve, so that when the one is opened the other is closed. 2nd. The combination of a main gas burner, with an auxiliary burner opening therefrom, a cylindrical chest held in said main burner, and provided with passages leading respectively to the main and auxiliary burners, and a sliding valve loosely supported in said cylindrical chest normally open to the passage leading to the main burner. 3rd. The combination of a main gas burner, with an auxiliary burner opening therefrom, a removable cylindrical chest held in said main burner and provided with passages leading respectively to the main auxiliary burners, and a sliding valve loosely supported in said cylindrical chest, normally open to the passage leading to the auxiliary burner and closed to that leading to the main burner. 4th. A gas burner, consisting of a main burner, in combination with an auxiliary burner opening therefrom, and a valve operated by the pressure of the gas, consisting of a vertically-movable inverted cup, and a cylindrical piece within which said cup is supported, and upon the sides of which it is guided, located within the main burner, and provided with openings respectively to said main and auxiliary burners, said openings to the main burner being normally closed, and the opening to the auxiliary burner being normally open. 5th. A gas burner consisting of a main burner, in combination with an auxiliary burner opening therefrom, and a valve operated by the pressure of the gas, consisting of a vertically movable inverted cup, and a cylin-

driical piece within which said cup is supported, and upon the sides of which it is guided, provided with passages substantially in opposite sides opening respectively into the main burner, and into the auxiliary burner located within the main burner, the former of said passages being normally closed, and the latter normally open when the supply is increased. 6th. In a gas burner, the combination of the main burner B, auxiliary burner L opening therewith, cylinder E held in said burner having a passage-way K on the one side to said auxiliary burner, and passage-ways I, J on the other to said main burner, valve F provided with opening H normally opposite to passage-way K into the auxiliary burner loosely secured in said cylinder E, but free to rise therein to close the passage-way into the auxiliary burner, and to open that into the main burner. 7th. In a gas burner, the combination of the main burner B, auxiliary burner L opening therewith, cylinder E held in said burner having a passage-way K on the one side to said auxiliary burner, and passage-ways I, J on the other to said main burner, valve F provided with opening H normally opposite to passage-way K into the auxiliary burner loosely secured by means of slot f, and pin G on said cylinder E, but free to rise therein to close the passage-way into the auxiliary burner, and to open that into the main burner.

No 32,272. Ventilating Man-Hole for Sewers. (*Regard de ventilation pour les égouts.*)

Thomas W. Morgan, Oakland, Cal., U.S., 16th September, 1889; 5 years.

Claim.—1st. The vertical man-hole having the supplemental flue formed parallel therewith, and the curb C having the opening G, said supplemental flue having its lower end leading into the man-hole, and its upper end in communication with the passage G, in combination with a close pan or cover at the bottom of the curb below the opening G, substantially as herein described. 2nd. The vertical man-hole, a supplemental flue built in the side-wall thereof, and the curb C, said supplemental flue connecting with the man-hole at its lower end, and with the space in the cylindrical curb at the upper end, and being filled with charcoal or other disinfectant, in combination with the close pan or cap fitting upon the ledge or lip around the bottom of the curb, the perforated cover fitted to the curb, and the extension at the side of the curb with its supplemental cover, substantially as herein described.

No. 32,273. Machine or Contrivance for Fastening Doors Open. (*Appareil pour retenir les portes ouvertes.*)

Ellen P. Passmore, Brantford, Ont., 16th September, 1889; 5 years.

Claim.—The combination of the bars 2 and 3, with the eyes 4 and 4', for the purpose hereinbefore set forth.

No. 32,274. Portable Centre for Constructing Continuous Archways. (*Centre portatif pour la construction continue des passages envoûtés.*)

Smith Toye, Cardinal, Ont., 16th September, 1889; 5 years.

Claim.—1st. The combination in a portable centre for constructing continuous archways, of the carriage A, with the adjustable cover B having hinged wings L, L, as set forth. 2nd. The combination in a portable centre for constructing continuous archways, of the carriage body or framework A, with the adjustable hinged trucks C, C, and the adjustable cover B having hinged wings L, L, as set forth. 3rd. The combination in a portable centre for constructing continuous archways, of the carriage body or framework A, with the adjustable hinged trucks C, C, and the cover B adjustable vertically in two definite positions, and having dependent from each side of said cover, the hinged ways L, L, as set forth. 4th. The combination in a portable centre for constructing continuous archways, of the carriage body or framework A, with the adjustable hinged trucks C, C, and the cover B adjustable vertically in two definite positions and having dependent from each side of said cover the hinged wings L, L, with arms J, J, for expanding the same, substantially as set forth.

No. 32,275. Grain Scourer.

(*Nettoyeur des grains.*)

Giles S. Cranson, Silver Creek, N.Y., U.S., 16th September, 1889; 5 years.

Claim.—1st. The combination, with a scouring case, of a scouring drum provided with transverse grooves and recesses or depressions in said grooves, substantially as set forth. 2nd. The combination, with a scouring drum provided with grooves, and recesses or depressions in said grooves, of a scouring case provided with grooves, and recesses or depressions in said grooves, substantially as set forth. 3rd. In a grain scourer, a scouring plate provided with transverse grooves having inclined advancing sides, and abrupt retreating sides, and recesses or depressions in said grooves, substantially as set forth. 4th. The combination, with the scouring case, of a drum having a scouring plate provided at its entering end with inclined flights, and with transverse grooves having recesses or depressions, substantially as set forth. 5th. The combination, with the scouring case, of a drum composed of alternating plates having transverse grooves, with recesses or depressions, and plates having longitudinal grooves, substantially as set forth. 6th. The combination, with a scouring drum, of a scouring case provided with a tight bottom plate, having transverse grooves and recesses, or depressions in said grooves, and with a ventilated top section, substantially as set forth.

No. 32,276. Machine for Moulding Confections. (*Machine à mouler les bonbons.*)

Joshua C. Ruby, Philadelphia, Penn., U. S., 16th September, 1889; 5 years.

Claim.—1st. In a confection-moulding machine, the combination of the hopper with the discharge tube X, the vertically movable plungers I in the said tubes, provided with the inlet openings, and the vertically movable rods M having the stems OI extending through the upper ends of the plungers, and provided at their lower ends with valves P, substantially as described. 2nd. In a confection-moulding machine, the combination, of the hopper, the discharge tubes, valves D, reciprocating plungers I and rods M, having valves P, substantially as described. 3rd. The combination in a machine for moulding confections, of the hopper, with the tubes X in its lower side, the cups Z attached to the lower ends of said tubes, the spring pressed valves D, the vertically movable plungers I arranged in the tubes and having the inlet openings, and the openings L in their lower sides, and the vertically movable rods M playing loosely in the plungers, and having the valves P to open and close the openings L, substantially as described. 4th. The combination, in a confection-moulding machine, of the hopper, having the discharge tubes with the plungers I in said tubes, and provided with the inlet openings, and the vertically movable rods M, having a limited independent movement in said plungers, and provided at their lower ends with the valves P, substantially as described. 5th. The combination in a confection moulding machine, of the hopper having the discharge tubes, the plungers I in said tubes, provided with the inlet openings, and the vertically movable rods M, having a limited independent movement in said plungers, and provided at their lower ends with the valves P, with the adjustable stop R, to limit the independent movement of the rods in the plungers, for the purpose set forth, substantially as described. 6th. In a machine for moulding confections, the combination of the hopper with the rigid table, the horizontal tray resting on and supported by the table and divided into a series of compartments, the driving shaft C, the two shafts C, the chain running around the said shafts C, the pitman F, connecting at one end with the driving shaft, the working lever G, to which the other end of the pitman is adjustably connected, the pawl carried by the lever and the ratchet on one of the shafts C to be engaged by the pawl, as set forth. 7th. In a machine for moulding confections, the hopper, having an open bottom combined with the closed hollow steam chamber W, removably fitted within, and closing the open bottom of the hopper, whereby the chamber can be removed and another chamber substituted, having a greater or less number of tubes, and the pipes to supply the chamber with steam, substantially as described. 8th. In a machine for moulding confections, the combination of the hopper with the discharge tubes X, the I having the inlet openings and working in the tubes X, and the discharge cup Z fitted to the tubes and valves D in the cups, the plungers rods M having a limited independent vertical movement in the plungers and carrying valves P, as set forth. 9th. In a machine for moulding confections, the hopper having an open bottom, combined with the closed hollow steam chamber W, removably fitted within and closing the open bottom of the hopper, whereby the chamber can be removed and another chamber substituted, having a greater or less number of tubes and the pipes to supply the chamber with steam, and the said hopper having side compartments M and pipes N to supply hot water thereto, the compartments N being entirely separate and independent of the chamber W.

No. 32,277. Plough and Cultivator.

(*Charrue et cultivateur.*)

Edward Bartlett, Banoroff, Ont., 16th September, 1889; 5 years.

Claim.—1st. The side bend or offset of the beam marked A, towards the land side of the plough or cultivator, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the said bend or offset A in the beam with the standard and mould board of the plough or cultivator, substantially as and for the purpose hereinbefore set forth.

No. 32,278. Metallic Wheel.

(*Roue métallique.*)

George H. Everson, Pittsburg, Penn., U. S., 16th September, 1889; 5 years.

Claim.—1st. The combination of the sleeve, the wooden filling placed therein, and the box, the wooden filling being bored out to receive the box, the central ring or band F, the hub sections and the fastening devices which engage with the inner ends of the spokes and hold them in position, substantially as shown. 2nd. In a hub, the sleeve A, provided with a series of sockets or recesses in its outer side to receive the ends of the spokes, in combination with the central band or ring, the spokes, the fastenings to engage with the ends of the spokes and hub sections, substantially as described. 3rd. A metallic spoke formed of thin metal, and which is made angular at its inner end, oval in cross section a short distance beyond the hub, and then round at its outer end so as to correspond to the shape of an ordinary buggy spoke, substantially as set forth. 4th. The combination of the metallic felloe, the detachable separate fastenings placed therein and provided with ribs or flanges on their inner sides, so as to catch in grooves or recesses formed in the sides of the end of the spokes, and the rivets or fastenings which are passed through the felloe, substantially as specified. 5th. The combination, with the hub and the notched metallic spokes, of separate springs, which are applied to the spokes for the purpose of securing them in position in the hub, and imparting to the wheel the necessary amount of elasticity, substantially as shown and described. 6th. The combination, with the felloes, of a suitable filling of wood and rubber, which is placed therein between the castings to which the ends of the spokes are fastened, substantially as set forth. 7th. The combination, with the felloe, of the rubber Q and a layer or layer of wood which are placed upon the top of the rubber, substantially as specified.

No. 32,279. Lime Kiln. (*Four à chaux.*)

Frederick Kranz, Sandusky, Ohio, U.S., 16th September, 1889; 5 years.

Claim.—1st. In a kiln, a cooling chamber, consisting of a top plate C and cone D secured thereto, a nozzle E engaging on the lower end of the cone, and connections between the top plate and the nozzle, substantially as described. 2nd. In a kiln, and in combination with the fire chamber B, a top-plate C provided with eye-bolts J and the inverted V-shaped recess K, a sheet metal cone D engaging into said recess, a nozzle E at the lower end of the cone, and connections between the top plate and the nozzle, substantially as described. 3rd. In a kiln, a cooling chamber, consisting of a top plate C, having eye-bolts J and the inverted V-shaped recess K, a sheet metal cone D engaging with its upper end into said recess, a nozzle E provided with lugs L and bolts M connecting the top plate and the nozzle, substantially as and for the purpose described.

No. 32,280. Extracting Oil from and Cleaning Cotton Waste. (*Extraction de l'huile du coton et nettoyage des déchets.*)

William Mitchell, London, Eng., 16th September, 1889; 5 years.

Claim.—For extracting oil from, and cleaning cotton waste, the composition of materials, prepared and used substantially as herein described.

No. 32,281. Cutter Head for Cutting or Trimming Gores of Barrel Blanks. (*Porte outil pour tailler ou parer les pointes des ébauches de barils.*)

John W. Philp, Memphis, Tenn., U. S., 16th September, 1889; 15 years.

Claim.—1st. A cutter head for cutting or trimming the edges of the gores of barrel blanks, consisting of a circular disk tapering on its opposite sides towards its periphery, having cutters or blades on each side inclining toward each other beyond the disk, for the purpose stated. 2nd. A cutter-head for cutting the gores of barrel blanks, consisting of a circular disk tapering on its opposite sides toward the periphery, and the cutters or blades arranged in lines tangent to a concentric circle and inclining toward each other beyond the disk, for the purpose stated. 3rd. In a cutter-head for cutting or trimming the edges of the gores of barrel blanks, the combination of a circular disk tapering toward the periphery, with cutters or blades secured upon the tapering faces and projecting beyond the periphery, with their outer ends in concentric line beyond the periphery, as shown and for the purpose specified. 4th. In a cutter-head for cutting or trimming the edges of the gores of barrel blanks, the combination of a circular disk or head tapering toward the periphery, with cutters or blades secured upon the faces of the disk or head and having the cutting edges thicker than the rear edges, as shown and for the purpose specified. 5th. In a cutter-head for cutting or trimming the edges of the gores of barrel blanks, cutters or blades having their cutting edges thicker than their rear edges, and formed with briar teeth bevelled toward the inner side or side facing the head, as shown and described. 6th. In a cutter-head for cutting or trimming the edges of the gores of barrel blanks, the combination of a circular disk or head tapering toward the periphery, with cutters or blades secured to the faces of the disk and formed with briar teeth bevelled toward the inner sides facing the disk, as shown and described. 7th. In a cutter-head for cutting or trimming the edges of the gores of barrel blanks, a cutter or blade having its cutting edge formed with briar teeth, bevelled toward the inner side, and having the outer tooth formed with an oblique chisel-point, as shown and described. 8th. The combination of the circular disk or head, having tapering sides, with the cutters or blades secured to the faces of the disk by the countersunk screws, and having the briar teeth upon the thicker cutting edges bevelled toward the inner sides, and formed with the oblique chisel-point extending in a concentric circular line beyond the periphery of the disk, as shown and for the purpose specified.

No. 32,282. Shoe Pack. (*Oreille de soulier.*)

John Moffatt, Parry Sound, Ont., 16th September, 1889; 5 years.

Claim.—A shoe pack, having a leg with a crimped front, which front is connected directly to the tongue or vamp, an open seam provided with laces or other fastening being left on one side of the leg, and the said seam connected together by a bellows tongue, substantially as and for the purpose specified.

No. 32,283. Grain Separator.

(*Séparateur des grains.*)

George C. Beeman, Minneapolis, Minn., U.S., 16th September, 1889; 5 years.

Claim.—1st. The combination of a rotary shaft, a series of cylindrical screens of different degrees of fineness mounted thereon, a coarser conical screen in the receiving end thereof, closed at its small end and opened at its larger end, and a finer removable conical screen adapted to fit within the coarser conical screen, substantially as described. 2nd. The combination of a rotary shaft, a series of cylindrical screens of different degrees of fineness mounted thereon, a conical screen in the receiving end thereof, closed at its small end and open at its larger end, a finer removable conical screen adapted to fit within the coarser conical screen, and a detachable feed hopper having a discharge spout projecting into said conical screen, substantially as described.

No. 32,284. Method of Stitching Button Holes. (*Manière de piquer les boutonnières.*)

Elmer Fletcher, Needham, Mass., U. S., 16th September, 1889; 5 years.

Claim.—That improvement in the art or method of stitching button holes, which includes clamping the material and stitching the same to form one straight side for the button hole, then an enlarged eye portion for the outer end of the button hole, and a second straight portion for the second or opposite side of the button hole, the stitches forming the end of the said enlarged eye in the line of the centre of the button hole being shortened in the direction of the length of the button hole, and superimposed or crossed back and forth, substantially as described, in the line of the slit in the button hole, thereby accumulating the thread directly at the edge of the button hole at the extremity of the said enlarged eye, and strengthening the button hole where the strain therein is to be the greatest, substantially as set forth.

No. 32,285. Ironing Machine.

(*Machine à repasser le linge.*)

George J. Fritz, St. Louis, Mo., U. S., 16th September, 1889; 5 years.

Claim.—1st. In an ironing machine, the combination of the frame having inclined slots 10, a shaft mounted in fixed bearings, a movable shaft roller on the shaft, sliding boxes in which the movable shaft is journaled, and means for shifting the movable shaft, consisting of an independently movable lever, pivoted to the frame at 19, and having a bearing at one end against the under side of one of the sliding boxes and a weight at the other end of the lever, said movable shaft being moved by the said lever in one direction, and yokes secured to the boxes, pivoted arms connected to the yokes and a treadle to which the arms are connected for moving the shaft in the other direction, substantially as and for the purpose set forth. 2nd. In an ironing machine, the combination of the shaft 2 mounted in fixed bearings, movable shaft 3, rollers on the shafts, sliding boxes 9, fitting in slots 10 of the frame yokes 11 pivoted to the boxes and encompassing shaft 2, arms 13 pivoted to the yokes and to the frame operating treadle, and adjustable rods 16 connecting the arms to the treadle, substantially as shown and described.

No. 32,286. Hinge for Folding Seats.

(*Charnière pour fauteuils pliants.*)

John M. Sauder, Bloomsburgh, Penn., U.S., 16th September, 1889; 5 years.

Claim.—1st. In a hinge, the combination with a fixed member having a segmental groove, of a movable member mounted to turn on the said fixed member, and provided with a lug fitting into the said groove, a clamping bolt and a spring, substantially as shown and described. 2nd. In a hinge, the combination, with a fixed member having a segmental groove, of a movable member mounted to turn on the said fixed member, and provided with a lug fitting into the said groove, a spring plate held on the said movable member, a washer held on the said spring plate and a bolt uniting the several parts, substantially as shown and described. 3rd. In a hinge, the combination with a fixed member, having a segmental groove, and provided with an annular rim, of a movable member mounted to turn on the said fixed member, and provided with an annular edge adapted to rest on the said rim, a lug formed on the said movable member and fitting into the said segmental groove, a spring plate held on the said movable member, a washer held on the said spring plate and a bolt uniting the several parts, substantially as shown and described. 4th. A hinge, comprising a fixed member, having an apertured offset, provided with a concavity and a segmental groove, a movable member having an apertured convex offset fitting into the said concavity, a lug formed on the said offset and fitting into the said segmental groove, a spring plate held on the said movable member, a washer held on the said spring plate, and a bolt pressing through the said offsets spring plate and washer, substantially as shown and described. 5th. In a hinge, a fixed member having an apertured offset provided with a concavity and a segmental groove, in combination with a movable member having an apertured convex offset fitting into the said recess, a lug formed on the said offset and fitting into the said segmental groove, a spring plate held in recesses in the said movable member, a washer having a conical offset resting on the said spring plate, and a bolt passing through the offsets spring and washer, substantially as described.

No. 32,287. Hand Truck. (*Camion à bras.*)

William H. Berker, Philadelphia, Penn., U.S., 16th September, 1889; 5 years.

Claim.—1st. In a hand truck, a solid platform located above the axle of the wheels and between the latter, and extending both forwardly and rearwardly beyond the axial line, said platform consisting of a flat plate or casting without openings or interstices, substantially as shown and described. 2nd. In a hand truck, substantially as described, the combination, with the wheels and axle, of a horizontally arranged platform on either side thereof, which rests upon said axle and extends forwardly and rearwardly beyond the same, of handles secured to said platform behind the axial line of the wheels, as set forth. 3rd. In a hand truck, a platform, consisting of a flat plate having cast therewith and thereupon handle sockets, consisting of box-shaped recesses, the inner walls of which converge rearwardly towards each other, said sockets being located back of the axial line of the truck wheels, substantially as described. 4th. In a hand truck, the combination, with the wheels, of a bent axle upon which the same are mounted, and a horizontal platform mounted upon said axle and located below the axial line of said wheels, said platform consisting of a plate of large area, which extends forwardly as well as rearwardly beyond the axial line, substantially as described. 5th. In a hand truck, the combination, with the platform suspended be-

low the axial line of the wheels, and having vertical side walls of the U-shaped or bent axle having its bends or shouldered extensions located outside the marginal lines of the platform, substantially as described. 6th. In a hand truck, the combination, with the wheels and the bent or shouldered axle, of the platform suspended below the axial line, and having its horizontal portion and vertical walls coincidentally dotted for the accommodation of the axle bends or shouldered, substantially as described. 7th. In a hand truck, in which the platform is located above the axle, and extends rearwardly beyond the same, the combination, with said platform, of the handle sockets located back of the axial line, and having their inner washers convergent on a horizontal plane, substantially as described. 8th. In a hand truck, the combination, with the platform, of the handle sockets cast therewith and formed with front, rear and inner walls, said walls having their inner surfaces inclined and producing a recess, having its front and back walls inclined rearwardly and its inner walls at an acute angle with the surface of the platform, whereby the handles will be inclined rearwardly and towards each other, substantially as described. 9th. The combination with a hand truck platform located above and extending rearwardly beyond the axle, of handles secured to said platform and converging towards their upper ends, substantially as described. 10th. In a hand truck, the combination, with the platform and wheels, of the wheel guards secured to or cast integral with the platform and having laterally-extending flanges spanning the wheels concentrically, substantially as described.

No. 32,288. Lumber Trimming and Assorting Machine. (*Machine à recéper et assortir le bois.*)

Albert T. Linderman, Whitehall, Mich., U.S., 16th September, 1889; 5 years.

Claim.—1st. The combination, with a machine for trimming lumber, of a series of gauge keys G, G', substantially as described. 2nd. The combination, in a lumber trimming and assorting machine, of a conveyor E, e, a table a, a saw S and graduated openings r, substantially as described. 3rd. In lumber assorting machines, a conveyor n having an inclined bottom, an endless conveyor mechanism and graduated openings p in the inclined bottom of the conveyor, substantially as described. 4th. The combination, in a lumber trimming and assorting machine, of the conveyor E, e, the table a, gauge keys G, saw S, graduated openings r, conveyor trough n, m, and graduated openings p substantially as described.

No. 32,289. Process for Producing Color Printing Plates by means of several transparent layers, each of which is provided with the Painting or Drawing of only one of each of the required colors. (*Procédé pour produire des plaques d'impression en couleurs au moyen de plusieurs couches transparentes, dont chacune est pourvue de couleur ou dessin d'une seule des couleurs requises.*)

Maurice Wirths, New York, N.Y., U.S., 16th September, 1889; 15 years.

Claim.—The production of paintings or drawings in single colors on separate transparent layers, which, when laid one on another, will by means of their transparency represent a complete colored picture, and the application of the same in making press color printing plates for lithographic zinc plate, and photo-lithographic printing for wood-cut, copper plate, and steel plate printing for the Albotype, photo-type, photo-engraving, photo-gravure, zincographic, heliographic, autotype, and pigment printing processes, and for all press color printing in which printing plates created by means of photographic processes are used, substantially as and for the purpose set forth.

No. 32,290. Fire Escape. (*Sauveteur d'incendie.*)

Samuel H. Sprague and Isaac R. Swigart, Beloit, Kan., U.S., 16th September, 1889; 5 years.

Claim.—1st. The combination in a fire-escape of a suitable frame B having a shaft journalled therein, projecting bars d, d' carrying pulleys f, f', a brake bar I secured to the inner side of said frame and provided with a spring H, guide-bars i, i'; therefor, flexible connections F and F' wound in different direction upon the shaft, and provided at their ends with a cage and weight, and a flexible connection I' extending from the projecting end of the brake-lever into the cage, so that the descent of the cage can be regulated, the parts being organized substantially as shown and for the purpose set forth. 2nd. The combination, substantially as described, of the frame, the chain-drums fixed on a shaft journalled therein, and provided with carchains, the brake-drum fixed to the same shaft, and provided with peripheral recesses, the brake-bar overhanging the brake-drum and provided with a pull-rop, and a band secured to the brake-bar to encircle the brake-drum, and provided with a lug to engage the recesses in the drum.

No. 32,291. Process of Preserving Meats, more particularly those which are Treated or Cured by the Process of Smoking. (*Procédé de conservation des viandes, plus particulièrement celles préparées par la fumée.*)

John D. Reed, Boston, Mass., U.S., 16th September, 1889; 5 years.

Claim.—1st. In combination with a closed smoke-chamber, a furnace located therein, and provided with perforations in its top and

side for the escape of smoke, and the plate C supported upon and raised above said furnace, substantially as specified. 2nd. In apparatus for curing meat by simultaneously smoking and roasting a closed smoke-chamber D, the flue E inclined for purposes stated, the pipes G, H having dampers, and connecting said chamber and flue, combined with the furnace B interiorly of said chamber provided with smoke apertures d, d', grate b, the deflector plate C, and means for controlling the combustion of fuel, substantially as herein stated.

No. 32,292. Door and other Locks.

(*Serrure de porte et autres.*)

Niels G. Sörensen, Stockholm, Sweden, 16th September, 1889; 5 years.

Claim.—A lock consisting of a shell or casing with solid or latticed walls, in which is freely moved and guided, vertically or in an inclined direction, a bolt, the downward motion of which is effected by gravity, and determined by a pin or stud entering into a slot or groove in the shell, and of a cap provided with an inclined or horizontal plane, or only with an edge adapted for the bevelled bolt to slide upon, which cap being fixed on the corresponding door or other part to be locked has for its object to receive the bolt.

No. 32,293. Weather Strip. (*Bourrelet de porte.*)

John E. Jones, New York, N.Y., U.S., 16th September, 1889; 5 years.

Claim.—1st. A weather strip and spring composed of a narrow strip of spring metal set into the edge of the window sash, the outer edge a of the strip being held by spring pressure constantly against the window frame, substantially as described. 2nd. A weather strip composed of a strip of spring metal bent to form the diverging members b, b', substantially as described. 3rd. A weather strip composed of a narrow strip of spring metal bent to form the diverging members b, b', and the flange b₂, substantially as described. 4th. The sash A rabbetted to form the rib D₁ and space D, in combination with the weather strip B formed of a strip of metal bent to form diverging members b, b', substantially as described. 5th. The sash A rabbetted to form the rib D₁ and space D, and slotted at E, in combination with the weather strip B formed of a strip of metal bent to form diverging members, and the flange b₂, substantially as described.

No. 32,294. Horse Rake. (*Râteau à cheval.*)

Cyrille Martel, St. Theodore d'Acton, Qué., 16th September, 1889; 5 years.

Résumé.—1o. La manière de l'adapter à une faucheuse ordinaire en prolongeant l'essieu de cett faucheuse D, A, tel que décrit. 2o. La combinaison permettant un mouvement rotatoire au moyen d'un arbre A, B, tel que décrit et pour les fins indiquées. 3o. La combinaison permettant un mouvement vertical de droite et de gauche au moyen d'une liaison mobile C, entre la tongue du râteau (I F, et I' F, et I'') arbre A, B, tel que décrit ci-dessus et pour les fins indiquées. 4o. La combinaison du levier ou bras du râteau, permettant à la personne qui dirige la faucheuse de soulever et abaisser le râteau au besoin K H i, Fig. 4, tel que décrit.

No. 32,295. Safety Switch. (*Aiguille de sûreté.*)

Louis Dunn, Minneapolis, Minn., U.S., 17th September, 1889; 5 years.

Claim.—1st. The combination, with the rails of the main and side tracks and the switch rails, of the stationary rails 25 and 27 arranged between the rails of the side and main tracks, and extending from the rails of the side track toward the rails of the main track, and adapted to guide onto the main track a train passing into the space between the main and side tracks, substantially as described. 2nd. The combination, with the movable switch-rails, of the rails 3 and 1, with either of which said switch is adapted to connect, of the rail 25 extending from the outer side of one of the rails 3 to the inner side of the corresponding rail 1, and the rail 27 extending from the inner side of the other rail 3, the outer side of the other rail 1, substantially as described. 3rd. In combination with the rails 3 and 1, one of the said rails 1 being provided with the groove 28, of the rail 25 and 27 extending from said rail 3 to said rail 1, as described, and the switch adapted to connect with either said rails 3 or 1, substantially as described. 4th. The combination, with the switch rails 5, provided with the branch rails 9 and 11, of the rails 3 and 1, and the branch rails 25 and 27 extending from said rails 3 to said rails 1, all substantially as described.

No. 32,296. Plow. (*Charrue.*)

James Kingdon, Hamilton, Ont., 17th September, 1889; 5 years.

Claim.—1st. In a plow, the combination of the lever I pivoted to the right angle frame C at E and locked into the segment E', the rod K, the rigid bearing L, the angle bar J, the socket T, the arm S, wheel R, the arms N, with shank O the wheel M, the collar latch V, the socket lock X, and the double box P and P', substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a plow, of the lever D pivoted at E to the frame C, the segment D₁, the link F connected to the bent end of lever D, and to angle lever G and the wheel H, substantially as and for the purpose hereinbefore set forth. 3rd. The frame C secured to beam A, in combination with the levers D and I, segments D₁ and E₁, angle lever G, link F, wheels H, M and R, rod K, bearing L, bar J, arms N and S, double boxes P and P', socket T, hand screw U, and the latch V, with its socket lock X, substantially as and for the purpose hereinbefore set forth.

No. 32,297. Cork Screw. (*Tire-bouchon.*)

William N. Barrett, Meadville, Penn., U.S., 17th September, 1889; 5 years.

Claim.—The combination with the case C slotted at *c*, *c*, and the nut D carrying screw *d* in slot *c*, of the right and left screws E, E' on the same stem, the drive-hut F having outside rack *f*, and the toothed sector on lever G, whereby a corkscrew may be operated in the manner and for the purpose set forth.

No. 32,298. Combined Bedstead and Table. (*Couchette et table combinées.*)

George Bellamy, Shoal Lake, Man., 17th September, 1889; 5 years.

Claim.—The combination, with the standing frame A A B, of the bed frame C having a folding head and foot board D E, and a double bottom, the lower bottom N in two sections, one section hinged to the frame for use as a table, and said bed frame hinged to fold into the standing frame and counterbalanced by weights L, L, as set forth.

No. 32,299. Abdominal and Spinal Supporter. (*Suspensoir abdominal et vertébral.*)

Euphemia A. McLennan, Goderich, Ont., 17th September, 1889; 5 years.

Claim.—1st. The body A composed of the inner and outer layers, combined with the rigid and elastic strip B extending throughout the width of the body A, and serving to support the spine, substantially as and for the purpose described. 2nd. The body A composed of the inner and outer layers, and having the lacings attached to its ends, and having also the rigid and elastic strip B, substantially as and for the purpose set forth. 3rd. The combination, with the body A, of the pads E secured to the lower edge thereof so as to press upon the abdomen, and the bands F secured at their rear ends to the lower edge of the body A, and at their opposite ends to the front edges of said body, substantially as and for the purposes described. 4th. The combination, with the body A, of the loops G secured to the lower edges of the body by the short strap G1, and the bands E, as and for the purposes specified.

No. 32,300. Pipe Casing or Conduit.

(*Enveloppe de tuyau.*)

Arcalous Wyckoff and Earnest L. Wickoff, Elmira, N.Y., U.S., 17th September, 1889; 5 years.

Claim.—As a new article of manufacture, the herein described casing for pipes consisting of a tube composed of an inner and an outer shell, each built up of strips of wood united to form an hollow cylinder, and a layer of non-conducting material interposed between said shells.

No. 32,301. Heating Apparatus.

(*Appareil de chauffage.*)

Edward E. Gold, New York, N.Y., U.S., 17th September, 1889; 5 years.

Claim.—1st. In a heating apparatus for railway cars, the combination, with a heat-radiating liquid circulating system within the car, of means for applying heat to said system, either from a source of heat upon the car as a stove, or from a source of steam heat exterior to the car, as the locomotive, whereby, when the car is coupled in the train its circulating system may be heated by steam taken from the locomotive or exterior source of heat, and when the car is detached it may be heated by a stove or local source of heat, substantially as set forth. 2nd. In a heating apparatus for railway cars, the combination, with a heat-radiating liquid-circulating system within the car, of a compound heater for applying heat to said system either from a source of heat upon the car, or from a source of heat exterior to the car, consisting of a stove in heat-radiating contact, with part of said circulating system, and a steam-chamber or passage also in heat-radiating contact with part of said circulating system, and a steam-pipe leading to said steam-chamber and adapted to be connected with an external source of steam, substantially as set forth. 3rd. In a heating apparatus, the combination, with a water-coil and a steam-coil arranged one within the other, of a stove within which the double coil is placed, a source of steam connecting to the steam-coil, and a water-circulating system connected to the water coil, substantially as set forth. 4th. In a heating apparatus, the combination of a water-coil and a steam-coil arranged one within the other, a source of steam connecting to the steam-coil, and a water-circulating system connected to the water-coil, substantially as set forth. 5th. The combination, with the coil A and circuit-pipes a connecting to the terminals thereof, of the inner heating-coil D inclosed in coil A, with its ends projecting from the ends thereof, a source of steam connected to one end of said steam-coil, and a trap connected to the opposite end of the same, substantially as shown and described. 6th. The compound coils D, A, in combination with a stove B inclosing and arranged to heat said coils, water-circuit pipes a connecting to coil A, and a steam-supply pipe g connecting to one end of the coil D, with a valve *f* in the connection, and a trap *i* on the opposite end of the coil, substantially as herein shown and described.

No. 32,302. Steam Engine. (*Machine à vapeur.*)

James McAllister, Chippewa Lake, Mich., U.S., 17th September, 1889; 5 years.

Claim.—1st. The combination with a piston and a shaft mounted in proximity to the same, of a drum mounted in said piston, and a pin secured to said shaft and passing loosely through the drum, substantially as set forth. 2nd. The combination, with a piston having a

recess with diverging walls, and a shaft mounted in proximity to said piston, of a drum mounted in said piston, and a pin secured to the shaft and passing loosely through said drum, substantially as set forth. 3rd. The combination, with a piston and a shaft mounted in proximity thereto, of a drum mounted in said piston, a ring keyed to the shaft, and a pin projecting from said ring and passing loosely through the drum, substantially as set forth. 4th. In a steam engine, the combination, with a cylinder, having an opening with diverging walls, and a piston having a recess with diverging and curved walls, of a drum mounted in said piston, a shaft in proximity to the opening in the cylinder, and a pin secured to the shaft and passing through said opening and through an opening in the drum, substantially as set forth. 5th. In a steam engine, the combination, with a cylinder having an opening, and a piston in said cylinder having a recess with curved walls to produce bearing faces, of a drum having a central perforation mounted in the piston and adapted to oscillate on said bearing faces, a shaft mounted in proximity to the opening in the cylinder, and a pin secured to said shaft and passing through the openings in the cylinder and drum, substantially as set forth. 6th. The combination, with a cylinder having an opening therein, and a shaft mounted in proximity to said opening, of a piston in said cylinder, packing rings secured to said pistons, and heads secured to said rings, and a drum mounted in said piston and having a perforation and a pin secured to the shaft and passing through the drum, substantially as set forth. 7th. In a steam engine, the combination, with a cylinder and piston therein, of a drum mounted in said piston, a shaft carrying a crank arm mounted in proximity to and opening in said cylinder, and a pin secured to said shaft and passing through an opening in the drum, substantially as set forth. 8th. In a steam engine, the combination, with a cylinder and a piston therein, of a drum mounted in said piston, a shaft mounted in proximity to an opening in said cylinder, a pin secured to said shaft and passing through an opening in the drum, a crank arm at one end of said shaft, a second shaft carrying a crank arm, and a pitman connecting said crank arms, substantially as set forth. 9th. In a steam engine, the combination with a cylinder, a shaft mounted on bearings cast integral with said cylinder, and a piston, of a drum mounted in said piston, and a pin secured to the shaft and passing through an opening in the cylinder and through said drum, substantially as set forth.

No. 32,303. Hoof Expander.

(*Appareil pour élargir les sabots des animaux.*)

Frank K. Dowler, Jamestown, N. Y., U. S., 17th September, 1889; 5 years.

Claim.—1st. A V-shaped hoof-expander for use independent of the shoe, having spurs of the inner sides of its arms to engage the opposite sides of the frog, substantially as specified. 2nd. The herein described hoof expander, for use independent of the shoe, having the divergent arms B, B terminating at their rear ends in points E, E to engage the hoof, and provided at intermediate points with spurs G, G, to engage the opposite sides of the frog, substantially as and for the purpose specified.

No. 32,304. Camping Vehicle.

(*Voiture de campement.*)

Alonzo J. McMaster, Lockport, N.Y., U. S., 17th September, 1889; 5 years.

Claim.—1st. In a camping carriage, the combination of the swinging basin E, privy seat I and privy door i, substantially as and for the purpose described. 2nd. In a camping carriage, the combination of the drivers' seat *c*2 hinged at *c*3, seat box *c*1, oil stove *c*4, windows *c*7 and doors *c*5, substantially as and for the purpose described. 3rd. In a camping carriage, the combined arrangement of an ice box for wardrobe, drawer, chest, wash basin, privy, water tanks, seats and convertible sleeping berths, substantially as described. 4th. A camping carriage, having kitchen and toilet accommodations, provided with a portable sleeping cot, ladder and supports *n*, *n*1 for said ladder, said supports being constructed and arranged to permit the ladder to be adjusted beneath the carriage at a proper altitude for forming a sleeping cot between the ladder and the carriage bottom, substantially as described. 5th. A camping carriage, provided with a wardrobe, having a portable door with folding table legs attached to it, substantially as and for the purpose described.

No. 32,305. Combined Car Coupling and Air Brake Pipe Coupling. (*Attelage de chars et joint de tuyau de frein atmosphérique combinés.*)

Richard J. Edwards, Galena, Ill., U. S., 17th September, 1889; 5 years.

Claim.—1st. A draw-head, having cast integral with it depending ears *b*, *b*, substantially as described. 2nd. The combination, with the draw-bar and draw-head, of the coupling and ejecting pins, the pivoted lever E, the crank-shaft provided with a crank-arm J1 and an anti-friction roller journaled. 3rd. The combination, with the draw-head, of the coupling-pin, the sliding dog F, the lever H pivoted in a recess back of the mouth of the draw-head, and means for operating this lever H, substantially as described. 4th. The combination, with the draw-head, of the coupling and ejecting pins, the pivoted lever E, the dog F and lever H and a rod K pivotally connected to the lever E and adapted to operate the said lever H, substantially as specified. 5th. The combination of the car's transverse crank-shafts journaled upon the cars, conducting pipes upon the cars, provided with flexible hose-sections, pipe couplings on the ends of these flexible sections, these couplings being provided with interlocking lugs and upwardly-extending arms, and chains connecting the upwardly-extending arms with the respective crank-shafts on the cars, whereby the couplings may be uncoupled whether the car be in motion or at rest, substantially as described. 6th. The combination, with the crank shaft J provided with arm J1, of the conducting pipe provided with a stop-cock, this stop-cock being provided with an arm *b*11, substantially as described.

No. 32,306. Baling Press. (*Presse d'emballage.*)

Irving S. Moulthrop, Birmingham, Conn., U.S., 17th September, 1889; 5 years.

Claim.—1st. In a baling press, the combination of two longitudinal baling chambers and followers working alternately therein, a circular pulley journalled eccentrically in front of same, and a cord or wire connected to said pulley and the follower heads, all substantially as and for the purposes set forth. 2nd. The combination, with a baling chamber of a follower, an eccentrically journalled pulley in front of press, and a wire rope or chain secured to said pulley at a point farthest from its axis, passing through groove in the side of the chamber, and connected with one side of follower head, all as herein set forth. 3rd. In combination with the chambers C and D, the followers K and L constructed, arranged and operating substantially as described. 4th. In a baling press, the combination of the two longitudinal baling chambers C and D, bale chambers E and F, with side and top doors, pulley eccentrically journalled in brackets, and wire M, secured at *m* to pulley and to sides of heads K₂, L₂, all as and for the purposes described.

No. 32,307. Combined Plough and Pulverizer. (*Charrue et brise-motte combinés.*)

Sylvester T. Johnston, St. Louis, and Columbus Johnston, Clarksville, Mo., U.S., 17th September, 1889; 5 years.

Claim.—1st. The combination in a wheel plough, of the frame having the rearward extending bar E, the trailing wheel W supporting the rear end of said bar, the plough beam pivotal connections between the rear ends of the beam E and plough beam, the lever S pivotally secured to the frame and the link connecting the same to the front end of the plow beam, whereby the latter may be raised or lowered, substantially as described. 2nd. The combination in a wheel plough, of the frame to which the plough beam is connected, the shaft F journalled in said frame and having the traction wheel H, the pulverizer frame pivoted or hinged to the shaft, the shaft I₂ journalled to the pulverizer frame, and having the pulverizer and connections between the said pulverizer, and the shaft F to transmit rotary motion of the latter to the former, and the lever to raise or lower the pulverizer frame, substantially as described. 3rd. The combination in a wheel plough of the frame, having the driving shaft F provided with the gear wheel I, the pulverizer frame pivoted or hinged at one end to shaft F, and having the shaft C₂ and the shaft I₂, the pinion D₂ on shaft C₂, meshing with gear wheel I, the pulverizer attached to wheel I₂, the chain and pulley connections between the shafts C₂ and I₂, and the lever to raise and lower the free end of the pulverizer frame, substantially as described. 4th. The combination in a wheel plough, of the frame, the wheel H on one side of the frame, the standard K depending from the opposite side thereof, the arm L pivoted to said standard and having spindle M, the supporting furrow wheel N journalled on said spindle, the lever connections between the same, and arm L to raise and lower the latter, the rearward extending bar E and the furrow wheel W having the vertical shaft or support journalled to the rear end of bar E, substantially as described. 5th. The combination of the frame, having the rearward extending bar E, the diagonal bar L, connections between the bar L and the rear end of bar E, the plate or standard M depending from the rear end of bar L, the plough beam having its rear end pivoted to said plate or standard, and provided at the front end with the clevis, and the lever to raise and lower the front end of the plough beam, substantially as described. 6th. The combination in a wheel plough, of the frame having the supporting wheels of unequal diameters on opposite sides, and having the rearward extending arm, the tongue pivotally attached to the front end of the frame, the furrow wheel at the rear end of the arm, the plough beam having its rear end pivotally connected to the rear end of the arm, and having the clevis at its front end, and the lever to raise and lower the front end of the plough beam, substantially as described. 7th. The combination of the frame, having the rearward extending bar E, the travelling caster wheel W supporting the rear end of said bar, the wheels H and N of unequal diameter on opposite sides of the frames, the plough beam having its rear end pivotally connected to bar E, and the lever to raise and lower the front end of the plough beam, and the lever O and connections to raise and lower the wheel N, substantially as described. 8th. The frame, having the traction wheel H, the plain wheel N, the driving shaft or axle F for the traction wheel, the pulverizer driven thereby and the plough share and beam, the arrangement of the traction wheel on one side of the plough beam, obviating the use of a landside, as set forth. 9th. The frame, having the traction wheel H, the plain wheel N mounted on an independent bearing, the driving shaft or axle F for the wheel H, the pulverizer connected to the driving shaft, and the furrow wheel W running in rear of the plough in line with the furrow and obviating the use of a sole or heel to the plough, and the arrangement of the traction wheel H on one side of the plough, obviating the use of a landside to the plough, as set forth.

No. 32,308. Apparatus for Lining Journal Boxes. (*Appareil pour garnir les boîtes des tourillons.*)

George W. Topham, Boston, Mass., U.S., 17th September, 1889; 5 years.

Claim.—The herein described apparatus for lining axle boxes, consisting of a mandrel, against which the box to be lined is fastened, the surface of said mandrel adjacent to the box being shaped to correspond to the bearing surface of the finished box, combined with the removable piece *d*₂, which, together with the mandrel, determines the shape of the lining or anti-friction metal of the box, and which is to be removed after the anti-friction metal has been cast into the box to afford a recess for softer metal, which is to be cast into said recess upon the surface of the lining metal, substantially as described.

No. 32,309. Smoke Consuming Fire Device for Boilers. (*Appareil fumivore pour les chaudières.*)

Bernard Muller, Chemnitz, Germany, 17th September, 1889; 5 years.

Claim.—1st. In smoke consuming furnaces, the arrangement of lining the fire space or spaces in any suitable manner with fire bricks, and the feeding of the furnaces with fuel through openings arranged on the upper side of the furnace, which may be closed hermetically, substantially as described. 2nd. In smoke consuming furnaces, arranged, as claimed in claim 1, the arrangement of a number of fire or air admission doors *a*, valves *c* and valves *b*, in such a manner that one or more of the furnaces may be used, substantially as described.

No. 32,310. Ax Helve. (*Manche de hache.*)

Hiram Hall, Jr., Spruce Head, Me., U.S., 17th September, 1889; 5 years.

Claim.—1st. In an ax-helve, the combination of a chamber having outwardly-converging walls, and a saw-kerf extending inward from the bottom thereof, a bevelled nut disposed in said chamber, and a screw working in said nut, and provided with an oval or button-shaped head, substantially as described. 2nd. In an ax-helve, the helve A provided with the chamber *b* having converging walls *d*, the saw-kerf *f*, the nut D disposed in said chamber and the screw *h* working in said nut, and provided with the oval head *m*, all being combined and arranged to operate substantially as described.

No. 32,311. Nut Lock. (*Arrête-écrou.*)

Walter T. Ross, Québec, Qué., 17th September, 1889; 5 years.

Claim.—1st. N nut-locking washer having a straight edge base or blank A₁ below the bolt hole, and radial fingers F extending outwardly from around the upper part of the bolt hole, as set forth. 2nd. The combination, with the rails D, and fish-plate I, of the bolt H, nut J, and washer A having radial fingers F, one or more of said fingers bent against the edge of the nut to resist unscrewing, as set forth.

No. 32,312. Combined Tool and Tool Holder. (*Outil et porte-outil combinés.*)

William H. Laguire, Scottville, Mich., U.S., 17th September, 1889; 5 years.

Claim.—1st. In a combined tool and tool-holder, the combination of the lever pivoted in the direct line of the longitudinal axis of the cylinder, the central stem, the cylinder, the square adapted to receive dies and clamps, the pawl and ratchet-belt, all constructed and arranged to operate as and for the purpose shown and described.

No. 32,313. Butter Package.

(*Vaisseau pour le beurre.*)

Simeon Crittenden, Chatfield, Minn., U.S., 17th September, 1889; 5 years.

Claim.—1st. The combination of an earthenware jar or crock having an interior flange or shoulder, a cover placed upon the latter, the heads or caps having radially extending studs packing material interposed between the top and bottom of the jar, and said heads or caps, a layer of paper interposed between the cover of the jar, and the packing material and a fastening cord laced around the studs of the heads or caps, substantially as and for the purpose set forth. 2nd. The combination of the earthen jar, the telescoping paper wrappers or jackets surrounding the same, and having their ends interposed between the disks E, and their encircling hoops or rims composing the heads or caps, the studs extending radially from the latter, packing material placed between the top and bottom of the jar, and said heads or caps, a layer of paper interposed between the cover of the jar and the packing material, and a fastening cord laced around the studs of the caps or heads, substantially as and for the purpose set forth. 3rd. In a butter-package, the herein described heads or caps consisting of wooden disks having the telescoping paper or straw-board jackets, secured thereto by sheet-metal rims or hoops, and provided with radially extending studs, and a fastening cord laced around the studs, substantially as and for the purpose herein set forth. 4th. The combination, with a jar or similar breakable package, of the herein described heads or caps consisting of wooden disks, having the telescoping paper or straw-board jacket, secured thereto by sheet-metal rims or hoops, and having radially-extending studs and a fastening cord, substantially as and for the purpose herein shown and specified.

No. 32,314. Nut Lock. (*Arrête-écrou.*)

Walter T. Ross, Québec, Qué., 17th September, 1889; 5 years.

Claim.—The combination, with the bolts C, C and nuts D, D, of the plate A having a slot B at opposite ends, said ends extending beyond the nut and bent against it, as set forth.

No. 32,315. Feed Water Heater and Spark Arrester. (*Réchauffeur de l'eau d'alimentation et arrête-étincelle.*)

Charles Patticary, St. Thomas, Ont., 17th September, 1889; 5 years.

Claim.—1st. The combination of a drum or heater H and a coil, of pipe C placed in the front end of an engine boiler, in such a manner that the exhaust steam will pass through the drum or heater, and the water on its way to the boiler will pass through the coil, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with a drum or heater H and a coil, of pipe C for heat-

ing the water before it enters the boiler, and an exhaust pipe E passing through a reflector or damper D in such a manner that the said reflector or damper may be closed at the will of the operator, substantially as and for the purpose hereinbefore set forth.

No. 32,316. Dry Flour Paste.

(*Pâte sèche de farine.*)

John H. Day, Albany, N. Y., U.S., 17th September, 1889; 5 years.

Claim.—A new article of manufacture resulting from evaporating the moisture from liquid flour paste, composed of flour, glue and alcohol, and grinding the residue to a fine powder, substantially as described.

No. 32,317. Combination Tool.

(*Outil à combinaison.*)

Alexander Clarke and John F. Clarke, Essex Centre, Ont., 17th September, 1889; 5 years.

Claim.—1st. A combination tool herein described consisting of a supporting body provided with a series of tools having a jointed engagement therewith, the construction and arrangement being such that each tool of the series may be erected for use and turned out of the way when not in use, substantially as set forth. 2nd. A combination tool herein described consisting of a supporting body provided with a series of tools having a jointed connection therewith, and a spring to hold the tools in position for use, substantially as set forth. 3rd. A combination tool herein described consisting of a supporting body, a shank for engaging the tool in a bit-stock, a series of tools having a jointed engagement with said body, and a device to hold the tools in position for use, substantially as set forth. 4th. A combination tool herein described consisting of a supporting body, and a series of tools constructed with inwardly extended shoulders, said shoulders having a jointed engagement with said body, substantially as set forth. 5th. A combination tool herein described consisting of a supporting body, a shank, a series of tools having a jointed engagement with the body, and a spring latch to engage each of said tools, the end of said body constructed to receive a separable tool, substantially as set forth. 6th. A combination tool herein described consisting of a body, a shank engaged therewith, a ferrule and a series of tools jointly engaged with said body, substantially as set forth. 7th. A combination tool herein described consisting of a body formed of united jaws, a shank engaged with said body, and a series of tools having a jointed engagement with said body, substantially as set forth. 8th. The tool herein described consisting of a body formed with an open end having in combination therewith, a series of tools jointly engaged with said body, a shank to engage a bit-stock, and a separable tool engaged in the open end of said body, substantially as set forth. 9th. The tool herein described consisting of a body formed with an open end adapted to receive a separable tool, said body having in combination therewith, a series of tools jointly engaged with the body, a spring to hold the series of tools in an erect position, a shank to engage a bit-stock, and a ferrule, all constructed and arranged substantially as and in the manner described.

No. 32,318. Car Coupler. (*Attelage de chars.*)

Samuel Burgess and Fred Planke, Vincennes, Ind., U.S., 18th September, 1889; 5 years.

Claim.—1st. The combination, with slotted draw-head A, of shaft C₁ carrying cam disc C₂ and hand wheel C₄, longitudinal rod B pivoted at rear and carrying pin P at front, and spring S, substantially as set forth. 2nd. The combination, with draw-head A, shaft C₁ carrying cam-disc C₂, hand wheel C₄, pivoted rod B carrying pin P, and spring S, of gear-wheel C₃, vertically moving shaft E₁ carrying worm E₂, and hand wheel E₃, substantially as set forth.

No. 32,319. Steam Trap. (*Purge de vapeur.*)

William L. Blake, Portland, (assignee of Charles A. Carleton, Westbrook), Me., U.S., 19th September, 1889; 5 years.

Claim.—In a steam-trap, the combination of a steam-trap chamber provided with an inlet in its top, a dome secured within said steam-trap chamber opposite said inlet, two semi-annular valve chambers in the bottom of said body, connected by a circular valve opening, one of said valve chambers opening directly into the trap chamber, and the other being connected therewith by a circular valve opening, said valve openings being in alignment, a valve provided with annular flanges fitted to work in said valve openings, the inner surfaces of said flanges being on inclined planes so as to open, and close gradually, and a ball float on the stem of said valve disposed beneath said dome, substantially as described.

No. 32,320. Door Bell. (*Timbre de porte.*)

William B. Atkinson and Isaac H. Goodnight, Franklin, Ky., U.S., 18th September, 1889; 5 years.

Claim.—1st. In a door bell, the combination, with a revolving shaft having a crank, of a gong through which said shaft passes, and one or more hammers which are pivotally connected with said shaft, and arranged within the gong, substantially as shown and described, whereby the hammers are adapted to strike the gong when the shaft is rotated, as specified. 2nd. In a door bell, the combination, with a crank shaft having one end screw-threaded, and a gong mounted thereon, of a disk fixed on a tube which screws on said shaft, and hammers pivoted to the disk, substantially as shown and described, whereby said disk is adapted for adjustment lengthwise of a shaft, as specified. 3rd. In a door bell, the combination, with the rotating crank shaft, and a gong and disk mounted thereon, the disk being inclosed by the gong, of one or more hammers which are pivoted to the disk near its edge, and the stop-pins affixed to said disk on opposite sides of the hammer-pivots, as and for the purpose specified.

4th. In a door bell, the combination, with the rotating shaft, and a gong and disk mounted thereon, and the latter inclosed by the former of the hammers which are pivoted near the outer edge of said disk, as shown and described, whereby they are adapted to operate on the gong by gravity, as specified.

No. 32,321. Water Heater. (*Calorifère à eau.*)

William A. White, Staatsburgh, and D. E. Howat, Hyde Park, N. Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. In a sectional hot water heater, a flue or flues passing separately from between and near the top of the water-cells, and extending by means of outside smoke-bonnets through between the water-spaces in each upper section, to give a direct draft along the surface of the upper section water-cells, as and for the purpose described. 2nd. A sectional hot-water heater having the water-cells in all the upper sections K, K, directly above the deep water-cells H, H, which form the crown sheet of the fire-box, thus giving a clear open water-space vertically from the arch of the fire-box through and to the top of the boiler, including all the sections for the purpose of facilitating rapid circulation of the heated water, substantially as described. 3rd. A sectional hot-water heater constructed with continuous separate flues T, T, between the water-cells, and running lengthwise of each of the upper sections, and connected by outside smoke-bonnets to make a continuous draft, as and for the purpose described. 4th. In a hot water heater, the combination, of the deep water-cells forming the top of the fire-box with the short smoke-flues F, F passing only from the back of the fire-box through the water-leg to the outside continuous flue or smoke-bonnet, substantially as described. 5th. In a sectional hot-water heater, the combination of the water-cells H, H forming the arch of the fire-box, the short flues F, F leading to the smoke-bonnet, the flues T, T, and the smoke-bonnet W, W, all for the purpose of securing economical combustion, as described. 6th. A sectional hot water heater, consisting of a fire-box having an arch formed by deep water-cells H, H, the short flues F, F, and the flues of the upper sections T, T, smoke-bonnet F, F, and the water-cells A, A and B, B, substantially as and for the purpose described.

No. 32,322. Railroad Tie.

(*Traverse de chemin de fer.*)

Alden C. Nickloy and William W. Whitaker, Gloversville, N. Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. A metallic tie for railroads slitted spirally in the direction of its length, substantially as and for the purpose described. 2nd. A metallic tie for railroads constructed of a tubular helix, substantially as and for the purpose described. 3rd. A metallic tie for railroads, constructed of a tube slitted spirally in the direction of its length, and thereby adapted to yield longitudinally and transversely, substantially as and for the purpose described. 4th. A tubular metallic tie for railroads slitted spirally in a longitudinally direction, and having a flattened rail-receiving surface, substantially as and for the purpose described.

No. 32,323. Railway Switch.

(*Aiguille de chemin de fer.*)

Gustavus N. Reiff and Charles H. Koyl, Easton, Penn., U.S., 18th September, 1889; 5 years.

Claim.—1st. The combination of a detector-bar arranged by the side of a railway-rail, the toggle-levers supporting the same, and vertical guides for the detector-bar, with a switch-operating device and connections between the same, and the toggle-levers to move them when the switch is unlocked, substantially as described. 2nd. The combination of a detector-bar arranged by the side of a railway-rail, the toggle-levers supporting the same, and a slide-bar to which the toggle-levers are connected with a switch-operating mechanism, and connections between the same and the said slide-bar, substantially as set forth. 3rd. The combination of a detector-bar arranged by the side of a railway-rail, and carrying the anti-friction rollers E, the pivoted supports for the bar, the guides with which the said rollers engage, and means for moving the supports for the bar when the switch is unlocked, and before the switch is operated, substantially as set forth. 4th. The combination of a vertically-movable detector-bar arranged by the side of a railway-rail, the toggle-levers, the bars of which are fulcrumed respectively to the detector-bar, and to stationary supports below the inner ends of the lever-bars are pivoted, substantially as set forth. 5th. The combination of the vertically movable bar A carrying the rollers E arranged by the side of a railway-rail, the brackets D secured to the rail and having the vertical guides d with which the said rollers engage, the toggle-levers fulcrumed respectively in the said bar and bracket, and the slide-bar b to which the toggle-levers are pivoted, substantially as set forth.

No. 32,324. Saw Gummer. (*Evideur des scies.*)

James F. Brower, Rodney, and Orange M. Clark, Big Rapids, Mich., U.S., 18th September, 1889; 5 years.

Claim.—1st. In a saw-gummer, the combination, with the bed provided with the bed-die, of a guide-arm having the vertical bearing, and the punch adapted to have a vertical motion in said bearing, and provided at its lower end with a die having an inclined bottom and a stop, substantially as described. 2nd. In a saw-gummer, the combination, with a bed-die, of the extension C, guide-arm D having a vertical bearing E, punch F having a shoulder e, die b, and an inclined edge c, whereby a shearing cut is obtained, and a stop, the parts being arranged to operate, substantially as and for the purpose described.

No. 32,325. Automatic Sprinkler.*(Arrosoir automatique.)*

Joseph Clapp, Evanstown, and Palmer A. Montgomery, Chicago, Ill., U.S., 18th September, 1889; 5 years.

Claim.—1st. The combination with the cap and frame of an automatic sprinkler, of a separable intervening post having a member tapered to pivotally bear upon the axis of the cap, the body of which member is extended laterally from said axis, a secondary member having one end resting against the frame and the other provided with a positive eccentric point of bearing upon said first member, the main body of one of said members being enclosed within the other and having their continuous surfaces united by means of fusible solder, whereby, upon the yielding of the solder from heat, said surfaces may slide laterally upon each other in the arc of a circle, the centre of which is said eccentric point of bearing, substantially as shown and described. 2nd. In an automatic sprinkler, a sectional sheet-metal post for normally holding the cap in position, consisting of independent members of lesser length than the entire length of the post, the body of the members forming one section of said post having radial flanges extending from the axis thereof, one of said members being partially enclosed within the other, fusible solder for uniting the contiguous surfaces of said members, and positive pivotal points of bearing therein eccentric to said axis, substantially as shown and described. 3rd. The combination, with the cap and frame of an automatic fire-extinguisher, of a sectional cap-holding post consisting of two independent sheet-metal members tapered to a point at, and having a bearing upon the axis of, the cap, one or more members soldered thereto to form the remainder of the post which rests against the frame, and bearings or rests upon said tapered members eccentric to the axis thereof, substantially as shown and described. 4th. In an automatic sprinkler, a sectional sheet-metal post for normally holding the cap in position, consisting of two independent members of less length than the entire length of the post, pointed to meet and bear in common upon the axis of the cap, the bodies of which members extend laterally from said axis, one or more secondary members attached thereto with fusible solder and having eccentric points of bearing thereon, substantially as shown and described.

No. 32,326. Grain Drill. *(Semoir en ligne)*

Charles E. Patric, (co-inventor with Frank R. Packham), Springfield Ohio, U.S., 18th September, 1889; 5 years.

Claim.—1st. The combination, with a shoe, of a wheel journalled in a hanger which is pivoted to the front of said shoe, a rib or flange on the rear of said shoe, and a guide on said hanger adapted to travel alongside of said flange, substantially as specified. 2nd. The combination, with a shoe, of a wheel journalled in a hanger pivoted to the front of said shoe, a rib or flange on the rear portion of said shoe, a guide on said hanger adapted to embrace said flange, and means, substantially as described, for connecting said hanger to said flange in different positions of adjustment. 3rd. The combination, in a grain drill, of a shoe attached by drag-bars to the main frame of said drill, and a wheel journalled in a hanger pivoted to said shoe, the centres of the connections between said frame and shoe, and said shoe and wheel being such that the bottom of the shoe shall stand below said wheel when said connections are in a straight line, substantially as specified. 4th. The combination in a grain drill, with a shoe having a drag bar attached to the frame, of a wheel journalled in a hanger pivoted to said shoe, so that the connecting points between the shoe and the frame, and the shoe and wheel, shall be in a straight line when the shoe is slightly below said wheel, and means, substantially as described, for adjusting the frame of the drill to change the position of the point of attachment between the drag-bar and frame, substantially as specified. 5th. The combination, with a shoe, of a gaging and pressing attachment pivoted thereto, and provided with a rigid bearing-support, a pressure bar with stirrups and springs, as described, and a connecting bar from said springs, and stirrups to said presser attachment, means for connecting said presser attachment rigidly to said shoe, and means, substantially as described, for adjusting the position of said connecting bar on said bearing support, substantially as specified. 6th. The combination, with a shoe, of a gaging and pressing attachment pivoted thereto, a flange on said shoe having a series of openings through which said pressing attachment may be attached to said shoe in different positions of adjustment, and a bearing support on said pressing attachment having a series of openings, whereby the lifting and pressure bar may be connected by different positions to said pressing attachment, substantially as specified. 7th. The combination, with the pressure bar, and lifting levers adapted to operate the same, of the stirrups and springs thereon, said stirrups being formed in two parts having the hooked-shaped ends adapted to be slipped over said pressure-bar, substantially as specified. 8th. The combination, with the pressure bar, and lifting lever adapted to operate the same, stirrups on the said bar, springs about the said stirrups, and shoes under said stirrups, of connecting-bars attached to said stirrups and to said shoes, and means, substantially as described, for adjusting said connecting bars with reference to said stirrups to move the shoes to or from the pressure bar without changing the tension of the said springs, substantially as specified. 9th. The combination, with the pressure-bar, the stirrups thereon, and the springs about said stirrups, at right angles to said pressure-bar, of sleeves on said pressure-bar, each provided with end flanges thereon, adapted to separate the said stirrups and engage in the ends of said springs and hold the same in position about said stirrups, substantially as specified. 10th. The combination, with a series of grain-drill shoes, and a pressure-bar connected thereto, of the rocker-arms attached to said pressure-bar, one of said arms being provided with gear teeth thereon, a lifting-lever having a segment of gear teeth adapted to engage with the teeth on said rocker-arm, and a ratchet stand on which said lever is journalled, substantially as and for the purpose set forth. 11th. The combination, in a grain-drill, of the lifting-lever and pressure-bar, said lever being provided with a segment adapted to engage with teeth on the arm of said pressure-bar, a ratchet stand secured to the hopper and adapted to support said lifting-lever and bar, and a sleeve

and connecting bolt extending from said ratchet stand to the drill frame, substantially as specified. 12th. The combination, with the drill frame and hopper, of a ratchet stand secured to said hopper adapted to support the lifting-lever, a brace from said frame connected through said hopper to said ratchet stand, a sleeve between said frame and ratchet stand below said hopper, and a bolt or rod connecting said frame and ratchet stand through said sleeve, substantially as specified. 13th. The combination, with the shoes having the drag-bars attached rigidly thereto at one end, so as to project at an angle, as described, of the trunnions on the frame to which said drag-bars are adapted to be attached, said bars being formed of resilient metal and adapted to spring over said trunnions, substantially as specified. 14th. The combination, with the shoes having the angular faces to which the drag-bars are attached, of the drag-bars formed of resilient metal secured to said angular faces, so as to project at an angle, as described, and trunnions on the main frame with which said bars are adapted to engage, said bars being held in position on said trunnions by the resilience thereof, substantially as set forth. 15th. The combination, with the hopper, and ratchet stand attached thereto, of the pressure-bars having crank arms at either end thereof, one of the crank arms of each bar being journalled to the said ratchet stand and provided with gear teeth, the lifting-levers having gear teeth adapted to engage the teeth in said crank-arms, stirrups on said pressure-bars, springs on said stirrups, and connecting rods from said stirrups to the shoes, substantially as set forth. 16th. The combination, with a pressure-bar and its operating lever, of the stirrups formed in two parts of resilient metal, springs on said stirrups, sleeves on said pressure-bar between said stirrups, said sleeves having flanges at the ends adapted to engage said springs and connecting rods from said stirrups to the drill-shoes, substantially as set forth. 17th. The combination, in a grain-drill, of a shoe with a pressing and gaging wheel attached to and adapted to follow said shoe, a hanger in which said wheel is journalled having a bearing support connected rigidly to said hanger over said wheel, variable pressure springs over said hanger, and means for connecting said springs to said bearing support at different points, substantially as specified. 18th. The combination, with a shoe having a gauge, and pressing attachment pivoted thereto, of a pressure bar having a stirrup and spring thereon above said pressing attachment, and an independent bar connecting said pressing attachment to said stirrup, whereby said pressing attachment may be adjusted to or from said pressure-bar without changing the tension of said springs, said connecting bar being provided with a series of openings adapted to receive a connecting pin or bolt which secures the same to the said stirrup, substantially as specified. 19th. The combination, with a series of grain-drill hoes, and a pressure-bar having the stirrups and springs arranged above said hoes, one stirrup and spring for each hoe, of independent bars connecting said stirrups to the respective hoes, and means, substantially as described, for changing the point of connection between the respective stirrups and bars, to adjust the hoes to or from the pressure-bar without changing the tension of the springs, substantially as and for the purpose set forth.

No. 32,327. Hydro-Carbon Burner.*(Foyer à hydrocarbures.)*

The Mascotte Burner and Oil Company, Cleveland, (assignee of Charles H. Phelps, Cleveland, and Evan A. Edwards, Toledo), Ohio, U.S., 18th September, 1889; 5 years.

Claim.—1st. In a hydro-carbon burner, a burner plate, an oil pipe passing through and extending above the same, in combination with an upper plate formed with an annular chamber into which the oil pipe discharges, as and for the purpose set forth. 2nd. In a hydro-carbon burner, a burner plate formed with a downwardly-extending portion provided with a ledge, an upper plate sustained at some distance therefrom formed with a correspondingly downward-extending portion, in combination with an oil supply pipe extending through the lower plate and into a dome or retort formed in the upper plate, as and for the purpose set forth. 3rd. A hydro-carbon burner comprising a base portion, a base plate formed with an upwardly inclined outer edge, and an upturned inner edge, in combination with two parallel burner plates having downwardly inclined portions, and an oil supply pipe in communication with the space between the burner plates, as and for the purpose set forth.

No. 32,328. Cape Collar. *(Colerette.)*

Noel E. Powers, Landsingburgh, and Wilbur, Milbr and Wilbur, Troy, N.Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. A cape collar, consisting of the collar proper, formed of a plurality of approximately straight edge plies, one of which plies extends below the bottom edge of such collar proper, and the cape formed of a ply of fabric, having its inner edge concave or curved, all of said plies being fastened together by a line of stitching along the lower straight edge of the collar proper and the inner curved edge of the cape, the extended collar ply lapping the cape and having its lapping portion notched and secured to the cape body by a line of stitching along the edge of the lapping ply, substantially as described. 2nd. In a cape collar, the combination, with the collar part having an approximately straight edge, and the cape part having a concave edge, such parts being secured together by a line of stitching along such edges, of a reinforce strip having its longitudinal edges cut on the bias, approximately straight and parallel with each other, secured to the collar part by a line of stitching along one of such edges, and to the cape part by another line of stitching along the other of such edges. 3rd. A cape collar, consisting of the collar proper formed of a plurality of approximately straight edge plies, one of which plies extends below the bottom edge of such collar proper, and is composed of two approximately straight edge strips of fabric united with each other along one edge, the strip forming the extended or cape lapping portion of the ply being cut on the bias, and the cape formed of a ply of fabric, having its inner edge concave or curved, all of said plies being fastened together by a line of stitching along the lower straight edge of the collar proper and the inner curved edge of the cape, the extended collar ply lapping the cape and having its lapping edge secured to the cape body by a line of stitching along the edge of the lapping ply, substantially as described.

No. 32,329. Equalizer for Tripletrees.*(Volée d'arrière.)*

Phelps Evans, Bondhead, Ont., 18th September, 1889; 5 years.

Claim.—1st. A lever B extending across the tongue A, and having a whiffletree C connected at one end, in combination with the rod E pivoted on the lever B and extending diagonally across the tongue A until it connects with the machine on which the tongue A is attached, substantially as and for the purpose specified. 2nd. A lever B extending across the tongue A and having a whiffletree C connected to it at one end, and at its opposite end a rod E, which extends diagonally across the tongue A until it connects with the machine on which the tongue A is attached, in combination with the lever I connected at one end to the doubletree F by the rod H, and at its other end to the lever B by the rod J, substantially as and for the purpose specified.

No. 32,330. Screen for Car Windows and the like. *(Store pour les fenêtres des chars et autres.)*

James R. Steel, Henry L. Penny and Frederiek H. Morehouse, Montreal, Que., 18th September, 1889; 5 years.

Claim.—The combination, with a lifting sash, of a gauge or like screen attached at one end to lower rail of such sash, a spring cylinder to which other end of screen is secured, and a casing enclosing same, all substantially as herein set forth.

No. 32,331. Washing Machine.*(Machine à blanchir.)*

Hiram H. Gifford, Roscommon, Mich., U.S., 18th September, 1889; 5 years.

Claim.—1st. In a washing machine, the combination, with a body having ports in the bottom thereof, and a cylinder suspended beneath the bottom of the body and connected with the said ports, of a piston held to slide in the cylinder, provided with a piston rod extending through one end of the said cylinder, and a lever connected with the outer end of the said piston rod, substantially as shown and described. 2nd. In a washing machine, the combination with a body having ports formed in the bottom thereof, and provided with a transverse partition separating the ports, of a cylinder held beneath the bottom of the body and connected with the ports of the latter, a piston held to reciprocate in the cylinder provided with a piston rod projecting through one end thereof, and a lever fulcrumed upon the body connected with the said piston rod, all combined for operation substantially as shown and described. 3rd. In a washing machine, the combination, with a body provided with a partition secured to the bottom dividing the same into two compartments, a port formed in each of the said compartments, and a cylinder supported beneath the said body, connected with the ports of the body of a piston held to reciprocate in the cylinder, provided with an attached rod extending through one end of the same, a lever fulcrumed to the body and connected with the piston rod, and a perforated false bottom supported a distance above the main bottom of the body in each of the compartments formed therein, substantially as and for the purpose specified.

No. 32,332. Means for Locking Nuts and Bolts and Set Screws. *(Moyens pour arrêter les écrous et boulons et les vis d'arrêt.)*

Thomas B. Grant, Holborn, Eng., 18th September, 1889; 5 years.

Claim.—1st. The herein described method of locking a nut or screw by the flattening of the bent segments of a dished washer placed under the nut or screw head, and engaged with the nut, or in a recess in such manner that the washer in being flattened, is made to grip the bolt or screw, and the nut or screw head is thus prevented from being turned by vibration. 2nd. For the purpose of locking a nut on a bolt, the combination, with a nut and bolt, of a dished segmental washer, substantially as described, with reference to Figures 1 to 9 inclusive of the accompanying drawings. 3rd. For the purpose of locking a screw, the combination, with the screw head, of a dished segmental washer engaged in a recess or groove, substantially as described with reference to Figure 10. 4th. In combination with a bolt and with a bossed nut, a washer having segments dished in both directions, substantially as described with reference to Figures 11, 12 and 13.

No. 32,333. Washing Machine.*(Machine à blanchir.)*

James L. Weir, Chatham, Ont., 18th September, 1889; 5 years.

Claim.—1st. A washing machine, having rubbers B and C, whose facing surfaces are flat and parallel to each other and corrugated, the top rubber B being laid off in sections, having corrugations running angular to the corrugations of the adjacent sections, the said top rubber B being connected with the crank E by the shaft D, running through the cover H, supporting the bearing G, in combination with a circular vessel A, having a flat and corrugated bottom C, the corrugations being parallel to each other, the said corrugated bottom being the bottom rubber C, all substantially as specified. 2nd. In a washing machine, a circular vessel, as A, having a corrugated bottom, said corrugated bottom being the bottom rubber C, substantially as specified.

No. 32,334. Telephone Call Box.*(Boîte d'appel téléphonique.)*

Amenzo Griffith, Springfield, Henry A. Burbank Westfield, and William H. Jordan, Springfield, Mass., U. S., 18th September, 1889; 5 years.

Claim.—1st. In a telephone call box, the combination, with the

magneto-operating shaft, provided with the ratchet-wheel, the enlarged wall surrounding a portion of said shaft and the swinging receiver holder arm of an involute spring by its inner end secured to said shaft, and having its outer end free for a spring bearing on said wall, substantially as described, and a pawl normally located for engagement with said ratchet wheel, and means actuated by said holder arm, whereby, on the downward movement thereof, said pawl will be thrown out of engagement with said ratchet, for the purpose described. 2nd. In combination, the magneto shaft adapted to have a spring reversed rotation, and detent devices adapted normally to prevent such reversal, the short circuit spring and its contact pin, the swinging receiver holder arm and movable connections actuated by the said holder arm and in engagement with said arm, and said short circuit spring, and also with said detent devices, whereby, on the downward movement of the said holder arm, said spring will be drawn from its contacting pin, and said magneto shaft will be freed for its reverse rotation, substantially as described. 3rd. In a telephone call box, the combination, with the magneto-operating shaft, having the ratchet-wheel thereon, the enlarged surrounding wall and the swinging receiver holder arm, of an involute spring, by its inner end secured to said shaft and having its outer end free for a spring bearing on said wall, a sliding shaft, having a spring pawl thereon, normally located for engagement with said ratchet, and provided with a stud 22 and a toothed wheel and spring pawl therefor carried by said swinging arm, and located in relation to said shaft stud, substantially as described, whereby, on the upward movement of the said holder arm, said toothed wheel will produce no effect on said slide shaft, but on the downward movement thereof said shaft will be moved longitudinally to carry said pawl out of a position for engagement with said ratchet, substantially as described. 4th. The combination, with the magneto-shaft, having the ratchet, the surrounding circular wall and the involute spring, substantially as described, and the holder arm of the slide shaft having the stud 22 and pin 18 thereon, and guiding lugs therefor, the pawl loosely fitted on the end portion of the slide shaft, having the slot 19 engaging said slide shaft, the spiral spring 20 applied between and secured to a guide lug, and said pawl for exerting an outward pressure on said pawl and slide shaft, and a pressure on said pawl, for a partial rotation thereof on its shaft, and the toothed wheel and spring pawl therefor carried by said holder arm, and arranged for operation on and with relation to said shaft stud 22, substantially as and for the purpose described. 5th. The combination, with the guiding lugs a and b, the latter having the right angled extension with the longitudinal slot therein, of the slide shaft D for carrying the spring pawl provided with the pin 23 and the sleeves 21 and 22, the former bearing on the walls of said slot, substantially as and for the purpose described. 6th. The combination, with the short-circuit contact-spring g and the contacting part i therefor, and the swinging receiver holder arm, of the slide shaft D having an abutment 32, mechanism, substantially as described, interposed between said holder-arm and said slide-shaft to secure a longitudinal slide of the latter on the downward movement of the former, an intermediately pivoted tilting lever, having one end in engagement with said abutment for being secured thereby, and a connecting rod between the other end of said lever and said contact spring g for drawing same away from its contacting part on the swinging of said lever in one direction, substantially as described. 7th. The combination, with the contact spring g having an aperture 37 therein, and the tilting lever l intermediately pivoted and having an aperture 34 in one arm thereof, of the connecting rod m by one end portion passing through the spring aperture 37, and headed thereat, and at its other end portion passing through the lever arm aperture 34 and screw-threaded end, the adjusting cheek nut 35, substantially as and for the purposes described. 8th. In a telephone call box, the magneto-shaft A provided with the ratchet wheel and the enlarged circular wall surrounding a portion of said shaft, the involute spring by its inner end secured to said shaft, and by its outer end in spring bearing on said wall, the swinging receiver holder door and the short circuit contact spring g and its contacting button i, combined with a sliding shaft having a spring pawl normally located for engagement with said ratchet, and provided with a stud 22 and abutment 32, a toothed wheel and spring pawl therefor, carried by said swinging arm and located in relation to said shaft for the operation on said slide shaft, as described, an intermediately pivoted tilting lever l, by one arm in position to be engaged by said slide rod abutment 32 and a connecting rod m between and in engagement with the other arm of said lever and said contact spring g, all substantially as and for the purpose described. 9th. In a telephone call box, the combination, with the swinging lever E, of the lever G separately pivoted by its one end on the box and engaging said lever by an intermediate portion thereof, which is nearer said pivoted point than its outer end, substantially as and for the purpose described.

No. 32,335. Process of Treating Metallic Tubing to Convert it into Ornamental Spheroidal and Analogous Forms. *(Procédé de traitement du tubing pour le convertir en objets d'ornement sphéroïdes et autrement.)*

John Burkhardt and William H. Jackson and Company, New York, N.Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. The process herein described of treating metallic tubing to convert it into ornamental spheroidal and analogous forms, which consists in placing sections of such tubing between pairs of dies and compressing said tube in the dies axially, substantially as described. 2nd. The process described, of embellishing metal bodies, consisting of the interposition of flexible metal jackets embodying ornamental designs in relief between such metallic bodies, and the dies employed for forming the same, and compressing said bodies and jackets by means of a press, as set forth. 3rd. The process described, of attaching stems, rods or sections of railing to concavo-convex metallic bodies, consisting of the compression of the metal of such bodies around the stems, rods or railings during the operation of forming such metallic bodies, as set forth.

No. 32,336. Method of Making Striped Paper Bags. (*Mode fabrication des sacs de papier barrés.*)

Kilgour Bros., Toronto, Ont., (assignees of Charles A. Dean and Frederick H. Robie, Boston, Mass., U.S.), 18th September, 1889; 5 years.

Claim.—The method of making striped paper bags herein disclosed, which consists in striping and simultaneously drying one side of a web, and subsequently and continuously conducting said web to and through bag-forming mechanism.

No. 32,337. Hot Water Heating Apparatus. (*Calorifère à eau.*)

The Boynton Furnace Company, (assignee of Nathaniel A. Boynton,) New York, N.Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. In a hot-water heating-apparatus, a transversely placed water-section which extends from side to side of the heater, and which has two distinct sinuous water-passages, each of which extends from the lower to the upper extremity of such heating-apparatus. 2nd. In a hot-water heating apparatus, a water-section which extends from side to side of such apparatus, which is provided with vertical water-passages and with horizontal water-passages, and which is provided also with right and left vertical partitions, which separate such vertical and horizontal water-passages into two distinct series of passages, each series of which embraces both vertical and horizontal water-passages, substantially as described. 3rd. In a hot-water heating apparatus, the combination, with the intermediate water-sections and having exterior vertical water-passages, and each having horizontal water-passages, as a^{20} , a^{21} , which extend inwardly from such exterior vertical water-passages, of the rear closing section A¹ provided with eccentrically placed smoke-exit opening a^2 , substantially as and for the purposes set forth. 4th. A hot-water heating apparatus in which the water-heater is composed essentially of a front closing section, a rear closing section, and a series of intermediate water-sections, each of which has right and left vertical water-passages or legs, which constitute the side walls of the fuel-chamber, vertical passages above such side wall passages, horizontal water-passages which extend inwardly from such higher vertical passages, and lateral reduced or cut-away portions beyond the inner extremity of such horizontal passages, which together constitute vertical smoke-passages between lower and upper smoke-spaces, the front and rear closing sections and the sections between them being secured together, substantially as specified. 5th. In a hot-water heating apparatus, the series of water-circulating sections A¹ and A², each provided with the web-like strengthening and retarding ribs a^{23} and a^{24} , extending along both the vertical and the transverse portions of such sections, as described and shown. 6th. In a hot-water heating apparatus, the combination, with the intermediate water-sections, of the rear-closing water section communicating on either side at top and bottom with such intermediate water-sections, and provided with a smoke-flue which extends longitudinally through such closing-section. 7th. In a hot-water heating apparatus, the combination, with the intermediate water-sections, of the rear-closing water-section having a transverse water-passage at top and at bottom, and a series of intermediate vertical tubular water-passages which connect such top and bottom transverse water-passages. 8th. In a hot-water heating apparatus, the combination, with the central or intermediate water-sections, of the front-closing water-section provided with a clearing-opening and with a fuel-supply opening, and having right and left vertical water-passages, top, bottom and intermediate transverse or horizontal water-passages, and rear openings which are coincident with the longitudinal water-passages of the intermediate water-sections.

No. 32,338. Farm Waggon. (*Wagon de ferme.*)

John Herby and Milo Harris, Jamestown, N.Y., U.S., 18th September, 1889; 5 years.

Claim.—1st. In farm waggons, connecting the reach to the kingbolt at three different points, one being above the sand board, and one below the axle, substantially as shown and for the purpose set forth. 2nd. In farm waggons, braces bent near their rear end and securely attached to the reach, the upper one passing into a recess in the bolster, and provided with a hole through which the king-bolt passes, the under brace passing below the axle and having a hole to receive the kingbolt, substantially as shown and for the purpose set forth. 3rd. In farm-waggons, braces bent near their rear end and securely attached to the reach, the front end of upper brace passing into a recess or gain, or the under side of bolster and over a metal plate securely attached thereto, and provided with a hole to receive a king-bolt, the under brace passing under the axle and over a metal plate which is securely attached to said axle, having a hole to receive a kingbolt, substantially as shown and for the purpose set forth. 4th. In farm waggons, in combination with the kingbolt of a wagon, braces a , a , recess R connecting clips b , b , plate c , all being constructed to operate in the manner and for the purpose set forth.

No. 32,339. Fifth Wheel. (*Rond d'avant-train.*)

John W. Anderson, (co-inventor with Samuel B. Cox), Lancaster, Penn., U.S., 18th September, 1889; 5 years.

Claim.—1st. The combination, with the perch, of the plate A, having a rearwardly extending arm L provided with a hook r formed on the lower side thereof, the axle plate B, the perch-plate having the clip f which engages the peripheries of the plates A and B, the rearwardly extending arm R, of the axle-plate provided with a flange or lip b , which is engaged by the hook r , and the king-bolt, all constructed and operating substantially as described. 2nd. The combination, in a fifth-wheel, of the plate L, having a stud S formed thereon, and

the rearwardly extending arm R, of the axle plate, provided with a tapering socket adapted to receive the stud S, and the wedge-shaped packing ring, and a washer constructed to fit against the same, substantially as and for the purpose specified. 3rd. The combination, in a fifth-wheel, of the plate L, having a stud S formed thereon, the rearwardly extending arm R of the axle plate provided with a socket adapted to receive the stud S, the wedge-shaped packing ring and washers constructed to fit against the same, and the stay-plate K having a projection formed thereon adapted to bear against the washer, substantially as and for the purpose specified.

No. 32,340. Photographic Negative and Sensitized Plate for use in Photo-illustrative Processes. (*Négatif et plaque sensibilisée photographiques pour servir dans les procédés de photo-illustration.*)

Herbert Deveril and William Gallagher, Sydney, N.S.W., 18th September, 1889; 5 years.

Claim.—1st. A sensitized photographic plate having upon it latent dots or marks which, during development, become and afterwards remain opaque, or semi-opaque, or non-actinic, substantially as herein described and explained. 2nd. A photographic gelatine negative having, upon or within the developed picture, superinduced opaque, or semi-opaque, or non-actinic dots or marks, substantially as herein described and explained. 3rd. A sensitized photographic plate for the obtaining of negatives for photo-illustrative processes prepared in the ordinary manner and before or after exposure in a camera by an exposure to light under a "mater" or non-actinic sheet, having transparent or semi-transparent dots or marks, substantially as herein described and explained. 4th. A photographic gelatine negative for photo-illustrative process prepared by converting minute portions, or dots, or marks of an ordinary photographic negative into a substance insoluble in water, and preferably by treating such negative with bichromate of potash, and exposing it to light under a "mater" or non-actinic sheet, having transparent or semi-transparent dots or marks, substantially as herein described and explained.

No. 32,341. Apparatus for Mixing Liquid and Powdered Substances, and for Filling Bottles and other Receptacles therewith. (*Appareil pour mélanger les corps liquides et pulvérisés, et en remplir les bouteilles et autres réceptacles.*)

Benjamin D. Milliken, Somerville, Mass., U.S., 19th September, 1889; 5 years.

Claim.—1st. An organized apparatus having three essential co-acting features, to wit: A revolving agitator or mixer provided with blades and located in a tank, for incorporating various liquid or powdered ingredients, or both, together, a strainer for eliminating impurities therefrom, and a reciprocating device consisting of one or more cups for filling bottles, etc., the several features operating simultaneously and continuously, as described. 2nd. A tank A provided with blades C, a revolving shaft B carrying a series of arms provided with blades C, and a strainer P located in said tank, in combination with one or more reciprocating cups M, each of the same capacity of a bottle to be filled thereby, a number of spouts N corresponding to the number of filling cups, and a mechanism located between and connected with the filling cups and the shaft of the agitator, and by which the motion of the shaft is periodically imparted to the cups, as and for the purpose set forth. 3rd. The tank A with a slot p in its top, a strainer P located in the tank, one or more filling cups M pivoted to a reciprocating cross-head T, a series of levers connected with the cross-head and one or more spouts N, in combination with a revolving mixer, a series of toothed gear actuated by the shaft of the same, and a cam H secured to one of the said gear, one g , of the levers connected with the cross-head being located in the path of said cam and being periodically raised thereby, all constructed to operate substantially in the manner and for the purpose specified.

No. 32,342. Medicinal Compound.

(*Composition médicale*)

Wallace Dawson, Montreal, Que., 19th September, 1889; 5 years.

Claim.—1st. A worm drop or lozenge composed of chocolate cream, a drug for killing the worms, and a purgative incorporated in such chocolate cream, substantially in the manner specified. 2nd. The herein described worm remedy consisting of a drop of chocolate cream, having Santonine and Elaterium incorporated therein, substantially in the proportions specified.

No. 32,343. Dyeing of Wool and other Fibrous Material and Means or Apparatus employed therein. (*Teinture de la laine et autres matières fibreuses, et moyens ou appareil pour cet objet.*)

Charles Vandermeirssche, Rheims, France, 19th September, 1889; 5 years.

Claim.—The combination, with the vat A₁, A₁, A₁, the hollow drum A₂ journaled in the sides of said vat, the gudgeon c_1 extending without said vat, the worm wheel K mounted upon said gudgeon,

the pulley L, and its worm shaft actuating said worm wheel, the pump P, the pipe Q, and valve q, and pipe Q₁, and cock R, connecting the said pump with said vat, of the flared tubes B attached to and communicating with the drum A, the pots C screwed into said flaring tubes and having perforated bottoms F, posts t on either side, and perforated covers D, the horizontally supported track K, the carriage J running thereon, the rod J₁ attached to said carriage, the nut H attached to the said rod J, the screw i working in said nut, and the nut H₁, the hand wheel I mounted upon said screw, the nut H₂ in which said screw works, the hook G connecting the said nut H₁ and the bales E, and the bales E connected as aforesaid to the nut H₂, and adapted to fit on the posts t of the pots C for lifting said pots, all substantially as and for the purpose set forth.

No. 32,344. Pole and Thill for Vehicles.

(*Timon et limonière pour les voitures.*)

George L. Clapp and Bradford Almy, Ithaca, N.Y., U.S., 19th September, 1889; 5 years.

Claim.—1st. The combination of the curved head bar c, and the adjustable draft irons d, with the straight bracing slotted bars e, which span the curve of the head bar, substantially as set forth. 2nd. In the described pole and thill gearing for vehicles, the lug or draft bars d, and the bars e, adapted and fitted to the rear hollow or curve of the head bar c, as set forth.

No. 32,345. Air Brake. (*Frein atmosphérique.*)

The Lansberg Brake Company (assignee of Frank Lansberg), St Louis, Mo., U.S., 19th September, 1889; 5 years.

Claim.—1st. In an air-brake, the combination of the train pipe, receiver pipe and brake cylinder pipe, piston valve located in a cylinder or housing through which air passes from the train pipe to the air receiver pipe, and a sliding cut-off located on the stem of said valve and provided with a V-shaped notch extending from the top downward, whereby it coincides with said brake pipe, with its apex first and opening 20, substantially as and for the purpose set forth. 2nd. In an air-brake the combination of the train pipe, air receiver pipe, cylinder or housing, forming a communication between the train pipe and air receiver pipe, and having a hollow upward extension valve located in said cylinder stem extending upwardly from said valve, a cut off valve on said stem having a longitudinal and transverse opening and a notch in its upper end, a plug resting in said longitudinal opening, and a spring bearing upon said plug, substantially as and for the purpose set forth. 3rd. In an air-brake, the combination of the train pipe, air-receiver pipe and pipe leading to the brake cylinder, chamber located between the train pipe and receiver pipe, piston valve located in said chamber and having an upwardly-extending stem, cut-off valve located on said stem, provided with a longitudinal and a transverse opening, and a notch extending from the top downward, a spring plug for forcing the cut-off valve against the wall of the hollow extension, and a screw cap for compressing said spring, substantially as and for the purpose set forth. 4th. In an air-brake, the combination, with the train pipe 1 and cylinder 4 having the ports 12, 13, and the groove 9 in its bottom, of the hollow neck connected to said cylinder, and having ports 10 extending into said groove, a piston valve in said cylinder, the hollow extension 14 extending from said cylinder axially with said neck and having the ports 21, a stem projecting in both directions from said piston into said extension and neck, the pipe 5 receiving said stem and forming communication between the pipe 1 and neck 11, a spring surrounding said stem and bearing upon said pipe, and a slide valve on said stem in said extension, having the notch 19 and opening 20, substantially as set forth. 5th. In an air-brake, the combination of the train pipe, receiver pipe and brake cylinder pipe, piston valve located in the cylinder or housing through which the air passes from the train pipe to the air receiver pipe, the hollow extension 14 and neck 11 projecting from said valve cylinder, stems projecting from said piston valve into said extension and neck, a spring surrounding one of said stems for holding said valve in one direction, and the pipe 5 in said neck forming a guide for the stem therein, and also communicating between the train pipe and said neck, substantially as set forth.

No. 32,346. Bob Sleigh. (*Traineau-jumeau.*)

William H. Becks and John Hastie, Little Current, Ont., 19th September, 1889; 5 years.

Claim.—The combination of the two knees with one bench, and the runner, and the iron cap, and the bolt passing through and binding the whole sleigh together, substantially as and for the purpose herebefore set forth.

No. 32,347. Combined Cock and Coupling for Barrels. (*Robinet et joint combinés pour les barils.*)

H. Davis Northup, Fort Edward, N.Y., U.S., 19th September, 1889; 5 years.

Claim.—1st. The combination, with a plug section that is permanently secured in a barrel, and which is provided with a spring-seated grooved valve, having the perforated tubular stem, of the screw plug to screw into the plug section and provided with a set screw, and pipe section passing completely through said screw plug to enter the bore of the section and co-act with the valve-stem to open the valve and form a continuous discharge through the valve stem and pipe from the barrel, said pipe having an annular groove, into which the set screw extends, and by which the pipe is detachably held extending through the screw plug, substantially as described. 2nd. In a combined cock and coupling for barrels, etc., a valve, consisting of

a tubular stem open at the outer end, and provided with radial inlets at the inner end, and the bevelled valve proper on the inner end of the stem provided with one or more transverse grooves or channels extending across its end wall or face, as and for the purpose set forth. 3rd. A cock for barrels, etc., comprising a plug section adapted to be secured in a barrel, and having a longitudinal bore, a perforated chamber at the inner end of the plug, a valve adapted to close the inner end of the bore, and consisting of a hollow stem extending into said bore, and provided with one or more inlets near its inner end, and the bevelled valve proper on the inner end of the stem located in said chamber, and provided with one or more transverse grooves or channels, extending across the flat end or face of said valve proper, and a coiled spring longitudinally located in said chamber, and at one end bearing against said grooved face, substantially as described.

No. 32,348. Boiler. (*Chaudière.*)

George F. Spencer, Thompson, Penn., U.S., 19th September, 1889; 5 years.

Claim.—1st. The combination, with a vertical boiler and its fire-pot, and a smoke box above the boiler, of a jacketed fuel magazine extending down through the smoke box and the top of the boiler into the combustion chamber, and having a movable or sliding direct draft section within the smoke box, the space within the jacket communicating with the interior of the boiler, substantially as set forth. 2nd. The combination, with a vertical casing having a smoke box in its top, a fire-pot and flues leading from the space above the fire pot downward and then upward into the smoke box, of a fuel magazine leading down through the smoke box into the combustion chamber, and provided with a removable section within the smoke box, whereby, by removing said section, a direct draft through the magazine from the fire pot to the smoke box will be formed, substantially as set forth. 3rd. The combination, with a vertical casing, having a smoke box in its upper end, the boiler in said casing, consisting of upper and lower water chambers, tubes connecting them, concentric fire tubes passing through the water tubes and both water chambers, the lower ends of the fire tubes leading from a space within the casing below the lower water chamber, and their upper ends discharging into the smoke box, and baffle-plates for causing the draft to pass from the upper part of the combustion chamber downward to the lower ends of the fire tubes, of a jacketed magazine extending downward through the smoke box and upper water chamber with its jacketed space communicating with the interior of the boiler and having a removable section within the smoke box, by removing which a direct draft through the magazine will be formed, substantially as set forth. 4th. In a boiler, the combination, with a lower water chamber surrounding the fire pot, an upper water chamber, water tubes connecting the upper and lower chambers, and fire tubes passed through the water tubes and water chambers, of a fuel magazine surrounded by a water jacket connected with the lower water chamber, and baffle plates partially closing the space intervening the several water tubes, substantially as shown and described. 5th. In a boiler, the combination, with a lower water chamber surrounding the fire pot, a base supporting said chamber, an upper water chamber, water tubes connecting the upper and lower chambers, fire tubes passing through the water tubes and said chambers, and baffle plates partially closing the space intervening the water tubes, of a fuel magazine surrounded by a water jacket connected with the lower water chamber, and a casing surrounding the chamber and water tubes supported upon the base, substantially as shown and described. 6th. In a boiler, the combination, with a lower water chamber surrounding the fire pot, an upper water chamber, water tubes connecting the upper and lower chambers, fire tubes passing through said chambers and water tubes, and baffle plates partially closing the space intervening the water tubes, of a fuel magazine surrounded by a water jacket connected with the upper and lower water chambers, a casing surrounding the water receptacle, provided with an off take flue, and a segmental deflecting plate attached to the upper water chamber beneath said flue, all combined to operate substantially as shown and described.

No. 32,349. Construction of Canals.

(*Construction des canaux.*)

Arthur Pickard, Leeds, Eng., 19th September, 1889; 5 years.

Claim.—The arrangement and construction of canals or water-courses, having a current or stream throughout the length thereof, produced substantially as and for the purposes herein set forth.

No. 32,350. Pen for Drawing Staffs.

(*Plume pour tracer des portées.*)

Reinhold Händel, Leipzig, Germany, 19th September, 1889; 5 years.

Claim.—1st. An instrument for ruling the stave lines for writing music and for similar purposes, in which the several pens, of which the instrument consists, are driven apart by teeth wider than the space between the separate pens, such teeth being combined to form a single slide, substantially as described. 2nd. In an instrument, such as described, a slide guided between two screws, as shown in the drawings.

No. 32,351. Separator for Steam Pipes.

(*Séparateur pour tuyaux de vapeur.*)

Sinclair Stuart, Plainfield, N.J., U.S., 19th September, 1889; 5 years.

Claim.—A separator, comprising an inlet branch and an outlet branch, a chamber into which both said branches extend, the outlet branch being of larger diameter than the inlet branch, and having

its mouth or opening in the chamber overlapping the opening or mouth of the inlet branch, and a well below the openings of both said branches, said chamber having its walls inclined toward the well, substantially as specified.

No. 32,352. Paper Bag or Sack.

(*Sac de papier.*)

James Arkell, Canajoharie, N. Y., U. S., 19th September, 1889; 5 years.

Claim.—A paper bag or sack, having throughout its body portion corrugations or indentations, which render said body portion more pliable, and which make it more stretchable or superficially elastic than the body portion of a bag composed of the same stock, but not so corrugated or indented.

No. 32,353. Paper Bag or Sack.

(*Sac de papier.*)

James Arkell, Canajoharie, N. Y., U. S., 19th September, 1889; 5 years.

Claim.—The improved "soft tie" paper bag hereinbefore described, the mouth end or portion of which has compressed corrugations or crimps of a depth about equal to the thickness of the paper, whereby said mouth end or portion is softened without detriment to the strength of the fabric, all substantially as hereinbefore set forth.

No. 32,354. Apparatus for Recording the Oscillations and Vibrations of Locomotives, Rolling Stock, Various kinds of Machinery and of Structures. (*Appareil pour enregistrer les oscillations et les vibrations des locomotives, du matériel roulant, de diverses machines et des constructions.*)

John Milne, Croydon, Eng., 19th September, 1889; 5 years.

Claim.—1st. An apparatus for indicating and recording vertical vibrations, such as, for example, are experienced on locomotives, constructed, arranged and operated substantially as hereinbefore described and as illustrated by the accompanying drawings. 2nd. An apparatus for indicating and recording horizontal vibrations, such, for example, as are experienced on locomotives, constructed, arranged and operated substantially as hereinbefore described and as illustrated by the accompanying drawings. 3rd. An apparatus for simultaneously recording all the oscillations and vibrations similar to those which are experienced, for example, on a locomotive, constructed, arranged and operated substantially as hereinbefore described and as illustrated by the accompanying drawings.

No. 32,355. Process for Obtaining Phosphorus. (*Procédé pour produire le phosphore.*)

James B. Readman, Edinburgh, Scotland, 19th September, 1889; 5 years.

Claim.—The process of obtaining phosphorus by subjecting materials containing it to heat generated by an electric current within the furnace chamber containing the materials and applied directly to them, substantially as herein set forth.

No. 32,356. Method of Preparing Hides for Tanning. (*Mode de préparer les peaux pour le tannage.*)

Albert Hull, West Winsted, Conn., U. S., 19th September, 1889; 5 years.

Claim.—In preparing hides and skins to be tanned, the method of neutralizing the lime in hides and skins by subjecting them to the action of a solution of gallic acid and water, and subsequently removing the gallic acid and neutralized lime therefrom by washing and working, substantially as set forth.

No. 32,357. Weighing Scale. (*Balance.*)

Robert E. Glover, Granger, Mo., U. S., 19th September, 1889; 5 years.

Claim.—1st. In scales, the combination, with a fulcrumed support, of a scale arm supported thereby and adapted to be turned relatively thereto, said scale arm being provided at its rear end with a counterbalancing weight and adapted to carry at its forward end a scale pan. 2nd. In a scale, the combination, with the base having the graduated scale K_1 , and the platform supported upon said base, of a bearing strip secured upon said platform, the ring D fulcrumed upon the upper edge of said strip, the weight I having the recess i , supported and adapted to be turned upon said ring, and the scale pan secured at the rear end to said weight, and its forward end adapted to play over the scale and to support a scale pan, as described. 3rd. In a scale, the combination, with the base having the graduated scale K_1 , and the platform supported upon said base, of the strip c secured upon said platform, the ring D fulcrumed upon the upper edge of said strip, the weight I having the recess i , and supported upon said ring, a scale arm secured at its rear end to said weight, and its forward end adapted to play over the scale and support a scale pan, and a second weight supported by the scale arm and adapted for longitudinal adjustment, substantially as specified.

No. 32,358. Device for Introducing a Heated Product into the Cavity of a Tooth. (*Appareil pour introduire une substance réchauffée dans la cavité d'une dent.*)

Dexter M. Small, Providence, R.I., U.S., 19th September, 1889; 5 years.

Claim.—1st. The combination, with the reservoir of a dental tool or hand instrument having a short outlet pipe for introducing a heated product into the cavity of a tooth, for the purpose set forth, of a diminutive heating apparatus, constructed and arranged so as to be supported in connection therewith by the manipulating hand of the operator. 2nd. The combination, with a device for introducing a heated product into the cavity of a tooth, of a shield S near the orifice of the outlet pipe, substantially as and for the purpose set forth. 3rd. The combination, with the conduit or outlet pipe, of a device for utilizing therapeutically a jet of steam, as set forth, of a short and comparatively diminutive nozzle free to turn radially independent thereof, substantially as and for the purpose set forth. 4th. The combination, with the conduit or outlet pipe, of a device for utilizing therapeutically a jet of steam, as set forth, of an orifice or nozzle having its inner end which is within the conduit raised above or separated by a sharp angle from the inner wall thereof, so that the water produced by condensation of steam within the conduit shall not come in contact therewith. 5th. The combination, with the conduit or outlet pipe, of a device for utilizing therapeutically a jet of steam, as set forth, of a receptacle for holding the water produced by condensation of steam within the conduit. 6th. The combination, with a device for utilizing therapeutically a jet of steam, as set forth, of a pipe or conduit, the outer section or end of which that containing the orifice or aperture for the nozzle is composed of non-conducting material, substantially as described.

No. 32,359. Stiffening Blade. (*Busc de corset.*)

Ira D. Warner, Bridgeport, Conn., U.S., 19th September, 1889; 5 years.

Claim.—1st. A stiffening blade consisting of straightened bundles of fibres arranged side by side and bound together and flattened, substantially as set forth. 2nd. The within-described stiffening blade consisting of two or more straightened bundles of fibres confined firmly together and flattened under heavy pressure, as set forth. 3rd. The improvement in the art of manufacturing stiffening blades consisting in applying tension to bundles of fibres, binding them under tension and then flattening the same, substantially as set forth. 4th. The manufacture of stiffening blades consisting in subjecting bundles of fibres to tension, to straighten the same, cementing and drying, and then flattening under heat and pressure, substantially as set forth.

No. 32,360. Cash Carrier. (*Chien de magasin.*)

David Lippy, Mansfield, Ohio, U.S., 21st September, 1889; 5 years.

Claim.—1st. A cash-carrier frame carrying on its upper side three grooved wheels, and on its lower side a cash receptacle, and an idle grooved wheel placed intermediate of the three grooved wheels, and adapted to bear against a stop at the end of the track, substantially as specified. 2nd. A cash-carrier frame carrying on its upper side three grooved wheels for running upon the track, a cash receptacle secured to its under side, a grooved idle wheel placed intermediate of the three wheels and adapted to bear against a tapered stop at the end of the track, and two rollers mounted in the base of the frame and adapted to be acted against by a starting cord, substantially as described.

No. 32,361. Refining Sugar and Apparatus therefor. (*Raffinage du sucre et appareil pour cet objet.*)

Alwin Baumgarth, Sudenburg-Magdeburg, Germany, 21st September, 1889; 5 years.

Claim.—1st. The improved method of refining sugar, consisting in subjecting the sugar, whilst in the centrifugal machine, to the action of a spray-jet, formed by passing air under considerable pressure and water through a suitable mixing nozzle. 2nd. In combination, a centrifugal machine, a spray-jet apparatus S connected by flexible pipes f and g , with the water and air supplies respectively, in combination with the measuring vessel M furnished with a water gauge s . 3rd. The spray jet apparatus S containing a passage h for water, a passage m for air, an inner nozzle n , an outer nozzle r , and a two-way valve o , substantially as described.

No. 32,362. Coal Oil Lamp. (*Lampe à pétrole.*)

George Roberts, Montreal, Que., 21st September, 1889; 5 years.

Claim.—1st. The combination, with a coal-oil lamp burner, substantially as described, of the cylinders 1 and 3, annulet 2, plates 4 having perforations 5 by which the air passing to the flame is divided, the whole substantially as and for the purposes set forth. 2nd. The combination, with a coal-oil lamp burner and font, as described, of the cylinders 1 and 3, perforated annulet 2 arranged to cause the air to pass through the annulet 2, with the plates 4 having perforations 5, said plates being arranged to divide the air, the whole substantially as described for the purposes set forth. 3rd. The combination, in the burner of a coal-oil lamp, of the wick-tube a , plates 4 having cross-bars 6, and clamps 7 by which the plates 4 are adjustable and easy of being removed, the whole substantially as described.

No. 32,363. Machine for Cutting Tobacco.*(Machine à hacher le tabac.)*

Alexander Gordon and Daniel DeGarmo, Rochester, N.Y., U.S., 21st September, 1889; 5 years.

Claim.—1st. In a tobacco cutter, the combination of the circular cutter D for cutting the tobacco longitudinally, the gauge-roller E against which the cutters work, the cross cutter K for cutting the tobacco transversely, and the guide plate I, and bar H capable respectively of vertical and longitudinal adjustment, the guide plate being provided with a flange d that rests against the roller, as and for the purpose specified. 2nd. In a tobacco cutter, the combination of the circular cutter D, the gauge-roller E, the guide plate I provided with the right angled flange d, the bar H to which the plate is attached, the guide plate I provided with fingers that extend between the cutters and having a shear edge at its outer end, and the cross-cutter K, the whole arranged to operate in the manner and for the purpose specified. 3rd. In a tobacco cutter, the combination of the circular cutter D, the gauge-roller E, the guide plate G, the bar H, the guide plate I, the cross-cutter K, and the picker L, as shown and described and for the purpose specified.

No. 32,364. Fire-Escape. (Saveteur d'incendie.)

Eugene Delia, Cincinnati, Ohio, U.S., 21st September, 1889; 5 years.

Claim.—1st. A fire-escape comprising a plurality of separate bars adapted for connection end to end, a revolving frame turning about a vertical axis and sustaining the same side by side in a vertical position, and a stationary guide for the bars, substantially as described. 2nd. A fire-escape comprising a plurality of separate bars adapted for connection end to end, a revolving frame turning about a vertical axis and sustaining the bars side by side in a vertical position, a stationary guide for the bars, and a flexible ladder attached to the upper end of the uppermost bar, substantially as described. 3rd. A fire-escape comprising a plurality of separate bars adapted for connection end to end, a revolving frame turning about a vertical axis and sustaining the bars side by side in a vertical position, a stationary guide for the bars, a flexible ladder attached to the upper end of the uppermost bar, and a hook on the upper end of said ladder for supporting the same, substantially as described. 4th. A fire-escape comprising a plurality of toothed bars adapted for connection end to end, a revolving frame turning about a vertical axis and sustaining the said bars side by side in a vertical position, a stationary guide for the bars, and a gear wheel engaging said bars, substantially as described. 5th. A fire-escape comprising a plurality of bars adapted for connection end to end, a revolving frame sustaining the bars, a stationary guide for the bars, and a spring applied to said frame for turning the same, substantially as described. 6th. The combination, with a stationary column, of a plurality of bars adapted for connection end to end, a revolving table surrounding the base of the column, a revolving keeper ring also surrounding the column, vertical standards rigidly connected to said table, and keeper ring, and a stationary guide for the bars located above the keeper-ring, substantially as described. 7th. The combination, with a stationary column, of a plurality of bars adapted for connection end to end, a revolving frame consisting of a table surrounding the base of the column, a revolving keeper-ring also surrounding the column, and vertical standards rigidly connecting said table and keeper-ring, a stationary guide for the bars, and a coiled spring connected with the column, and revolving frame for turning the latter, substantially as described. 8th. A fire-escape comprising a plurality of bars, a revolving frame sustaining the same, and a stationary guide for the bars, said bars being provided upon their ends with interlocking mortises and tenons arranged at right angles to radial lines of the frame, whereby the bars may be connected with each other by the turning of the frame, substantially as described. 9th. A fire-escape comprising a plurality of bars, a revolving frame sustaining the same, and a stationary guide for the bars, said bars being provided on their ends with interlocking mortises, and tenons adapted to engage each other by a lateral movement of the bars, and slides on the bars for holding the same from disconnection, substantially as described. 10th. The combination, with a revolving frame and stationary guide, of a plurality of bars provided with interlocking mortises and tenons, the shoulders of which are oblique, the ends of each tongue being provided with a groove containing a prong, and the sides of the tongues having detent notches and each mortise having an eye to fit over the prong, and lugs to engage the detent notches, substantially as described. 11th. The combination, with a revolving bar-supporting frame and a stationary guide, of a plurality of bars provided with interlocking mortises and tenons, and having guide flanges adjacent to their ends, and slides engaged with said flanges for holding the bars from disconnection, substantially as described. 12th. The combination, with a revolving bar-supporting frame, and a stationary guide, of a plurality of bars provided with interlocking mortises and tenons, and having guide flanges adjacent to their ends, and slides engaged with said flanges, said stationary guide being provided with a spring-arm adapted to engage and move the slide, substantially as described. 13th. The combination, with a fire-escape truck and an extensible column, of a platform supporting said column, said platform being pivoted by means of a vertical pivot to the truck, and an adjustable supporting leg hinged to the outer or free end of said platform, substantially as described.

No. 32,365. Washing Machine.*(Machine à blanchir.)*

Henry Broadwell and Silas G. Irwin, Blue Mound, Kan., U.S., 23rd September, 1889; 5 years.

Claim.—The combination, with the semi-cylindrical casing or tub A, the top C, the rotary cylindrical rubber D mounted in the casing, the vertical guides H₂, springs I secured in said guides, and the vertical guides H₁, of the lower concave wash-board G having an end cross-bar H, provided with projecting pins h, mounted in the guides H₂ and engaging with the springs I, and the end cross-bar H₁, pro-

vided with projecting pins h₁, mounted in the guides H₃, the spring K₁ secured to the casing and connected with the cross-bar H and the upper concave wash-board L, the springs M connecting one end of the said concave L with the concave G, and the springs n secured to the casing and attached to the other end of the concave L, all constructed arranged and operated substantially as shown and described.

No. 32,366. Radiator. (Calorifere.)

Power and Company, (assignees of Frank E. Bayer), Halifax, N.S., 23rd September, 1889; 5 years.

Claim.—1st. In a tube radiator, the base and top having water communicating apertures and recesses in the metal encircling them, to receive the ends of the tubes, as set forth. 2nd. In a tube radiator, the combination of a base and top having water communicating apertures and recesses in the metal encircling them, and tubes adapted to fit such recesses, substantially as shown and described. 3rd. In a tube radiator, the combination of base A, top B, tubes C, packing D, and means for securing the whole together, substantially as shown and described.

No. 32,367. Stamp Cancelling and Post Marking Machine. (Machine à maculer les timbres poste et à timbrer les lettres.)

The International Postal Supply Company, Brooklyn (assignee of George W. Hey, Syracuse), N.Y., U.S., 23rd September, 1889; 5 years.

Claim.—1st. The combination of a marking roller normally at rest, a continuously-revolving roller mounted on the marking roller shaft, a clutch between the two rollers, and a trigger in the letter path connected to the clutch and actuated by letters fed over the letter-supporting bed, substantially as and for the purpose set forth. 2nd. The combination of the marking roller with the revolving roller, both mounted on a common shaft, a clutch for connecting the two rollers and a trigger for operating the clutch, substantially as and for the purpose set forth. 3rd. The combination, with a marking roller and a revolving roller, both mounted on a common shaft and detachably connected together, of a stop for stopping the marking roller after it has registered, substantially as and for the purpose set forth. 4th. The combination, with a marking roller and a feed roller, both mounted on a common shaft, of a clutch for connecting the two rollers, a trigger for operating the clutch and a stop for stopping the marking roller, substantially as and for the purpose set forth. 5th. The combination, with an intermittently-revolving marking roller, a trigger projecting into the letter path, and a connection substantially such as described, between the trigger and roller for starting the latter, of a stop for engaging and holding said roller at the proper point for registry with the next letter, substantially as and for the purpose set forth. 6th. The herein described trigger, consisting of the pivoted adjustable lever extending into the letter path provided with springs for resetting it to its normal position, after the letters have passed its end, said trigger, through a suitable connection, substantially as described, transmitting motion from the letters to the marking roller, substantially as and for the purpose set forth. 7th. The combination, with the rollers F, F₁, mounted on the same shaft S, and the pressure roller against which they rotate, of the marking roller B normally at rest, and means, substantially as described, for bringing the marking roller B into action when the letter in transit encounters the trigger, and the trigger t, substantially as and for the purpose set forth.

No. 32,368. Telephone System.*(Systeme téléphonique.)*

Fred A. Holcomb and Percy T. Cook, Grand Rapids, Mich., U.S., 23rd September, 1889; 5 years.

Claim.—1st. The combination, with a telephone system, of a recorder for recording signals at a distant station, and a device at the sender's station, adapted to be operated by the sender, for automatically recording at the distant station the number of the call of the sender, substantially as set forth. 2nd. In a telephone system, the combination, with a recording mechanism, of a make and brake mechanism, a device for throwing the same into electrical circuit, and, at the same time, setting free the recorder mechanism, substantially as set forth. 3rd. In a telephone system, the combination, with a device for recording signals, of a make and brake mechanism, means for throwing the same into electrical circuit, and a spring motor for automatically throwing the make and brake mechanism out of circuit, after the signal has been recorded, substantially as set forth. 4th. In a telephone system, the combination, with a device for recording signals, of a make and brake mechanism, means for throwing the same into electrical circuit, an electro-magnet in the main circuit, recording mechanism controlled by the electro-magnet, and spring actuating mechanism to operate said devices, substantially as set forth. 5th. In a telephone system, the combination, with a recording instrument at a subscriber's station, of a device at the central office for causing any desired number to be intelligibly recorded in or at the instrument at the subscriber's station, substantially as set forth. 6th. In a telephone system, the combination, with a device for recording intelligible signals at a subscriber's station, of an instrument at the central office for operating said recording device to produce any desired number therein, and a battery in the circuit of said instruments. 7th. In a telephone system, the combination, with a device for intelligibly recording signals at a subscriber's station, of an instrument at the central office provided with a shaft, a series of disks having projections mounted on said shaft, make and break springs, with which the projections of the disk engage to make and break the circuit, and mechanism for operating said disks, substantially as set forth.

No. 32,369. Car Coupling. (*Attelage de chars.*)

John P. Turney and Joseph A. Thomas, Arlington, Oregon, U.S., 23rd September, 1889; 5 years.

Claim.—1st. The combination, with the cars of a train, of pneumatic couplings for connecting the cars, and a series of pneumatic tubes corresponding to the couplings and extending to the cab of the engineer, a reservoir for compressed air, and a switch conduit or valve mechanism for directing the air blast through any of said tubes to any one of the couplings, substantially as shown and described. 2nd. The combination, with a series of tubes extending throughout the train, of a face plate A in the cap, having openings through the same connecting with the said tubes, a reservoir for compressed air, a tube c leading from the reservoir to the centre of the face-plate, and a swinging hollow arm or conduit B, having a channel-way b adapted to connect the tube c with any one of the tubes C, substantially as and for the purpose described. 3rd. The pneumatic car coupling, consisting of hooked and slotted draw-bar E, the coupling-head, consisting of face plate D, with hook-shaped guide arms d, the socket ring D', sleeve E' with bulbous end, and bolt E' and spiral spring E', substantially as and for the purpose described. 4th. A car coupling, consisting of a rotary adjustable hook-shaped draw-bar E, and a spring seated coupling head surrounding and loosely connected to the same, substantially as and for the purpose described. 5th. A car coupling, having face plates combined with pneumatic tubes opening through said face plates, the said openings being adapted, as described, to register with those of the next car, and form continuous channels when the cars are coupled, substantially as and for the purpose described. 6th. The combination of a rotary adjustable draw-bar E, having pin or lug i, the sleeve G, with cam groove g and slides h, the guides H, H', spiral spring I, the piston rod J connected to the sleeve G and the piston, and cylinder K, and suitable pipes for transmitting a pneumatic pressure to the said cylinder, substantially as and for the purpose described. 7th. The combination, with the pneumatic car couplings and the series of continuous tubes connecting with the same, of a register or commutator for throwing any one tube into communication with any other tube, substantially as and for the purpose described. 8th. The combination, with the continuous tubes, of the register or commutator consisting of stationary section L, with passage ways l and m, m', through it, the two rotary adjustable heads L', L'', with corresponding passage ways and bevel wheels and the adjustable shaft M, with bevel wheels M', adapted to be thrown alternately into engagement with the bevel-wheels of the two heads, substantially as and for the purpose described. 9th. The combination of the middle section L, of the register having through channels l and terminal channels m, m', the adjustable heads L', L'', tubes N, N' connecting with the terminal channels m, m', and the two cylinders K, K' connecting with the tubes N, N', substantially as and for the purpose described. 10th. The combination of the register L, L' and the communicating tubes, the shaft M, with notched disk M', lever and rods O, O', detent O', sliding block n and curved guide p, substantially as and for the purpose described. 11th. The combination, with a series of longitudinal tubes, and a register or commutator consisting of stationary section l, with passage-ways and movable heads L', L'' connected to the longitudinal tubes, of an adjusting mechanism for rotating said heads, having an indicator disk notched to represent the openings in the heads, and locking mechanism for said disk, substantially as and for the purpose described.

No. 32,370. Manufacture of Electrical Dry Elements. (*Fabrication des éléments électriques secs.*)

James L. Morrison, Toronto, Ont. (assignee of Carl Gassner, Jr., Mayence, Germany), 23rd September, 1889; 5 years.

Claim.—The production of hydrated peroxide of iron, in galvanic dry elements by chloride of iron, in combination with a chemical body contained in the exciting or agitating mass, or developed therein by the action of the current, which absorbs chlorine from the chloride of iron.

No. 32,371. Combined Gas Generator and Burner. (*Générateur et foyer à gaz combinés.*)

Charles Blythe and Charles W. Jones, London, Ont., 23rd September, 1889; 5 years.

Claim.—1st. In a gas generator, the partitions D formed in the hollow sections α , substantially as shown and described and for the purpose specified. 2nd. A gas generator, formed in one or more hollow sections α and with partitions D, substantially as shown and described and for the purpose specified. 3rd. An opening E formed in a gas generator, substantially as shown and described and for the purpose specified. 4th. The plug E', having an opening E formed therein, in combination with a gas generator, substantially as shown and described and for the purpose specified. 5th. A gas burner, formed of a lower section α , having openings F surrounding the ignited gas, in combination with an upper section α , having an opening G inclined, or fulcrumed, or funnel-shaped on the under side, and having a recess I on the upper side, and a disk H, substantially as shown and described and for the purpose specified. 6th. The combination of the plug E' with the receptacle L, substantially as shown and described and for the purpose specified. 7th. A combined gas generator and burner, formed of one or more sections α , having partitions D therein, and plugs J, the lower section having an opening E and openings F thereon, and the upper section having an opening G therein, the latter being inclined or funnel-shaped on the under side, and having a recess I on the upper side, in combination with a disk H, substantially as shown and described and for the purpose specified. 8th. The combination of the gas burner with casing K, having openings k' therein, substantially as shown and described and for the purpose specified.

No. 32,372. Car Coupling. (*Attelage de chars.*)

Reuben S. Hall, Kalamazoo, Mich., U. S., 23rd September, 1889; 5 years.

Claim.—The combination of the internally-recessed draw-bar, the link coupling pin and the spring actuated block for holding up the pin, said block having the main concavity in the end, and the supplemental small concavity below the verticle centre of and above the lower side of the main concavity to receive the loop end of the link, substantially as set forth.

No. 32,373. Hot Air Radiator in Combination with Hot Air Furnace. (*Calorifère à air.*)

William J. Copp, Hamilton, Ont., 23rd September, 1889; 5 years.

Claim.—The radiator E, having openings I, B, damper C and chamber A, in combination with the dome D, all formed, arranged and combined as shown and described.

No. 32,374. Tobacco Pipe. (*Pipe de fumeur.*)

Charles E. Darling and Henry Free, Lewiston, Me., U. S., 23rd September, 1889; 5 years.

Claim.—The herein described pipe-bowl, having its interior lined with asbestos, a metal plate located in the bottom thereof, and an interiorly flanged cap or ring located at the mouth thereof, said cap or ring having holes near its inner edge for the reception of pins for securing the said ring or cap to the mouth of the bowl, thereby retaining the asbestos lining in place, substantially as set forth.

No. 32,375. Automatic Electric Cut-Out.*(Interrupteur électrique automatique.)*

The United Electric Improvement Company, Gloucester, N.J., (assignee of Stanley C. C. Currie, Philadelphia, Penn.), U.S., 23rd September, 1889; 15 years.

Claim.—1st. An electric cut-out device consisting of two pieces of metal interposed in a circuit, and engaging with, and held by an insulated yoke, and said wires imbedded in an insulating substance susceptible of being melted and immersed in a conducting material in a vessel, and a band circumscribing said vessel, substantially as and for the purposes set forth. 2nd. An electric cut-out device consisting of two wires or pieces of metal interposed in an electric circuit, and supported in or by a block composed of an insulating material and said wires or pieces of metal in engagement with an insulated yoke and imbedded in an insulating substance capable of being fused at a low temperature and immersed in a conducting fluid in a vessel surrounded by a band, substantially as and for the purposes set forth. 3rd. A cut-out device consisting of two pieces of metal interposed in an electric circuit and imbedded in an insulating substance, as paraffine wax, and immersed in a conducting fluid, as mercury, substantially as and for the purposes described. 4th. A cut-out device consisting of two pieces of metal interposed in an electric circuit in engagement with a yoke, and said pieces of metal imbedded in an insulating substance capable of being melted at a lower temperature than will melt said pieces of metal and portions thereof immersed in a conducting fluid in a vessel, and means to prevent said vessel from falling and to allow of the device being re-adjusted after the circuit is broken, substantially as described. 5th. The combination, with two pieces of metal interposed in a circuit, and a supporting insulated yoke of an insulating substance, and a fluid contained within a vessel, and a supporting yoke, substantially as and for the purposes set forth.

No. 32,376. Wrench. (*Cle à écrou.*)

Joseph Potvin, Edmonton, N.W.T., 26th September, 1889; 5 years.

Claim.—1st. The combination of the grooved circles A, A and the central block B, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the grooved circles A, A, and the central block B, and the spring catch D, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the grooved circles A, A, and the central block B, and the spring catch D, and the swinging clasp E, substantially as and for the purpose hereinbefore set forth.

No. 32,377. Baking Cabinet.*(Buffet de cuisine.)*

John E. Merriam, Chesley, Ont., 26th September, 1889; 5 years.

Claim.—A baking cabinet consisting of drawers a, b, c, board and lid B, slides E, trap door F, and spice drawers G, all arranged and combined as set forth and shown.

No. 32,378. Swing (round-about, named "Aerolite"). (*Jeu de baguette.*)

Alexander W. Little, Harvey, N.B., 26th September, 1889; 5 years.

Claim.—1st. The combination of the revolving mast A, supporting arms by linked iron rods b, b, etc., and moved by shaft X, substantially as and for the purpose herein set forth. 2nd. The combination of seat E upheld by devices d, d, substantially as and for the purpose herein set forth.

No. 32,379. Marginal Index for Bibles.*(Index marginal pour les bibles.)*

Byron Laing, Acton, Ont., 26th September, 1889; 5 years.

Claim.—In a marginal index for Bibles, the transparent facing B in combination with the index C, formed and placed substantially as and for the purpose hereinbefore set forth.

No. 32,380. Secondary Battery.*(Batterie secondaire.)*

Victor H. Ernst, Jersey, N.J., U.S., 26th September, 1889; 5 years.

Claim.—1st. The combination, in a storage battery plate, of a body of active material with a yielding core of material indestructible by the acid of the battery, substantially as described. 2nd. The combination, in a storage battery plate, of a body of active material with an absorbent core of material indestructible by the acid of the battery, substantially as described. 3rd. The combination, in a storage battery plate, of a body of active material, with a core of material indestructible by the acid of the battery, and having a yielding and absorbent nature, substantially as described. 4th. A storage battery plate having a body of active material, with a yielding or absorbent core of material indestructible by the acid of the battery, and having a series of fibrous ends or leaders projecting from the core into the active material of the plate, substantially as described. 5th. A storage battery plate having transverse openings or vents in portions of the plate, said openings or vents having tapered mouths, whereby the bubbles are carried from the underside of the plate through the openings, substantially as described. 6th. A storage battery plate having longitudinal grooves in one or both faces, with transverse openings or vents in said grooved portions of the plate, substantially as and for the purpose described. 7th. The combination of a series of battery plates, each having a terminal orifice at one side, and a notch at the opposite side, the notches of the negative plates being above the orifices of the positive plates, with a single positive terminal adapted to be passed through and be secured to the positive plates, and a single negative terminal adapted to be passed through and be secured to the negative plates, substantially as described. 8th. A battery plate arched or convex in cross-section, substantially as and for the purpose described.

No. 32,381. Sounding Toy. (Jouet résonnant.)

Joseph S. O'Brien, Springfield, Mass., U.S., 26th September, 1889; 5 years.

Claim.—1st. Devices for producing audible reports, consisting of a seat for a diaphragm to be burst, having therebelow a free air passage and a chambered shell of elastic and collapsible material, having a mouth adapted to rest on and closely fit the surface of the diaphragm on said seat, substantially as described for the purpose set forth. 2nd. Devices for producing audible reports, consisting of a lower tubular part A, open from end to end and having a widened upper extremity a to form a seat for a diaphragm to be burst, and a chambered shell of elastic material having a widened or bead-formed mouth adapted to rest on and closely fit the surface of the diaphragm on said seat, substantially as and for the purpose described. 3rd. In a toy device for producing audible reports, a tubular part open from end to end, its upper extremity forming a seat for a diaphragm to be burst, and a chambered shell of elastic material having a mouth or opening adapted to rest on and closely fit the surface of a diaphragm on said seat, combined with a spring hinge at one side of, and connecting said elastic shell and tubular casing, substantially as described for the purpose set forth. 4th. Devices for producing audible reports, consisting of a tubular part open from end to end, its upper extremity being widened, forming a ledge or seat for a diaphragm to be burst, and the chambered spherical shell of elastic material having the contracted mouth, and the circular surrounding bead or lip adapted to rest on and closely fit the surface of a diaphragm on said seat, substantially as described.

No. 32,382. Socket or Holder for Incandescent Electric Lamps. (Douille pour les lampes électriques incandescentes.)

James W. Collier, New York, N.Y., U.S., 26th September, 1889; 5 years.

Claim.—1st. The combination, with the body of the holder, and the contacts for the wires leading the current to said holder, of the non-conducting cap serving at once as a cover for said chamber and as a clamp, whereby each leading-in wire is clamped and firmly held to its appropriate contact, substantially as hereinbefore set forth. 2nd. The combination of the non-conducting holder-body, the tubular contacts f, fi imbedded therein, and the cap B, substantially as and for the purposes hereinbefore set forth. 3rd. The non-conducting holder having the socketed main wire contacts f, fi and their permanent connections, and provide l with non-conducting right and left screw-cap B, adapted at once and by the same movement to clamp the main or leading-in wires into place, and to screw upon the bracket or support for the said holder, as set forth. 4th. The moulded holder of non-conducting material, and switch chamber formed therein, in combination with the movable circuit-controlling switch or cam-piece in said chamber, and the key stem extending through the side of the holder into said chamber to engage the cam-piece and detachable connected with both the holder and the cam-piece, substantially as hereinbefore set forth.

Nó. 32,383. Automatic Egg Boiler.*(Bouilloire automatique pour les œufs.)*

John C. Craig, Fenelon Falls, Ont., 26th September, 1889; 5 years.

Claim.—1st. The egg receptacle 5, provided with arms 6, a detent bar 7, and supported by springs 4, 4, encircling posts 3, 3, the detent post 8, engaging bar 7, and the cup 9 having a handle enclosing a rolling bar 11, and seated on bar 7 to operate by the discharge of water in the cup through a hole in the bottom, whereby the egg receptacle is lifted automatically, as set forth. 2nd. The combination of the egg receptacle 5 provided with a detent bar 7, the supporting springs 4, 4, posts 3, 3, and spring or flexible post 8 engaging bar 7, and a cup 10 tilting to unlock the detent bar and post 8, as set forth for the purpose described. 3rd. The combination of the vessel 1, posts 3, 3 and 8, springs 4, 4, egg receptacle 5 provided with a detent, and the cup 10 having an outflow timed to release the detent, whereby the springs will lift the receptacle, as set forth.

No. 32,384. Upright Piano Case.*(Boîte de piano droit.)*

Richard M. Bent, New York, N.Y., U.S., 26th September, 1889; 5 years.

Claim.—1st. The combination of a piano case or frame having standards B, B, with perforations through which the bolts C, C pass, of the removable side arms D, D, with portions which extend within the piano case or frame, and nuts let into said portions with which the bolts engage, said bolts having slotted key-ended heads, whereby they can be turned either by wrench or screw-driver, substantially as shown and for the purpose set forth. 2nd. The combination, with a piano case or frame having blocks or guides a and a' secured thereto, of side arms D, D, with inwardly extending portions which engage with said guides or blocks, shoulders to limit the inward movement of the side arms, and bolts C, C, for securing said side arms removably to the frame, substantially as shown and for the purpose set forth. 3rd. The combination, in a piano case or frame, of the side pieces A' provided with guides a and a', the upper guide a' being inclined on its lower edge, side arms D, D, having their upper edges which extend within the case inclined as shown, and bolts C, C, adapted to pass through the main portion of the frame and engage with the nuts secured to the side arms, substantially as and for the purposes set forth.

No. 32,385. Preservation of Food Articles.*(Conservation des substances alimentaires.)*

Henry Salzer, Baltimore, Md., U.S., 26th September, 1889; 5 years.

Claim.—1st. The process of preserving food articles by enclosing them in an expansible envelope, and afterwards heating in a bath containing vaseline or like substance, which is allowed to harden and form a permanent coating around the article, substantially as described. 2nd. The process of preserving food articles by enclosing the same in a coating of vaseline or like substance, and a protective wrapper composed essentially of plaster-of-paris, substantially as described. 3rd. The process of preserving food articles by enclosing the same in an envelope, applying a coating of plaster-of-paris and, after the latter has become dry, immersing the whole in a heated bath of plastic inorganic substance, such as vaseline, substantially as described. 4th. As a new article of manufacture, a case or package consisting of an envelope, such as described, having a coating of plastic inorganic substance, such as vaseline, and a protective covering or shell of plaster-of-paris and containing an article of food, substantially as described.

No. 32,386. Method of Manufacturing Spools. (Mode de fabrication des bobines.)

Emerson P. Brownell, Beebe Plain, Qué., 26th September, 1889; 5 years.

Claim.—1st. The improved method of making spools and similar articles, consisting in, first, cutting longitudinally into the blank to give the proper circumferential shape to the ends, and then cutting the central body portion away to less diameter than the ends, substantially as described. 2nd. The improved method of making spools and similar articles, consisting in cutting longitudinally into the blank from opposite directions distances equal to, or greater than, the thickness of the edges of the flanges, and subsequently cutting the central body portion of the spool down on lines intersecting said cuts to a diameter less than that of said ends, substantially as described. 3rd. The improved method of making spools and similar articles, consisting in cutting longitudinally into the ends of the blank from opposite directions, to give the proper circumferential shape thereto, and simultaneously embossing or stamping suitable figures on the face of such ends, substantially as described. 4th. The improved method of making spools and similar articles, consisting in forcing annular cutters into the ends of the blank from opposite directions to give the same the proper circumferential shape, and embossing or stamping suitable figures on the faces of such ends while within the cutters, substantially as described. 5th. The improved method of making spools, consisting in, first, boring the blank, then cutting longitudinally into it to shape the ends and stamping figures on the faces of said ends, and subsequently turning the central body portion down on lines intersecting the cuts made from the ends to a diameter less than such ends, substantially as described. 6th. The herein described method of making spools and similar articles, consisting, first, in boring the blank, second, facing or turning the ends, third, stamping designs in the ends or either of them, and simultaneously cutting longitudinally into the blank to shape the ends, and finally turning the spool body down to proper shape on lines intersecting the cuts previously made, as set forth. 7th. The herein described step in the manufacture of spools and simi-

lar articles, consisting in cutting longitudinally into the blank by means of a circumferentially corrugated die, thereby shaping the ends, and subsequently turning the body of the spool down on lines intersecting the cust previously made. 8th. The herein-described method of making spools and similar articles, consisting, first, in boring the blank, second, facing or turning the ends independently of the boring, and, finally, turning the spool body down to the proper shape independently of the boring and facing, as set forth. 9th. The herein described method of making spools and similar articles, consisting, first, in boring the blank, second, facing or turning the ends, third, stamping designs in the ends or either of them, and, lastly, turning the spool body down to the proper shape, as set forth.

No. 32,387. Toy Windmill.

(Moulin à vent jouet.)

Aloidas E. Morin, Montréal, Qué., 26th September, 1889; 5 years.

Claim.—In a toy windmill, a cylindrical chamber divided by the partition A, having the apertures D, E and F, H made in the walls of the chamber, the wind wheel F pivoted on said chamber wall, blow pipe I, with its flange J, cleats K and removable top L, all substantially as shown and described.

No. 32,388. Machine for Removing Bark from Logs. (Machine à décortiquer les billots.)

Frank M. Parinton, Providence, R. I., U. S., 27th September, 1889; 5 years.

Claim.—The combination of a rotating cylinder B, having cutting knives C, a swinging frame E, shaft D and spring connection between the shaft and frame, and the frame H pivoted upon frame E at one end, and having means for horizontally adjusting it at the other end, and means for holding the log, as set forth.

No. 32,389. Method of Construction of Tunnels. (Mode de construction des tunnels.)

Luther Beecher, Detroit, Mich., U.S., 27th September, 1889; 5 years.

Claim.—1st. In sub-aqueous tunnelling, a tunnelling ram provided with a wedge-shaped bulkhead adapted to displace the ground upwardly, and forming a water-tight compartment slidingly operating on the head of the tunnel casing, substantially as described. 2nd. The combination, with the tunnelling ram, provided with the wedge-shaped bulk-head, and forming a water-tight compartment slidingly secured on the head of the tunnel casing, of a series of hydraulic jacks grouped around the inner wall of said ram against the bulk-head thereof, and with their pistons adapted to operate in line with the casing of the tunnel, substantially as described. 3rd. In sub-aqueous tunnelling, a tunnelling ram, provided with a solid bulk-head, constructed in the form of a wedge, adapted to displace the ground upwardly when pushed ahead, and with a movable point or nose for steering it, said tunnelling ram being adapted to slidingly operate on the head of the tunnel casing and forming a water-tight compartment for extending the tunnel casing within said tunnelling ram, substantially as described. 4th. In sub-aqueous tunnelling, a tunnelling ram, provided at its front end with a solid bulk-head, having its front face rearwardly inclined from the bottom to the top, and having a hinged point or nose, and, laterally extensible wings, substantially as described. 5th. The combination, with the casing and tunnelling ram slidingly secured thereon, of the plastic packing applied between the tunnelling ram and casing to form a water-tight joint, substantially as described. 6th. In sub-aqueous tunnelling, the combination, with the casing, of a tunnelling ram provided with a tapering rear end and a plastic packing applied to the annular space between said tapering rear end and the casing of the tunnel, said tunnelling ram forming a water-tight compartment on the head of the casing, and provided with means for advancing it to permit of extending the casing within the tunnelling ram, substantially as described. 7th. In sub-aqueous tunnelling, the combination, with a casing constructed of rectangular segmental cast-iron plates, smooth on the outside, and interiorly flanged on their edges for securing said plates together by bolts, of the tunnelling ram provided with a tapering rear end smooth on the outside, and slidingly engaging with the end of the tunnel casing by means of a plastic packing adapted to form a permanent covering on the outside of the tunnel casing, substantially as described. 8th. In sub-aqueous tunnelling, the combination of a tunnel casing, consisting of rectangular segmental iron plates, adapted to be interiorly bolted together with intervening gaskets, by means of interior flanges provided with corresponding tongues and grooves, a tunnelling ram, provided with a solid bulk-head, wedge-shaped at its outer face, and with a tapering rear end sliding on the head of the casing, with a water-tight joint formed of a plastic material adapted to form a permanent covering on the outside of the tunnel casing, a series of hydraulic rams grouped around the inner wall of said tunnelling ram, and adapted to operate with their pistons against the inner ends of the plates of the casing, to force the same in place and advance the tunnelling ram, substantially as described. 9th. A tunnel casing, composed of rectangular segmental cast-iron plates smooth upon their outer faces, and provided alike with corresponding grooves and tongues upon their edges to form a tongue and groove joint for securing the plates together and of interior flanges on the outer edges of said plates, by means of which the plates are bolted together to break joints with an intervening gasket of soft metal plate between said flanges, substantially as described. 10th. The herein described method of constructing sub-aqueous tunnels, consisting in extending the main casing, step by step, within a tunnelling ram adapted to be advanced thereon, and using a plastic packing between the main casing and tunnelling ram, substantially as described. 11th. The herein improvement in the art of constructing sub-aqueous tunnels, consisting in extending the casing, step by step, with a tunnelling ram slidingly secured thereon, and provided with a wedge-shaped bulk-head,

whereby the earth in front of said tunnelling ram may be displaced upwardly by forcing said ram forward, in combination with the process of preparing or loosening the ground in advance of the tunnelling ram, substantially as described.

No. 32,390. Medical Compound, called "Lung Syrup," for the Cure of Consumption, Asthma, Coughs, Colds, Dyspepsia and Liver Complaint. (Composition médicale dite "Lung Syrup," pour la guérison de la consommation, l'asthme, la toux, le rhume, la dyspepsie et les maladies du foie.)

Moses Courtemanche, Midland, Ont., 27th September, 1889; 5 years.

Claim.—A medical compound, called "Lung Syrup," composed of herbs, called hourhound, ladies slipper, dandelion roots, honey and alcohol, etc., used for the cure of lung diseases, substantially in the proportions and for the purposes set forth.

No. 32,391. Fire Escape. (Sauveteur d'incendie.)

Andrew R. Moore, Charlotte, Mich., U. S., 27th September, 1889; 5 years.

Claim.—1st. In fire escapes, the folding rack for hoisting the ladder operated by endless chain over smooth pulley and around sprocket wheel on shaft below, operated by a crank on each end of shafts, with lug on chain to raise lifting post to open rack, then main lug on chain to catch block E that raises folding rack, in combination, with the folding rack, oscillating case mounted on rotating table bolted to the platform on waggon, substantially set forth and described. 2nd. In fire escapes, the folding rack made of slats bolted in the centre and ends, and attached below to a sill in which frame B is fastened and made secure in case 4 hinged in rear to rotating table, and operated in front by tilting lever, substantially as described. 3rd. In fire escapes, the folding rack, substantially secured to sill J, the frame B containing post a, chain C, spur f to raise block e, all securely fastened to rotating table and bolted to bed of waggon, guy N fastened to top of rack S, S, and reel K, K, operated by cranks and secured to case 4, as set forth and described. 4th. In fire escapes, the folding rack, the lifting post, frame B secured to case 4, mounted in Figs. 1, 2 and 3, with all of their connections, as described and set forth, in combination with the flexible ladder on reel ready to be fastened with machine by means of bale on ends, half circle chute fastened and reeled the same as ladder, the whole chute baled and reeled, as described.

No. 32,392. Manufacture of Seed Cake or Cattle Food from Cotton Seed. (Fabrication d'un gâteau de graine de coton pour la nourriture du bétail.)

Robert S. Baxter and George D. Macdougald, Dundee, Scotland, 27th September, 1889; 10 years.

Claim.—The improvement in the art of making seed cake or cattle food from cotton seeds, consisting in combining with the ordinary mechanical operations for making such seed cake or cattle food, the preparatory treatment, with an acid and subsequent washing for the purpose of rendering innocuous the fibre remaining on the seeds, substantially as herein set forth.

No. 32,393. Means of Propelling Sleds. (Mode de propulsion des traîneaux.)

George Gog, Sr., St. Louis, Mo., U.S., 28th September, 1889; 5 years.

Claim.—1st. In a sled a, the combination of platform b, with ropes, chains or cords c crossing each other crosswise over the platform b, substantially as shown and for the purpose described. 2nd. In a spear for propelling sleds, the combination of the shaft e, with prod d at its lower end, and provided at its upper end with a screwed adjustable portion c, having handle f and working through a nut at the upper end of the shaft, substantially as described and for the purpose specified.

No. 32,394. One Furrow Stilt or Handle Plough for Regulating the Depth and Width of Furrows. (Charrue à avant train.)

William Kaiser, Stanley, Ont., 28th September, 1889; 5 years.

Claim.—1st. The beam attachment, composed of the standards B, B and D, D, cross-bar E, E, axles H, H, and K, K, clasp F and set screws J, J, J, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the beam attachment, composed of standards B, B and D, D, cross-bar E, E, axles H, H and K, K, clasp F and set screws J, J, J, with the wheels A, A, and C, substantially as and for the purposes hereinbefore set forth.

No. 32,395. Manufacture of Gutter Pipes. (Fabrication des tuyaux de descente "dallots.")

Charles Brodeur et Théophile Lessard, Montréal, Qué., 28th September, 1889; 5 years.

Résumé.—Dans un dallot expansible, la combinaison des baguettes B, B, avec l'agraffe A, tel que ci-dessus décrit et pour les fins indiquées.

No. 32,396. Pegging Machine.*(Machine à cheviller.)*

Thomas Gare, Stockport, Eng., 28th September, 1889; 5 years.

Claim.—1st. In a pegging machine, the horn or support *a* having an awl hole *b* formed in the top thereof, substantially as set forth and for the purpose specified. 2nd. In a pegging machine, the combination, with the top of the horn or support *a*, of a plate *b* formed with a knife edge awl hole *b*₁, substantially as set forth and for the purpose specified. 3rd. In a pegging machine, the combination, with the awl hole *b*₁, of a mechanically moved knife *b*₂, substantially as set forth and for the purpose specified. 4th. In a pegging machine, the awl slide *a*₃ formed with a cam *a*₄ and *a*₅, in combination with the cam stud *n*, adapted to cause the awl *a*₂ to descend intermittently, substantially as set forth and for the purpose specified. 5th. In a pegging machine, the head part *b* carrying the awl *a*₂ and plunger *f*, and provided with a screw spindle *o*₃, in combination with a double cam *m*, *m*₁, the part *m*₁ of which is acting inside the head part *b*, and the cam part *m* on the screw spindle *o*₃, adapted to impart a variable and intermittent lateral motion to the head part *b*, substantially as set forth and for the purpose specified. 6th. In a pegging machine,

the combination, with the awl *a*₂, and head part *b*, carrying the plunger *f*, and awl *a*₂, of a support or guide *z* attached thereto, substantially as set forth and for the purpose specified.

No. 32,397. Vehicle Wheel. *(Roue de voiture.)*

Melville B. Mahurin, Indianapolis, Ind., U.S., 28th September, 1889; 5 years.

Claim.—1st. In a wheel, the felloe *A* having the grooves *a*₅ formed in its inner face around the spoke holes or on two sides, front and back, in combination with the spokes *D* having flanges *a*^o either formed thereon or secured thereto to enter said grooves, substantially as shown and described. 2nd. In a wheel, the felloe *A* having the spoke holes *a*₁ therein, and grooves *a*₅ in its inner face around said holes, in combination with the spokes *D*, having the flanges *a*^o to enter said grooves, and the tire *C* having flanges to embrace the side of the felloe, substantially as and for the purpose set forth. 3rd. The felloe *A* having the spoke holes *a*₁ and having annular or other shaped grooves *a*₅ formed in its inner face around said spoke holes, in combination with the wooden spokes *D* having metal flanges *a*^o to enter said grooves, substantially as and for the purpose set forth.

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

1550. H. F. BEAN, 2nd 5 years of No. 20,105, from the second day of September, 1889. Improvements on Levelling Rods and Out Tapes, 2nd September, 1889.
1551. H. F. CAMPBELL, 2nd 5 years of No. 20,239, from the twenty-first day of September, 1889. Improvements in Machines for Preparing Hoops, 2nd September, 1889.
1552. H. F. CAMPBELL, 2nd 5 years of No. 20,271, from the thirtieth day of September, 1889. Improvements in Machines for Preparing Hoops, 2nd September, 1889.
1553. T. D. GALLOWAY, 2nd 5 years of No. 20,203, from the seventeenth day of September, 1889. Improvements in Distributors for Feeding Machines, 3rd September, 1889.
1554. T. D. GALLOWAY, 2nd 5 years of No. 20,211, from the eighteenth day of September, 1889. Improvements in Seeding Machines, 3rd September, 1889.
1555. T. D. GALLOWAY, 2nd 5 years of No. 21,273, (re-issue of Patent No. 20,275) from the twenty-sixth day of September, 1889. Improvements in Combined Drills and Cultivator Hoes, 3rd September, 1889.
1556. R. W. HOPKINS, 2nd 5 years of No. 20,176, from the thirteenth day of September, 1889. Improvements in Machines for Holding and Cutting Rolled Paper, 4th September, 1889.
1557. R. W. JAMES, 2nd 5 years of No. 20,134, from the fourth day of September, 1889. Improvements in Bag Holders and Truck for Carrying the same, 4th September, 1889.
1558. T. G. COOPER, 2nd 5 years of No. 20,148, from the sixth day of September, 1889. Improvements in Memorandum Books commonly known as Black Leaf Check Books, 5th September, 1889.
1559. O. PATTERSON, 2nd 5 years of No. 20,160, from the eighth day of September, 1889. Improvements in Hand Power Lighting and Force Pumps, 7th September, 1889.
1560. H. P. HEACOCK, C. E. RIGLEY, D. M. ESTEY and THE ESTEY MANUFACTURING Co. (assignee), 2nd and 3rd 5 years of No. 31,862, from the first day of August, 1894. Improvements on Saw Mill Works, 10th September, 1889.
1561. T. HALL, 2nd 5 years of No. 20,200, from the seventeenth day of September, 1889. Improvements in Horse Hay Carriers (or Forks), 10th September, 1889.
1562. THE PATENT NUT AND BOLT CO., 2nd 5 years of No. 20,259, from the twenty-fourth day of September, 1889. Improvement in Nut Forging Machinery, 10th September, 1889.
1563. C. R. A. WRIGHT, 2nd 5 years of No. 20,299, from the thirtieth day of September, 1889. Improvements on the Production of Metallic Solution, 12th September, 1889.
1564. J. G. CUTLER, 2nd 5 years of No. 20,238, from the twenty-first day of September, 1889. Improvements in Letter Box Connections, 12th September, 1889.
1565. L. GARNETT and E. GARNETT, 2nd 5 years of No. 20,191, from the sixteenth day of September, 1889. Improvements in Butter Tubs, 12th September, 1889.
1566. J. B. STETSON, 2nd 5 years of No. 20,227, from the nineteenth day of September, 1889. Improvements in Lanterns, 14th September, 1889.
1567. THE GOLDEN GATE CONCENTRATOR CO., 2nd 5 years of No. 20,458, from the third day of November, 1889. Improvements in Mechanism for and Process of Concentrating Ore, 14th September, 1889.
1568. SHANNON, METZLER & CO., 2nd 5 years of No. 20,201, from the seventeenth day of September, 1889. Improvements on Washing Machines, 14th September, 1889.
1569. W. BUCK, 2nd 5 years of No. 20,204, from the seventeenth day of September, 1889. Improvements in Whiffletrees for Working Three Horses Abreast, 14th September, 1889.
1570. T. F. VAN SUVEN, 2nd 5 years of No. 20,302, from the thirtieth day of September, 1889. Improvements in Carriage Top Joints, 16th September, 1889.
1571. E. GOODWIN, 2nd 5 years of No. 20,232, from the nineteenth day of September, 1889. Improvements in Washing Machines, 16th September, 1889.
1572. C. RUSS, 2nd 5 years of No. 20,206, from the eighteenth day of September, 1889. Improvements in Sulky Ploughs, 17th September, 1889.
1573. H. A. MORRELL, 2nd 5 years of No. 20,225, from the nineteenth day of September, 1889. Improvement in Sleigh Shoes, 17th September, 1889.
1574. C. HAGGENMACHER, 2nd and 3rd 5 years of No. 31,167, from the twentieth day of April, 1889. Improvements in Middlings Purifiers or Apparatus for Grading or Sorting Grits and other Pulverulent Substances, 18th September, 1889.
1575. CARTER & CO., 2nd 5 years of No. 20,235, from the nineteenth day of September, 1889. Machine for Numbering Paper, 19th September, 1889.
1576. A. HARRISTON & COMPANY, 2nd 5 years of No. 20,256, from the twenty-second day of September, 1889. Improvements in Harvester Binders, 19th September, 1889.
1577. J. H. TRICKEY, 2nd 5 years of No. 20,220, from the nineteenth day of September, 1889. Art or Process and Composition for making Artificial Stone, 19th September, 1889.
1578. J. DENICHAUD, 2nd 5 years of No. 20,285, from the twenty-ninth day of September, 1889. Improvements in Safety Railway Cars and Rails, 20th September, 1889.
1579. AMERICAN AXLE AND WHEEL COMPANY, 2nd 5 years of No. 20,351, from the tenth day of October, 1889. Improvements in Carriage Hubs and Axles, 24th September, 1889.
1580. MASSEY MANUFACTURING CO., 2nd 5 years of No. 20,273, from the twenty-sixth day of September, 1889. Improvements in Mechanism for Knitting Grain Bands in the Automatic Grain Binders, 24th September, 1889.
1581. MASSEY MANUFACTURING CO., 2nd 5 years of No. 20,274, from the twenty-sixth day of September, 1889. Improvements in Bundle Carriers for Harvesters, 24th September, 1889.
1582. MASSEY MANUFACTURING CO., 2nd 5 years of No. 20,282, from the twenty-ninth day of September, 1889. Improvements in Harvester Pruner, 24th September, 1889.
1583. MASSEY MANUFACTURING CO., 2nd 5 years of No. 20,327, from the first day of October, 1889. Improvement in Automatic Grain Binders, 24th September, 1889.
1584. RATHBUN & Co., 2nd and 3rd 5 years of No. 27,354, from the sixth day of August, 1889. Improvements in the Manufacture of Charcoal and Distillation of Wood Production, 27th September, 1889.
1585. J. W. BRITTON, 2nd 5 years of No. 21,269, from the fourteenth day of March, 1889. Improvements in an Apparatus and Process for Straightening Sheet and Plate Metal, 27th September, 1889.
1586. J. H. BARR, 2nd 5 years of No. 20,309, from the thirtieth day of September, 1889. Improvements in Sulky Ploughs, 28th September, 1889.
1587. H. IWAN and L. IWAN, 2nd 5 years of No. 20,403, from the twentieth day of September, 1889. Improvements in Ditching Hoes, 28th September, 1889.
1588. O. B. FYSH, 2nd 5 years of No. 20,304, from the thirtieth day of September, 1889. Improvements in Two-Wheeled Vehicles, 28th September, 1889.
1589. M. C. BOOTH, T. O. PARKER & BOOTH & SON, (assignees), 2nd 5 years of No. 20,305, from the thirtieth day of September, 1889. Improvements in Baths, 30th September, 1889.
1590. A. L. WILSON, 2nd 5 years of No. 20,294, from the thirtieth day of September, 1889. Improvements on Horse Shoes and in the Fastening of Shoes to the Feet of Horses or other Animals, 30th September, 1889.

SEPTEMBER LIST OF TRADE MARKS.

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3537. CHARLES ALBERT SMITH, of Montreal, Que. Cigars, 6th September, 1889.
3538. THE WILLIAM JOHNSON COMPANY, of Montreal, Que. Paints and Colors, 9th September, 1889.
3539. THE KINNEY TOBACCO COMPANY, of New York, U.S.A. Manufactured Tobacco, and particularly Cigarettes, 10th September, 1889.
3540. SMITH, FISCHER & COMPANY, of Montreal, Que. Cigars, 12th September, 1889.
3541. SAMUEL ROGERS, of Toronto, Ont. Machine Oils, 13th September, 1889.
3542. MARSHALL MARTIN ENGLISH, of Lulu Island, B. C. Canned Salmon, 17th September, 1889.
3543. STEPHEN HOYTS' SONS, of New Canaan, Connecticut, U.S.A. Nursery Products. 18th September, 1889.
3544. WALLACE DAWSON, of Montreal, Que. Medicinal Preparation, 20th September, 1889.
3545. JOHN WHITEFIELD, of Victoria, B.C. Salvo, 21st September, 1889.
3546. MARSHALL MARTIN ENGLISH, of Lulu Island, B.C. Canned Salmon, 21st September, 1889.
3547. ROGERS' COPYING COMPANY (L'd.), of 20 Ludgate Hill, London, and 11 Cook Street, Liverpool, Lancashire, England. Chemical Preparation for facilitating the copying of Manuscript, 23rd September, 1889.
3548. REED AND CARNRICK, of New York, U.S.A. Pharmaceutical Preparation or Medical Compound, used as a remedy in Phthisis, Neurasthenia, Constipation and Intestinal Indigestion, 24th September, 1889.
3549. REED AND CARNRICK, of New York, U.S.A. Pharmaceutical Preparation, or Medical Compound, of a granular effervescent nature, used as a brain and nerve food, and as a sedative, for the cure of headaches, neuralgia, insomnia, neurasthenia, general nervous debility and other kindred affections, 24th September, 1889.
3550. REED AND CARNRICK, of New York, U.S.A. Medical Preparation, used as a solvent for Diphtheritic Membrane, 24th September, 1889.
3551. REED AND CARNRICK, of New York, U.S.A. Prepared Milk Food for Infants and Invalids, 24th September, 1889.
3552. LE PAGE MANUFACTURING COMPANY (L'd.), Halifax, N. S. Washing Compound and Soap Powder, 26th September, 1889.
3553. E. R. DURKEE & COMPANY, of New York, U.S.A. General Trade Mark, 27th September, 1889.
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5003. THE CURSE OF CRANE'S HOLD. By G. A. Henty (book). John Lovell & Son, Montreal, Que., 2nd September, 1889.
5004. PREMIER CONCILE PROVINCIAL DE ST. BONIFACE, MANITOBA, 16 JUILLET, 1889. (photographic group). John Best, Winnipeg, Manitoba, 3rd September, 1889.
5005. AGAINST THE WORLD, or LIFE IN LONDON (drama). Heinrich B. Telgmann Kingston, Ont., 3rd September, 1889.
5006. TRIUMPHANT SONGS, No. 2. By E. O. Excell. Wm. Briggs, Toronto, Ont., 4th September, 1889.
5007. DAUGHTERS OF BELGRAVIA. By Mrs. Alexander Frazer (book). The National Publishing Co., Toronto, Ont., 6th September, 1889.
5008. ADELE. A True Story. By "Lily." John Dougall & Son, Montreal, Que., 6th September, 1889.
5009. THE BOYS OF OUR SCHOOL. By Bernardo (story). John Dougall & Son, Montreal, Que., 6th September, 1889.
5010. FAVOUR AND FORTUNE. By the author of "Jack Urquhart's Daughter." Wm. Bryce, Toronto, Ont., 9th September, 1889.
5011. PRINCIPES DE LITTERATURE. M. l'Abbé Joseph Séguin, Verchères, Que., 10 Septembre, 1889.
5012. A LIFE SENTENCE. By Adeline Sergeant (book). John Lovell & Son, Montreal, Que., 11th September, 1889.
5013. MIA BELLA. Waltz. By Otto Roeder. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 11th September, 1889.
5014. CHRISTMAS ROSES. Valse. By Emile Waldteufel. I. Suckling & Sons, Toronto, Ont., 12th September, 1889.
5015. CATECHISME D'HYGIENE PRIVEE. Par le Dr. Joseph Israël Desroches, Montreal, Que., 12 Septembre, 1889.
5016. CODE OF CIVIL PROCEDURE OF THE PROVINCE OF QUEBEC. By W. A. Weir, Advocate. Amedee Périard, Montreal, Que., 12th September, 1889.
5017. TELL ME TO STAY. Song. By F. Paolo Tosti. Chappell & Co., London, England, 13th September, 1889.
5018. WINGED ECHOES. Song. By F. Paolo Tosti. Chappell & Co., London, England, 13th September, 1889.
5019. INTRODUCTION AU NOUVEAU COURS DE CALLIGRAPHIE CANADIENNE B. J. A. Langlais, Quebec, Que., 13 Septembre, 1889.
5020. OUR OWN COUNTRY, CANADA. By W. H. Withrow, D.D. Wm. Briggs, Toronto, Ont., 14th September, 1889.
5021. THY KING. Sacred Song. Words by Henry Vaughan. Music by Paul Rodney The Anglo-Canadian Music Publishers' Association, (L'd.) London, England, 16th September, 1889.
5022. LITTLE GLEANERS. Waltz. By Otto Roeder. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 16th September, 1889.
5023. GOOD TIMES. A Book of Dialogues for School Entertainments. By Miss E. Weaver. Wm. Briggs, Toronto, Ont., 17th September, 1889.
5024. COMEDY OF A COUNTRY HOUSE. By Julian Sturgis. John Lovell & Son, Montreal, Que., 18th September, 1889.
5025. ECCE HOMO. Sacred Song. Written and composed by M. Piccolomini. The Anglo-Canadian Music Publishers' Association, (L'd.), London, England, 18th September, 1889.
5026. HENDERSON'S NORTH-WEST BRAND BOOK. Second Edition. James Henderson, Winnipeg, Man., 19th September, 1889.
5027. GUIDE DES CANDIDATS OU ASPIRANTS AU BREVET D'INSTITUTEUR Cadieux et Derome, Montreal, Que., 23 Septembre, 1889.
5028. MONSEIGNEUR DOMINIQUE RACINE. Premier Eveque de Chicoutimi. Notice Biographique. Par l'Abbé Victor A. Huart. Nouvelle Edition. Victor A. Huart. Ptre. Chicoutimi, Que., 23 Septembre, 1889.
5029. DOMESTIC ECONOMY AND PLAIN SEWING AND KNITTING. Compiled by M. Alice Clark. J. & A. McMillan, St. John, N.B., 24th September, 1889.
5030. PROCEEDINGS AND TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA FOR THE YEAR 1888. Volume VI. Dawson Brothers, Montreal, Que., for the Royal Society of Canada, 28th September, 1889.
5031. HANDBOOK OF CANADIAN GEOLOGY. By Sir J. William Dawson. Dawson Brothers, Montreal, Que., 28th September, 1889.

5032. MR. STRANGER'S SEALED PACKET. By Hugh Maccoll. The National Publishing Co., Toronto, Ont., 28th September, 1889.
5033. THE PICCADILLY PUZZLE. By Fergus Hume. The National Publishing Co., Toronto, Ont., 28th September, 1889.
5034. WHEN SHALL WE MEET. Song. Words by Walter Travers. Music by Oscar Verne. I. Suckling & Sons, Toronto, Ont., 28th September, 1889.
5035. SALVE NOS DOMINE (Save us, O Lord). Song. Words and Music by M. Piccolomini. I. Suckling & Sons, Toronto, Ont., 30th September, 1889.
5036. BELL TELEPHONE COMPANY OF CANADA TORONTO EXCHANGE SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, SEPTEMBER, 1889. The Bell Telephone Company of Canada, Montreal, Que., 30th September, 1889.
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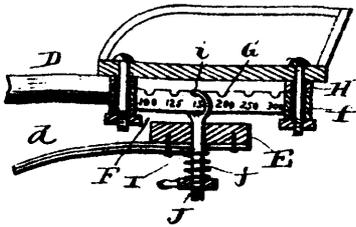
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

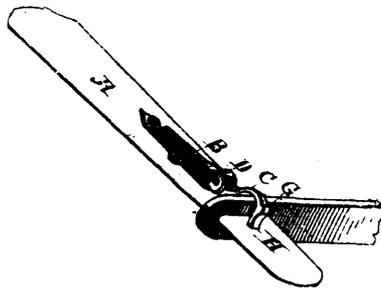
Vol. XVII.

SEPTEMBER, 1889.

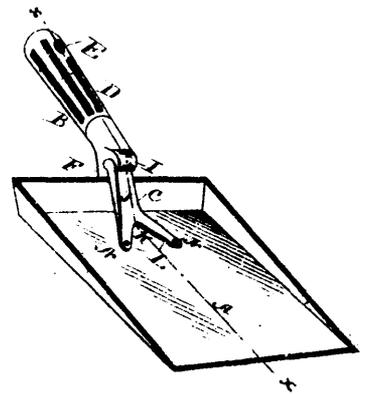
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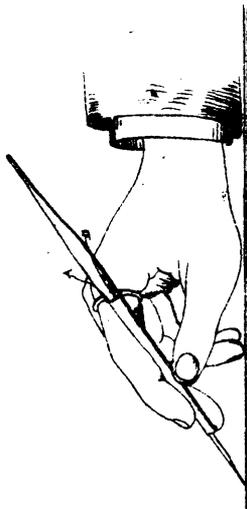
32171 Burg's Village Cart.



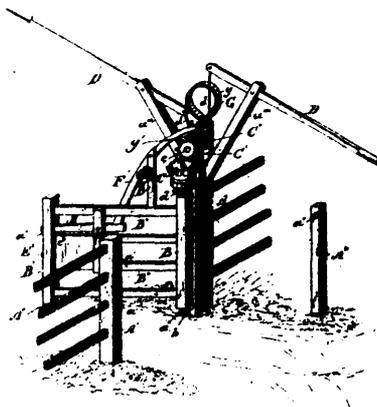
32172 Eysaman's Whiffletree Snap.



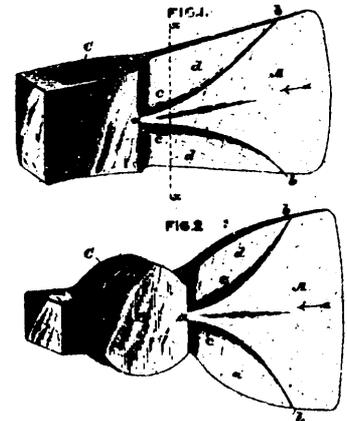
32173 Angevine's Dust Pan.



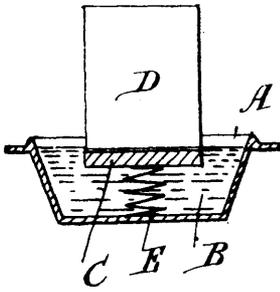
32175 Bergman's Pen Guide.



32176 McDonell's Gate.

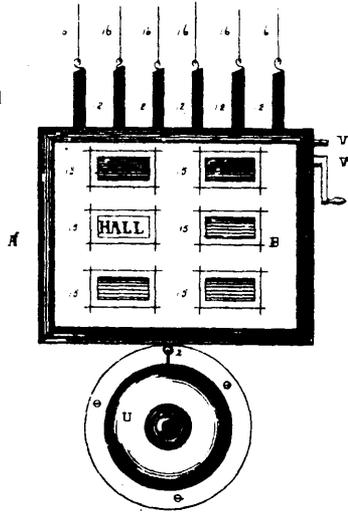


32177 Kelly's Axe.

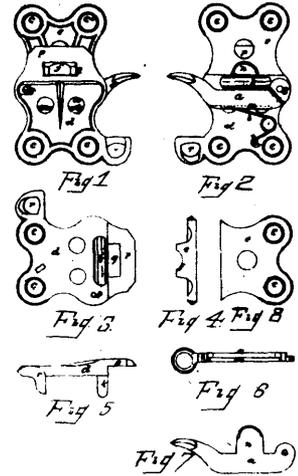


32178 Davidson's Apparatus for Securing Ends on Cans.

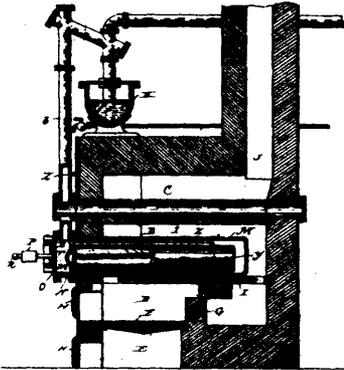
Fig 1



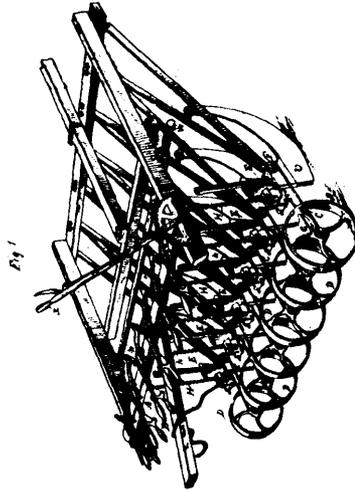
32179 Mason & Miller's Mechanical Annunciator.



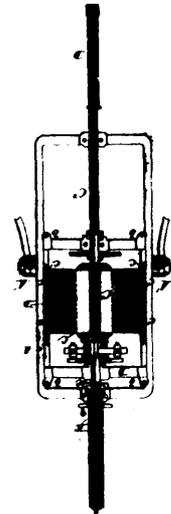
32180 Emerson's Sling Lock.



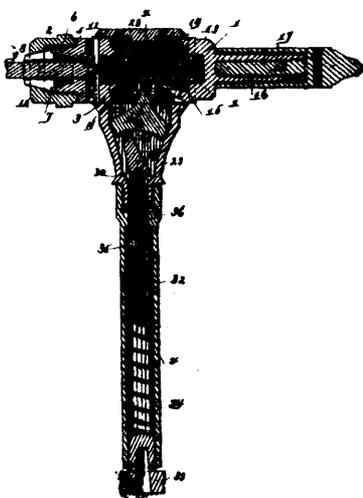
32181 Averill's Generating Wood Gas.



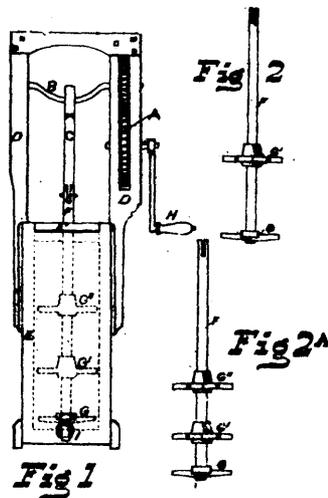
32182 Fockler's Grain Drill.



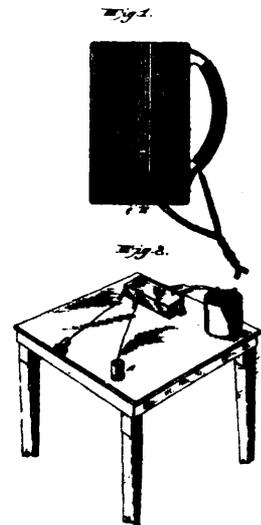
32183 Storey's Electric Drill



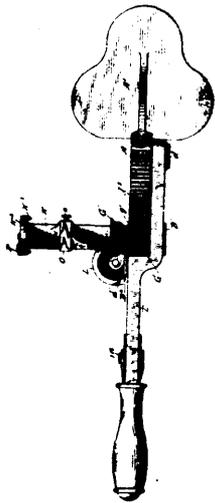
32184 Erickson's Hatchet Drill.



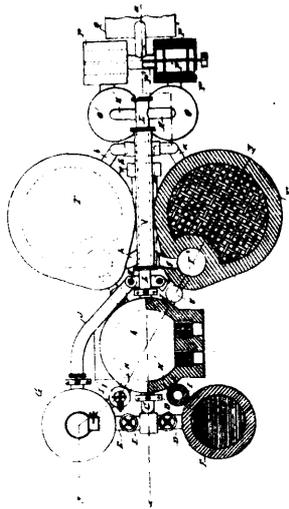
32185 Martin's Churn.



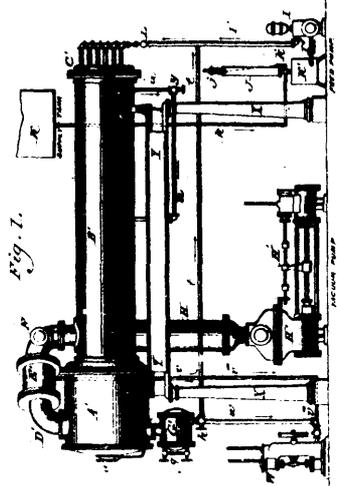
32186 Flint's Electric Drinking Vessel.



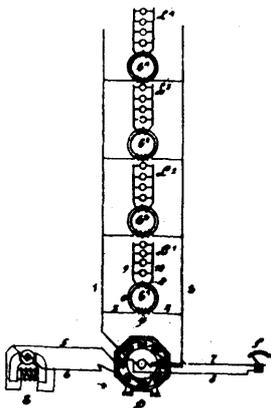
32187 Hunter's Machine for Cutting and Crimping Cartridge Shells.



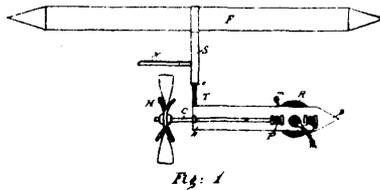
32188 Westman's Process of Reducing Zinc Ores.



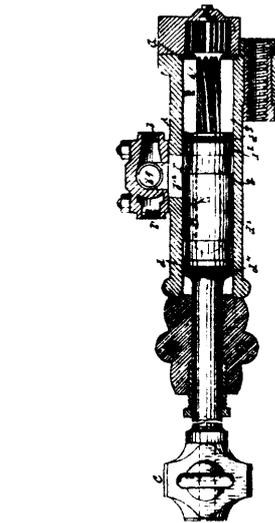
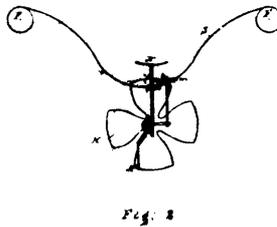
32189 Yaryan's Evaporating Apparatus.



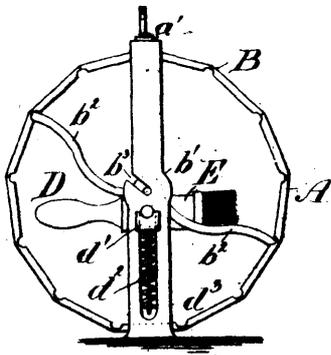
32190 Slattery's System of Electrical Distribution



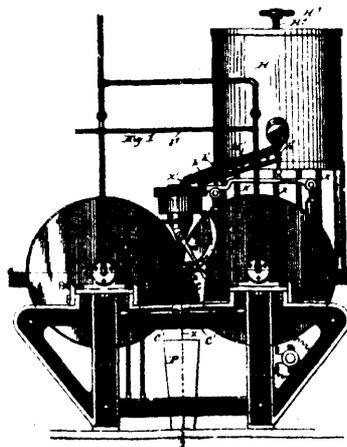
32191 Malo's Swimming Machine.



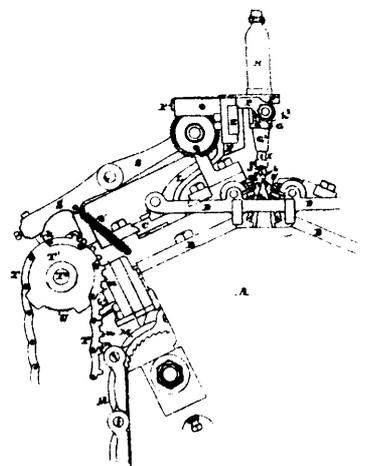
32192 Sypher's Rock Drill, etc.



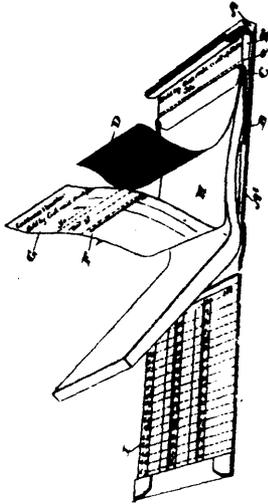
32193 Parish's Stencil Drum.



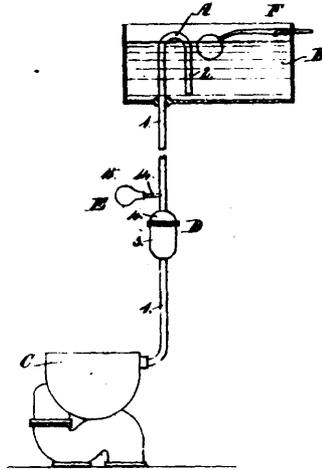
32194 Norton & Hodgson's Manufacture of Sheet Metal.



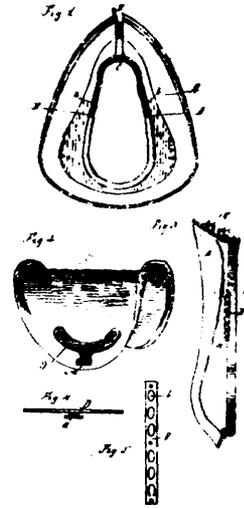
32195 Esty's Knitting Machine.



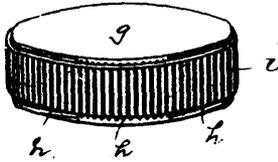
32196 McDowell's Check Book.



32197 Dwinnell's Water Closet.



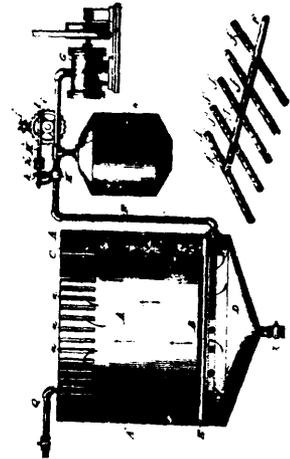
32198 Jacobs & Chapman's Horse Collar.



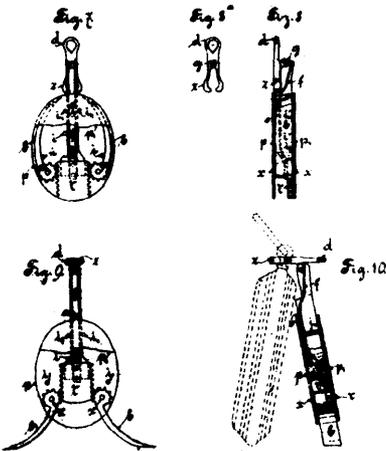
32199 Phillips' Stopper for Bottles, etc.



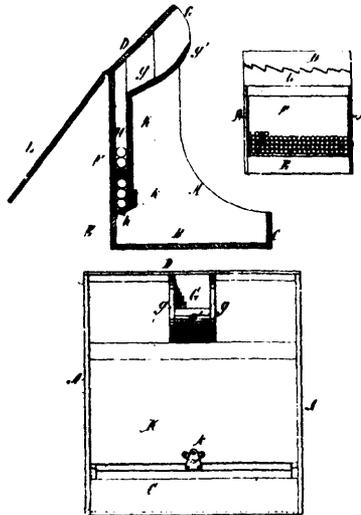
32200 Tode's Sled.



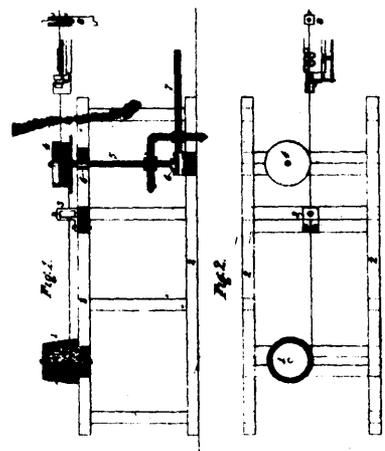
32201 Cooper's Apparatus for Treating Hides, etc.



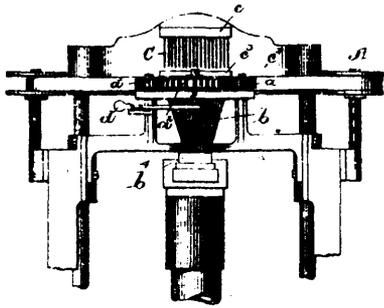
32202 Bresch's Watch Stand.



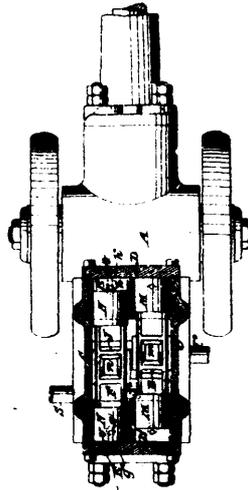
32203 Taylor's Ballot Box.



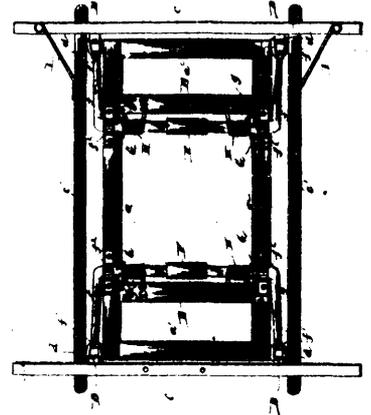
32204 Rawson's Wire Working Apparatus.



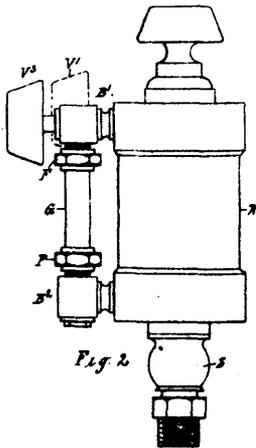
32205 Raymond's Nail Feeding and Distributing Machine.



32206 Sergeant's Valve for Engines.



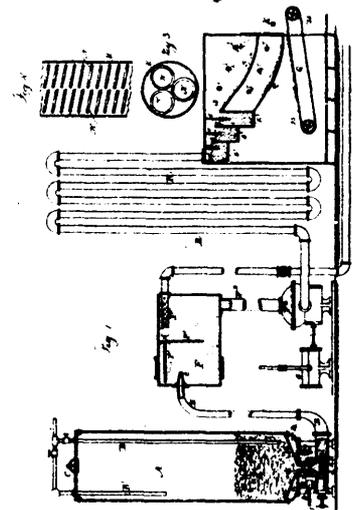
32207 Dupée's Gear for Vehicles.



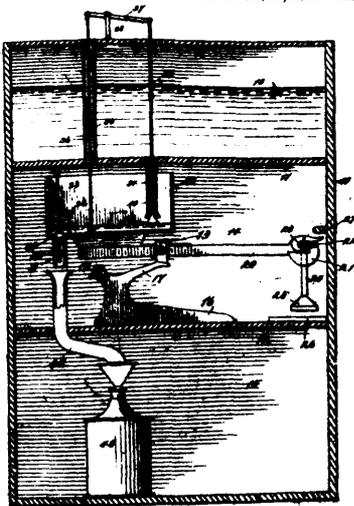
32 08 Burgess' Lubricator.



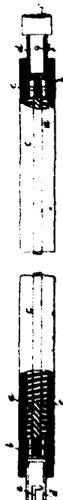
32209 Williamson's Busk or Dress Stay.



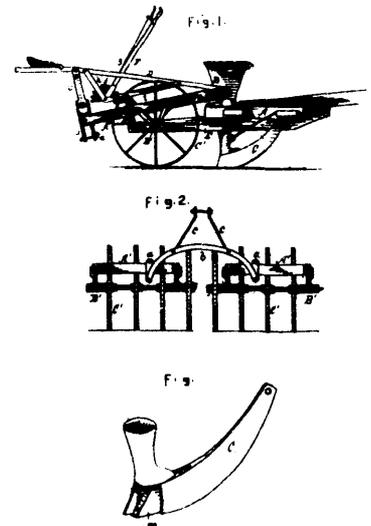
32210 Blackman's Disintegrating Fibres, etc.



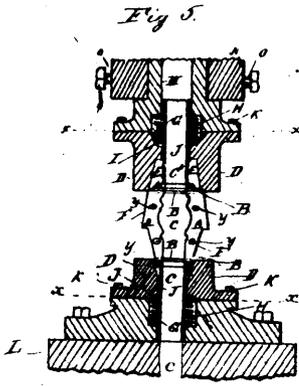
32211 Bachelder & Lovejoy's Oil Tank.



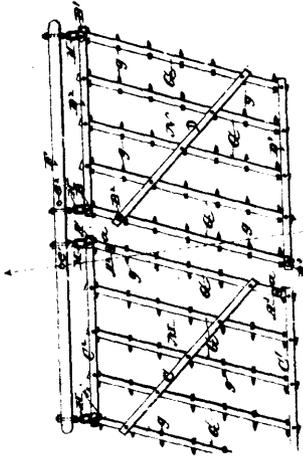
32212 Wolseley's Flexible Shaft.



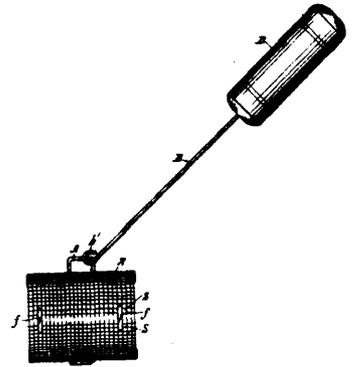
32213 Rhodes' Grain Drill.



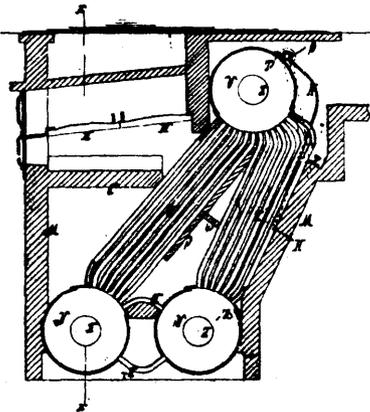
32214 Burkhard's Die for impressing Designs on Metal Tubes.



32215 Paddock's Harrow.



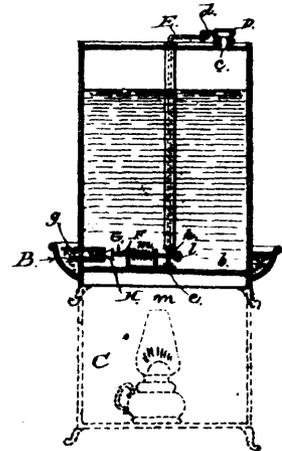
32216 Macrett's Fire Lighter.



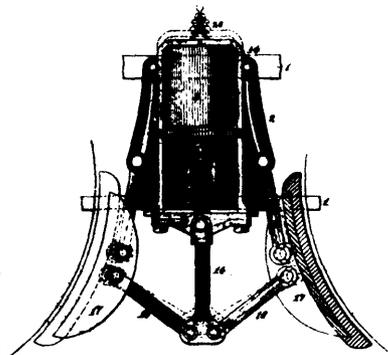
32218 Stirling's Steam Boiler.



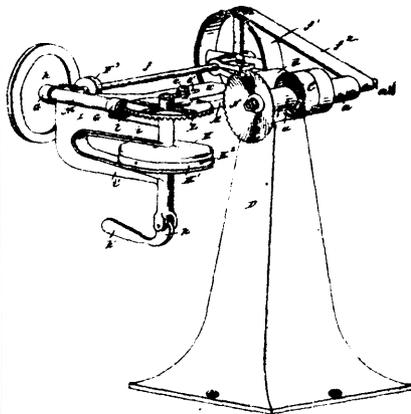
32220 Fall's Brace.



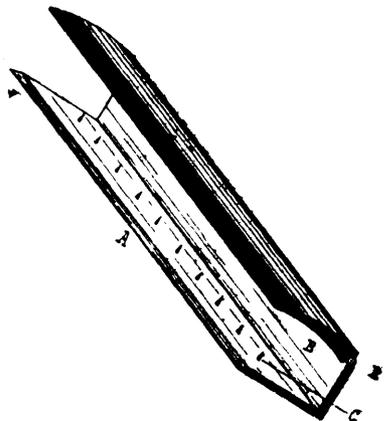
32221 Merriman's Fountain.



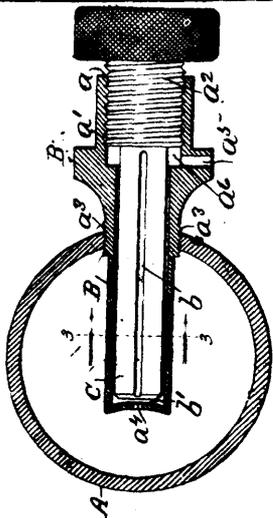
32222 Lansberg's Locomotive Brake.



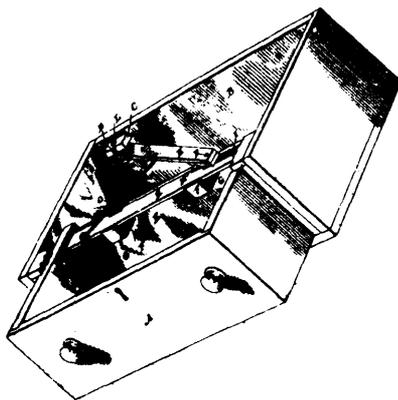
32223 Mumford's Barrel Head Sawing Machine.



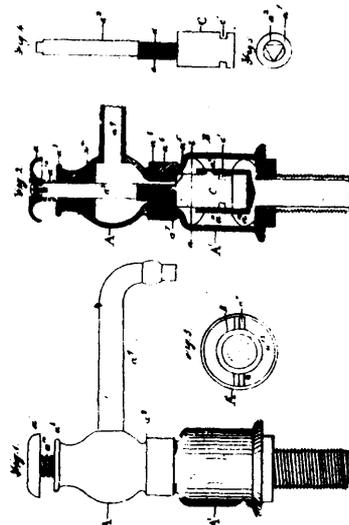
32224 Rogers' Rabbit and Carpet Tacker.



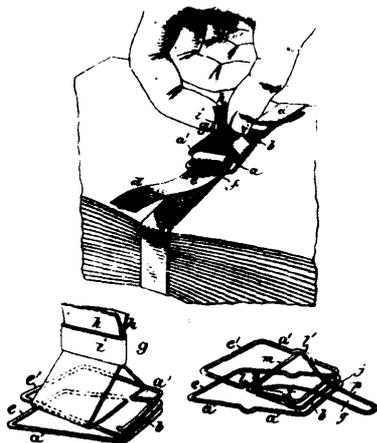
32225 Davis' Air Valve.



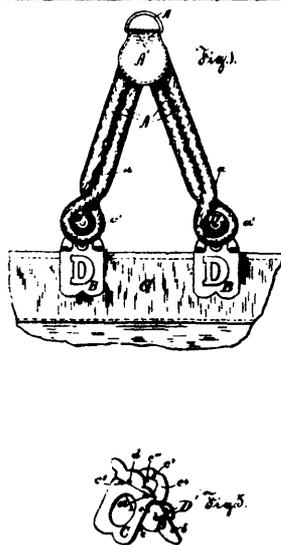
32226 Knaus' Furniture Drawer.



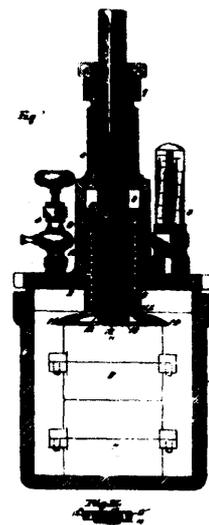
32227 Hyde's Water Tap.



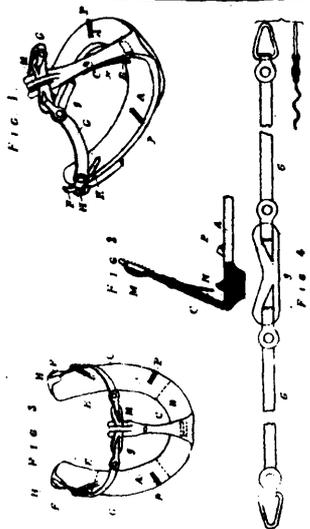
32228 Hall & Norton's Clasp for Bands for Securing Papers, etc.



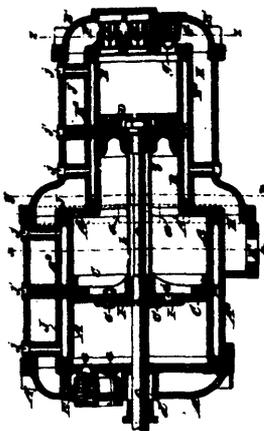
32229 Doran's Suspender End and Clasp Button.



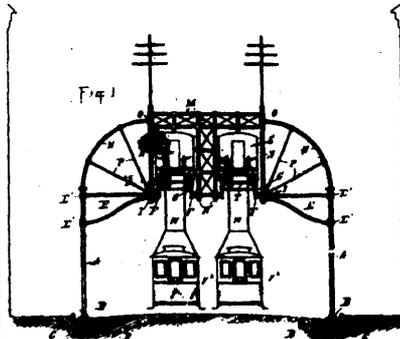
32230 Crane's Vulcaniser.



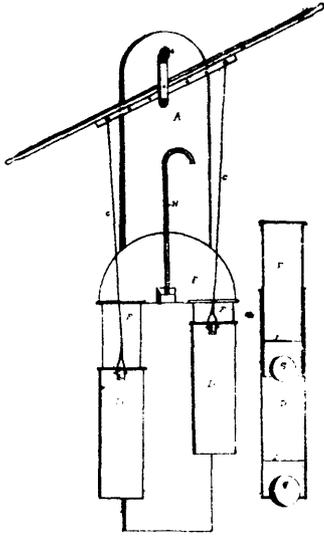
32231 Jutson & Poupard's Shoe for Horses, etc.



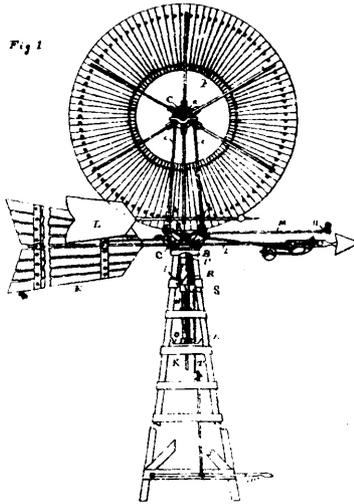
32232 Sergeant's Air Compressor.



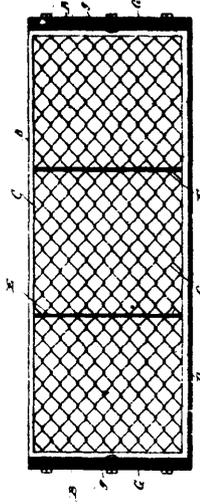
32233 Cody's Elevated Railway.



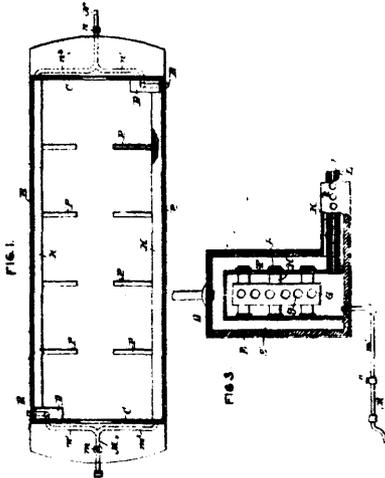
32234 Anderson's Force Pump.



32235 Clark's Wind Engine.



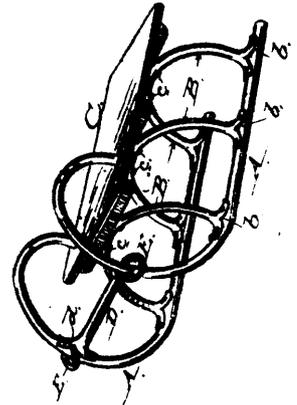
32236 Stanwood's Step or Platform.



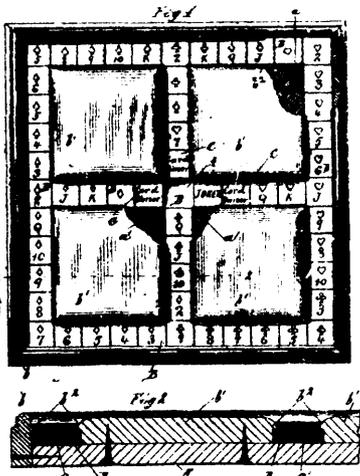
32237 Morton's Car Heater.



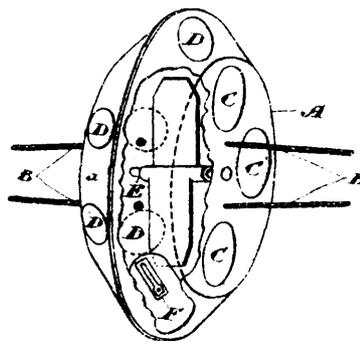
32238 Wesson's Slat Fastener.



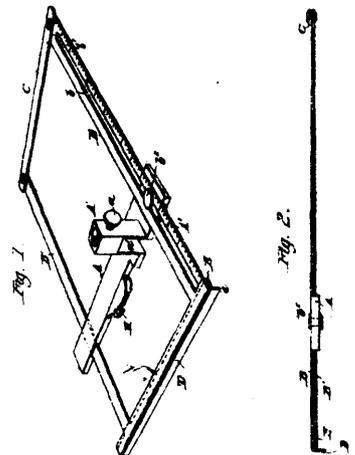
32239 Pickett's Sled.



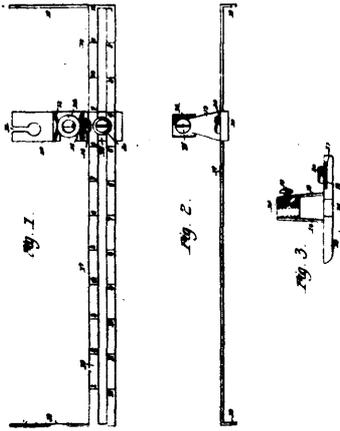
32240 Roberto's Game Apparatus.



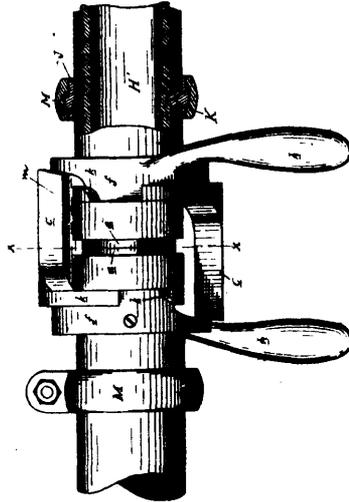
32241 Oakley's Toy.



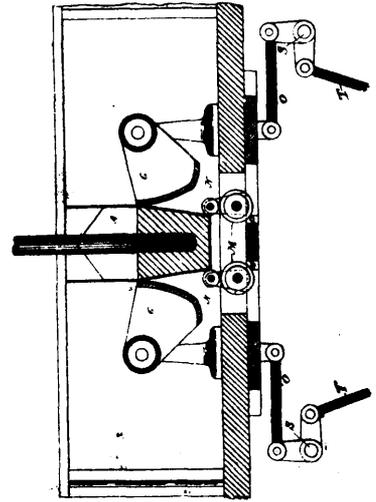
32242 Mayo's Presser Foot Hammer.



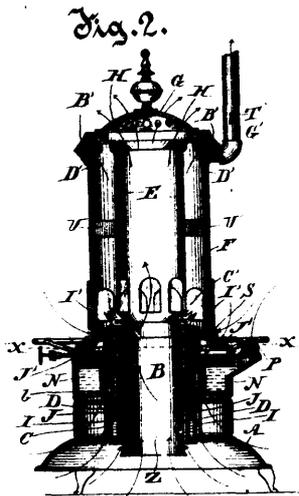
32243 Mayb's Sewing Machine Attachment.



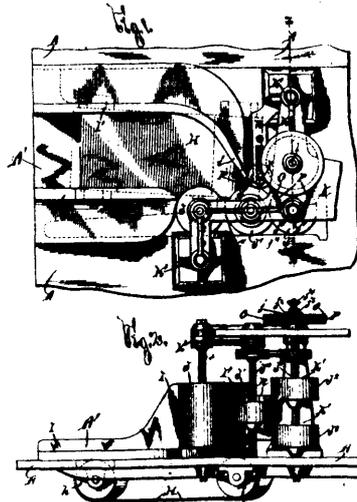
32244 McElroy's Pipe Coupling.



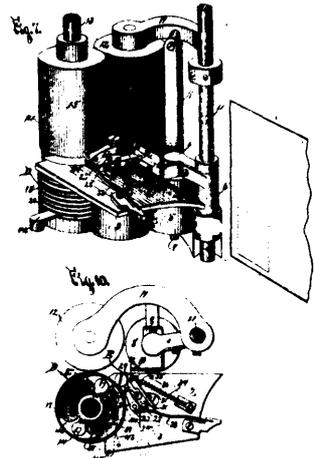
32245 Hutt's Machine for Manufacturing Paper Boxes.



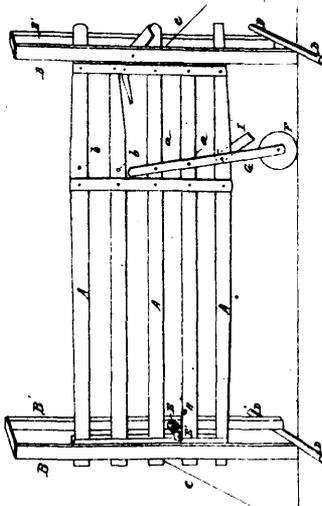
32246 Zimmerling's Stove.



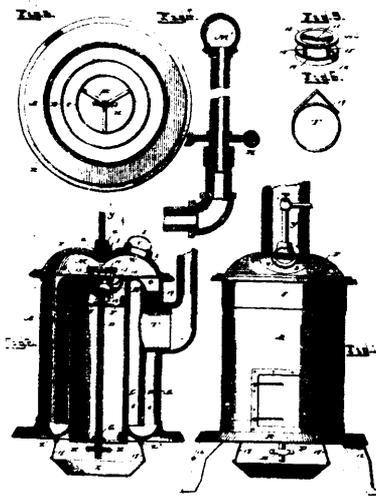
32247 Bertram's Letter Post Marking and Cancelling Machine.



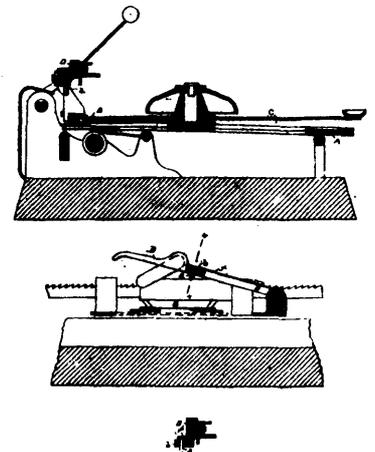
32248 Dolphin's Machine for Separating and Feeding Letters.



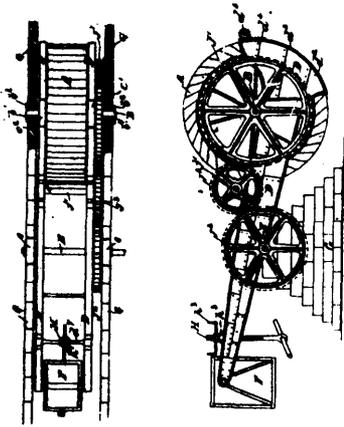
32249 Ardelli's Gate.



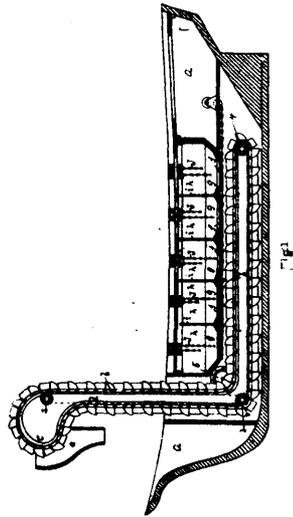
32250 Devoe's Gas or Oil Stove.



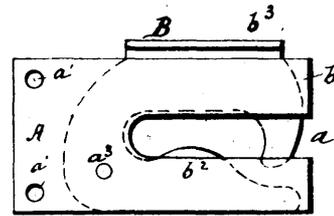
32251 Tileston's Type Writer.



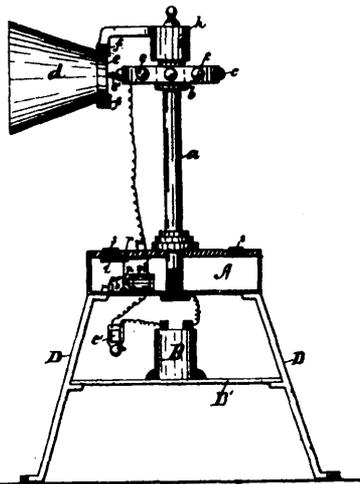
32252 Simpson's Water Wheel.



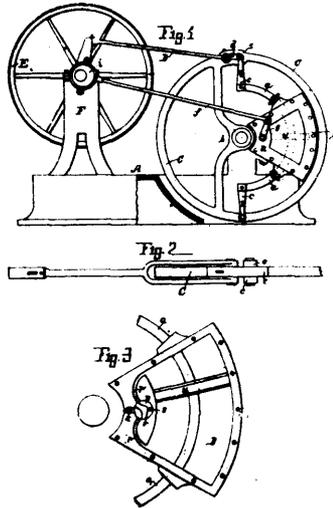
32253 Feymour's Elevator and Conveyor.



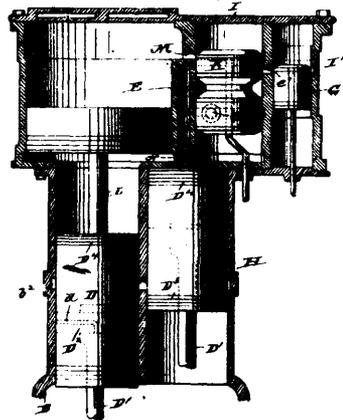
32255 Spooner's Clasp.



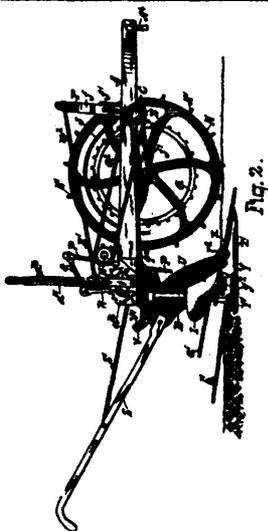
32256 Thompson & Gartner's Ocean Signal.



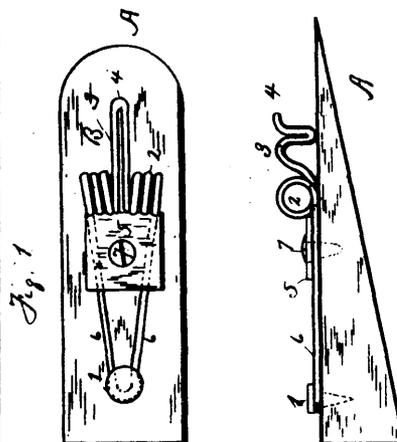
32257 Geib's Steam Engine.



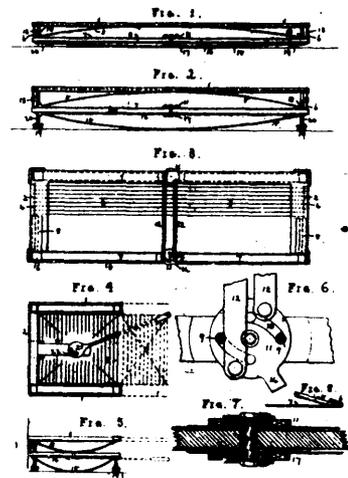
32258 Mumford's Steam Engine.



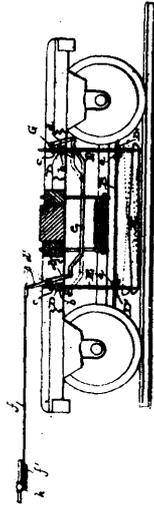
32259 Wilkin's Potato Digger.



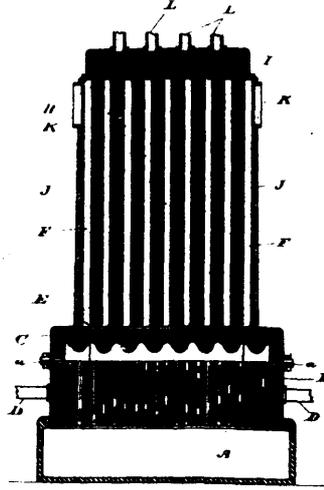
32260 Hydorn's Trace Holder.



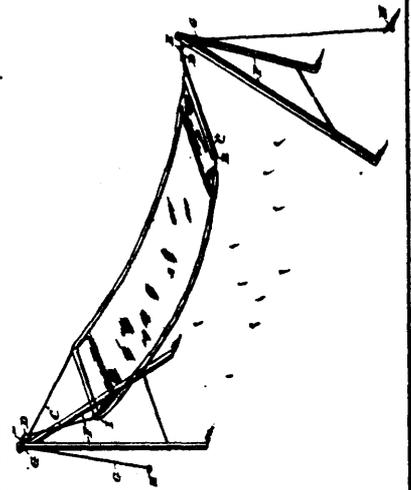
32261 Aldridge's Berth and Seat for Ships and Cars.



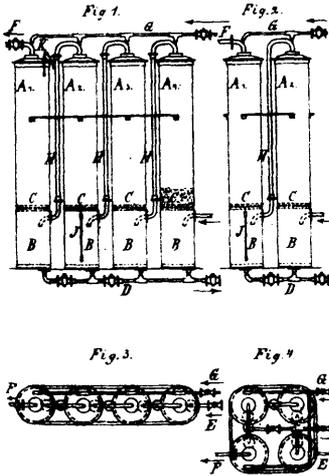
32262 Wescott & Bristol's Car Brake.



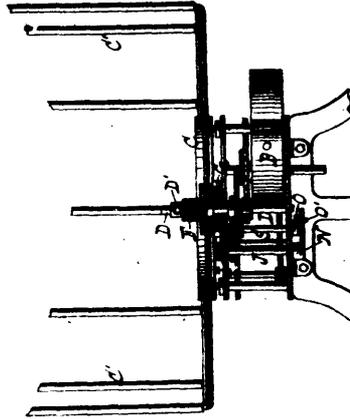
32263 Brake's Hot Water Heater.



32264 Challenger's Hammock and Support.



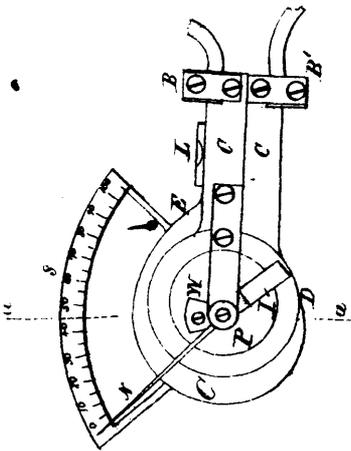
32265 Hoff's Rectifying Chemical Fluid.



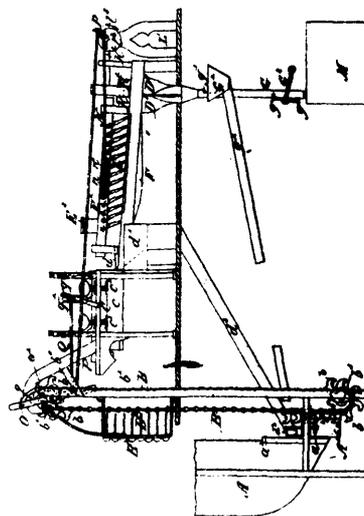
32266 Pincus' Mechanical Movement.



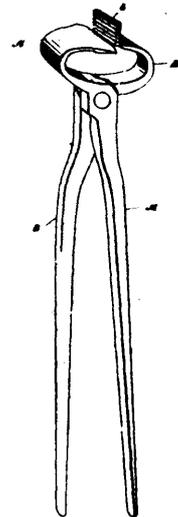
32267 Ripson's Burial Casket.



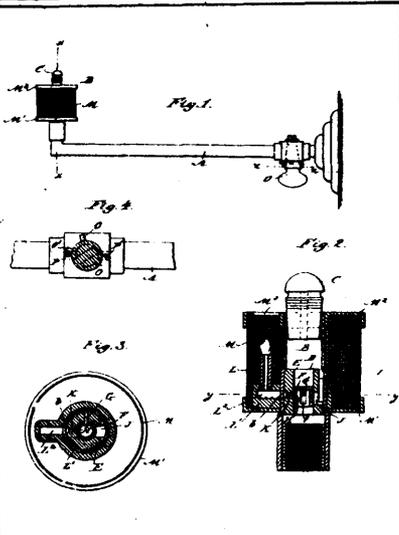
32268 Thomson's Electrical Measuring Instrument.



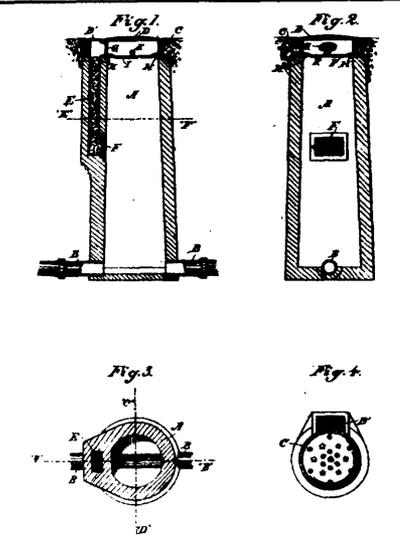
32269 Storie's Feed Mechanism for Chain Link Machines.



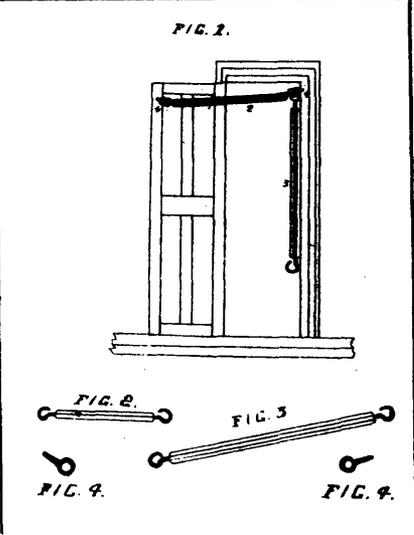
32270 Bowler's Hoof Trimmer.



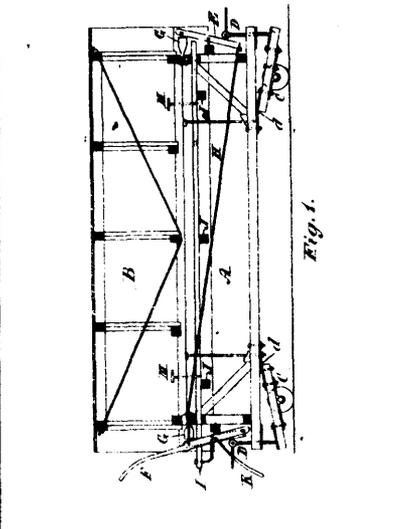
32771 Jacob's Gas Burner.



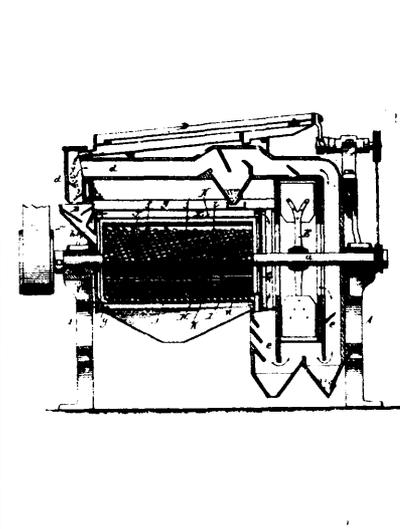
32772 Morgan's Man-Hole for Sewers.



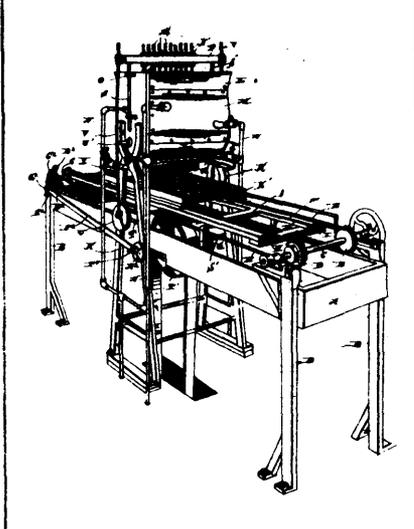
32773 Passmore's Contrivance for Fastening Doors Open.



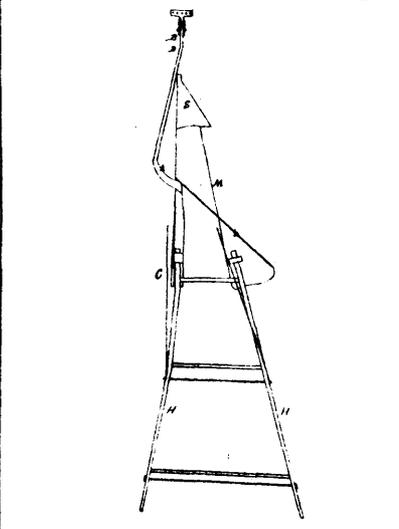
32774 Toye's Portable Centre for Constructing Archways.



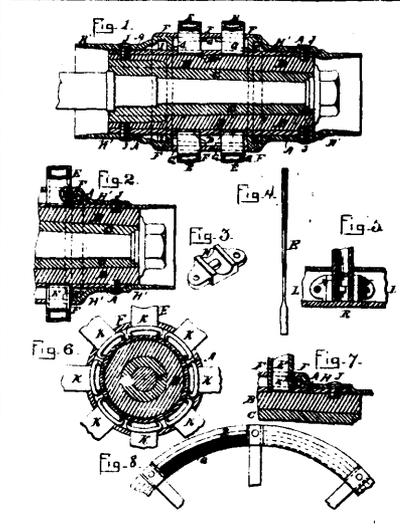
32775 Cranson's Grain Scourer.



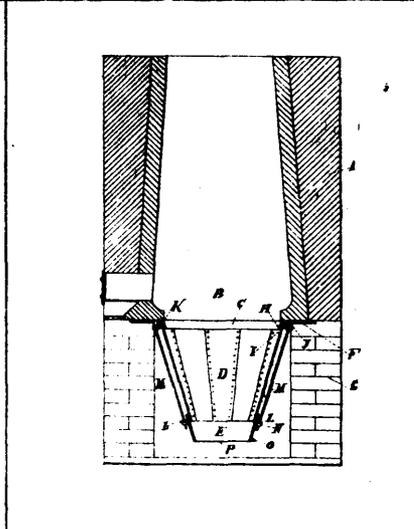
32776 Ruby's Machine for Moulding Confections.



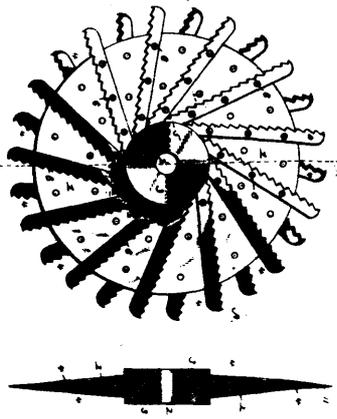
32777 Bartlett's Plough and Cultivator.



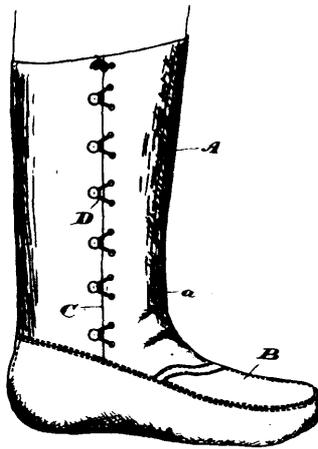
32778 Everson's Metallic Wheel.



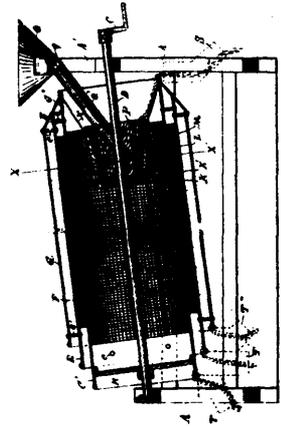
32779 Kranz's Lime Kiln.



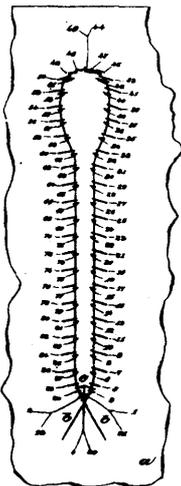
32281 Philp's Cutter Head for Cutting Barrel Blanks.



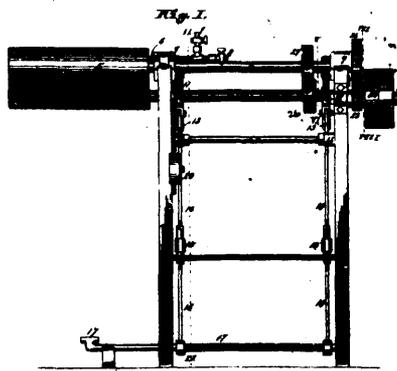
32282 Moffatt's Shoe Pack:



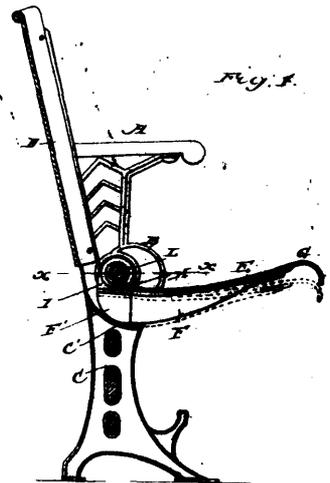
32283 Beeman's Grain Separator.



32284 Fletcher's Method of Stitching Button Holes.

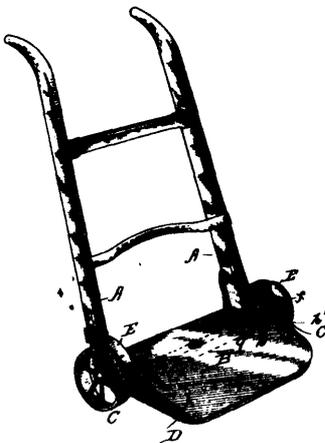


32285 Frits's Ironing Machine.

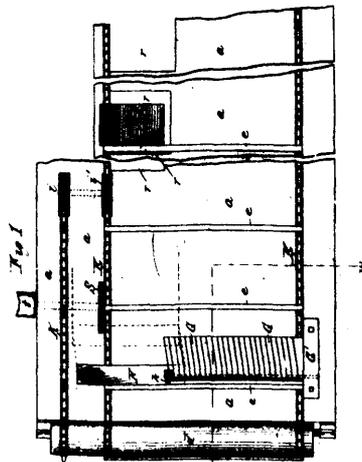


32286 Sander's Hinge for Folding Seats.

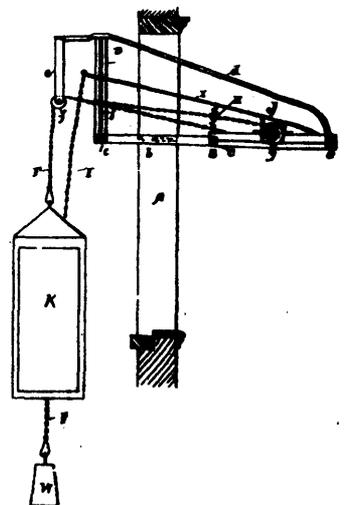
Fig. 1.



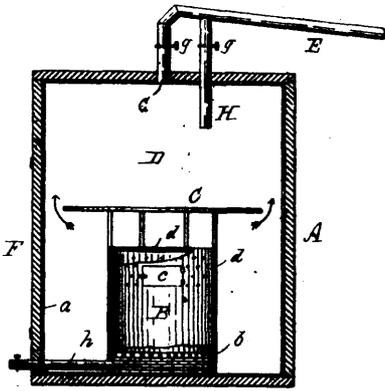
32287 Berger's Hand Truck.



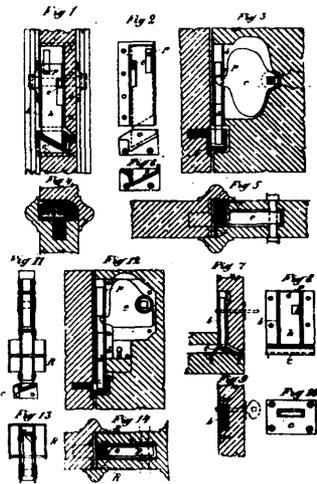
32288 Linderman's Lumber Trimming and Assorting Machine.



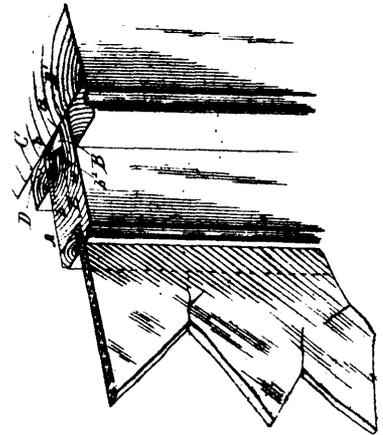
32290 Sprague's Fire Escape.



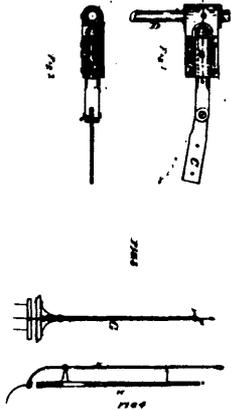
32291 Reed's Process of Preserving Meats.



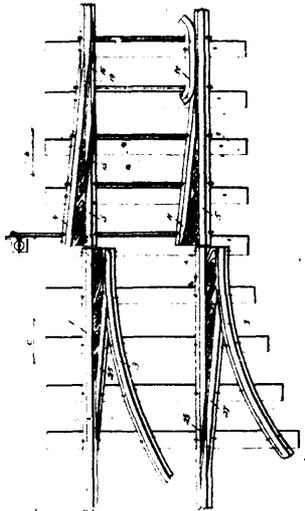
32292 Sorensen's Lock.



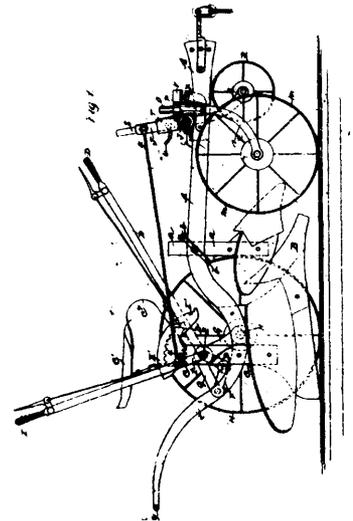
32293 Jones' Weather Strip.



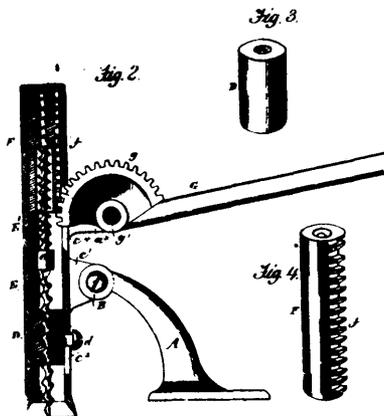
32294 Martel's Hay Baler.



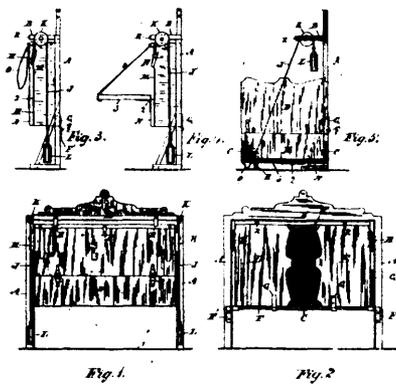
32295 Dann's Safety Switch.



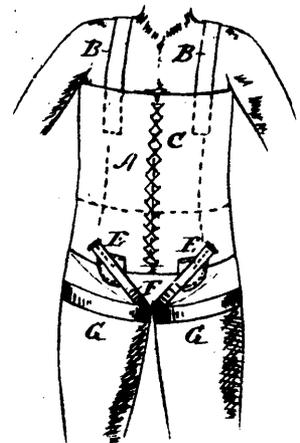
32296 Kingdon's Plough.



32297 Barrett's Cork Screw.



32298 Bellamy's Bedstead and Table.



32299 McLennan's Abdominal and Spinal Supporter.

Fig. 1.

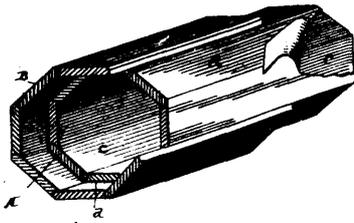
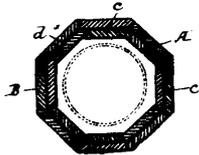


Fig. 2.



32300 Wyckoff's Pipe Casing or Conduit.

FIG. 1.

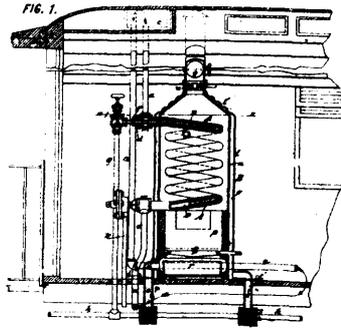
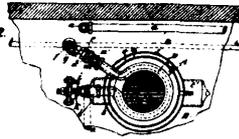
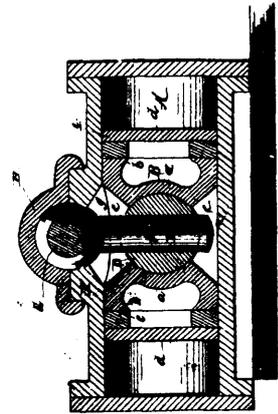


FIG. 2.



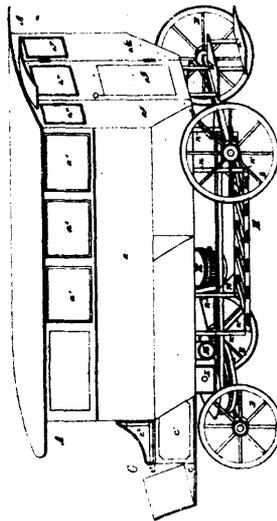
32301 Gold's Heating Apparatus.



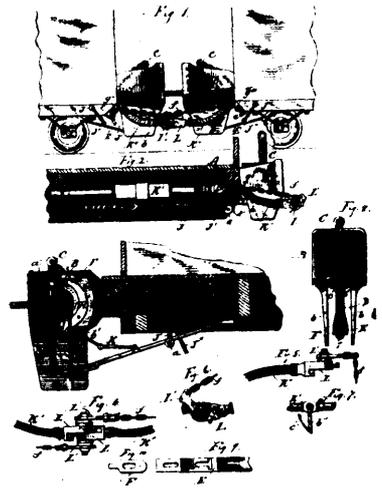
32302 McAllister's Steam Engine.



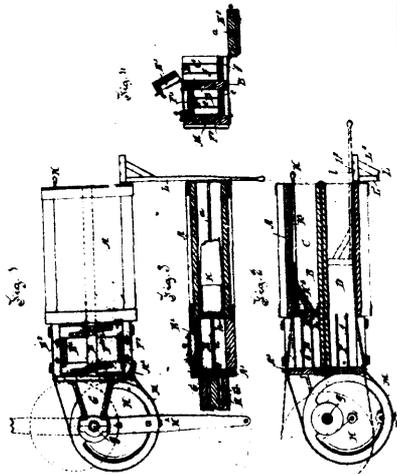
32303 Dowlers' Hoof Expander.



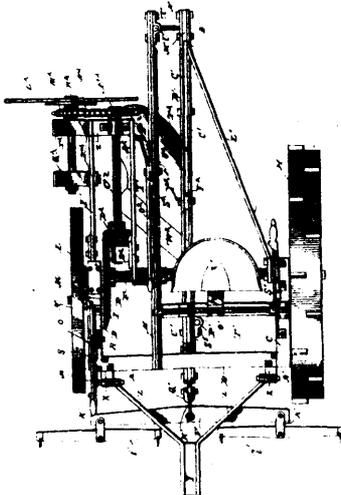
32304 McMaster's Camping Vehicle.



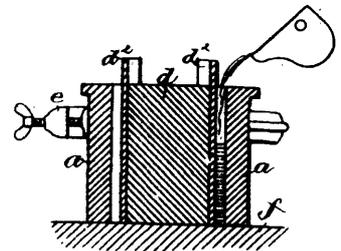
32305 Edward's Car Coupling, etc.



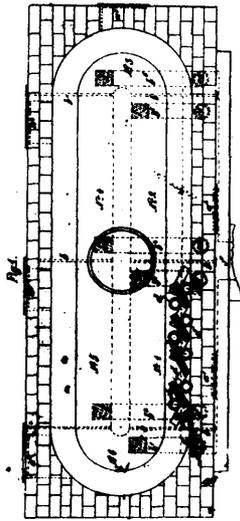
32306 Moulthrop's Baling Press.



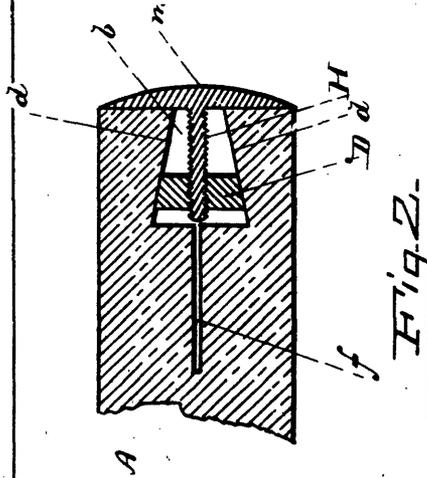
32307 Johnston's Plough and Pulverizer.



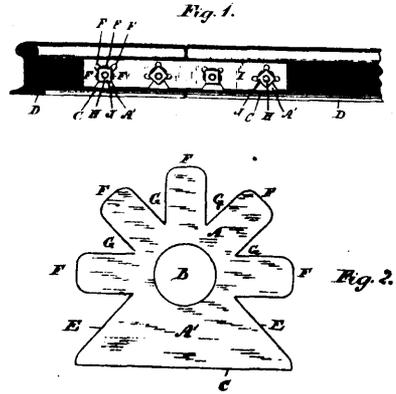
32308 Tophem's Apparatus for Lining Journal Boxes.



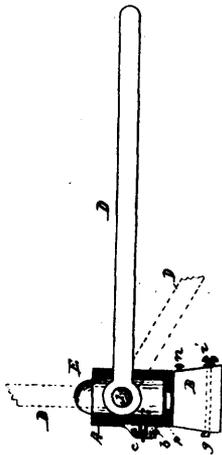
32309 Müller's Smoke Consuming Device.



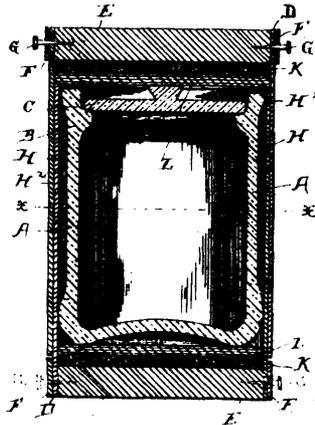
32310 Hall's Ax Helve.



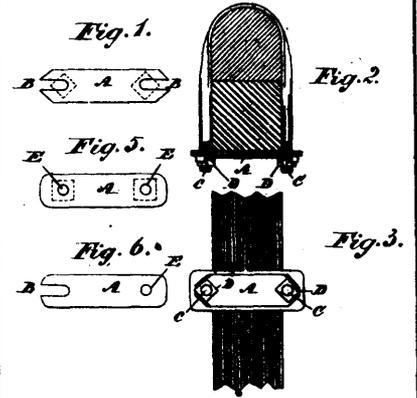
32311 Ross' Nut Lock.



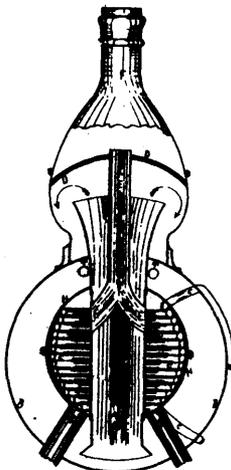
32312 Laguire's Tool and Tool Holder



32313 Crittenden's Butter Package.



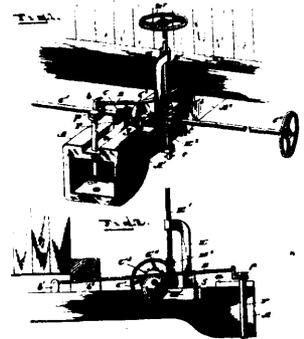
32314 Ross' Nut Lock.



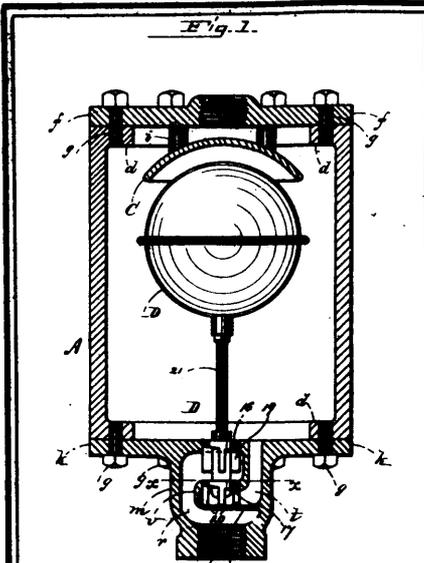
32315 Potticary's Water Heater, etc.



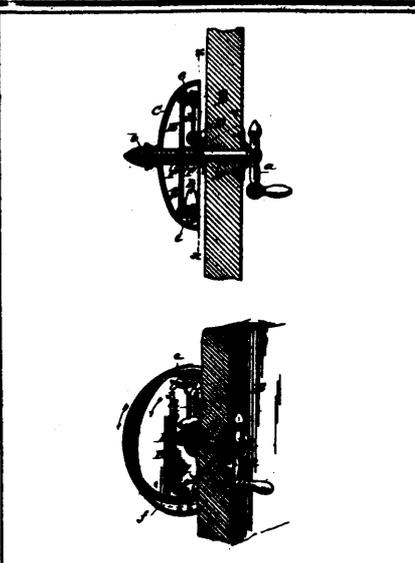
32317 Clarke's Combination Tool.



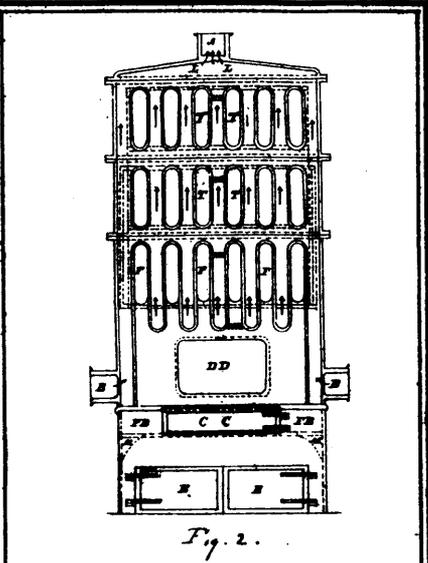
32318 Burgess' Car Coupler.



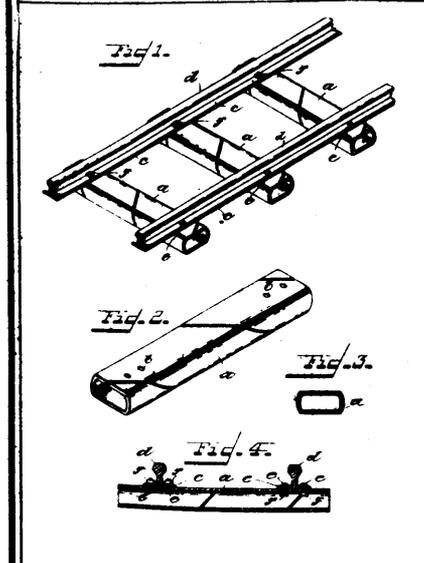
32319 Carleton's Steam Trap.



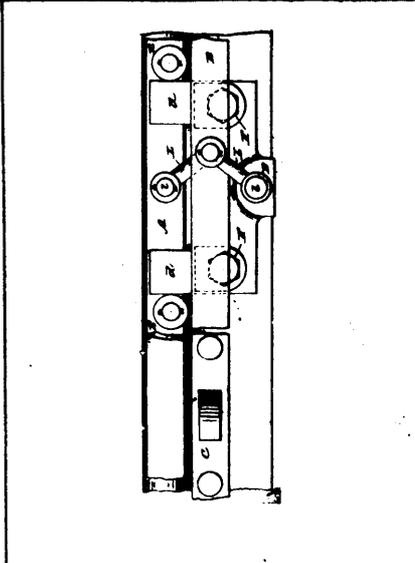
32320 Atkinson's Door Bell.



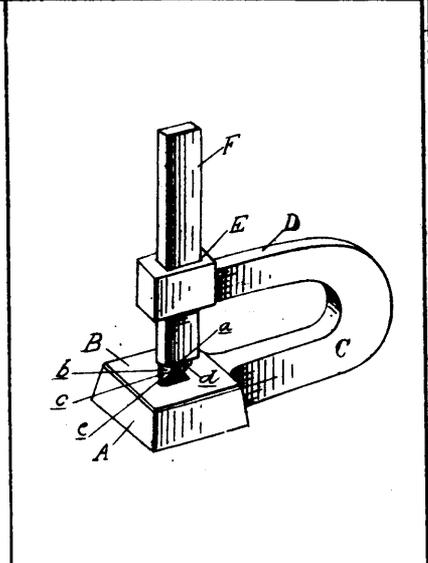
32321 White's Water Heater.



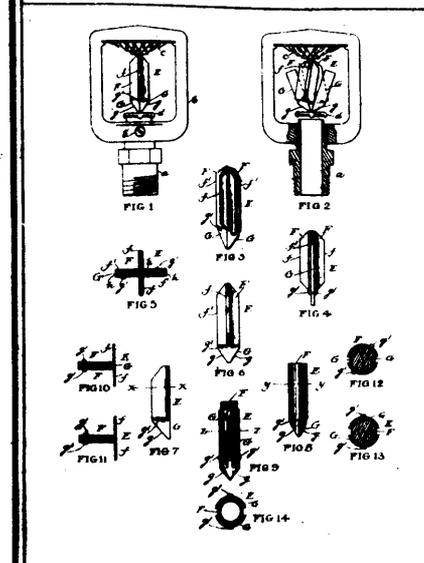
32322 Nickley's Railroad Tie.



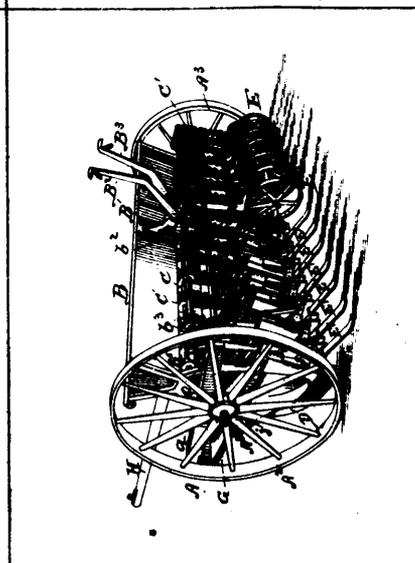
32323 Reiff's Railway Switch.



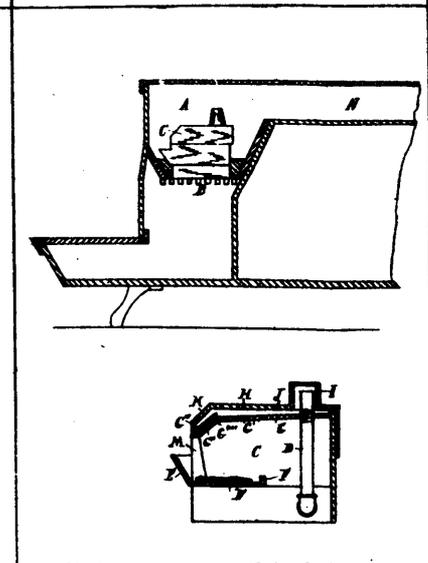
32324 Brower's Saw Gummer.



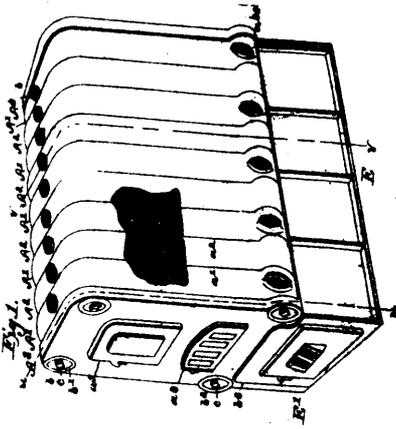
32325 Clapp's Sprinkler.



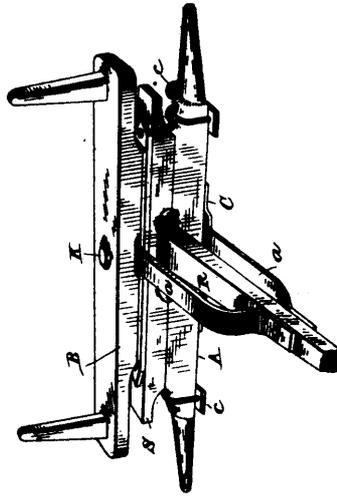
32326 Patric and Packham's Grain Drill.



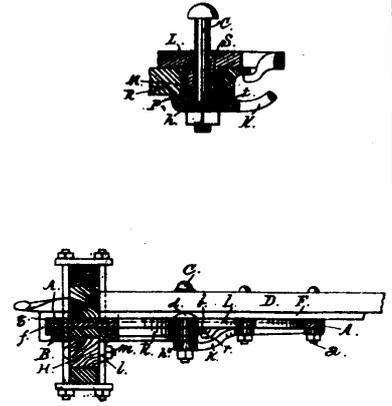
32327 Phelps & Edward's Hydro-Carbon Burner.



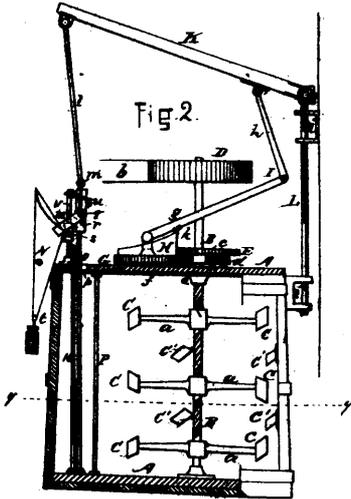
32337 Boynton's Hot Water Heating Apparatus.



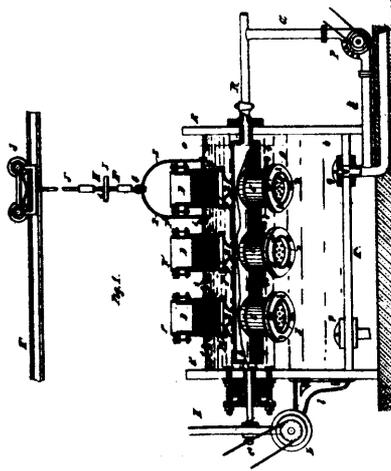
32338 Herby's Farm Wagon.



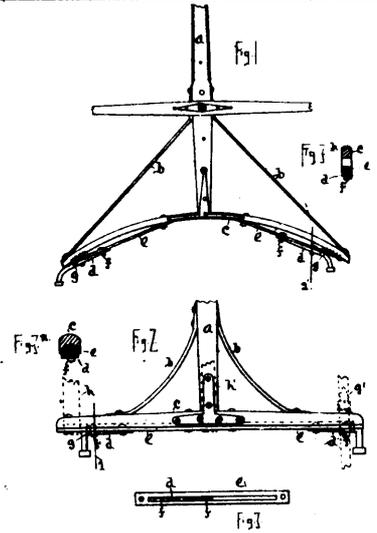
32339 Anderson & Cox's Fifth Wheel.



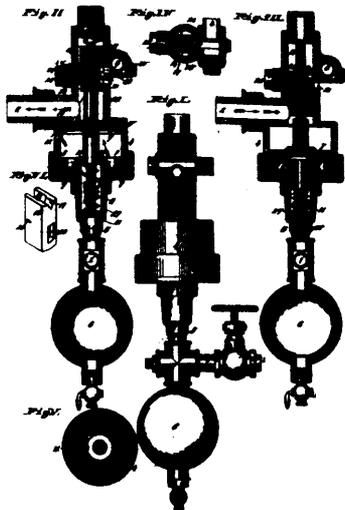
32341 Milliken's Apparatus for Mixing Liquids, etc.



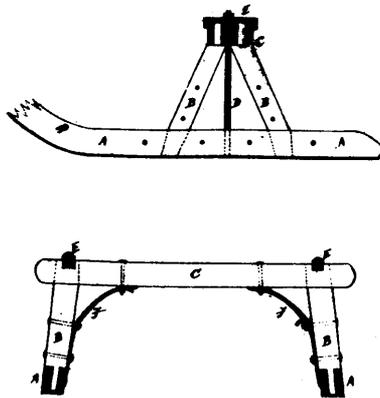
32343 Vandermeersch's Apparatus for Dyeing Wool, etc.



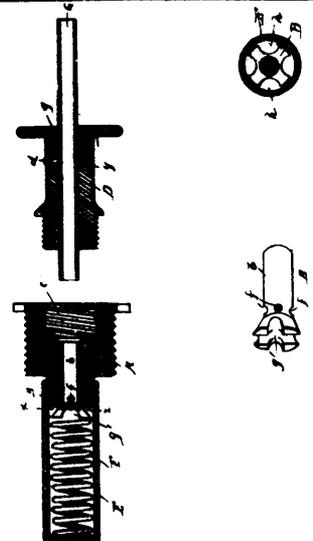
32344 Clapp's Pole and Thill:



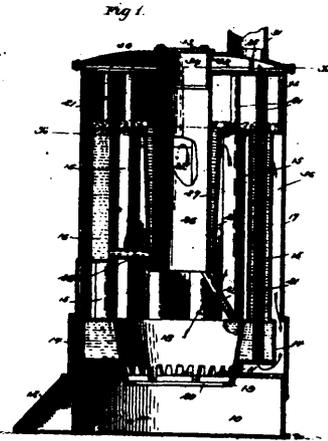
32345 Lansberg's Air Brake.



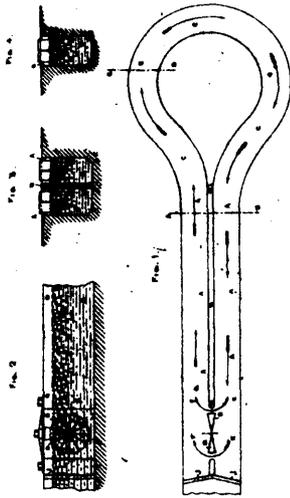
32346 Becks' Bob Sleigh.



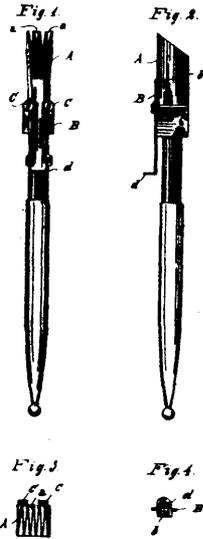
32347 Northup's Cock and Coupling for Barrels.



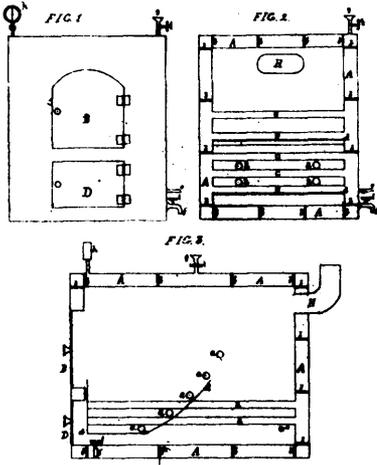
32348 Spencer's Boiler.



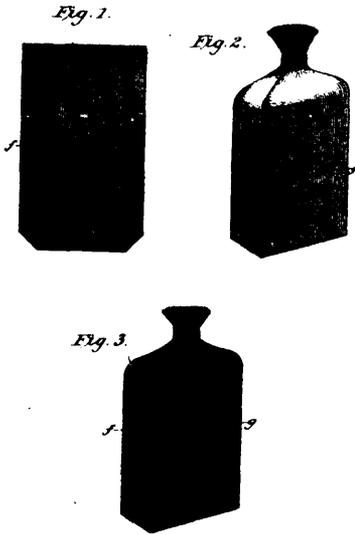
32349 Pickard's Construction of Canals.



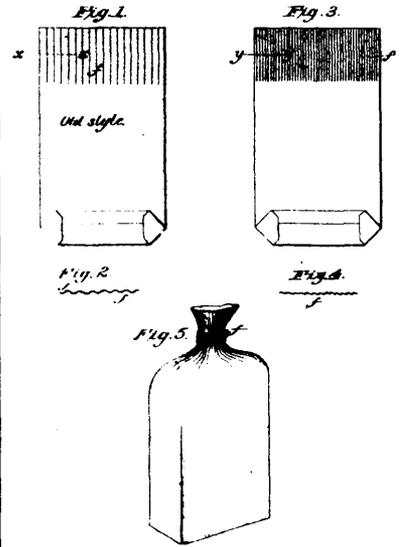
32350 Handel's Pen for Drawing Staffs.



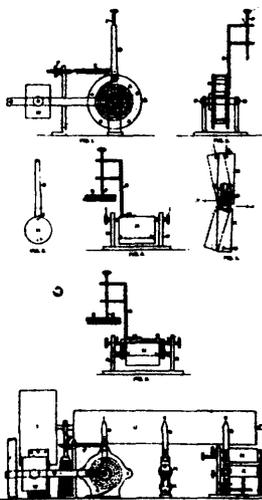
32351 Stuart's Separator for Steam Pipes.



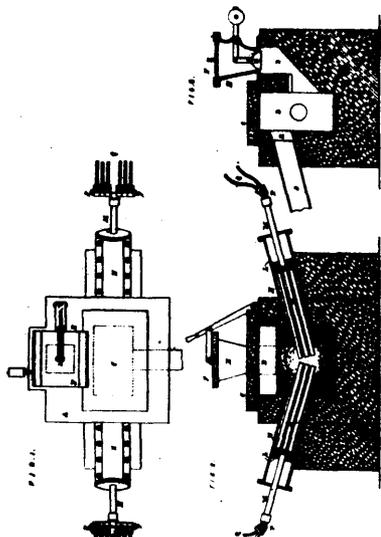
32352 Arkell's Paper Bag.



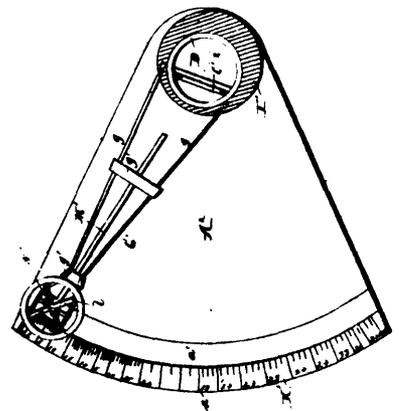
32353 Arkell's Paper Bag.



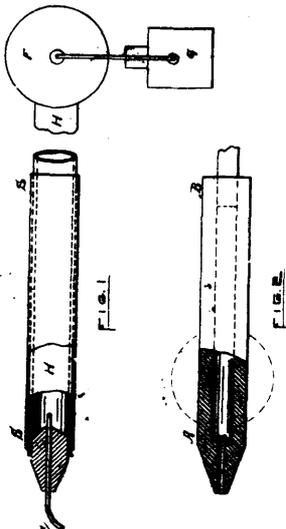
32354 Milne's Apparatus for Recording the Oscillations and Vibrations of Locomotives, etc.



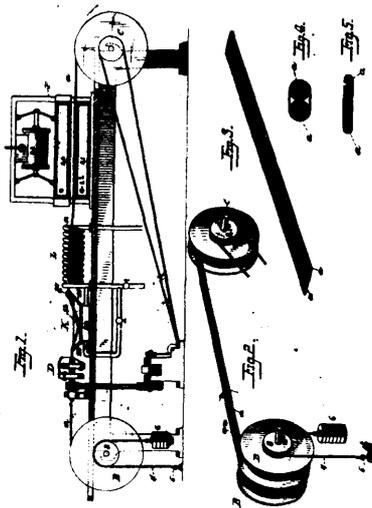
32355 Readman's Process for Obtaining Phosphorus.



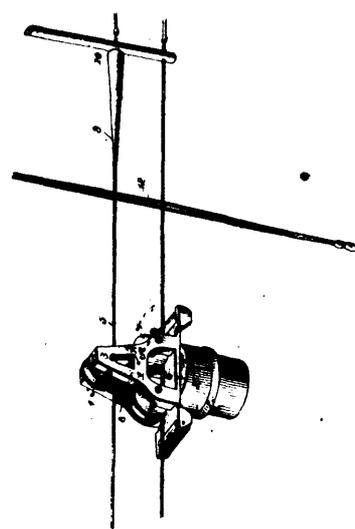
32357 Glover's Weighing Scale.



32358 Small's Device for Introducing a heated Product into the Cavity of a Tooth.

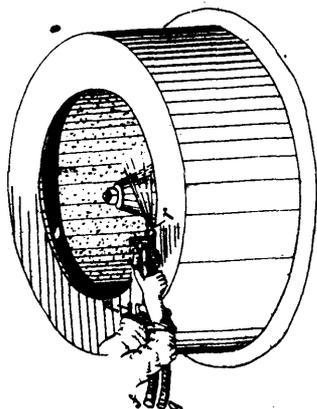


32359 Warner's Stiffening Blade.

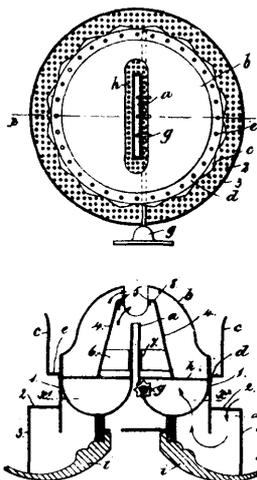


32360 Lippy's Cash Carrier.

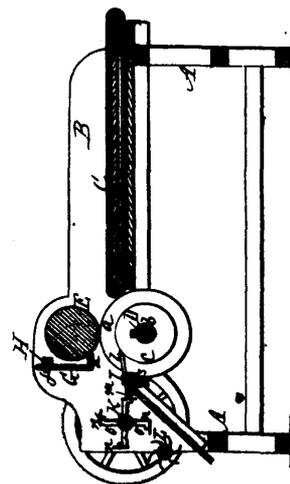
Fig. 3.



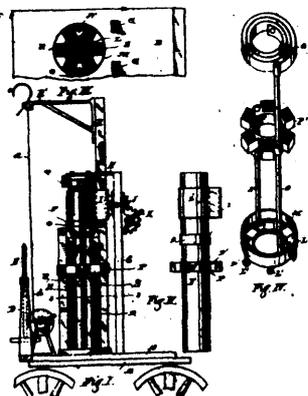
32361 Baumgarth's Apparatus for Refining Sugar.



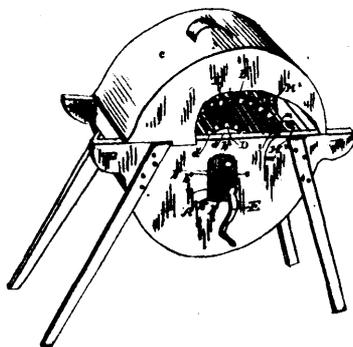
32362 Roberts' Coal Oil Lamp.



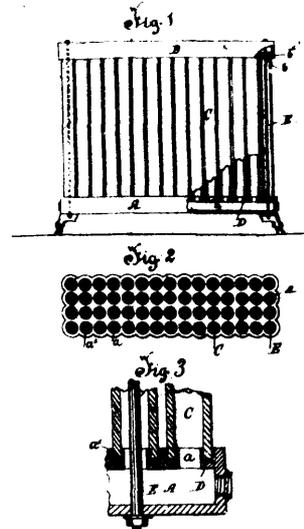
32383 Gordon & De Garmo's Machine for Cutting Tobacco.



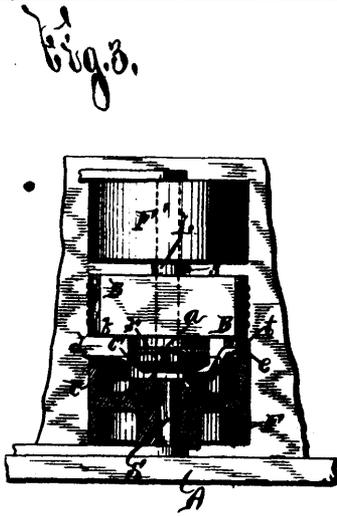
32364 Della's Fire Escape.



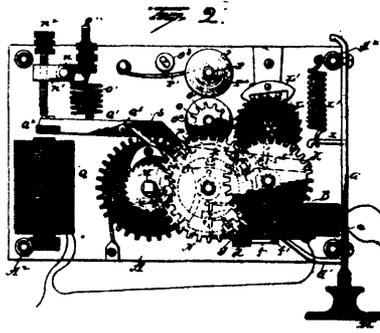
32365 Broadwell's Washing Machine.



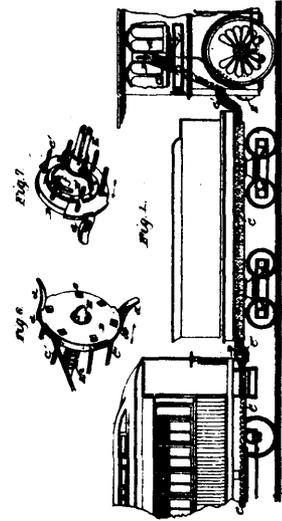
32366 Bayer's Radiator.



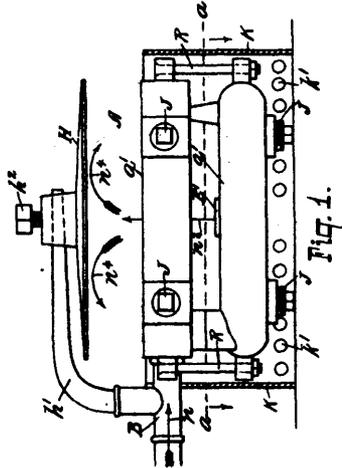
32367 Hey's Cancelling and Post Marking Machine.



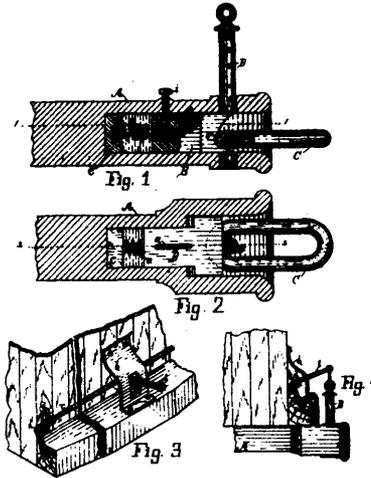
32368 Holcomb's Telephone System.



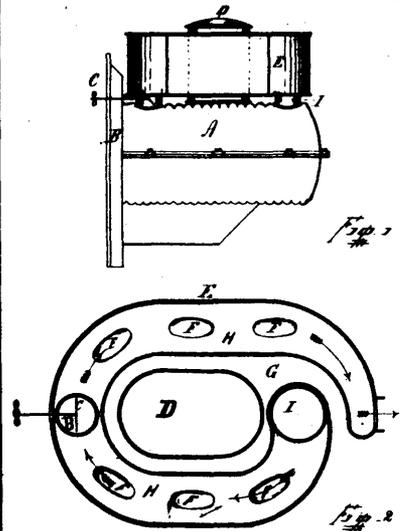
32369 Turney's Car Coupling.



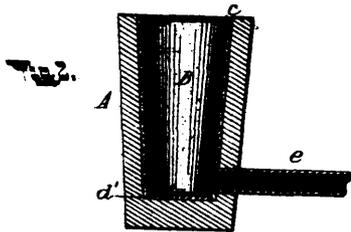
32371 Blythe's Gas Generator and Burner.



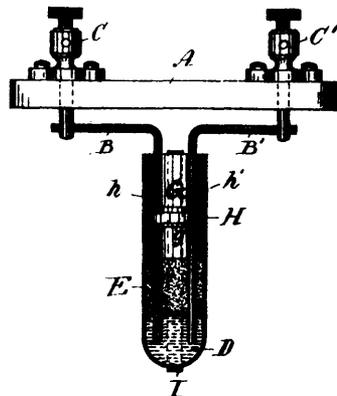
32372 Hall's Car Coupling.



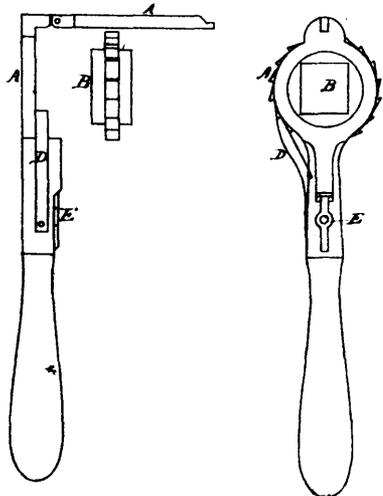
32373 Hopp's Hot Air Radiator, etc.



32374 Darling & Free's Tobacco Pipe.

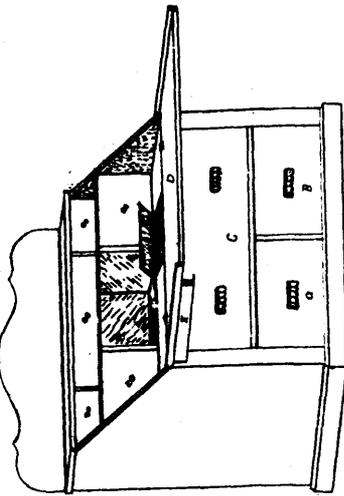


32375 Currie's Electric Cut-Out.

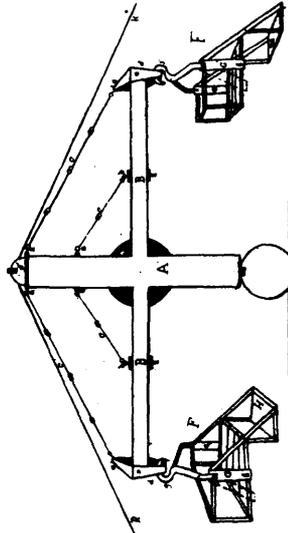


32376 Potvin's Wrench.

Fig. 2.



32377 Merriam's Baking Cabinet.



32378 Little's Swing.

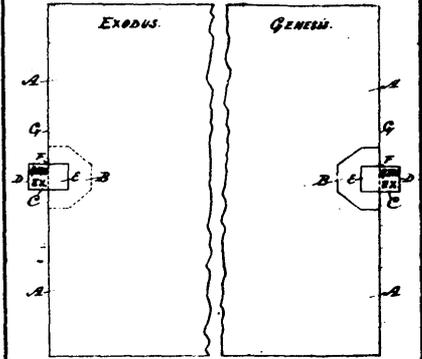
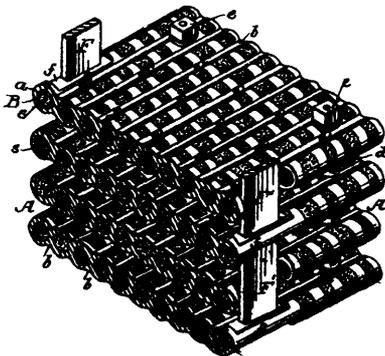


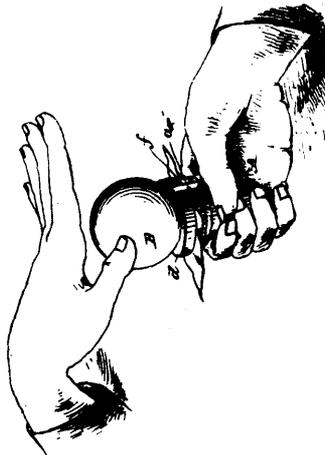
Fig. 3.

32379 Laing's Marginal Index for Bibles.

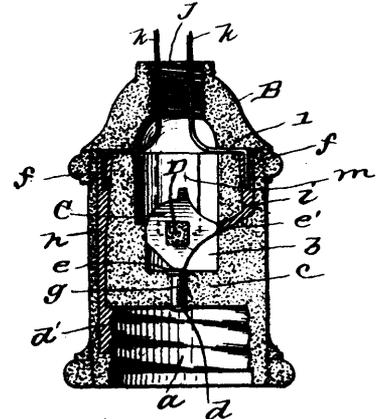
FIG. 1.



32380 Ernst's Secondary Battery.



32381 O'Brien's Sounding Toy.



32382 Collier's Socket for Electric Lamps.

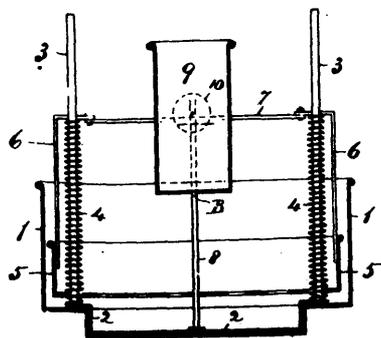
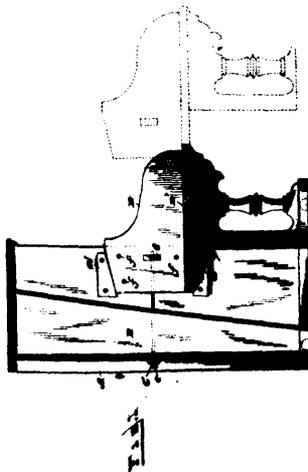
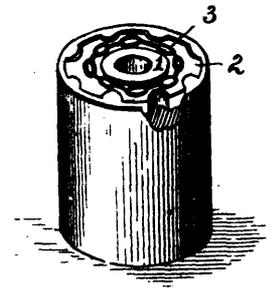


Fig. 2.

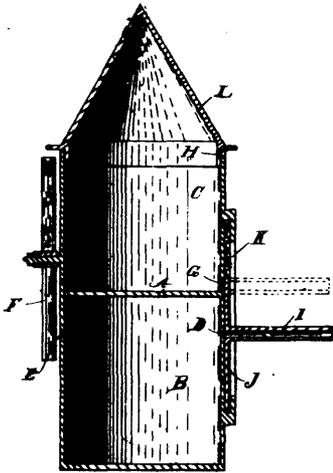
32383 Craig's Egg Boiler.



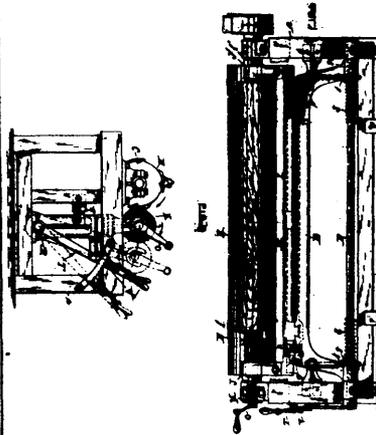
32384 Bent's Piano Case.



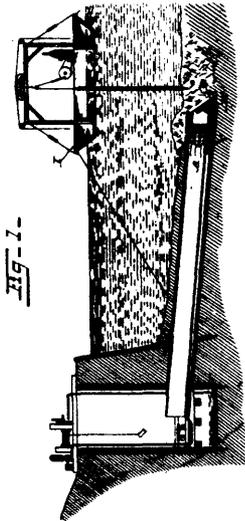
32386 Brownell's Method of Manufacturing Spools.



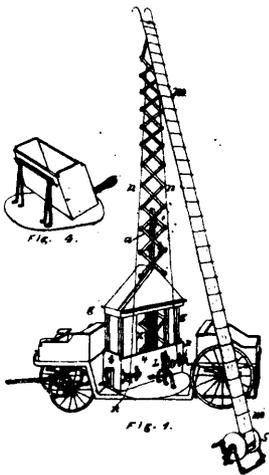
32387 Morin's Toy Windmill.



32388 Purinton's Machine for Removing Bark from Logs.



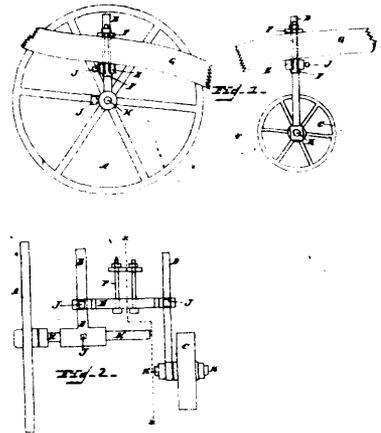
32389 Beecher's Method of Constructing Tunnels.



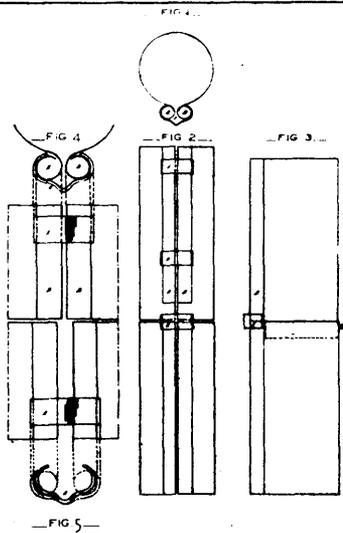
32391 Moore's Fire Escape.



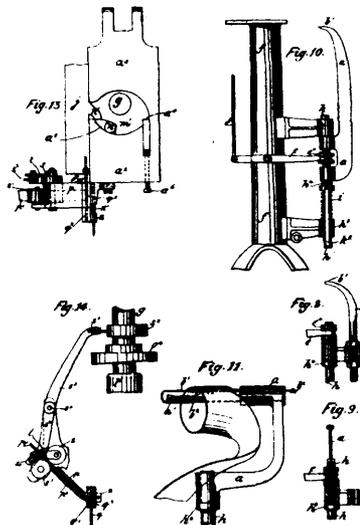
32393 Gog's Means of Propelling Sleds.



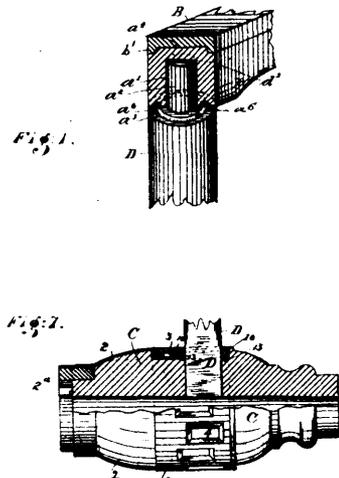
32394 Kaiser's Plough.



32395 Brodeur & Lessard's Water Pipe for Eaves.



32396 Gare's Pegging Machine.



32397 Mahurin's Vehicle Wheel.

INDEX OF INVENTIONS.

Abdominal and spiral supporter. Euphemia A. McLennan.....	32,299	Cotton waste. Extracting oil from and cleaning. William Michell.....	32,280
Air brake. Lausberg Brake Co.....	32,345	Coupling: see Cock. Pipe.	
Air compressor. Henry C. Sergeant.....	32,232	Crimping: see Cartridge.	
Air valve. George M. Davis.....	32,225	Cultivator: see Plough.	
Alloys of chrome, iron and manganese. Process of making. Heinrich Eckardt et al.....	32,217	Cutter head for cutting and trimming gores of barrel blanks. John W. Philip.....	32,281
Animals: see Shoe.		Cutting: see Cartridge.	
Animal drinking fountain. Francis E. Merriman.....	32,221	Cutting tobacco. Machine for. Alexander Gordon et al.....	32,363
Annunciator: see Mechanical.		Die for impressing ornamental designs on metal tubes. John Burkhardt et al.....	32,214
Archways. Portable centre for constructing. Smith Toye.....	32,274	Digger: see Potato.	
Axe. W. C. Killy.....	32,177	Disintegrating fibres and manufacturing paper pulp. Art of and apparatus for. Henry Blackman.....	32,210
Axe helve. Hiram Hall.....	32,310	Distributing: see Nail.	
Baking cabinet. John E. Merriman.....	32,377	Distribution: see Electrical.	
Bal of box. Charles M. Taylor.....	32,203	Door bell. William B. Atkinson et al.....	32,320
Baling press. Irving S. Moulthrop.....	32,306	Doors open. Contrivance for fastening. Eden P. Passmore.....	32,273
Bands: see Clasp.		Drawer: see Furniture.	
Bark from logs. Machine for removing. Frank M. Purinton.....	32,388	Dress stay. William H. Williamson.....	32,209
Barrel head sawing machine. Joseph A. Mumford ..	32,223	Drill: see Grain. Electric. Ratchet.	
Battery: see Secondary.		Drum: see Stencil.	
Bedstead and table. George Bellamy.....	32,298	Dry flour paste. John H. Day.....	32,316
Berths and seats for ships and railways cars. James George U. Alridge.....	32,261	Dust pan. L. Angevin.....	32,173
Bibles. Marginal index for. Byron Laing.....	32,379	Dyeing: see Wool.	
Black leaf check book. James L. Morrison.....	32,196	Egg boiler. John C. Craig.....	32,383
Blade: see Stiffening.		Electric cut out. United Electric Improvement Co.....	32,375
Bob sleigh. William H. Becks et al.....	32,346	Electric drill. J. E. Storie.....	32,183
Boiler: see Steam.		Electric drinking vessel. F. W. Flint.....	32,186
Boiler. George F. Spencer.....	32,348	Electric measuring instrument. Thomson-Houston International Electric Co.....	32,268
Book: see Black.		Electrical distribution. System of. M. M. M. Slattery	32,190
Bottle: see Stopper.		Electrical dry elements. Manufacture of. James L. Morrison.....	32,370
Box: see Ballot. Telephone.		Electrical measuring instrument. Thomson-Houston International Electric Co.....	32,268
Brake: see Air. Car.		Elevated railway. Lorenzo J. Cody.....	32,233
Brake for locomotives, etc. Frank Lansberg ..	32,222	Elevator and conveyor. Charles J. Seymour.....	32,253
Burial casket. Mary E. Ripson et al.....	32,267	Engine: see Steam. Wind.	
Burner: see Gas. Hydro.		Engine: see Valve.	
Butter package. Simeon Crittenden.....	32,313	Evaporating: see Vacuum.	
Button: see Suspender.		Expander: see Hoof.	
Button holes. Method of stitching. Elmer Fletcher..	32,284	Explosive. Frederick A. Abel et al.....	32,219
Cabinet: see Baking.		Farm wagon. John Herly et al.....	32,338
Camping vehicle. Alonzo J. McMaster.....	32,304	Fastener: see Slat.	
Canals. Construction of. Arthur Pickard.....	32,349	Feed mechanism for chain link machines. James D. Storie.....	32,269
Cancelling: see Letter.		Feed water heater and spark arrester. Charles Potticary.....	32,315
Cans. Apparatus for securing ends on. T. Davidson..	32,178	Feeding: see Nail.	
Cape collar. Noel E. Powers et al.....	32,328	Fifth wheel. John W. Anderson.....	32,339
Car and air brake pipe couplings. Richard J. Edwards	32,305	Fire escape. Andrew R. Moore.....	32,391
Car brake. Earl A. Wescott et al.....	32,262	Fire escape. Eugene Della.....	32,364
Car coupler. Samuel Burgess et al.....	32,318	Fire escape. Samuel H. Sprague et al.....	32,290
Car coupling. John P. Turney et al.....	32,369	Fire lighter. William Eacrett.....	32,216
Car coupling. Reuben S. Hall.....	32,372	Flexible driving shaft. Frederick Y. Walseley.....	32,212
Car heater. Thomas M. Morton.....	32,237	Food articles. Preservation of. Henry Salzer.....	32,385
Carrier: see Cash.		Force Pump. James W. Anderson.....	32,234
Cart: see Village.		Fountain: see Animal.	
Cartridge shells. Machine for cutting and crimping. G. D. Hunter.....	32,187	Furnace: see Hot.	
Cash carrier. David Lippy.....	32,360	Furniture drawer. Joseph H. Knau.....	32,226
Case: see Upright.		Game apparatus. Ferdinand C. Roberts.....	32,240
Casket: see Burial.		Gas burner. Alfred P. Jacob.....	32,271
Cavity of a tooth. Device for introducing a heated product into a. Dexter M. Small.....	32,358	Gas. Generating wood. J. F. Foray.....	32,181
Chain link machines. Feed mechanism for. James D. Storie.....	32,269	Gas generator and burner. Charles Blythe et al.....	32,371
Check book: see Black.		Gas or oil stove. Benjamin G. Devoe.....	32,250
Churn. W. A. Martin.....	32,185	Gate: see Self.	
Clasp. Frederick B. Spooner.....	32,255	Gate. D. McDonell.....	32,176
Clasp for bands for securing paper envelopes, etc. Edward J. Hall et al.....	32,228	Gear: see Running.	
Cleaning: see Cotton.		Generator: see Gas.	
Closet: see Water.		Grain: see Press.	
Coal oil lamp. George Roberts.....	32,362	Grain drill. C. Fockler.....	32,182
Cock and couplings for barrels. H. Davis Northup....	32,347	Grain drill. Charles E. Patric.....	32,326
Collar: see Cape. Horse.		Grain scourer. Giles S. Cranson.....	32,275
Color printing. Process for producing. Maurice Wirths.....	32,289	Grain separator. George C. Beeman.....	32,283
Combination tool. Alexander and John F. Clarke....	32,317	Guide: see Pen.	
Compound: see Medicinal.		Hammock and support. William Challenger.....	32,264
Compressor: see Air.		Hand truck. William H. Berger.....	32,287
Couduit: see Pipe.		Harrow. Gustavus A. Paddock.....	32,215
Confections. Machine for moulding. Joshua C. Ruby	32,276	Heater: see Car. Hot.	
Conveyor: see Elevator.		Heating apparatus. Edward E. Gold.....	32,301
Cork screw. William N. Barrett.....	32,297	Helve: see Axe.	
		Hommer: see Presser.	
		Hides for tanning. Method of preparing. Albert Hull.	32,356
		Hinge for folding seats. John M. Saunder.....	32,286
		Holder: see Tool. Trace.	

Holder for incandescent electric lamps. James W. Collier..... 32,382
 Hoof expander. Frank K. Dowler..... 32,303
 Hoof trimmer. Giles Bowler..... 32,270
 Horses: see Shoe.
 Horse collar. George W. Chapman et al..... 32,198
 Horse hay rake. Cyrille Martel..... 32,294
 Horse shoe: see Shoe.
 Hot air radiator and furnace. William J. Copp..... 32,373
 Hot water heater. Archibald Brake..... 32,263
 Hot water heating apparatus. Boynton Furnace Co..... 32,337
 Hydro-carbon burner. The Mascotte Burner and Oil Co..... 32,327
 Index: see Bibles.
 Sewing machine. George J. Fritz..... 32,285
 Kiln: see Lime.
 Knitting machine. William Esty et al..... 32,195
 Lamp: see Coal.
 Letter. Postmarking and cancelling. International Postal Supply Co..... 32,247
 Letters. Machine for separating, etc. International Postal Supply Co..... 32,248
 Lighter: see Fire.
 Lime kiln. Frederick Kranz..... 32,279
 Lining journal boxes. Apparatus for. George W. Topham..... 32,308
 Link: see Feed.
 Liquid and powdered substances and filling receptacles therewith. Apparatus for. Benjamin D. Millbren..... 32,341
 Lock: see Sifting.
 Lock. Niels G. Dorensen..... 32,292
 Locomotives: see Brake.
 Lubricator. Benjamin A. Burgess et al..... 32,208
 Lumber trimming and assorting machine. Albert T. Lindemann..... 32,288
 Machinery and structures. Apparatus for recording the vibrations of. John Milne..... 32,354
 Man holes: see Ventilation.
 Measuring: see Electric.
 Meats. Process of preserving. John D. Reed..... 32,291
 Mechanical annunciator. C. Wilmot et al..... 32,179
 Mechanical movement. Henry Pincus et al..... 32,266
 Medicinal compound. Moses Courtemanche..... 32,390
 Medicinal compound. Wallace Dawson..... 32,342
 Metal: see Sheet.
 Metallic tubing to convert it into ornamental, spheroidal and analogous forms. Process of treating. John Burkhardt et al..... 32,335
 Metallic wheel. George H. Everson..... 32,278
 Moulding: see Confection.
 Movement: see Mechanical.
 Nail feeding and distributing machine. Freeborn F. Raymond..... 32,205
 Nut lock. Walter T. Ross..... 32,314
 Nuts, bolts and set screws. Means for locking. Thomas B. Grant..... 32,332
 Ocean signal. Walter Thompson et al..... 32,256
 Oil heating stove. Augustus F. Zimmerling et al..... 32,246
 Oil. Process of refining. Jesse A. Dubbs..... 32,254
 Oil tank. Elmer N. Bacheider et al..... 32,211
 Pack: see Shoe.
 Package: see Butter.
 Pan: see Dust.
 Paper bag. James Arbell..... 32,352
 Paper bags. Method of making striped..... 32,336
 Paper. Machine for the manufacture of. James W. Hutt et al..... 32,245
 Paste: see Dry.
 Pegging machine. Thomas Gare..... 32,396
 Pen for drawing staffs. Reinhold Handel..... 32,350
 Pen guide or rest. J. Bergmann..... 32,175
 Petroleum: see Refining.
 Phosphorus. Process for obtaining..... 32,355
 Photographic negatives and sensitive plates. Herbert Deverill et al..... 32,340
 Pipe: see Tobacco.
 Pipe casing or conduit. Arcalons and Ernest L. Wy-chaff..... 32,300
 Pipe couplings. McEvoy Car Heating Co..... 32,241
 Platform: see Step.
 Plough for furrows. William Kaiser..... 32,394
 Plough. James Kingdon..... 32,296
 Plough and cultivator. Edward Bartlett..... 32,277
 Plough and Pulverizer. Sylvester T. and Columbus Johnston..... 32,307
 Pole and thill for vehicles. George L. Clapp et al..... 32,344
 Post-marking: see Letter.

Potato digger. Alexander Wilkin..... 32,259
 Press: see Baling.
 Press drill for planting grain. John W. Rhodes..... 32,213
 Presser foot hemmer. Alice La G. Mayo..... 32,242
 Pulp: see Disintegrating.
 Pulverizer: see Plough.
 Pump: see Force.
 Rabbit and carpet tacker. Elizabeth A. Rogers..... 32,224
 Radiator: see Hot.
 Radiator. Power & Co..... 32,366
 Railroad tie. Alden C. Nickloy et al..... 32,322
 Railroad tie. William W. Whitaker..... 32,322
 Railroad: see Elevated.
 Railway switch. Gustavus N. Reiff et al..... 32,323
 Rake: see Horse.
 Ratchet drill. P. R. Erickson..... 32,184
 Rectifying chemical and apparatus therefor. Bogdan Hoff..... 32,265
 Reducing: see Zinc.
 Refining: see Oil.
 Refining petroleum by distillation. Art or process of. E. C. C. Mengel..... 32,174
 Refining sugar. Apparatus for. Alwin Baumgarth..... 32,361
 Rock drills and analogous machines. A. J. Sypher..... 32,192
 Running gear for vehicles. Frank Dupee..... 32,207
 Safety switch. Louis Dunn..... 32,295
 Saw gummer. James F. Brower..... 32,324
 Sawing: see Barrel.
 Scourer: see Grain.
 Screen for car windows, etc. James Reid Steele et al..... 32,330
 Seats: see Berths. Hinge.
 Secondary battery. Victor H. Ernst..... 32,380
 Seed cake or cattle food from cotton seed. Manufacture of. Robert S. Baxter et al..... 32,392
 Self locking gate. William H. Ardiell..... 32,249
 Separator: see Grain.
 Separator for steam pipes. Sinclair Stuart..... 32,351
 Sewers: see Ventilating.
 Sewing machine attachments. Alice La G. Mayo..... 32,243
 Shaft: see Flexible.
 Sheet metal. Manufacture of. E. and O. M. Norton..... 32,194
 Shoes for horses and other animals. Charles J. Johnson et al..... 32,231
 Shoe pack. John Moffatt..... 32,282
 Signal: see Ocean.
 Slat fastener. Miley B. Wesson..... 32,238
 Sled. Adolphe Tode..... 32,200
 Sled. Lyman B. Pickett et al..... 32,239
 Sleds. Means of propelling. George Gog..... 32,393
 Sleigh: see Bob.
 Sling lock. S. G. Emerson..... 32,180
 Smoke consuming fire device for boilers. Bernhard Muller..... 32,309
 Snap: see Whiffletree.
 Spools. Method of manufacturing. Emerson P. Brownell..... 32,386
 Sprinkler. Joseph Clapp et al..... 32,325
 Stamp cancelling and post-marking machine. International Postal Supply Co..... 32,367
 Stand: see Watch.
 Stay: see Dress.
 Steam boiler. The Dominion Safety Boiler Co..... 32,218
 Steam engine. James McAllister..... 32,302
 Steam engine. Joseph A. Mumford..... 32,253
 Steam engine. William Geib..... 32,257
 Steam trap. William L. Blake..... 32,319
 Stenell drum. J. Parish..... 32,193
 Step or platform. Frank H. Stanwood..... 32,236
 Stiffening blade. Ira De Ver Warner..... 32,359
 Stitching: see Button.
 Stopper for bottles, pots, jars, etc. Henry L. Phillips..... 32,199
 Stove: see Gas. Oil.
 Sugar: see Refining.
 Support: see Hammock.
 Supporter: see Abdominal.
 Suspender end and clasp button. William L. Doran..... 32,229
 Swimming machine. J. Malo..... 32,191
 Swing. Alexander W. Little..... 32,378
 Switch: see Safety.
 Table: see Bedstead.
 Tacker: see Rabbit.
 Tank: see Oil.
 Tap: see Water.
 Telephone call box. Amengo Griffith et al..... 32,334
 Telephone system. Fred A. Holcomb et al..... 32,368
 Thill: see Pole.
 Tobacco: see Cutting.
 Tobacco pipe. Charles E. Darling et al..... 32,374

Tool: see Combination.
 Tool and tool holder. William H. Laguire..... 32,312
 Toy. Frederick Oakley..... 32,241
 Toy. Joseph S. O'Brien..... 32,381
 Toy windmill. Alcdas E. Morin..... 32,387
 Trace. George W. Fail..... 32,220
 Trace holder. George L. Hydorn..... 32,260
 Treating hides, skins, etc., in liquids. Apparatus for. Charles W. Cooper..... 32,201
 Trimmer: see Hoof.
 Tripletrees. Equalizer for. Phelps Evans..... 32,329
 Truck: see Hand.
 Tunnels. Method of constructing. Luther Beecher... 32,389
 Type writer. Elliott G. Thorpe..... 32,251
 Upright piano case. Richard M. Bent..... 32,384
 Vacuum evaporating apparatus. H. T. Yaryou..... 32,189
 Valve: see Air.
 Valve for engines. Henry C. Sergeant..... 32,206
 Vehicle: see Camping.
 Vehicle wheel. Melville B. Mahurm..... 32,367
 Vehicle: see Running.
 Ventilating man-hole for sewers. Thomas W. Morgan..... 32,272
 Ventilation of man-holes for sewers. Thomas W. Morgan..... 32,272
 Vessel: see Electric.
 Village cart. L. Burg..... 32,171
 Vulcanizer. Edward B. Crane..... 32,230
 Washing machine. Henry Broadwell et al..... 32,365
 Washing machine. Hiram H. Gifford..... 32,331
 Washing machine. James Lachin Weir..... 32,333
 Water closet. David L. Dwinell et al..... 32,197
 Water heater. William A. White et al..... 32,321
 Water pipe for eave troughs. Charles Brodeur et al... 32,395
 Water tap. Francis H. Hyde..... 32,227
 Water wheel. Universal Water Power Co..... 32,252
 Watch stand. Richard Bresch..... 32,202
 Weather strip. John E. Jones..... 32,293
 Weighing scale. Robert Emmet Glover..... 32,357
 Wheel: see Fifth. Metallic. Water.
 Whiff-tree snap. A. E. Eysaman..... 32,172
 Wind engine. Arthur S. Clark..... 32,235
 Wind mill: see Toy.
 Wire working apparatus. David Rawson..... 32,204
 Wool and other fibrous materials. Means for dyeing. Charles Vandermeirsche..... 32,343
 Wrench. Joseph Potvin..... 32,376
 Writer. see Type.
 Zinc. Process of reducing. G. M. Westman..... 32,188

INDEX OF PATENTEES.

Abel, Frederick A., et al. Explosive..... 32,219
 Aldridge, James George W. Berths and seats for ships and railway cars..... 32,261
 Almy Bradford, et al. Pole and thill for vehicles..... 32,344
 Anderson, James W. Force pump..... 32,234
 Anderson, John W. Fifth wheel..... 32,339
 Angevine L. Dust pan..... 32,173
 Ardiell, William H. Self locking gate..... 32,249
 Arkell, James. Paper bag..... 32,352
 Atkinson, William B., et al. Door bell..... 32,320
 Bachelder, Elmer N., et al. Oil tank..... 32,211
 Barrett, William N. Cork screw..... 32,297
 Bartlett, Edward. Plough and cultivator..... 32,277
 Baumgarth, Alwin. Refining sugar and apparatus therefor..... 32,361
 Barter, Robert S., et al. Manufacture of seed cake or cattle food from cotton seeds..... 32,392
 Becks, William H. Bob sleigh..... 32,346
 Beecher, L. Method of constructing tunnels..... 32,389
 Beeman, George C. Grain separator..... 32,283
 Bellamy, George. Bedstead and table..... 32,298
 Bent, Richard M. Upright piano case..... 32,384
 Berger, William H. Hand truck..... 32,287
 Bergmann, I. Pen guide or rest..... 32,175
 Blackman, Henry. Art of and apparatus for distilling fibres and manufacturing paper pulp..... 32,210
 Blake, William L. Steam trap..... 32,319
 Blythe, Charles, et al. Gas generator and burner..... 32,371
 Bowler, Giles. Hoof trimmer..... 32,270
 Boynton Furnace Co. Hot water heating apparatus... 32,337
 Brake, Archibald. Hot water heater..... 32,263
 Bresch, Richard. Watch stand..... 32,202

Bristol, E. R., et al. Car brake..... 32,262
 Broadwell, Henry, et al. Washing machine..... 32,365
 Broden, Charles, et al. Water pipe for eave troughs... 32,395
 Brower, James F., et al. Saw gummer..... 32,324
 Brownell, Emerson, P. Method of manufacturing spoons..... 32,388
 Burbank, Henry A., et al. Telephone call box..... 32,334
 Burg, L. Village cart..... 32,171
 Burgess, Benjamin A., et al. Lubricator..... 32,208
 Burgess, Samuel, et al. Car coupler..... 32,318
 Burkhardt, John, et al. Die for impressing ornamental designs on metal tubes..... 32,214
 Burkhardt, John, et al. Process of treating metallic tubing to convert it into ornamental spheroidal and analogous forms..... 32,335
 Busiel C. A., J. T. and F. E., et al. Knitting machine 32,195
 Challenger, William. Hammock and support..... 32,264
 Chapman, George W., et al. Horse collar..... 32,198
 Clapp, George L., et al. Pole and thill for vehicles... 32,344
 Clapp, Joseph, et al. Sprinkler..... 32,325
 Clark, Arthur L. Wind Engine..... 32,235
 Clark, O. M., et al. Saw gummer..... 32,324
 Clarke, Alexander and John F. Combination tool... 32,317
 Cody, Lorenzo J. Elevated railway..... 32,233
 Collier, James W. Holder for incandescent lamps... 32,382
 Cook, Percy T., et al. Telephone system..... 32,368
 Cooper, Charles W. Apparatus for treating hides, skins, etc., in liquid..... 32,201
 Copp, William J. Hot air radiator and furnace..... 32,373
 Courtemanche, Moses. Medicinal compound..... 32,390
 Craig, John C. Egg boiler..... 32,383
 Crane, Edward B. Vulcanizer..... 32,230
 Cranson, Giles T. Grain scourer..... 32,275
 Crittenden, Simeon. Butter package..... 32,313
 Darling, Charles E. Tobacco pipe..... 32,374
 Davidson, T. Apparatus for securing the ends on cans 32,178
 Davis, George M. Air valve..... 32,225
 Dawson, Wallace. Medicinal compound..... 32,342
 Day, John H. Dry flour paste..... 32,316
 De Garmo, Daniel, et al. Machine for cutting tobacco 32,363
 Della, Eugene, Fire escape..... 32,364
 Deverill, Herbert, et al. Photographic negatives and sensitive plates..... 32,340
 Devoe, Benjamin G. Gas or oil stove..... 32,250
 Dewar, James, et al. Explosive..... 32,219
 Dominion Safety Steam Boiler Co. Steam boiler..... 32,218
 Doran, William L. Suspender end and clasp button... 32,229
 Dorensen, Niels G. Lock..... 32,292
 Dowier, Frank K. Hoof expander..... 32,303
 Draper, William R., et al. Machine for the manufacture of paper..... 32,245
 Dubbs, Jesse A. Process of refining oil..... 32,254
 Dunn, Louis. Safety switch..... 32,295
 Dupe, Frank. Running gear for vehicles..... 32,207
 Dutcher, Pierpont E. and John A., Oil heating stove 32,248
 Dwinell D. L., et al. Water closet..... 32,197
 Eacrett, William. Fire lighter..... 32,216
 Eckardt, Heinrich, et al. Process of making alloys of chrome and manganese..... 32,217
 Edwards, Richard J. Car and air brake pipe couplings..... 32,305
 Edy, William D. and James N., et al. Lubricator..... 32,208
 Emerson, S. G. Sling lock..... 32,180
 Erickson, P. R. Ratchet drill..... 32,184
 Ernst, Victor H. Secondary battery..... 32,380
 Esty, William, et al. Knitting machine..... 32,195
 Evans, Phelps. Equalizer for tripletrees..... 32,329
 Everson, George H. Metallic wheel..... 32,278
 Eysaman, A. H. Whiffletree snap..... 32,172
 Fall, George W. Trace..... 32,220
 Fletcher Elmer. Method of stitching button holes... 32,284
 Flint, F. W. Electric drinking vessel..... 32,186
 Fockler, C. Grain drill..... 32,182
 Foraya, J. F. Improvement in generating wood gas. 32,181
 Frazer, William A., et al. Burial casket..... 32,267
 Free, Henry, et al. Tobacco pipe..... 32,374
 Fritz, George J. Ironing machine..... 32,285
 Gallagher, William, et al. Photographic negatives and sensitive plates..... 32,340
 Gare, Thomas. Pegging machine..... 32,396
 Gartner, Alfred, et al. Ocean signal..... 32,256
 Gelb, William. Steam engine..... 32,257
 Gifford, Hiram H. Washing machine..... 32,331
 Glover, Robert E. Weighing scale..... 32,357
 Goodnight, Isaac H., et al. Door bell..... 32,320
 Gold, Edward E. Heating apparatus..... 32,301
 Gordon, Alexander, et al. Machine for cutting tobacco..... 32,363

Grant, Thomas, B. Means for locking nuts, bolts and set screws.....	32,332	Morrison, James L. Black leaf check book.....	32,196
Griffith, Amenzo et al. Telephone call box.....	32,334	Morrison, James L. Manufacture of electrical dry elements.....	32,370
Grissold, George W., et al. Horse collar.....	32,198	Morehouse, Frederick H., et al. Screen for car windows, etc.....	32,330
Hall, Edward J., et al. Clasp for bands for securing paper, envelopes, etc.....	32,228	Morgan, Thomas W. Ventilation of manholes for sewers.....	32,272
Hall, Hiram. Axe helve.....	32,310	Mortin, Alcides, E. Toy windmill.....	32,387
Hall, Reuben S. Car coupling.....	32,372	Morton, Thomas M. Car heater.....	32,237
Handel, Reinhold. Pen for drawing stiffs.....	32,350	Mouthrop, Irving S. Baling press.....	32,306
Harris, Milo, et al. Farm wagon.....	32,335	Mumford, Joseph A. Barrel head sawing machine.....	32,223
Hastie, John, et al. Bob sleigh.....	32,346	Mumford, Joseph A. Steam engine.....	32,258
Herby, John, et al. Farm wagon.....	32,338	Muller, Bernhard. Smoke consuming device for boilers.....	32,309
Hoff, Bogdan. Rectifying chemical and apparatus therefor.....	32,265	Nickloy, Alden C., et al. Railroad tie.....	32,322
Holcomb, Fred A., et al. Telephone system.....	32,368	Nirrnheim, Eugene, et al. Process of making alloys of chrome and manganese.....	32,217
Howatt, D. E., et al. Water heater.....	32,321	Northup, H. Davis. Co-k and coupling for barrels.....	32,347
Hull, Albert. Method of preparing hides for tanning.....	32,356	Norton, E. and O. W. Sheet metal.....	32,194
Hunter, G. D. Machine for cutting and crimping cartridge shells.....	32,187	Norton, Harrison I. Clasp for bands for securing paper, envelopes, etc.....	32,228
Hutt, James W., et al. Machine for the manufacture of paper.....	32,245	Oakley, Frederick. Toy.....	32,211
Hyde, Francis H. Water tap.....	32,227	O'Brien, Joseph S. Toy.....	32,381
Hydorn, George L. Trace holder.....	32,260	Paddock, Gustavus A. Harrow.....	32,215
International Postal Supply Co. Letter marking and cancelling.....	32,247	Palmedo, David P., et al. Process of making alloys of chrome, iron and manganese.....	32,217
International Postal Supply Co. Machine for separating and feeding letters.....	32,248	Parish, J. Stencil drum.....	32,193
International Postal Supply Co. Stamp canceling and post marking machine.....	32,367	Passmore, Ellen P. Contrivance for fastening doors open.....	32,273
Irwin, Giles G., et al. Washing machine.....	32,365	Patric, Charles E. Grain drill.....	32,326
Jack-on, William H. and Co., et al. Die for impressing ornamental designs on tubes.....	32,214	Penny, Henry L., et al. Screen for car windows, etc.....	32,330
Jackson, William H. Process of treating metallic tubing to convert it into ornamental spheroidal and analogous forms.....	32,335	Phillips, Henry L. Stopper for bottles, pots, jars, etc.....	32,199
Jacob, Alfred P. Gas burner.....	32,271	Philp, John W. Cutter head for cutting and trimming the gores of barrel banks.....	32,281
Johnston, Sylvester T. and Columbus. Plough and pulverizer.....	32,307	Pickard, Arthur. Construction of canals.....	32,349
Jones, Charles W., et al. Gas generator and burner.....	32,371	Pickett, Lynam B., et al. Sled.....	32,239
Jones, John E. Weather strip.....	32,293	Pineus, Henry, et al. Mechanical movement.....	32,266
Jordan, William H., et al. Telephone call box.....	32,334	Planke, Fred, et al. Car coupler.....	32,318
Jutson, Charles J., et al. Shoe for horses and other animals.....	32,221	Potticary, Charles. Feed water heater and spark arrester.....	32,315
Kaiser, William. Plough for furrows.....	32,394	Potvin, Joseph. Wrench.....	32,376
Kelly, W. C. Axe.....	32,177	Poupard, Frederick A., et al. Shoe for horses and other animals.....	32,231
Kilgour Bros. Method of making striped paper bags.....	32,336	Power and Co. Radiator.....	32,366
Kingdon, James. Plough.....	32,296	Powers, Noel E., et al. Cape collar.....	32,328
Knaus, Joseph H. Furniture drawer.....	32,226	Purinton, Frank M. Machine for removing bark from logs.....	32,388
Koyl, Charles H., et al. Railway switch.....	32,323	Rawson, David. Wire working apparatus.....	32,204
Kranz, Frederick. Lime kiln.....	32,279	Raymond, Freeborn F. Nail feeding and distributing machine.....	32,205
Laing, Byron. Marginal index for Bibles.....	32,379	Readman, James B. Process for obtaining phosphorus.....	32,355
Lagure, William H. Tool and tool holder.....	32,312	Reed, John D. Process of preserving meats.....	32,291
Lansberg Brake Co. Air brake.....	32,345	Reiff, Gustavus N., et al. Railway switch.....	32,323
Lessard, Theophile, et al. Water pipe for eave troughs.....	32,395	Rhodes, John W. Press drill for planting grain.....	32,213
Lindermann, Albert T. Lumber trimming and assorting machine.....	32,288	Ripson, Mary E., et al. Burial casket.....	32,267
Lippy, David. Cash carrier.....	32,360	Roberts, Ferdinand C. Game apparatus.....	32,240
Little, Alexander W. Swng.....	32,378	Roberts, George. Coal oil lamp.....	32,362
Lovejoy, Fred E., et al. Oil tank.....	32,211	Rogers, Elizabeth A. Rabbet and carpet tacker.....	32,224
Macdougald, George D., et al. Manufacture of seed cake or cattle food from cotton seed.....	32,392	Ross, Walter T. Nut lock.....	32,311
McAllister, James. Steam engine.....	32,302	Rose, M. C., et al. Mechanical annunciator.....	32,179
McDonell, D. Gate.....	32,176	Ruby, Joshua, C. Machine for moulding confections.....	32,276
McEvoy Car Heating Co. Pipe couplings.....	32,244	Rutherford, David, et al. Lubricator.....	32,308
McLennan, Euphemia A. Abdominal and spiral supporter.....	32,299	Sachs, Joseph, et al. Process of making alloys of chrome, iron and manganese.....	32,217
McMaster, Alonzo J. Camping vehicle.....	32,304	Saiger, Henry. Preservation of food articles.....	32,385
Mahurin, Melville B. Vehicle wheel.....	32,397	Saunders, John M. Hinge for folding seats.....	32,286
Martel, Cyrille. Horse hay rake.....	32,294	Sayre, Daniel, et al. Sled.....	32,239
Martin, W. A. Churn.....	32,185	Selleck, Oakley, et al. Mechanical movement.....	32,266
Mascotte Burner and Oil Co. Hydrocarbon burner.....	32,327	Sergeant, Henry C. Air compressor.....	32,232
Mayo, Alice LaG. Presser foot hemmer.....	32,242	Sergeant, Henry C. Valve for engines.....	32,206
Mayo, Alice LaG. Sewing machine attachments.....	32,243	Seymour, Charles J. Elevator and conveyor.....	32,233
Mengel, E. C. C. Art or process of refining petroleum by distillation.....	32,174	Slattery, M. M. M. System of electrical distribution.....	32,190
Merriam, John E. Baking cabinet.....	32,377	Small, Dexter M. Device for introducing a heated product into the cavity of a tooth.....	32,358
Merriam, Francis E. Animal drinking fountain.....	32,221	Spencer, George F. Boiler.....	32,348
Micbell, William. Extracting oil from and cleaning cotton waste.....	32,280	Spencer, Frederick B. Clasp.....	32,255
Miller Brothers and Mitchell, et al. Water closet.....	32,197	Sprague, Samuel H., et al. Fire escape.....	32,290
Milliken, Benjamin D. Apparatus for mixing liquid and powdered substances and for filling receptacles therewith.....	32,341	Stanwood, Frank H. Step or platform.....	32,236
Milne, John. Apparatus for recording the vibrations of machinery and structures.....	22,351	Steele, James R., et al. Screen for car windows, etc.....	32,330
Moore, Andrew R. Fire escape.....	32,391	Storey, J. E. Electric drill.....	32,183
Moffat, John. Shoe pack.....	32,252	Storie, James D. Feed mechanism for chain link machines.....	32,269
Montgomery, Palmer A., et al. Sprinkler.....	32,325	Stuart, Sinclair. Separator for steam pipes.....	32,351
		Sypher, A. J. Rock drills and analogous machines.....	32,192
		Swigart, Isaac R., et al. Fire escape.....	32,290
		Taylor, Charles M. Bullet box.....	32,203
		Thomson-Houston International Electric Co. Electric measuring instrument.....	32,283

Thompson, Walter, et al. Ocean signal.....	32,256	Wescott, Earl A., et al. Car brake.....	32,262
Thomas, Joseph A., et al. Car coupling.....	32,269	Wesson, Miley B. Slat fastener.....	32,238
Thorp, Elliott G. Type writer.....	32,251	Westman, G. M. Process of reducing zinc.....	32,188
Tode, Adolphe. Sled.....	32,200	White, William, A., et al. Water heater.....	32,321
Topham, George W. Apparatus for lining journal boxes.....	32,308	Williamson, William H. Dress stay.....	32,209
Toye, Smith. Portable centre for constructing con- tinuous archways.....	32,274	Wilbur, Miller and Wilbur, et al. Cape collar.....	32,328
Turney, John P., et al. Car coupling.....	32,369	Wilkin, Alexander. Potato digger.....	32,259
United Electrical Improvement Co. Electric cut-out.....	32,375	Willmot, C., et al. Mechanical annunciator.....	32,179
Universal Water Power Co. Water wheel.....	32,252	Wirhs, Maurice. Process for producing color print- ing.....	32,289
Vandermeirsche, Charles. Means for dyeing wool and other fibrous materials.....	32,343	Wolseley, Frederick Y. Flexible driving shaft.....	32,212
Warner, Ira De Ver. Stiffening blade.....	32,359	Wychoff, Arcalons and Ernest L. Pipe cushioning and conduit.....	32,300
Weir, James L. Washing machine.....	32,333	Yaryon, H. T. Vacuum evaporating apparatus.....	32,189
		Zimmerling, Augustus F., et al. Oil heating stove.....	32,246