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INVENTIONS PATENTED.

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

No. 37,250. Replacer for Cars. (*Lève char.*)

Norwood Car Replacer Company, Baltimore, assignees of John E. Norwood, Sykesville, Maryland, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The combination, with the rail, of the outside replacer shell A, having a bridge with a transverse hole extending therethrough, and provided with a groove, a clamp running through said holes and beneath the rail, and having at one end a hook which engages the inside of the rail flange, and at its opposite end an arm provided with a groove coinciding with that in the bridge of the shell, and a key introduced between the bridge and said arm and occupying the said coinciding grooves, for the purpose set forth. 2nd. The combination, with the rail, of the inside replacer shell B, having a flange fitting up to the said rail, a clamp connected at one end to the said flange, and extending beneath the rail to the outside of the same, and a key introduced between the outer end of said clamp and the outside of the rail, whereby the replacer shell is clamped in position. 3rd. The combination, with the rail, of the inside replacer shell having a hole m^1, through that portion adjoining the said rail, a clamp extending beneath the rail and having at one end an arm which is introduced through said hole, and provided at the opposite end with an upward projection on the outside of the rail, and a key introduced between the said upward projection and the rail, whereby the replacer shell is clamped in position. 4th. The combination of the rail, the inside replacer shell B, clamped thereto and having a flange extending across its broad end, and a bur *p*, on each side of the flange, a reversible slug extending loosely through the said flange and having projections on its opposite ends, and an extension rail, the flange of which fits beneath one of said burs, and one of the projections of said loose slug, as set forth. 5th. The combination of the track rail and an extension rail G, the inside replacer shell clamped to the track rail and having a flange extending across its broad end, and an abutting wall *o*, on each side of the flange, and means attached to the shell flange for confining the base flanges of the extension rail, as set forth.

No. 37,251. Tire Bolt Wrench.

(*Clé à écrou pour boulons de bandage.*)

James A. Ross, Smith's Creek, Michigan, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The combination, with a tire bolt wrench, comprising a frame A, wrench shaft B, actuating crank C^1, and meshing pinions B^2, C^2, all arranged as and for the purposes described, of a projecting arm D, provided with an eye E, and a cross bar F, passing through said eye, said cross bar being adapted to rest upon the spokes of the wheel, when the wrench is in operation, substantially as described. 2nd. The combination, with a wrench head, of a supplemental head, one end socketed, and adapted to fit over the said wrench head, and the other end socketed, and adapted to fit on the outside of a larger or smaller nut than the said wrench head, substantially as described. 3rd. A tire bolt wrench, consisting of a frame, with a cross bar adapted to rest upon the spokes of the wheel, and a wrench head, and in connection therewith, a supplementary head, one end socketed and adapted to fit over the said wrench head and the other end socketed and adapted to fit on the outside of a larger or smaller nut than said wrench head, a wrench shaft, and a crank shaft, said shafts journaled in a plane, perpendicular to the cross bar, and the crank shaft adapted, by reason of the distance between itself and the wrench shaft, to extend out beyond the periphery of the wheel, meshing pinions mounted upon the said shafts, and an actuating crank, engaging the crank shaft outside the periphery of the wheel, and adapted to be turned at right angles to the wrench shaft, substantially as described.

No. 37,252. Cultivator and Harrow.

(*Herse scarificateur.*)

Benjamin Franklin Westmoreland and Franklin Walker Eady, both of Robertson, Louisiana, U.S.A., 1st September, 1891; 5 years.

Claim.—The improved cultivator herein described and shown, consisting of the tongue, the divided standard swiveled to the rear end of the tongue, the caster-wheel journaled in the lower end of the said standard, the tooth-bar pivoted to the tongue in advance of the said standard, the teeth carried by said bar, and the yoke having its ends pivoted to the end teeth and its central portion adjustably secured to the tongue, as set forth.

No. 37,253. Tube Scraper. (*Nettoyeur de tubes.*)

Edward Heathcote Jeeves, Port Rowan, Ontario, Canada, 1st September, 1891; 5 years.

Claim.—1st. The combination, with the cone head A, having free overlapping edges from base to apex, and a shank or handle secured to the smaller end of a socket G, having a contracted end screwing on said shank or handle and extending over the outside of said cone head, so that by screwing said socket the larger end of the cone head will be contracted by pressure of the socket thereon, as and for the purpose set forth. 2nd. The combination, with the contracting and expanding cone headed scraper A, having a shank or handle attached to the smaller end of the screw socket G, screwing on said shank or handle, and a washer or ring H, intervening said head, and the end of the socket to frictionally receive the thrust of the socket when contracting the head, as set forth. 3rd. The combination, with the scraper head A, having a shank B, of the socket G, coupling J, and handle C, as set forth.

No. 37,254. Nut Wrench. (*Clé à écrou.*)

Robert L. Fosburgh and John F. Milligan, both of St. Louis, Missouri, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In a ratchet nut wrench, a handle in which is revolvably secured a nut turning head, a bifurcated pawl pivotably secured to said handle with its two legs embracing said head, and adapted to engage with said head in recesses formed in the circumference of the same, in combination with a spring attached to said pawl, and a wedge-shaped sliding block secured on said handle capable of engaging with said spring combined and operating, substantially as described and for the purposes specified. 2nd. In a nut wrench, a handle to which is secured a double-ended nut turning head, formed with relatively different sized non-adjustable countersunk nut receiving recesses, in combination with reducing dies removably secured within, said recesses and retaining clip-springs secured to said reducing dies adapted to be sprung into a recess or groove formed therefor in the said head piece, combined and operating, substantially as described and for the purposes specified. 3rd. In a ratchet nut wrench handle A, head C, collar D, bifurcated pawl F, recesses I, spring K, tilting block L, and retaining screw M, combined and operating, substantially as described and for the purposes specified.

No. 37,255. Device for Teaching the Arts of Writing and Drawing. (*Appareil pour enseigner l'art d'ecrire et de dessiner.*)

Thomas K. Ewing, Milwaukee, Wisconsin, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. As an article of manufacture, a slate having letters, figures, characters, or other designs printed or painted thereon, and the same letters, figures, characters or designs in duplicate form in intaglio therein below the printed or painted letters, figures, characters or designs, substantially as described. 2nd. As an article of manufacture, a slate having letters, figures, characters or other designs printed or painted thereon, and the same letters, figures,

characters or designs in duplicate form in intaglio therein below the printed or painted letters, figures, characters or designs, and a blank space on the slate below the letters, figures, characters or designs, in intaglio which blank space is adapted for copying thereon, the same letters, figures, characters or designs, as are printed thereon, and as appear therein in intaglio, substantially as described.

No. 37,256. Whip. (*Fouet.*)

Frank Grant, Westfield, Massachusetts, U. S. A., 1st September, 1891; 5 years.

Claim.—A whip having a tapering central core, a layer of rubber of uniform thickness adherent to the central core and vulcanized thereon, and a covering of braid over said rubber, substantially as described.

No. 37,257. Ironing Table. (*Table à repasser.*)

Edmund Burke Nagle, Almonte, Ontario, Canada, 1st September, 1891; 5 years.

Claim.—1st. In an ironing board, the combination of the framed legs A, having staples f^1, cleated and slotted board B, narrow notched board D, bolt C, passing through the legs, and board B, and provided with thumb nut and connecting the legs and board pivotally, and adjustably the removable table E, having brackets e, and the removable arms F, having brackets f, adapted to engage the staples f^1, substantially as set forth. 2nd. In an ironing table, the combination of the framed legs A, cleated and slotted board B, narrow notched board D, bolt C, passing through the legs and bottom B, and provided with thumb nut, and connecting the legs and bottom pivotally and adjustably, substantially as set forth.

No. 37,258. Toy. (*Jouet.*)

Donald Murray Murphy, St. John, New Brunswick, Canada, 1st September, 1891; 5 years.

Claim.—1st. An improved toy consisting of a rod and a series of disks movable thereon, substantially as shown and described. 2nd. An improved toy consisting of a rod, a series of disks movable thereon, and the end-pieces rigidly attached to the opposits ends of the rod, substantially as shown and described. 3rd. The combination, with a rod, of the rigid end-pieces having flat inner faces, and the revolubly and longitudinally-movable disks arranged upon the rod intermediate the end-pieces, substantially as shown and described.

No. 37,259. Spiral Stairway. (*Escalier spiral.*)

Christopher Clarke, Northampton, Massachusetts, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The double-flight spiral stairway composed, essentially, of a series of metallic sections, each section consisting of a hollow cylindrical metallic sleeve having radially-extending treads extending from opposite sides thereof, and risers connected to the treads, the sleeve, treads and riser being in a single piece for each section, and the sleeves nestling with each other to form a central hollow cylindrical pipe with interlocking joints, all combined, substantially as described. 2nd. The within-described improved double-flight spiral stairway, consisting of a series of metallic sections, each comprising a central sleeve provided with a stud and socket to form a hollow central column when combined, and having integral with said sleeve radially-extending treads and risers from opposite sides thereof, and a threaded bolt within the combined sleeves, and a nut thereon bearing upon the upper sleeve of the series, whereby two steps are simultaneously erected by the arrangement of a single section, and whereby the whole series is made fast by the compressive action of a single nut, substantially as shown and described. 3rd. The herein described spiral stairway, consisting of sections, each section having a hollow cylindrical metallic sleeve, with a radially-extending arm forming the tread, and riser integral with said tread, the tread and riser being imperforate, adjoining treads and risers being connected by a groove, and a packing in said groove, all the parts combined and co-operating, substantially as described.

No. 37,260. King Bolt for Vehicles.

(*Cheville maîtresse pour voitures.*)

John Eupator Fisher, Boston, Massachusetts, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In a vehicle, a king bolt firmly attached to the rocker plate and tapered on the front and sides from the rocker plate towards the end of the bolt, but approximately straight on the back portion of said bolt to present a nearly perpendicular surface against which the axle bed and axle bed plate rest, when the vehicle is drawn forward, as set forth and described. 2nd. In a vehicle, a tapering king bolt, as described, combined with means, as a lug chain or strap to hold said bolt within the perforation in which it is adapted to rest, for the purpose set forth and described.

No. 37,261. Boiler Cleaner.

(*Nettoyeur de chaudière.*)

John D. McEachren, Galt, Ontario, Canada, 1st September, 1891; 5 years.

Claim.—1st. One or more pans arranged in the steam space of a boiler and connected to a water supply pipe, in combination with a pan placed below the water line under the other pans, substantially as and for the purpose specified. 2nd. A series of pans, arranged one above the other and extending from a little above the water level in a boiler to a point above the top of the boiler, in combination with a dome to enclose the pans, and a pipe to supply water under pressure to the said pans, substantially as and for the purpose specified. 3rd. One or more pans, arranged one above the other in the steam space of a boiler and connected to a water supply pipe, in combination with a pan placed below the water line under the other pans and joined to a funnel, which is connected to a suitable mud receptacle outside of the boiler, substantially as and for the purpose specified. 4th. A funnel joined to a pan located below the water line in the boiler, and having side plates extending from each side of the said funnel to the sides of the boiler, in combination with a pipe connected to the smaller end of the funnel and tending to a point outside of the boiler where it is provided with a suitable cock, substantially as and for the purpose specified. 5th. A funnel joined to a pan located below the water line in the boiler, and having side plates extending from each side of the said funnel to the sides of the boiler, in combination with a pipe connected to the smaller end of the funnel and to a mud receptacle having a curved plate placed within it to separate the mouth of the pipe leading back into the boiler, substantially as and for the purpose specified. 6th. A mud receptacle K, having a compartment formed in it by the curved plate M, in combination with the pipes J, and O, located one on each side of the plate M, substantially as and for the purpose specified. 7th. A mud receptacle K, having a compartment formed in it by the curved plate M, in combination with the pipe J, and O, located one on each side of the plate M, and the cock P, situated at the bottom of the receptacle K, substantially as and for the purpose specified. 8th. A horizontal receptacle Q, having a settling chamber R, and filtering material between the perforated plates b, and d, in combination with pipes J, and O, arranged to connect the said horizontal receptacle with a steam boiler, substantially as and for the purpose specified.

No. 37,262. Hitching Device. (*Enrénoire.*)

Christian Lasman, jr., Chicago, Illinois, U. S. A., 1st September, 1891; 5 years.

Claim.—As an improvement in lock-buckles, the frame A, provided with a hollow cross-bar B, having a lateral opening F, a lock, substantially as shown, on one side of said frame, having its bolt E, extended through the hollow of said cross-bar, and a tongue C, provided with a hole at one end adapted to be applied in the lateral opening of the said cross-bar and engage said lock-bolt, as and for the purpose specified.

No. 37,263. Lubricator for Car Axles.

(*Boîte à graisse pour chars.*)

John A. White, assignee of Abe L. Cushman, both of Concord, New Hampshire, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. A car axle lubricator, provided with a casting or a receptacle B, for the purpose of containing the felting or wicking C, and the said casting provided with journals a, a, oscillating in bearings on the opposite sides of the aforesaid receptacle E, secured to one end of the said casting or support F, as set forth and described. 2nd. A car axle lubricator, provided with a casting or support F, having fulcrum points b, b, adapted to rest on the bottom of the box or housing A, the aforesaid support supplied with a weight C, of the proper size to hold the felting or wicking D in contact with the journal B, and to take up any wear in the journal B, or the felting D, as herein set forth and described.

No. 37,264. Apparatus for Propelling Vehicles. (*Appareil de propulsion pour voitures.*)

Alexander Craig Mather, Montreal, Quebec, Canada, 1st September, 1891; 5 years.

Claim.—1st. The combination of an expanding and contracting frame, consisting of bars connected by pins at points of intersection, and connected with the leg L, as explained, applied to the sides of the vehicle, substantially as and for the purpose above set forth 2nd. In connection with a sledge or other vehicle, a number of bars n, together with a number of other bars n^1, pin connected at points of intersection arranged to operate, substantially as and for the purpose above set forth.

No. 37,265. Brake. (*Frein.*)

Vacuum Brake Company, Limited, London, assignees of James Gresham, Salford, Manchester, Lancaster, both in England, 1st September, 1891; 5 years.

Claim.—1st. The improved ejector apparatus for use with automatic vacuum-brakes constructed and operating, substantially as described, with reference to Figs. 1 to 7 of the accompanying drawings. 2nd. In automatic vacuum-brake apparatus, the improved construction and combination of mechanism for simultaneously applying or releasing the automatic vacuum-brakes, and the steam-brakes on the engine, arranged and operating substantially as described, with reference to Figs. 8, 9 and 10 of the accompanying drawings. 3rd. In automatic vacuum-brake apparatus, the employment of stop-valves, such as dx and d^5, placed above the ejectors, substantially as and for the purpose herein described. 4th. In automatic vacuum-brake apparatus, the combination with the small ejector, of the ball-valve g, substantially as and for the purpose set forth. 5th. In automatic vacuum-brake apparatus, the combination of a stop-valve dx, control ing the passage of air both to the small ejector and to the large elector, with a stop-valve d^5, controlling the passage of air to the large ejector, substantially as and for the purposes set forth. 6th. In automatic vacuum-brake apparatus, the employment of a hollow annular disc-valve, such as k, operating as and for the purposes herein set forth. 7th. In automatic vacuum-brake apparatus, the combination, with the steam disc-valve i, of the hollow annular disc-valve k, as and for the purposes set forth.

No. 37,266. Refining Canadian and Similar Petroleum Oils. (*Appareil pour raffiner le pétrole Canadien et autres semblables.*)

The Solar Refining Company, Lima, assignees of Herman Frasch, Cleveland, both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The process of purifying Canadian and similar petroleum, which contain sulphur compounds whose presence gives to said oils the property of dissolving lead oxides by, (1), distilling the same, and (2), *subjecting the vapors*, after they are given off from the distilling liquid, *to the action of the oxidating oxides*, so as to decompose the refractory sulphur compounds, substantially as described. 2nd. The process of purifying Canadian and similar petroleum, which contain sulphur compounds whose presence gives to the said oils the property of dissolving lead oxide, by (1) distilling the same *and* (2) *passing the vapors*, after they are given off, *through or over an oily or resinous liquid mixed with oxidating oxides*, or holding the same in solution or suspension, substantially as described. 3rd. The process of purifying Canadian and similar petroleums, which contain sulphur compounds whose presence gives to said oils the property of dissolving lead oxide, by (1) distilling the same, and (2) subjecting the vapors, after they are given off, to the action of the oxidating oxides, (3) condensing the vapors so acted upon, and (4) *washing the condensed liquid with sulphuric acid*, substantially as described. 4th. In the purification of Canadian and similar petroleums which contain sulphur compounds whose presence gives to said oil the property of dissolving lead oxide, the improvement consisting in, (1) *combining or mixing fatty or resinous acid* with the oxidating oxides, (2) distilling the oil to be purified, and, (3) subjecting the vapors to the action of such mixture or compounds, substantially as described. 5th. In the purification of Canadian and similar petroleums, which contain sulphur compounds whose presence gives to said oils the property of dissolving lead oxide, the improvements consisting in, (1) distilling the oil to be purified, and (2) subjecting the vapors thereof to the action of oxidating oxide *in solution*, or in solution and suspension in petroleum *containing fatty or resinous acid*, substantially as described. 6th. The process of purifying Canadian and similar petroleums, which contain sulphur whose presence gives to said oils the property of dissolving lead oxides by (1) distilling the same, and (2) subjecting the vapors to the action of the metallic salts, such as manganates, chromates, borates, sulphates and the like that are decomposed by hydrogen sulphide in acid solution, substantially as described. 7th. The process of purifying Canadian and similar petroleums which contain sulphur compounds whose presence gives to said oils the property of dissolving lead oxide by (1) distilling the same, and (2) subjecting the vapors to the action of the metallic salts, such as manganates, chromates, borates, sulphates and the like that are decomposed by hydrogen sulphide in acid solution, *mixed with or suspended in an oily or resinous liquid*, substantially as described. 8th. The combination, with an oil still, of a purifier, communicating with the vapor space of the still and provided with an exit pipe, and a pump or feeder which feeds the purifying material to the purifier, substantially as and for the purposes described. 9th. The combination, with an oil still, having a furnace, and a flue leading therefrom, of a purifier in the flue, and a pump or feeder which feeds the purifying material to the purifier, which purifier communicates with the vapor space of the still and has an exit pipe, substantially as and for the purposes described. 10th. The combination, with an oil still, of a purifier provided with baffle-plates, and a pump or feeder which feeds the purifying material to the purifier, which communicates with the vapor space of the still and is provided with an exit pipe, substantially as and for the purposes described. 11th. The combination of an oil still, of a purifier communicating with the vapor space thereof, and provided with an exit pipe, and a pump or feeder which receives the purifying material discharged from the purifier and returns it to the same, substantially as and for the purposes described. 12th. The combination, with an oil still, of a purifier communicating with the vapor space of the still, and provided with an exit pipe, a pump or feeder which supplies the purifying material to the purifier, and a supplementary distilling chamber which receives liquid condensed in the purifier, revaporizes it and returns the vapors to the purifier, substantially as and for the purposes described. 13th. The combination, with an oil still, of a purifier provided with baffle-plates, a pump or feeder which supplies the purifying material to the purifier, and a supplementary distilling chamber, which receives liquid condensed in the purifier, revaporizes it and returns the vapors to the purifier, the latter being in communication with the vapor space of said still, and being provided with an exit pipe, substantially as and for the purposes described. 14th. The combination, with an oil still, of a purifier provided with baffle-plates, a pump or feeder which receives the purifying material from the lower part of the purifier, elevates the same, and discharges it again into the vapors, the said purifier being in communication with the vapor space of the still and being provided with an exit pipe, substantially as and for the purposes described. 15th. The combination of an oil still, of a purifier provided with baffle-plates, and having moving parts which assist in carrying the purifying material through the purifier, and a pump or feeder which receives the purifying material after it has acted on the vapors, and discharges it again into the purifier, the latter being in communication with the vapor space of the still, and being provided with an exit pipe, substantially as and for the purposes described. 16th. The combination, with an oil still, of a purifier communicating therewith and provided with baffle-plates, a supplementary distilling chamber, which receives the purifying material from the lower part of the purifier as well as the liquid condensed in the purifier, and revaporizes the same, a pump or feeder which returns the purifying material into the purifier, and an exit pipe leading therefrom to a condenser, substantially as and for the purposes described.

No. 37,267. Art of Purifying Petroleum.

(*Art de purifier le pétrole.*)

The Solar Refining Company, Lima, assignees of Herman Frasch, Cleveland, both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The process of purifying Lima and similar petroleums of the character described, consisting in (1) distilling the same with a metallic oxidating oxide or oxides dissolved therein, (2) keeping up, during the process of distillation, *a condition of super-saturation of the oil with the oxides*, and (3) suspension of the latter by adding a quantity of oxides *in excess of the amount theoretically necessary to bind the sulphur contained in the oil* under treatment, and (4) by continuous agitation of the oil and oxides, substantially as described. 2nd. The process of purifying Lima oil and similar petroleums of the character described, by (1) mixing the petroleum with an oxidating oxide or oxides *in excess of the amount which the oil under treatment will hold in solution*, and (2) distilling the same, while (3) keeping the oil and oxides in the still *in a state of constant agitation* during the process, substantially as described. 3rd. The process of purifying Lima oil and similar petroleums of the character described, by (1) distilling the same in a still containing (mixed with the oil *in excess of the amount necessary to bind the sulphur contained therein*) a soluble metallic oxide or oxides or composition containing such oxide or oxides, (2) preserving a condition of *supersaturation of the oil* and of constant agitation of the oil and oxides during the distillation, and (3) treating the resultant distillate with sulphuric acid, substantially as described. 4th. The process of purifying Lima oil and similar petroleums, consisting in (1) distilling the oil when mixed with a soluble metallic oxide or oxides or mixture containing the same, *in excess of the amount necessary to bind the sulphur contained in the charge of oil under treatment*, (2) removing from the still at the end of any distillation a portion only of the sedimentary residuum, and (3) adding thereto an amount of metallic oxide or oxides sufficient with the unreduced oxides remaining in the sedimentary residuum to form a new charge for the next distillation, substantially as described. 5th. In the purification of Lima oil and similar petroleums, by distilling the same with oxidizing metallic oxide, oxides, or compound, the improvement consisting in (1) keeping in the oil during the distillation thereof *more of the said purifying material than is theoretically necessary to bind the sulphur in the oil*, and also during such distillation, (2) stirring the oil at the lower part of the still, (3) scraping or sweeping the floor of the still, and (4), giving to the oil and suspended purifying material a definite upward impulse, so as to keep constantly at the upper part of the charge in distillation, oil saturated with and holding in suspension the purifying material, and to thus cause the rising vapors which are generated at the bottom of the still most thoroughly to come into contact with the purifying material in solution and suspension in passing through the said charges, substantially as described. 6th. In combination, with an oil still, the following devices collectively, namely *drags* resting loosely on the bottom of the still and provided with scraping surfaces in contact therewith, means for drawing the said drags over the bottom of the still, rotary stirrers movable about a vertical axis and arranged in the oil space of the still, and deflectors also arranged in said oil space, substantially as and for the purposes described. 7th. In combination, with an oil still, flat *drags* resting loosely flatwise on the bottom of the still, and provided with scraping surfaces in contact therewith, and means whereby said drags are drawn over the said bottom, substantially as and for the purposes described. 8th. In combination, with an oil still, *drags* resting loosely on the bottom of the still and comprising bars whose edges conform to and bear upon the bottom of the still, and means whereby said drags are drawn over the said bottom, substantially as and for the purposes described. 9th. In combination with an oil still, a rotary stirrer movable about *a vertical axis*, and arranged in the oil space of said still, *deflectors* also arranged in said oil space and fixed to the still in an inclined position, substantially as and for the purposes described. 10th. The combination, with an oil still, of the vertical shaft in said still, the horizontal arms connected with said shaft and arranged in the oil space near the bottom of the still, the *drags* composed of flat frames of connected bars whose edges rest upon the bottom of the still, and the flexible connections between the said drags and the said arms, substantially as described. 11th. The combination, with an oil still, of the *drags* resting loosely on the bottom of the still and provided with scraping surfaces in contact therewith, the vertical shaft in said still, the arms of said shaft the flexible connection between the said drags and said arms, and the deflectors fixed in an inclined position in the oil space of the still, all substantially as illustrated in the accompanying drawings and described with reference thereto for the purposes specified.

No. 37,268. Art of Purifying Petroleum.

(*Art de purifier le pétrole.*)

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both of Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The process of preparing inodorous, *undistilled* petroleum of the character described, consisting in treating the same in the liquid state with oxidating agents, substantially as set forth. 2nd. In the art of purifying *undistilled* petroleum liquids of the character described, the improvement consisting in binding the sulphur compounds contained in the liquid, by dissolving therein an oxidating compound without subsequent precipitation, substantially as and for the purposes described. 3rd. In the art of purifying *undistilled* petroleum liquids of the character described, the improvement consisting in binding the sulphur compounds contained in the liquid by dissolving therein an oxidating compound without previous treatment of the liquid with sulphuric acid, substantially as and for the purposes described. 4th. In the art of purifying *undistilled* petroleum liquids of the character described, the improvement consisting in treating such liquid when in a heated state preferably at about 400° F, with an oxidating compound, agitating the mixture, and then allowing it to cool and settle, substantially as and for the purposes described. 5th. In the art of purifying *undistilled* petroleum liquids of the character described, the improvement consisting in treating such liquid in a heated closed vessel preferably at about the temperature of 400° F, with an oxidating compound, and then allowing the liquid to cool and settle, substantially as and for the purposes described. 6th. In the art of purifying the liquids of petroleum containing sulphur compounds, the improvement consisting in treating such liquid with an oxidating compound and an acid

hydrocarbon, substantially as and for the purposes described. 7th. As a new article of manufacture, a lubricant composed of deodorized *reduced* oil of the class of petroleum hereinbefore described, substantially as set forth. 8th. As a new article of manufacture, an *undistilled or residual product* of petroleum of the class hereinbefore described, containing in solution an oxidating oxide or oxides by which substantially all of the sulphur compounds of the oil are bound, substantially as set forth. 9th. As a new article of manufacture, a lubricant composed of *reduced* oil of the class described, containing in solution an oxidating oxide or oxides by which substantially all of the sulphur compounds of the oil are bound, substantially as set forth. 10th. As a new article of manufacture, *reduced* oil of the class described, containing in solution an oxidating oxide or oxides, and a hydrocarbon having an acid reaction, such as oleic acid, substantially as set forth. 11th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class hereinbefore specified. 12th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class specified free from water and alkali. 13th. As a new article of manufacture, the described *undistilled* deodorized petroleum of the class specified free from water and alkali, and holding in solution one of the specified heavy metal or metals which are precipitated from their solutions by hydrogen sulphide.

No. 37,269. Art of Purifying Petroleum.

(Art de purifier le pétrole.)

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both of Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from a still through a number of heated independent columns or filters charged with a purifying agent, and connected with the still and maintaining said independent columns at a relatively uniform temperature, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 2nd. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors through a number of heated independent columns or filters, charged with a metallic purifying agent and connected with the still, and maintaining said columns at a relatively uniform temperature, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 3rd. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors through a number of heated independent columns or filters charged with a metallic purifying agent and connected with the still, and maintaining said independent columns at a relatively uniform temperature of about 520 degrees Fahrenheit, whereby the vapors passed through the columns are uniformly purified, substantially as and for the purposes described. 4th. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from the same still through a number of independent columns or filters charged with metallic purifying agents, and maintaining a uniform passage of the vapors through the several columns or filters by producing a partial vacuum on the exit side of the same, substantially as described. 5th. In the purification of vapors of petroleum of the class described, the improvement consisting in passing the vapors from the same still at a uniform rate through a number of independent columns or filters heated to a uniform temperature, substantially as described. 6th. In the purification of oil containing sulphur compounds, by subjecting such oil or the vapors thereof to a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by treating the same with a chemical solvent, whereby the said sulphide is removed, substantially as and for the purposes described. 7th. In the purification of oil containing sulphur compounds, by subjecting such oil or the vapors thereof to a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by treating the same with a chemical solvent, and then washing with water, substantially as and for the purposes described. 8th. In the purification of oil containing sulphur compounds, by passing the vapors of such oil through a column containing a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by passing through the column a chemical solvent, and then passing water through the same, substantially as and for the purposes described. 9th. In the purification of oil containing sulphur compounds by passing the vapors of such oil through a column containing a divided metallic purifying agent, whereby the sulphur compounds of the oil are deposited on the surface of the metal in the form of sulphide, the improvement consisting in cleansing the purifying agent by passing through the column a chemical solvent, passing water through the same, and then heating the column, substantially as and for the purposes described. 10th. In the purification, by metal, of oil containing sulphur compounds, the improvement consisting in treating or washing the metal, coated with sulphide, with dilute acid, so as to renew the said metal for further action on the sulphur compounds, substantially as and for the purposes described. 11th. In the purification of oil containing sulphur compounds with solid purifying material in a suitable state of division, whose action becomes impeded by the formation of a metallic sulphide coating on the particles of said material, the improvement consisting in washing the coated material with a solvent of the metallic sulphide, and thus exposing anew the active surfaces of said particles, substantially as described. 12th. In apparatus for the purification and desulphuration of petroleum vapors, the combination of several columns or filters containing a purifying agent, a vapor supply pipe entering said columns, discharge pipes leading therefrom, and an exhauster or exhausters, whereby uniform and equal passage of the vapors through each of the columns is maintained, substantially as and for the purposes described. 13th. In apparatus for the purification and desulphuration of petroleum vapors, the combination of several columns or filters containing a purifying agent, a vapor supply pipe communicating with the columns, discharge pipes leading therefrom, and a steam ejector or ejectors for exhausting the vapors from the columns, substantially as and for the purposes described. 14th. In apparatus for the purification and desulphuration of petroleum vapors, a column containing the purifying agent, having a vapor inlet and outlet, an opening at the upper part of the column for the introduction of a purifying or cleansing liquid, and an outlet leading from the base for its discharge, substantially as and for the purposes described. 15th. In apparatus for the purification of petroleum vapors, a series of columns containing purifying material and connected with the vapor space of the still, and with a condenser, and a vessel in which the said columns are situate, said vessel containing a liquid which surrounds the said columns, and is designed to transmit substantially equal heat thereto, and being provided with means whereby the contents of the said vessel are heated, substantially as and for the purposes described.

No. 37,270. Art of Purifying Petroleum.

(Art de purifier le pétrole.)

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both of Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in removing the sulphide coating, thereby exposing fresh metallic surfaces, substantially as and for the purposes described. 2nd. In the art of desulphurizing petroleum or its distillates, by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in agitating the particles of the sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, substantially as and for the purposes described. 3rd. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described, consisting in agitating the particles of the sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, and subsequently washing the purificator with a solvent, substantially as and for the purposes described. 4th. In the art of desulphurizing petroleum, the improvement consisting in passing the vapors of petroleum through a column or vessel containing a solid purificator, and subjecting the contents of such column or vessel to agitation during the passage of the vapors, substantially as and for the purposes described. 5th. In the art of desulphurizing petroleum or its distillates by means of a metallic purificator, the efficiency of which becomes impaired by the formation of a coating of the sulphide of such metal, the improvement hereinbefore described consisting in agitating the particles of sulphide-coated purificator, and thereby abrading and removing the sulphide and exposing fresh metallic surfaces, and washing the purificator with water, substantially as and for the purposes described. 6th. In apparatus for purifying petroleum, an agitatory vessel containing a purificator interposed in the path of the vapors between the still and condenser, substantially as and for the purposes described. 7th. The combination, with a petroleum still and a condenser, of a rotatory vessel containing a permeable purificator, and interposed in the path of the vapors, substantiaily as and for the purposes described. 8th. A vessel for purifying petroleum, having trunnions on which it is journalled and is axially movable, and having upright partitions which cause the vapors passing therethrough to assume a circuitous course, substantially as and for the purposes described. 9th. A rotatory vessel for purifying petroleum, having a vapor inlet and outlet, and having upright cross-partitions provided with openings at or near the middle, substantially as and for the purposes described. 10th. A vessel for purifying petroleum, having hollow trunnions on which it is journalled and is axially movable and having chambers formed by upright partitions which cause the vapors passing therethrough to assume a circuitous course, and peripheral openings in the said chambers, substantially as and for the purposes described. 11th. The rotatory drum or vessel 2, communicating at the ends with the still and with the condenser, and having perforated or grated end partitions 13, substantially as and for the purposes described. 12th. A vessel for purifying petroleum vapors, containing a permeable purifying material, and upright partitions dividing the vessel into chambers, provided with openings through which the vapors pass in a circuitous course, substantially as and for the purposes described.

No. 37,271. Composition for Purifying Canadian and Similar Petroleum. *(Composition pour purifier le pétrole Canadien et autres semblables.)*

The Solar Refining Company, Lima, (assignees of Herman Frasch, Cleveland), both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The herein described new composition for removing or destroying the sulphur compounds in Canadian and similar petroleum, the same being in a finely divided form or powder and having its individual grains or granules composed of lead oxide, and copper oxide in connection with a less active or an inactive substance or carrier, such as iron oxide, plaster or other pulverulent substance, substantially as and for the purpose described. 2nd. The herein described new composition for removing or destroying the sulphur in Canadian and similar petroleum, the same being in a finely divided form or powder and having its individual grains or granules composed of *one or more* of the oxidating oxides, in connection with a less active or an inactive substance or carrier, such as iron oxide, plaster or other pulverulent substance, substantially as and for the purposes described. 3rd. The herein described new composition for removing or destroying the sulphur compounds in

Canadian and similar petroleum, the same being composed of two or more of the oxidating oxides in a finely divided form, substantially as and for the purposes described. 4th. The herein described new composition for removing or destroying the sulphur compounds in Canadian and similar petroleum, the same being in a finely divided form or powder, composed of lead oxide in conjunction with the oxide of a metal whose affinity for sulphur is greater at a low temperature than is the affinity of lead therefor at such temperature, substantially as and for the purposes described. 5th. The herein described new composition for removing or destroying the sulphur compounds in Canadian and similar petroleum, the same being the roasted and oxidated sulphur compounds of one or more metals of the oxidating oxides and hydrocarbon in chemical combination or molecular union therewith, substantially as and for the purposes described. 6th. The herein described new composition for removing or destroying the sulphur compounds in Canadian and similar petroleum, the same being the roasted and oxidated sulphur compounds of one or more metals of the oxidating oxides, in combination with a less active or inactive pulverulent substance, such as iron oxide, plaster or other refractory substance, substantially as and for the purposes described. 7th. The herein described new composition, consisting of sulphur and one or more of the metals of the oxidating oxides, in chemical combination or morecular union with hydrocarbon, substantially as and for the purposes described. 8th. The herein described new composition, said composition being in a finely divided form or powder, the grains of which contain sulphur and one or more of the metals of the oxidating oxides, together with hydrocarbon and containing also a less active or inactive or unsulphured refractory substance, substantially as and for the purposes described. 9th. The herein described new composition containing a sulphur compound of lead, and a metal having at a low temperature a greater affinity for sulphur than lead has at such temperature, substantially as and for the purposes described. 10th. The herein described new sulphur removing composition for purifying petroleum, consisting of a metallic oxide (such as the oxide of lead, or of copper) deposited in a finely divided or extended form on or in particles of a comminuted carrier or vehicle, substantially as and for the purposes described. 11th. The herein described new sulphur removing composition for purifying petroleum, consisting of a metallic oxide (such as the oxide of lead or of copper) deposited in a finely divided or extended form on or in particles of a comminuted carrier (such as plaster of paris or iron oxide) while subjected to the oil during the purifying process, and afterwards roasted and oxidized and reduced to a finely divided condition, substantially as and for the purposes described. 12th. The *finely divided composition* for purifying Canadian and similar petroleum containing in each grain or granule a compound of lead, of copper and of iron, substantially as and for the purposes described. 13th. For use in the decompositon of sulphur compound in the process of purifying Canadian and similar petroleum oils, wherein they are subjected to the action of an oxidating oxide or oxides, a new composition of matter consisting of a *powder* composed of roasted, reoxidated and pulverized sedimentary residuum from such process, substantially as and for the purposes described. 14th. The hereinbefore described method of preparing a revivified material for use in the process of purifying Canadian and similar petroleum oils, wherein they are subjected to the action of an oxidating oxide or oxides, which consists in burning the sedimentary residuum of such process, (containing sulphur compounds of metal, and hydrocarbon) and exposing them to an oxidizing atmosphere, the exposure being continued after the hydrocarbon has been burned, substantially as and for the purposes described. 15th. The method hereinbefore described of preparing a material for removing or destroying the sulphur compounds in Canadian and similar petroleums by burning a sulphur compound or compounds of one or more of the oxidating oxides, having hydrocarbon therewith, and exposing these burning compounds to an oxidizing atmosphere, the exposure being continued after the hydrocarbon has burned off, substantially as and for the purposes described. 16th. The hereinbefore described method of preparing a material for use in the process of purifying Canadian and similar petroleum oils, which consists in combining a sulphurless refractory substance with a sulphur compound of the metal of an oxidating oxide, and then roasting and oxidating the same; substantially as and for the purposes described. 17th. The hereinbefore described method of preparing a revivified material for use in the process of purifying Canadian and similar petroleum oils, wherein they are subjected to the action of an oxidating oxide or oxides which consists in burning the residuary deposits of such process (containing sulphur compounds of metal, and hydrocarbon) and passing the products of such combustion together with an oxidizing atmosphere over a portion of the deposits from which the hydrocarbon has been consumed, substantially as and for the purposes described. 18th. The improvement in roasting and oxidating sulphur compounds of lead by mixing or combining therewith a metal or compound of a metal having at a low temperature a greater affinity for sulphur than lead has, and then roasting and oxidating the mixture or combination, substantially as described. 19th. The hereinbefore described method of oxidating sulphur-containing metallic compounds which consists in mixing hydrocarbon therewith and then burning the mixture and subjecting it to an oxidating atmosphere, substantially as and for the purposes described. 20th. The process of preparing a material for removing the sulphur compounds from Canadian and similar petroleum, by forming the sulphur compounds of one or more metals of the oxidating oxides in the presence of the hydrocarbon vapors, and roasting and oxidating these sulphur compounds, substantially as described.

No. 37,272. Purification of Petroleum.

(*Purification du pétrole.*)

The Solar Refining Company, Lima, assignees of Herman Frasch, Cleveland, both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The process of purifying Lima and similar petroleums of the character described, consisting in mixing the same with a metallic purificator, in divided particles, and maintaining a condition of agitation and suspension of the purificator in the oil under treatment, substantially as and for the purposes described. 2nd. The process of purifying Lima and similar petroleums of the character described, consisting in distilling the same with a metallic purificator in divided particles, and maintaining during the distillation a condition of agitation and suspension of the purificator in the oil, substantially as and for the purposes described. 3rd. The process of purifying Lima and similar petroleums of the character described, consisting in distilling the oil when mixed with a metallic purificator in finely divided particles in excess of the amount necessary to bind the sulphur contained in the charge of oil under treatment, removing from the still at the end of the distillation a portion only of the sedimentary residuum and adding thereto an amount of metallic purificator sufficient, with the unspent purificator remaining in the sedimentary residuum, to form a new charge for the next distillation, substantially as and for the purposes described.

No. 37,273. Art of Purifying Petroleum.

(*Art de purifier le pétrole.*)

The Solar Refining Company, Lima, assignees of Herman Frasch, Cleveland, both in Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The process of preparing inodorous petroleum of the Canadian and Lima class, by treating the same in the liquid state with oxidating agents other than arsenic, substantially as described. 2nd. The process of deodorizing petroleum, undistilled and distillate, of the Canadian and Lima class, by treating the same in the liquid state with one or more of the following oxidating agents, to-wit, the oxides and decomposable salts of metals precipitable from their solutions by hydrogen sulphide and the highly oxidized decomposable compounds of metals and non-metals, substantially as described. 3rd. The process of deodorizing petroleum undistilled and distillate, of the Canadian and Lima class, by treating the same in the liquid state with solid oxidating agents, substantially as described. 4th. The process of deodorizing petroleum, undistilled and distillate, of the Canadian and Lima class, by treating the same in the liquid state with solid, dry oxidating agents, substantially as described. 5th. The process of deodorizing petroleum, undistilled and distillate, of the Canadian and Lima class, by treating the same in the liquid state, with solid anhydrous oxidating agents, substantially as described. 6th. The process of deodorizing petroleum, undistilled and distillate, of the Canadian and Lima class, by treating the same in a liquid state with solid, dry, anhydrous oxidating agents, substantially as described. 7th. The process of deodorizing petroleum, undistilled and distillate, by treating the same in the liquid state with non-alkaline oxidating agents, substantially as described. 8th. The process of deodorizing petroleum, undistilled or distillate, of the Canadian and Lima class, by keeping in suspension in said liquid, for a suitable time, a finely divided mass or powder composed or comprising in solid form one or more of the oxides or decomposable salts of the metals which are precipitated from solution by hydrogen sulphide or other oxidating agent, and afterwards separating the liquid oil from the solid residuum, substantially as described. 9th. The process of deodorizing petroleum of the Canadian and Lima class, by treating the same in the liquid state, at an elevated temperature of about 400° F., with oxidating agents, substantially as described. 10th. The process of deodorizing petroleum of the Canadian and Lima class, by treating the same in a liquid state, at an elevated temperate of about 400° F., with one or more of the following oxidating agents in a solid sub-divided form, to-wit, the oxides and decomposable salts of the metals which are precipitated from solution by hydrogen sulphide, and the solid highly oxidized compounds in general, substantially as described. 11th. The process of deodorizing petroleum of the Canadian and Lima class, by treating the same at an elevated temperature, in a close vessel, with agitation with oxidating agents, substantially as described.

No. 37,274. Thill Coupling for Sleighs.

(*Armon de limonière pour traineaux.*)

Richard Eccles, Auburn, New York, U.S.A., 1st September, 1891; 5 years.

Claim.—A thill coupling, comprising a bar vertically apertured and provided with transversely apertured and spaced ears, each extended to form a brace, one of which is curved upwardly and the other downwardly, substantially as described. 2nd. In a thill coupling, a bar having a flat top portion 13, vertically apertured at 14, and provided with the spaced collars 15, connected by the curved web 17, apertured at 18, and with the oppositely curved braces 19, and 20, projecting from the collars, substantially as herein shown and described.

No. 37,275. Draw Bar for Passenger Cars.

(*Barre d'attelage pour chars de passager.*)

David Wylie, Detroit, Michigan, U. S. A., 1st September, 1891; 5 years.

Claim.—1st. In a draw-bar, the combination of the web, the hook jointedly engaged therewith, and a locking-pin constructed with an angular-shaped head extending angularly across the web at the rear of the hook, substantially as described. 2nd. In a draw-bar, the combination of a web provided with a tongue, a hook recessed to receive said tongue and jointedly engaged therewith, a headed locking pin engaged in the web at the rear of said hook, and an operating lever to raise the bolt, substantially as described. 3rd. In a draw-bar, the combination of a web, a hook jointedly engaged therewith and provided with a shoulder c^3, a locking-pin located in said web at the rear of said hook, and an operating lever connected with said pin, the construction and arrangement being such that when the bar is in an unlocked position said shoulder c^3 will ride under the head of said bolt and support the pin in a position to permit the coupling of the hook, substantially as set forth. 4th. In a draw-bar, the combination of the web, the swinging hook, the operating lever,

and a locking-bolt, said bolt constructed with an angular-shaped head and an arm *d*, substantially as set forth. 5th. In a draw-bar, the combination, with a web constructed with a tongue and a shoulder, of a swinging hook constructed with a shoulder c^2, and a locking-bolt having an angularly shaped head located between said shoulders in its normally locked position, said shoulder c^2 riding under said head in uncoupling the hoook, substantially as set forth.

No. 37,276. Car Coupler. (*Attelage de chars.*)

Alexander Crane Martin, Chicago, Illinois, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. The combination, with a draw-head, of a pivoted coupling device having a hook upon one end, and a loop upon the other, substantially as shown and described. 2nd. The combination, with a draw-head, of an elbow shaped coupling device having a hook upon one part, and a loop upon the other, said coupling device being pivotally mounted within the draw-head upon a horizontal axis, substantially as shown and described. 3rd. A car coupling, consisting of two elbows pivotally mounted in opposite draw-heads, each of said elbows having a hook upon the extremity of one arm and a loop formed in the other, whereby in coupling the hook of one head may engage with the loop of the other, substantially as shown and described. 4th. The combination, with a draw-head, of a horizontally pivoted coupling device having a hook upon one extremity and a loop upon the other, a space being provided in said draw-head for the reception of a link, and a pin-socket in the bottom of the head in vertical alignment with the inner face of said loop, substantially as described. 5th. The combination, with a draw-head, of a pivoted elbow having a hook upon one part and a slotted arm or loop upon the other, a space being provided in said draw-head beneath said loop for the reception of a detachable link, a pin-socket in the bottom of the head in alignment with the opening in said loop and means for tilting said elbow, substantially as specified.

No. 37,277. Knife Cleaning Machine.

(*Machine à nettoyer les couteaux.*)

Joe Harrison Walker, Alma, Ontario, Canada, 1st September, 1891; 5 years.

Claim.—1st. A knife cleaning machine, consisting of a suitable frame work, a series of knife cleaning rollers suitably journaled in said frame work, the ends of the spindles of each roller are provided with pinions, which pinions engage with an annular gear suitably driven, substantially as and for the purposes specified. 2nd. A knife cleaning machine, consisting of a frame work, a series of knife cleaning rollers suitably journaled in said frame work, the spindles of which rollers are continued beyond said frame work, and fitted with pinions, which pinions engage with an annular gear, driven by a crank, substantially as and for the purpose specified. 3rd. A knife cleaning machine, consisting of a frame work, a series of knife cleaning rollers suitably journaled in said frame work, the spindles of said knife cleaning rollers continued beyond the bearings supporting the same, and fitted with pinions, which pinions engage with an annular gear having a closed side face, from which side face extends a spindle journaled in bearings formed at the top of a standard suitably connected to said frame work, said spindle continued beyond the bearing and having rigidly connected thereto a crank for driving said annular gear, substantially as and for the purpose specified.

No. 37,278. Leather Belting. (*Courroie en cuir.*)

Gottfried Bigger and George W. Sieber, both of Akron, Ohio, U.S.A., 1st September, 1891; 5 years.

Claim.—1st. A belt having a warp of leather thongs, and a separate facing of leather or other suitable material on one or both sides adhered to said leather thongs, substantially as described. 2nd. In a belt, the combination, with one or more woven bands, each band consisting of a warp of leather thongs, and a filling of twine or other suitable material, of a facing of leather, canvas, or other suitable material glued or cemented to such woven band or bands, such glueing being adapted to cement together the different members of the belt, substantially as described.

No. 37,279. Key Bolt. (*Boulon à clavette.*)

Mary Murison, New Carlisle, Quebec, Canada, 1st September, 1891; 5 years.

Claim.—1st. The combination of the key *b*, and the washers *a*, and a^1, substantially as and for the purpose hereinbefore set forth. 2nd. In combination, with bolt A, the key *b*, and the washers *a*, and a^1, substantially as and for the purpose hereinbefore set forth.

No. 37,280. Cultivator. (*Cultivateur.*)

J. O. Wisner, Son & Company, assignees of Charles Andrew Greiner, all of Brantford, Ontario, Canada, 2nd September, 1891; 5 years.

Claim.—1st. A side frame composed of two metal bars secured together at the draft bolt end, and rigidly connected one on top and one on the bottom of to two cross-bars, on one of which the cultivator teeth are fastened, substantially as and for the purpose specified. 2nd. A shoe or runner supporting beam composed of two bars, the ends of which are held close together by a casting on which the shoe or runner is fastened, the said bars being connected one on top and one on the bottom to the cross-bars A, and F, substantially as and for the purpose specified.

No. 37,281. Road Cart. (*Désobligeante.*)

Hugh A. Stringer, London, Ontario, Canada, 2nd September, 1891; 5 years.

Claim.—1st. In a road cart or other vehicle, the adjustable rails A, A, pivoted to seat B, at front and back of each end of said seat, substantially as shown and described and for the purpose hereinbefore set forth. 2nd. In a road cart, the adjustable truss E, screw-bolt F, and nut *b*, connecting the back with the front of body and regulating the pitch of the seat, substantially as shown and described. 3rd. In a road cart, a tortional spring G, the forward end of which is bent and received in eye *c*, on underside of shaft, and bolted to front bar *d*, the rear end being connected to bow-piece K, as shown and specified and for the purpose hereinbefore set forth.

No. 37,282. Account Ledger.

(*Grand livre de compte.*)

Samuel P. Russell, Winnipeg, Manitoba, Canada, 2nd September, 1891; 5 years.

Claim.—1st. A loose ledger account sheet, ruled for entries, and having the title of the account at the foot of the leaf. 2nd. A loose ledger account sheet, ruled for entries, and perforated at the top for securing the same on a movable arch or similar file.

No. 37,283. Radiator. (*Calorifère.*)

John Andrew Peard, Montreal, Quebec, Canada, 2nd September, 1891; 5 years.

Claim.—1st. A hot water or steam radiator section, having internal radiating surfaces in the form of open tubular air passages through its water or steam spaces as set forth. 2nd. A hot water or steam radiator section having water or steam spaces A, A, and open air tubes B, B, extending through them, as shown and described.

No. 37,284. Feed Rack with Shed Attachment. (*Crèche et hangar.*)

Samuel Haughton Warren, Keosauqua, Iowa, U.S.A., 2nd September, 1891; 5 years.

Claim.—In a feed-rack, the combination of a horizontal slatted manger having openings therein through which the feed is taken, slides for opening and closing the openings, a feed-holder above the manger formed of a size less than the manger, and with vertical slats, a shed inclined from the top of the holder and inclined retaining-stakes 12, in the manger, substantially as described.

No. 37,285. Metal Post for Fences.

(*Pieux en métal pour clôtures.*)

Joseph Jasper Crane, Summertown, Tennessee, U.S.A., 2nd September, 1891; 5 years.

Claim.—The metallic fence-post described, comprising in a single casting, the entering point, the T-shaped web having upon its front face lugs, the top and bottom ones of which are inversely arranged and between the entering point and the web, a horizontal portion having at its ends downwardly extended portions *f*, which are tapered and inclined outward from a right angle from the horizontal portion, substantially as specified.

No. 37,286. Spool or Bobbin. (*Bobine ou roquet.*)

George Otis Boynton, Boston, Massachusetts, U.S.A., 2nd September, 1891; 5 years.

Claim.—1st. A spool having the edge of one or each of its heads covered with a metal strip, which extends around the edge and a short distance on each side of the head, and each edge of the metal strip being bent inward and disposed in a groove in its respective side, for the purpose specified. 2nd. A spool having the edge of one or both of its heads covered with a metal strip which extends around the edge and a short distance on each side of the head, each edge of the metal strip being bent inward and disposed in a groove in its respective side, and its central portion depressed into a circumferential groove in the edge of the head, for the purpose specified.

No. 37,287. Belt for Horses.

(*Bandoulière pour cheval.*)

Théodule Ménard, Bedford, Quebec, Canada, 2nd September, 1891; 5 years.

Claim.—The combination of the blocks of wood, of Beach nut shape, like, and the way and manner of adjusting the same to the belt, for the purposes hereinbefore set forth.

No. 37,288. Brake and Starter for Cars.

(*Appareil pour enrayer et lancer les chars.*)

Benjamin Homer Fairchild, Pomona, (assignee of Elswood Chaffey, Santa Monica), both in California, U.S.A., 2nd September, 1891; 5 years.

Claim.—1st. The combination of the car frame, the car axle provided with fixed car wheels, two power-accumulator-operating-wheels loosely mounted upon such axle, the connecting wheel engaging with the accumulator-operating-wheels, two reversely arranged power accumulator devices, each fixed to the car frame and

connected respectively with the accumulator-operating-wheels, two sliding clutches mounted upon the axle and arranged to rotate therewith, and adapted to respectively engage with, and disengage from the accumulator-operating-wheels, means for operating such clutches, and means for controlling the rotation of the accumulator-operating-wheels. 2nd. The combination of the car frame, the car axle provided with fixed car wheels, two-power-accumulator-operating-wheels loosely mounted upon such axle, the connecting wheel engaging with the accumulator-operating-wheels, two reversely arranged power accumulator devices, each fixed to the car frame and connected respectively with the accumulator-operating-wheels, two sliding clutches mounted upon the axle and provided respectively with means whereby the clutches are compelled to rotate with the axle, each in a direction reverse to the other and are allowed to slip respectively in the reverse directions.

No. 37,289. Pattern Chart.

(Patron pour tracer les vêtements.)

Samuel Gilbert Crow, Toronto, Ontario, Canada, 2nd September, 1891; 5 years.

Claim.—A plate, having a straight edge on one side marked with a double rule, commencing, one from each end, the opposite edge of the plate being curved and three curved openings made in the said plate to form the graded arms eye the shoulder and darts, the under arm seam and the side form, substantially as and for the purpose specified.

No. 37,290. Treadle Mechanism for Bicycles and Tricycles. (*Mécanisme pour pédales de bicycle ou tricycle.*)

John Trebilcock, Ann Trebilcock and William Henry Kent, all of Toronto, Ontario, Canada, 2nd September, 1891; 5 years.

Claim.—A treadle journaled on the axle to which the bicycle-wheel is fixed, a heel formed on the said treadle, on which heel a beveled or mitred pinion is journaled, the said pinion meshing or engaging with a bevelled or mitred pinion fixed to the face of the fork and surrounding the axle, and with a pinion fixed to the said axle, substantially as and for the purpose specified.

No. 37,291. Method of Producing Artificial Cold. (*Méthode de produire du froid artificiel.*)

Flavius Paul Stiker, Buffalo, New York, U.S.A., 2nd September, 1891; 5 years.

Claim.—1st. The production of artificial cold for the manufacture of ice or for refrigerating purposes, by the use of the expansion of natural gas from its natural pressure or any portion thereof, to any lower pressure. 2nd. The use of natural gas, as a new agent for the production of artificial cold for the manufacture of ice or for refrigerating purposes. 3rd. The herein described mode of producing artificial cold, consisting in taking natural gas at its normal pressure and temperature as it issues from the earth into a suitable expanding apparatus, thereby expanding it from its normal pressure to a lower pressure, substantially as described.

No. 37,292. Pocket Book. (*Portefeuille.*)

Frederick Lieker, New York, State of New York, U.S.A., 2nd September, 1891; 5 years.

Claim.—A pocket book, composed of a flat bottom a, and four upwardly projecting sides a^1, a^2, a^3, a^2, connected at the corners to constitute a box, the sides a^2, being creased from the top diagonally downwards and the side a^3, being provided with a flap, that overlaps the side a^1, when the pocket book is closed, substantially as specified.

No. 37,293. Turning Lathe. (*Tour à tourner.*)

Gustaf Adolf Brodin, Stockholm, Sweden, 2nd September, 1891; 5 years.

Claim.—1st. An oval-turning lathe, provided with two headstocks having chucks facing each other, the elliptical motion of each chuck being effected by a slotted ring in which works a block fixed to the chuck, the said ring being fixed to a slide arranged on the headstock, the said slide being provided with an adjusting screw for adjusting the ring on the slide, so that by properly adjusting the respective rings of the headstocks articles can be turned of different oval shapes at both ends or the longitudinal axes of the ovals determined by both the headstocks may lie in different planes. 2nd. An oval-turning lathe provided with only one headstock, arranged as described, in claim 1, for the purpose set forth.

No. 37,294. Safety Device for Use in Milking Cows. (*Appareil de sûreté à l'usage de traire les vaches.*)

Christopher Columbus Palmer, Bantam, Connecticut, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. In a safety device for milking cows, the combination of the movable frame consisting of the two stanchions and the top cross-piece, the removable fender-board held by the side pieces, the sliding and adjustable foot-rail, the locking levers k, pivoted to said side pieces and adapted to hold said foot-rail in adjustment, and the shelf or pail rest in front of and supported by said side pieces or arms therein, substantially as specified. 2nd. The device for the purpose herein described, comprising the frame supported on rollers and suspended from an overhead support, said frame having the fender board removably held in slots in the side pieces thereof, the adjustable and sliding foot-rail, and the shelf or pail-rest supported by said side pieces or arms thereof, together with a back strap or cord, substantially as specified.

No. 37,295. Harrow. (*Herse.*)

Oscar Tower, Wilson, New York, U.S.A., 3rd September, 1891; 5 years.

Claim.—In a harrow, the hinged frames A, B, provided with detachable bars D, in combination with suitable teeth, and means for adjustably and removably connecting them to the bars, consisting of the clamping-plates H, having the slotted flanges h, and the clamps I, substantially as and for the purpose set forth.

No. 37,296. Hot Air Furnace. (*Calorifère à air.*)

George A. Wells, Oskaloosa, Iowa, U. S. A., 3rd September, 1891; 5 years.

Claim.—1st. In a hot air furnace, the combination of a fuel-chamber, a damper-box located above and communicating therewith, an exterior pipe connecting the lower part of said chamber with the damper-box, a partition having an opening, and being located in said box, and a damper so pivoted as to alternately close the pipe and opening in the partition, whereby an indirect or direct draft may be created in the manner and for the purpose, substantially as described. 2nd. In a hot air furnace, the combination, with a fire-chamber, of a hollow lining upon the sides thereof, forming an air-space between the lining and the walls of the fire-chamber, said lining being provided with openings in its side and bottom, and a damper commanding the openings in the bottom in the manner and for the purpose, substantially as described. 3rd. In a hot air furnace, the combination of a lining, an air-chamber behind the latter and having perforations through which the air is conducted behind said lining, and a water boiler around which the air passes from behind said lining, as and for the purpose set forth. 4th. In a hot air furnace, the combination of a fire-chamber having a damper-box above it, provided with a dampered inlet opening, a smoke-pipe leading out of said box, a partition having an opening and interposed between the top and bottom, an external pipe leading from the lower part of the furnace to the damper-box, and a pivoted damper located in said box and adapted to alternately close the openings in said partition, and said pipe all arranged and adapted to operate in the manner and for the purpose, substantially as described.

No. 37,297. Tool Box. (*Nécessaire à outils.*)

Charles O. Hescox, Tacoma, Washington, U.S. A., 3rd September, 1891; 5 years.

Claim.—1st. The combination, with the tube holding box of the graduated tubes, and the false bottom formed by a thick block of wood adapted to have sockets of greater or less depth bored into it in continuation of the sockets formed by the tubes. 2nd. The combination, with the tube holding box of the graduated tubes, and the false bottom having its parts beneath the respective tubes shaped to form with said tubes pockets of different depth, as explained. 3rd. In a tool holding box, the combination of the box A, the graduated tubes E, and the pocket H, with the false bottom F, of irregular shape, adapted to support the tops of the tubes and pockets on the same level, as herein set forth. 4th. A tool holding box provided with a series of tubes graduated in diameter and length and arranged in order of their size, and a false bottom of irregular shape supporting said tubes, whereby a series of tool holding pockets X, are formed which are also graduated in diameter and length, substantially as herein set forth.

No. 37,298. Convertible Chair for Children. (*Fauteuil brisé pour enfants.*)

Adolph Ostlund, Centreville, Iowa, U. S. A., 3rd September, 1891; 5 years.

Claim.—1st. In a convertible chair, the frame having cleats on its inner face and extending the length of the same, an extension integral with said frame, and in the rear thereof, a rocking chair mounted thereon and provided with an opening in the seat thereof, springs and guides on the bottom of the chair for retaining the same in place on the frame, and a foot rest slidingly supported on the cleats below the chair, having spring catches in one end to retain the same in a stationary position, substantially as described. 2nd. In a convertible chair, a base, a rocking chair mounted thereon, means for holding the rocker in alignment with the base, a tray pivotally connected by links with the chair rockers and adapted to be lowered to the plane of the chair seat, cleats on the inner face of the base extending the length thereof, and a foot rest having a sliding and locking engagement with said base and adapted to be turned to and retained in a vertical position to support said tray in its low position, substantially as described. 3rd. In a convertible chair, a supporting base, a foot rest sliding thereon and adapted to be turned to and retained in a vertical position, a rocking chair provided with a seat, having a semicircular opening in the forward outer edge, means for holding the said chair in alignment with and in fixed position on said base, a tray provided in its inner edge with a semicircular opening, and linked pivotal connection between said tray and rocker frame, whereby said tray may be lowered to the plane of the chair seat and be supported by the foot rest, substantially as described.

No. 37,299. Machine for Making Wire Ties for Bales, etc. (*Machine pour faire des liens en fer pour les ballots, etc.*)

Ovide Lamothe, St. Guillaume, Quebec, Canada, 3rd September, 1891; 5 years.

Claim.—1st. A machine for making wire bale ties, consisting of the twisting mechanism K, the said twisting mechanism consisting of plates 76, having a guide 77, a pin 78, suitably operated, a segmental slot in said plate, a pin 82, sliding in said slot, and means for operating the said pin, grippers M, cutting mechanism N, the

sliding carriage L, having a plate through which the ends of the wires, the threaded cams for holding the wire, the said cams being suitably operated, a sliding guide plate 56, and means for operating the said twisting mechanism K, the grippers M, cutters N, and the carriage L, substantially as set forth. 2nd. The combination in a machine for making wire bale ties, with a pinion driving the gear wheel carrying on its axle a balanced arm provided with a flanged friction wheel, of the slotted standard in which the said friction wheel slides, the said standard being attached to and operating the carriage L, substantially as set forth. 3rd. In a machine for making wire bale ties, the combination, with a frame running by means of flanged wheels on rails secured to the main frame carrying a slotted standard, of a plate secured to said standard, the said plate being bored for the insertion of the wires, cams penetrating the said bores and holding the said wires, said cams carrying weighted arms, a guide plate slidingly secured under the said plate, and means for operating the same, substantially as set forth. 4th. In a machine for making wire bale ties, the combination, with the plates 76, guides 77, slots 81, and pins 78 and 82, for bending the end of the wire, and means for operating the said pins, of the shafts 71 and 74, carrying the said plates, small intermeshing gear wheels 72 and 73, the large gear wheel 60, suitably journaled and operating one of the said small gear wheels, an annular rim 63, secured to the spokes of the said gear wheel 60, provided with equidistant notches, spring pawl 65, dog 67, and means for operating the said pawl and the spring 69, substantially as set forth. 5th. In a machine for making wire bale ties, the combination, with the balanced arm 26, suitably revolved, carrying the cam 27, of the arm 92, adapted to be engaged by the said cam, the rocking shaft 86, arm 87, attached to the sliding rod 89, the sliding rod 89, carrying forks 91, grooved sleeves 84, adapted to be engaged by the said forks, the said sleeves sliding on the shafts 71 and 74, links 83, connecting the said sleeves with the pins 82, sliding in the segmental grooves 85, substantially as and for the purpose set forth. 6th. In a machine for making wire bale ties, the combination, with the balanced arm 26, suitably revolved, carrying a cam 27, of the arm 102, on the rocking shaft 100, the said arm adapted to be engaged by the said cam, the rocking shaft 100, the arms 99, operating the upper jaws of the grippers M, the grippers M having jaws suitably journaled and geared together, and the spring 104, substantially as and for the purpose set forth. 7th. In a machine for making wire bale ties, the combination, with the balanced revolving arm 26, and the friction wheel 28, of the arm 54, operated by the said pin, the cranked bar 53, carrying at its end the said arm 54, and adapted to operate the weighted arms of the cams 48, substantially as set forth. 8th. In a machine for making wire bale ties, the combination, with the balanced revolving arm 26, carrying the pin 29, of the arm 51, of the rocking shaft 50, the rocking shaft 50, and T-shaped arm 49, substantially as and for the purpose set forth. 9th. In a machine for making wire bale ties, the combination, with the arm 26, and cam 27*a*, of the rocking shaft 117, carrying an arm 118, operated by the said cam, the arms 116, rods 115, the rocking shafts 111, having arms 114, connected by the said rods 115, to the said arms 116, the said rocking shafts journaled in brackets 113 and 112, the said brackets 112 being secured to a sliding support 105, the sliding supports carrying the jaws of the cutters, the jaws 107 and 108, the link 106, the arm 110*a*, on the rocking shaft 111, link 110, and spring 120, secured to the arm 119, on shaft 117, substantially as and for the purpose set forth. 10th. In a machine for making wire bale ties, the combination, with the arm 26, and cam 27*a*, of the arm 124, on the shaft 121, adapted to be engaged by the cam 27*a*, the shaft 121, arms 125, connected to the sliding supports 105, the arm 122, and spring 123, substantially as and for the purpose set forth. 11th. In a machine for making wire bale ties, the combination, with the plates 76, of the twisters of the pins 78, moving in apertures in the said plates, and the guides 77, the levers 79, carrying the said pins, the flattened ends 80, the vertically sliding rods 129, sliding in brackets 130, and engaging the ends of the levers 79, the bell crank levers 128, operating said rods 129, the connecting rods 127, and bell crank levers 126, connected to the said connecting rods, and the sliding supports 105, substantially as set forth. 12th. In a machine for making wire bale ties, the combination, with levers 107, of the cutters N, of the arms 131, on rocking shafts 132, the said arms being connected to the said levers 107, and arms 133, connected to the said rocking shafts 132, substantially as and for the purpose set forth. 13th. In a machine for making wire bale ties, the combination, with the plate 45, of the carriage L, of the sliding plate 55, having a guide plate provided with apertures 57, the stops 134 and 135, substantially as and for the purpose set forth. 14th. In a machine for making wire bale ties, the combination, with the twisting mechanism K, carriage L, cutters N, and grippers M, of the driving shaft 20, pinion 22, gear wheel 23, gearing with the said pinion, the shaft 24, carrying the said gear wheel, the stud 25, on said gear wheel, the balanced arms 26, 26*a*, the cams 27 and 27*a*, pin 29, and flanged friction wheel 28, on the said arm, substantially as set forth. 15th. A device for forming a loop on the end of a wire, consisting of a plate carried by an intermittently revolved shaft, a guide on one side of said plate in which the end of the wire is received, a pin at the open side of the said guide adapted to be withdrawn at will, a segmental slot in said plate in which slides a pin, said pin is carried by a link attached to a sleeve sliding on the said shaft, and means for operating the said sleeve, and means for holding the bent wire while the plate is being revolved, substantially as set forth.

No. 37,300. Churn. (*Baratte.*)

Ephraim Alpaugh, Galt, Ontario, Canada, 3rd September, 1891 ; 5 years.

Claim.—1st. The cream holding cylinder, having a central opening in one or both of its heads, mounted upon the supporting roller and operated by the cranks, substantially as set forth. 2nd. In combination, with the cream holding cylinder mounted upon the supporting rollers and operated by the cranks, the corrugated band and plane space for gathering the butter, substantially as set forth. 3rd. In combination, with the cream holding cylinder mounted upon the supporting rollers and operated by the cranks, the expansion plate or dish and sieve, as and for the purpose described.

No. 37,301. Switch Stand. (*Bâti d'aiguille.*)

Fred W. Snow, Hillburn, New York, U. S. A., 3rd September, 1891 ; 5 years.

Claim.—1st. The combination, in a switch stand, of a sliding clutch section bearing against a spring, a rotating clutch section engaging with the sliding section and a switch lever and a movable bolt for locking the lever to the rotating section of the clutch, substantially as set forth. 2nd. The combination, with the sliding clutch section bearing against the spring, and with a switch lever of an intermediate rotating clutch section having a series of peripheral notches or teeth and a bolt carried by the lever for engaging said notches or teeth, substantially as set forth. 3rd. The combination, with the sliding and rotating clutch sections, spring, lever, and bolt carried thereby for locking the rotating section to the lever, of a projection or lug extending from said bolt, and a flange 16, having notches for the passage of said projection, substantially as set forth. 4th. The combination, with the switch lever, clutch sections and bolt, of a bolt operating lever 31, and means for locking the latter, substantially as and for the purpose described. 5th. The combination, in a switch stand, of a lever, a rotating clutch section, a sliding clutch section, a spring bearing on the latter, and a frame in the form of a horizontal closed casing supporting all the parts and provided with guides for the sliding clutch section, substantially as set forth. 6th. The combination, with the lever, clutch section and spring, of a frame having a recess for receiving the sliding section and a projecting portion of the turning section, substantially as described. 7th. The combination, with the frame in the form, of a horizontal case, and a switch lever, and clutch sections, and spring, and a bolt passing through the lever sections, and spring and case and secured detachably, substantially as set forth. 8th. The combination, with the case B, of a yoke provided with a slot for the passage of the switch lever and secured detachably to the case, substantially as set forth.

No. 37,302. Electric Arc Lamp.

(*Lampe électrique à arc.*)

William Arthur Turbayne, Toronto, Ontario, Canada, 3rd September, 1891 ; 5 years.

Claim.—1st. In an electric arc lamp, the combination of main and shunt magnets or solenoids, a centrally pivoted lever connected at its opposite ends with the cores of the respective magnets, and a ring clutch for the carbon rod resting freely upon the top of the said lever, for the purpose set forth. 2nd. In an electric arc lamp, the combination of main and shunt magnets or solenoids, a centrally pivoted lever connected at its opposite ends with the cores of the respective magnets, and a ring clutch for the carbon rod, provided with lateral arms extending in opposite directions, one arm carrying a roller or other anti-friction device bearing upon the said lever, and the other arm carrying an adjusting screw, the end of which also bears upon said lever, for the purpose described. 3rd. In an electric arc lamp, the combination, with main and shunt magnets, of a centrally pivoted lever connected at its opposite ends with the cores of the respective magnets, a weight having a tendency to maintain the lever in a horizontal position, and a ring clutch for the carbon rod operated by said lever. 4th. In an electric arc lamp, the combination of main and shunt magnets, a centrally pivoted lever having its opposite ends connected with the cores of the magnets respectively, a ring clutch resting freely upon the top of the said lever, and guides connected with said lever for holding the clutch in its proper place.

No. 37,303. Art of and Composition for Making Ornaments from Hair.

(*Art et composition pour faire des ornements avec des cheveux.*)

Margaret I. Waldron, St. Joseph, Missouri, U.S.A., 3rd September, 1891 ; 5 years.

Claim.—1st. The above-described adhesive compound for use in ornamental hair-work, consisting of white glue, shred isinglass, acetic acid, water, carbolic acid, and oil of roses, in substantially the proportions above stated. 2nd. The described improvement in the art of making ornamental hair-work, consisting in uniting together the hair, and a strip or piece of silk or equivalent of white glue, shred isinglass, acetic acid, water, carbolic acid, and oil of roses, and cutting up the same, as desired, to be fabricated into the required ornaments.

No. 37,304. Method of Constructing Wooden Bridges. (*Méthode de construire les ponts en bois.*)

Richard Boyle, Township of Peel, Ontario, Canada, 3rd September, 1891 ; 5 years.

Claim.—1st. The combination of the extra-deck plank a^{1}, a^{11}, with the bottom of each truss so as to cover the centre joint and securing it with the iron rods b^{1}, b^{11}, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the iron plate c^{1}, c^{11}, with the side of each truss, and secured thereto by iron bolts, substantially as and for the purpose hereinbefore set forth. 3rd. For the using of welded eyes on lower ends of the suspension rods d^{1}, d^{11}, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the iron hinge e^{1}, e^{11}, with the lower ends of suspension rods d^{1}, d^{11}, substantially as and for the purposes hereinbefore set forth. 5th. The combination of a corbel stringer f^{1}, f^{11}, (made of cedar timber of any suitable size), with the end of each truss, and secured thereto by iron bolts, substantially as and for the purpose hereinbefore set forth. 6th. The use of a needle-beam g^{1}, g^{11}, formed of two pieces of timber separated by blocks of wood, the whole being securely joined with iron bolts, substantially as and for

the purposes hereinbefore set forth. 7th. The combination of the iron washer h^1, h^{11}, (with edges turned up) with the ends of the needle-beam, and with the iron rods b^1, b^{11}, substantially as and for the purposes hereinbefore set forth. 8th. The combination of the iron angle braces j^1, j^{11}, with the corbel stringers f^1, f^{11}, and the needle-beams next to the ends of the bridge, substantially as and for the purpose hereinbefore set forth. 9th. The use of a zinc or a galvanized iron covering for the top of each needle-beam, substantially as and for the purpose hereinbefore set forth. 10th. The use of a zinc or a galvanized iron covering for the top of each truss, substantially as and for the purpose hereinbefore set forth.

No. 37,305. Nut Lock. (*Arrête-écrou.*)

Charles Darwin Tisdale, Boston, Massachusetts, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. A nut lock, composed of a strip of metal having its ends respectfully bent in the reverse direction to fit the nuts to which it is to be applied, and secured to the body portion of the strip. 2nd. The combination, with two nuts, of bolts securing a plate to a railroad track, of a lock composed of a strip of metal having its ends respectively bent in the reverse direction to fit said nuts and secured to the body portion, for the purpose specified.

No. 37,306. Letter Box for Streets.

(*Boîte aux lettres pour rues.*)

Michael J. Donahue, Boston, Massachusetts, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. The combination, with a letter box, of the double acting single hinged door, constructed so as to perform the double function of door to the upper and lower compartments of the box, the door also being provided with outwardly acting guards, the guards having outwardly protruding pins *d*, *d*, substantially as and for the purpose hereinbefore described. 2nd. The combination, with a letter box, of the double acting hinged door provided with outwardly acting side guards *h*, *h*, having pins *d*, *d*, the inclined floor *f*, said door and floor forming a transverse passage extending out from the rear to the front side of the box for the ready passage of mail matter from the box to the bag of the collector, substantially as set forth. 3rd. The combination, with a letter box, of a double acting hinged door provided with outwardly acting guards having pins *d*, *d*, the guards acting in the cleats *c*, *c*, and the second floor *f*, substantially as described. 4th. The combination, with a letter box provided with the floor *f*, and a newspaper compartment beneath said floor, said compartment having the space or aperture *e*, on its front side, of the double acting door provided beneath its pivotal point with a lower portion or extension *m*, adapted when said door is closed to partially cover the aperture *e*, and form a door for the same leaving a slot or aperture of sufficient width for mailing purposes only, substantially as described. 5th. The combination, with a letter box, of two letter slots, whereby two different persons may use the same box at the same time for mailing purposes, as and for the purpose set forth.

No. 37,307. Mucilage Fountain and Envelope Moistener. (*Bouteille de mucilage et machine à humecter les enveloppes.*)

Arthur Joseph Ingraham, Philadelphia, Pennsylvania, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. The combination, with a can or reservoir, of a longitudinally perforated and tapering nozzle provided with a lip or skirt, and a brush interposed and secured between the lip or skirt and nozzle, whereby the brush may be inserted into and withdrawn from the can, substantially as and for the purposes described. 2nd. The combination of a can or reservoir having a mouth, a longitudinally perforated nozzle provided with a lip or skirt, a brush mounted on or between a ring interposed between the lip and nozzle, and lugs struck up from said lip and engaging or contacting with said ring, substantially as and for the purposes described. 3rd. The combination of a can or reservoir having a mouth, a longitudinally perforated and tapering nozzle provided with a body having integral externally threaded nipples, and a brush having the bristles suitably embedded between the tapering portion of the nozzle and inner surface of the upper nipple, substantially as and for the purposes described.

No. 37,308. Walking Stick. (*Canne.*)

Edwin Coleman, Forest, Ontario, Canada, 3rd September, 1891: 5 years.

Claim.—As a new article of manufacture, a walking stick made by cutting the burdock plant while in bloom, and allowing the same to shrink while partially saturated with oil, and straightening the stalk by pressure during the shrinking process, substantially as described.

No. 37,309. Sack Holder. (*Accroche-sac.*)

Salem T. Lamb, New Albany, Indiana, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. A bag-holder, having a base and a standard mounted at one side thereof, the base and standard being united by a hinge having flanges engaging the standard, and laterally-extending wings for securing it to the base, a hook on the standard engaging a pin on the base for locking the standard in upright position, and a pivoted hook on the standard engaging the edge of the base to hold the base and standard together in their folded condition, substantially as described. 2nd. In a bag-holder, the combination, with a slotted standard, of a block adjustably mounted therein, and a hoop pivotally mounted in the block, the block being provided with flanges *i*, and edge *j*, and the hoop being provided with projections *i*, engaging the flanges, whereby the hoop may be held in a horizontal or vertical position, substantially as described. 3rd. In a bag-holder, the combination, with the standard provided with a staple at its upper end, of the supporting-block adjustably mounted on the standard, a hoop for supporting the bag pivotally mounted in the block, and provided with laterally-projecting points, one of which points is arranged to engage with the staple in the standard to maintain the ring parallel therewith, substantially as described. 4th. In a bag-holder, the combination, with a base and standard pivotally mounted thereon, at its edge of a bag-supporting hoop connected with the standard, whereby the base and hoop may be folded parallel with the standard in its elevated position, and when folded parallel with the base and hoop, substantially as described.

No. 37,310. Paper Tube. (*Tube de papier.*)

Daniel N. Hurlburt, New York, State of New York, U.S.A., 3rd September, 1891; 5 years.

Claim.—1st. In a tube, the combination of a cylindrical core formed from a single thickness of material, and having an abutting or slightly overlapped seam, said core being covered throughout by a spirally-wound tape, substantially as described. 2nd. In a paper tube, the combination of a cylindrical core formed from a single thickness of paper, and having an abutting or overlapped seam, tapes of the same material spirally-wound about said core and breaking joints, and an adhesive material to bind said core and tapes, substantially as described.

No. 37,311. Spoke for Wheels. (*Rais pour roues.*)

Walter Bristow, Ottawa, Ontario, Canada, 3rd September, 1891; 5 years.

Claim.—As an article of manufacture, a spoke for a wheel, tapered from a point outside of that part which enters the hub, gradually down about one-half to two-thirds of its length, thence on curved lines continuing uniform a short distance, thence on curved lines increasing the size near the point of its intersection with a felly, substantially as and for the purposes hereinbefore set forth.

No. 37,312. Pavement. (*Pavement.*)

Wilhelm Schlichting, Hamburg, Germany, 3rd September, 1891; 5 years.

Claim.—1st. A pavement, having a foundation and a surface layer of asphalt, with iron or steel ribs set edgewise in said asphalt, and of the same depth as the asphalt, substantially as herein described. 2nd. A pavement, having a foundation and a surface layer of asphalt, with iron or steel ribs set edgewise in said asphalt and of the same depth as the asphalt, said ribs consisting of parallel sets crossing each other, substantially as herein described. 3rd. A pavement, having a foundation and a surface layer of asphalt, with rectangular frames composed each of two parallel series of iron or steel ribs notched and crossing each other inserted in said asphalt, and of the same depth as the asphalt, substantially as described. 4th. A pavement, having a foundation of concrete and a surface layer or layers of asphalt with rectangular and triangular frames, composed each of two parallel series of iron or steel ribs notched and crossing each other, said frames being of the same depth as said asphalt and notched therein, with the ribs in line diagonally to the line of the pavement, substantially as and for the purpose set forth.

No. 37,313. Button. (*Bouton.*)

Joseph Mathison, Somerville, Massachusetts, U.S.A., 3rd September, 1891; 5 years.

Claim.—A metallic button, composed of a single piece of sheet metal comprising the enlarged central portion *b*, constituting the head of the button, the shank sides or extensions *e e* formed on opposite edges of said head, but narrower than the latter and having a concavo-convex form in cross section, said shank sides being bent inwardly from the margin of the head under the latter, with their convex sides outward to form a rounded two part shank, and bent outwardly at their outer or lower portions to form feet to rest on the material and give the shank an elongated bearing thereon, and the prongs *g*, *g*, formed on the outwardly bent ends of the shank sides and adapted to pass through the material, the concavo-convex form of the shank sides giving them smooth bearing surfaces devoid of cutting and wearing angles, and strengthening the shank made of said sides by giving the same a substantially tubular form in cross section, as set forth.

No. 37,314. Veterinary Surgical Device.

(*Appareil chirurgical pour vétérinaires.*)

The Perfection Manufacturing Company, assignees of Joseph Van Ness, both of Gloversville, New York, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. A veterinary surgical device, comprising a furcated shield, a depending guard, and slotted braces, made integral and of soft rubber, combined with a flexible jacket secured to the device by insertion in the slots, and an adjusting strap applied to the jacket substantially as and for the purpose described. 2nd. A veterinary surgical device, having a depending guard, and a serrated or otherwise roughened edge appliance detachable therefrom, substantially as described.

No. 37,315. Dead Eye. (*Cap de mouton.*)

Warren Henry Carr, Charles Albert Hooker and David James Tabor, all of Bath, Maine, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. An improved dead-eye, consisting of a block or body portion having a plurality of openings made therein, and blocks rigidly secured in said openings, substantially as shown and described. 2nd. An improved dead-eye, consisting of a block or body portion having a plurality of openings, the openings being concaved the bottoms being straight and recessed, a plurality of blocks arranged in the openings the upper surface being concaved the lower surface being straight, and provided with projections and the tie rod, all arranged as described. 3rd. As an improved article, a dead-eye having a plurality of openings, each having a concaved top and recessed bottom, the blocks of lignum vital arranged in the openings, each having a concaved top and bottom with a projection the tie-rod, the metallic band and bolt, all arranged and adapted to operate, substantially as shown and described.

No. 37,316. Key Attachment for Musical Instruments. (*Instrument de musique à clé.*)

Annie Dixon, (assignee of Robert Emmanuel Bell), both of Toronto, Ontario, Canada, 4th September, 1891; 5 years.

Claim.—1st. In a key instrument, a series of levers arranged between the key-board and sounding mechanism of the instrument, in combination with mechanism by which the said levers may be adjusted so as to bring a higher or lower toned note in connection with the key in which the piece is written, substantially as and for the purpose specified. 2nd. In an organ, a series of levers arranged between the sticker pins and key-board, and connected to a flexible frame pivoted on the centre line of the sticker pins, in combination with mechanism by which the said flexible frame may be adjusted so as to bring a higher or lower toned note, in connection with the key in which the piece is written, substantially as and for the purpose specified. 3rd. In an organ, a series of levers arranged between the sticker pins and key-board and connected to a flexible frame pivoted on the center line of the sticker pins, and supported on a tilting frame, in combination with mechanism arranged to first tilt the levers clear of the buttons on the keys, and then adjust them so as to bring a higher or lower toned note in connection with the key in which the piece is written, substantially as and for the purpose specified. 4th. In an organ, a series of levers arranged between the sticker pins and key-board, and connected to a flexible frame, in combination with a series of levers one resting on each coupler wire and arranged in connection with the adjusting levers so that the octave will remain correct, notwithstanding the adjustment of the said levers, substantially as and for the purpose specified.

No. 37,317. Sheat Carrier and Means for Attaching and Working the Same. (*Porte-gerbe et lieuse.*)

William Wallace Norton, Adelaide, and Peter Sinton Mitchell, Mount Gambier, both in South Australia, Australia, 4th September, 1891; 5 years.

Claim.—1st. In the construction of reaping and binding machines the forming a sheaf carrier whose arms are in one length attached at or about the middle to a single, double or multiple band or frame, such as F, provided at its upper ends with a pair of pivot hinges such as F^1, F^2, which allow the same to tip and deposit the sheaves on the field, as and when required. 2nd. In reaping and binding machines, the double lever P, by which in conjunction with the cord or chain M, the sheaf-carrier is held in its required position to receive the sheaves, the essential feature of such lever being that when the cord is above the pivot or fulcrum the carrier is held in position for filling, and the lever is readily depressed by the driver pushing the same with his foot, which releases the cord or chain, and allows the sheaf carrier to tip and discharge. 3rd. In reaping and binding machines, the spring K, attached by one end to a lever or projection, of the sheaf-carrier, and by the other to a regulating screw such as K^1, or to a fixed portion of the machine for the purpose of tipping and discharging the sheaf-carrier when the holding cord or chain is released by the driver. 4th. In reaping and binding machines, the combination and arrangement of a sheaf carrier hinged on one central axis or pair of pivots, forming an axis with a clutch or lever such as P, actuating a cord or chain or rods to hold the sheaf carrier in position, and a spring K, and lever piece F^3, to tip and empty the sheaf carrier when the holding cord or chain is released by the drivers foot, substantially as described and illustrated in the drawings.

No. 37,318. Coin-Freed Apparatus for Delivering Goods. (*Appareil actionné par une piece de monnaie pour livrer les marchandises.*)

Samuel S. Allin, Bedford Park, Middlesex, England, 4th September, 1891; 5 years.

Claim.—1st. The combination of a set of circularly arranged knobs or pulls, and their feathered stems with a notched ring caused to turn partly round by the weight of introduced coins, substantially as and for the purposes herein set forth. 2nd. In combination, with the pulls and notched ring above referred to, a balanced arm or set of balanced arms supporting the lever carrying the coin or coins, and so determining the position of the ring until the movement of the ring effected by the sloped feather of the pull causes the coin or coins to be discharged, substantially as described. 3rd. In coin feed delivery apparatus, a measuring vessel for liquids constructed in cylindrical form with inlet openings in its side near, one end capped and provided with an outlet near the other end, and having a piston, packed loosely, and piston rod, a cross head, a valve, and springs, the said piston and valve respectively being normally held in such position as to allow said inlet openings to communicate with the interior of the cylinder and to shut off or close the outlet, and afterwards, by the movement of said piston rod, to first shut off the inlet openings, and subsequently open the outlet valve. 4th. In coin feed delivery apparatus, a measuring vessel for liquids constructed in cylindrical form with inlet openings in its side near one end, and capped, and provided with an outlet near the other end and having a piston rod and two loosely packed pistons, one of which is mounted rigidly and the other loosely on such rod so that this latter can slide through the loose one, springs for holding said pistons normally apart and in such positions relatively to the inlet and outlet openings as to allow the former to communicate with the interior of the cylinder, and the latter to be shut off therefrom, the movement of said piston rod serving to first shut off the inlet openings, and subsequently allow the contents of the cylinder to pass through the outlet. 5th. Applying to the end of a cistern heated by gas, a spring connected to the gas cock so that on the contents of the cistern becoming considerably reduced the gas supply is reduced or cut off, substantially as described. 6th. In coin feed delivery apparatus, the appliance for delivering paper cups and the like, which embraces an endless chain with supporting wheels, and having project-spring clips in which said cups are carried, ratchet and pawl mechanism for imparting a step by step movement to one of said wheels, means whereby the purchaser may operate said ratchet and pawl mechanism, a pair of inclined arms for freeing said cups from the clips and an inclined shoot for guiding it to a delivery mouth. 7th. In combination with a case containing packets or solid articles, a spring arranged to act in aid of the counterweight, and the pawl for delivering the uppermost article, as herein described.

No. 37,319. Straight Knitting Machine. (*Machine à tricoter.*)

Joseph Bennor, Philadelphia, Pennsylvania, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. In a knitting machine of the class recited, the combination, with the needle bed, its needles and the cam-frame of the slide plate transversely movable within said frame, the needle actuating cams mounted upon the slide-plate, the longitudinal slide-bar and provisions whereby it is connected with said plate and adapted to reciprocate the same to throw the cams into or out of action, substantially as described. 2nd. In a knitting machine of the class recited, the combination, with the needle-bed, the needles therein contained, and the cam frame, of the transverse slide-plate arranged within said frame carrying thereon the needle actuating cams, and provided with inclined face-slots and the longitudinal slide bar having studs which engage with said slots, substantially as described. 3rd. In a knitting machine of the class recited, the combination, with the needle bed, the needles therein, and the cam frame, of the transverse slide-plate arranged in said frame and carrying the needle actuating cams, the longitudinal slide-bar provided with the edge notches or recesses, provisions whereby said bar is connected with the slide-plate and adapted to reciprocate the same to throw the cams into or out of action, and the spring controlled locking pin adapted to engage with said notches or recesses successively, substantially as described. 4th. In a knitting machine of the class recited, the combination, with the needle-bed, the needles therein, and the cam frame, of the transverse slide plate arranged in said frame and carrying the needle actuating cams, the longitudinal slide bars provisions, whereby it is operatively connected with said plate and adapted to reciprocate the same so as to throw the cams into or out of action with the needles, the cam regulating bar, the inclined tooth and notch arranged with opposite relation to each other, in said regulating bar and slide plate, and the screw for adjustably securing said regulating-bar in position, substantially as described. 5th. In a knitting machine, the combination, with the cam frame the notched slide-plate therein, and the needle-actuating cams supported upon said plate, of the adjustable toothed bar disposed in the path of said slide plate and the adjusting screws, substantially as described. 6th. The combination, in a knitting machine with the cam frame, the notched slide plate therein, and the needle-actuating cams supported upon said plate, of the movable toothed bar provided with the slotted end-lug, and the flanged set screw engaging said slotted lug and working in the cam frame, substantially as described. 7th. In a knitting machine of the class recited, the combination with the cam frame, the slide-plate therein, the longitudinal slide-bar provisions, whereby said plate and bar are operatively connected and the needle actuating cams supported upon said slide plate, of the needle-controlling cam d^1, supported below said cams, substantially as described. 8th. In a knitting machine of the class recited, the combination, with the cam frame, the slide-plate therein, the longitudinal slide-bar provisions, whereby said plate and bar are operatively connected and the needle-actuating cams and needle-controlling cam-bar supported upon said plate, of the sliding safety-cam loosely secured to the cam frame below said slide-plate, substantially as described. 9th. In a knitting machine of the class recited, the combination, with the needle-bed, the needles therein, the reciprocating cam-frame, the mechanism for reciprocating the latter, the sliding needle-cam supporting plate within said frame, the slide-bar and provisions, whereby it is operatively connected with said plate, of the fixed end stop, the laterally-movable end stop or block, the rock-arm supporting said block, the rock-shaft, the arm on the extremity of the latter, the measuring device such as the described chain with which said latter arm engages and by which it is actuated, and means, such as the cam and pawl and ratchet mechanism, for operating said measuring device, substantially as described. 10th. In a knitting machine, the combination, with the needle-bed, the needles therein, the reciprocating cam-frame, the mechanism for reciprocating the latter, the sliding needle cam-supporting plate in said frame, the slide bar and provisions whereby it is operatively connected with said plate, of the fixed end stop, the laterally-movable end stop or block provided with the offset or stop thereon, the rock arm supporting said block, the rock shaft, the arm on the extremity of the latter, the measur-

ing device such as the described chain with which said latter arm engages and by which it is actuated, and means, such as the cam, and pawl, and ratchet mechanism, for operating said measuring device, substantially as described. 11th. In a knitting machine, the combination, with the oppositely inclined needle-beds, the rows of needles therein, the yoke reciprocating cam-frames, their actuating mechanism, the sliding needle cam-supporting plates arranged in said frames, the slide-bars and provisions whereby they are operatively connected with said plates, respectively, of the fixed end stops, the laterally movable end stops or blocks provided with the offsets or depressions therein, the rock-arms supporting said blocks, the rock-shafts, the rod connecting the same, the outer arm on the end of one of said shafts, the measuring device such as the described chain with which said outer arm engages and by which it is actuated, means, such as the cam, and pawl and ratchet mechanism, for operating said measuring device, and means, such as the spring, for holding said outer arm in engagement with the measuring device, substantially as described. 12th. In a knitting machine of the class recited, the combination, of the measuring chain, the sprocket wheel, its shaft, the ratchet on said sprocket wheel, and the cam on said shaft, the pivoted arm engaging with said cam, and the pawl pivoted on the end of said arm and engaged with the ratchet wheel, substantially as described. 13th. In a knitting machine, the combination, with the needle bed provided with the open needle-grooves the needles therein having downward bends which project through said grooves and the reciprocating needle, operating cams of the shaft O, the right and left hand screws thereon, the nuts on said screws, the crossed fingers pivoted on said nuts, the longitudinally movable and rotatable studs on said shaft adapted to actuate said fingers, substantially as described, means such as the springs o^{24}, adapted to return said fingers to their normal positions, the clutch mechanism, such as the described gear devices, the interposed sliding sleeve, the rock-shaft o^{10}, connected with said sleeve, the end arm on said rock-shaft, and the pattern chain for starting, reversing or stopping said shaft O, substantially as described. 14th. In a knitting machine, the combination, with the needle-bed provided with the open needle-grooves, the needles therein having downward bends which project through said grooves, and the reciprocating needle-operating cams of the shaft O, the oppositely-pitched screws thereon, the nuts on said screws, the broad-faced arms on said nuts, the longitudinally movable splines connected with the latter and provided with the projecting studs or heads respectively, the curved crossed fingers pivoted on the nuts below said shaft, and provided with the opposite enlargement thereon which project into the paths of said studs or heads and are actuated by the latter, substantially as described, means, such as the springs o^{24}, adapted to return said fingers to their normal positions, the bevel gear wheel fixed on the end of said shaft, the vertically driven shaft, the opposite bevel gears loosely mounted thereon, and engaging with said fixed gear, the longitudinally movable and rotatable toothed sleeve between said loosely-mounted gears, the studs or teeth on the opposite faces of the latter, the rock-arm o^{12}, connected with said sleeve, the spring the rock-shaft, its arm o^{11}, and the pattern chain, substantially as described. 15th. In a knitting machine, the combination, with the open needle-bed, the downwardly bent needles therein, and the reciprocating needle-actuating cams, of the shaft O, the right and left hand screws thereon, their nuts, the arms on said nuts provided with the upper lateral needle-sustaining plates, the needle-actuating fingers, the longitudinally movable and rotatable studs for actuating said fingers, and means, such as the spring o^{24}, adapted to return said fingers to their normal positions, substantially as described. 16th. The combination, in a knitting machine, with the needle beds, the needles therein contained, and the reciprocating needle-actuating cams of the longitudinal guide-bar, the yarn-carrier adapted to slide thereon, the pivoted rocking lever adapted to move in concert with said cams, and mechanism, such as the plain and studded pattern-chain links, the lever engagement therewith, and the cam-actuated arm for automatically throwing said pivoted lever into and out of action with the yarn carrier, substantially as described. 17th. The combination, in a knitting machine, with the needle-beds the needles therein, the needle-actuating cams, and the yoke connecting the same, of the longitudinal guide-bar, the yarn-carrier adapted to slide thereon, the rocking lever pivotally connected with said yoke, and mechanism such as the plain and studded links, the pivoted arm, and the lever engaging with said links, and arm for automatically throwing said rocking lever into and out of engagement with the yarn carrier, substantially as described. 18th. In a knitting machine, the combination, with the needle beds, the needles therein, the needle actuating cams, and the yoke connecting the same, the longitudinal guide bar, the yarn carrier adapted to travel thereon, the plate secured to said yoke, the rocking lever pivoted on said plate, the spring washer and mechanism such as the plain and studded links, the pivoted arms and the lever engaging said links, and arm for automatically throwing said rocking lever into and out of engagement with the yarn carrier, substantially as described. 19th. In a knitting machine, the combination, with the needle beds, the needles therein, and the reciprocating needle actuating cams of the longitudinal guide bar, the yarn carriers adapted to slide thereon, the pivoted rocking lever adapted to move in concert with said cams, and mechanism, such as the plain and studded pattern chain links, and the intermediate lever and pivoted bifurcated arm for automatically engaging said rocking lever with one yarn carrier, and disengaging it from the other yarn carrier, substantially as described 20th. In a knitting machine, the combination, with the needle beds, the needles therein, the reciprocating needle actuating cams, and the yoke connecting the same, of the longitudinal guide bar, the yarn carrier adapted to slide thereon, and provided with the notched finger, the rocking lever pivotally connected with said yoke and provided with the projecting studs p^{15}, p^{17}, the pivoted arm provided with the beveled or inclined inner end, and with the cam slot, the pattern chain provided with the plain and studded links, and the lever engaging with said links and cam slot, substantially as described. 21st. In a knitting machine, the combination, with the needle beds, the needles therein, the reciprocating needle actuating cams, and the yoke connecting the same, of the longitudinal guide bar, the yarn carriers mounted thereon and provided with the oppositely notched fingers, the rocking lever pivotally connected with said yoke and provided with projecting studs p^{15}, p^{17}, the arm p^{18}, pivoted on said bar and provided with the V-shaped end and with the cam slot p^{25}, the pattern chain provided with the series of studs p^{26}, and the stud p^{28}, and the lever engaging with said links and cam slot, substantially as described. 22nd. In a knitting machine, the combination, with the needle beds, the needles therein, the reciprocating needle actuating cams, and the connecting yoke of the longitudinal guide bar provided with the rib p^{19}, the yarn carrier mounted on said bar and provided with the notched finger, the rocking lever pivotally connected with said yoke and provided with the projecting studs p^{15}, p^{16}, p^{17}, the arm p^{18}, pivoted on said bar and provided with the beveled or inclined inner end, and with the cam slot, the pattern chain provided with the plain and studded links, and the lever engaging with said links and cam slot, substantially as described. 23rd. In a knitting machine, the combination, with the needle bed, the latch needles therein, the needle actuating cams and their frames of the sliding bars actuated by said frames, and the V-shaped latch controlling plate secured to said bars, substantially as described. 24th. In a knitting machine, the combination, with the needle bed, the latch needles therein, the needle actuating cams and their supporting frames, of the sliding bars actuated by said frames, and the V-shaped latch, controlling plate provided with the opening r^1, therein, and secured to said bars, substantially as described. 25th. In a knitting machine, the combination of the needle bed, the latch needles therein, the needle actuating cams and their frames, the sinker frames, the sinkers therein, the sliding grooved bars engaging with said sinkers, and the latch controller composed of the V-shaped plate secured to said sliding bars and adapted to move in concert with the latter, substantially as described. 26th. In a knitting machine, the combination, with the needle bed, the needles therein, and the recessed frame or block as e^3, of the bar or strip S, and the end lever cams s^4, s^5, thereon, substantially as described. 27th. In a knitting machine, the combination, with the needle bed, its needles and the recessed frame or block as e^3, of the bar or strip S, the end lever cams s^4, s^5, and the springs s^2, substantially as described. 28th. In a knitting machine, the combination, with the yarn carrier, of the take-up lever through which the yarn passes, the shifter bar provided with the toggle-joint, and the belt shifter frame, the drop-rod between said lever and bar provisions for supporting said rod and permitting it to drop, and thereupon to release the toggle-joint, and means, such as a spring, for actuating said toggle-joint, together with the fast and loose pulleys, substantially as described. 29th. In a knitting machine, the combination, with the reciprocating yarn carrier, of the take-up lever having its outer arm weighted and its inner arm hooked or looped, the vertically movable rod provided with the laterally projecting arm at a point thereon below and adjacent to said weighted arm, and provided with a stud or pin at its lower end the bearing t^{12}, with means for supporting the rod t^9, and for permitting it to drop under the circumstances stated, the spring t^8, the toggle lever provided with the extension adjacent said pin or stud, and the shifter bar connected with said toggle lever and provided with the shifter frame, together with the fast and loose pulleys, substantially as described. 30th. In a knitting machine, the combination, with the reciprocating yarn carrier, of the take-up lever having its outer arm weighted and its inner arm hooked or looped, the vertically movable rod provided with the laterally projecting arm at a point thereon below and adjacent to said weighted arm, and provided with a stud or pin at its lower end, the bearing t^{12}, with means for supporting the rod t^9, and for permitting it to drop under the circumstances stated, the spring t^8, the toggle lever provided with the extension adjacent to said pin or stud, the shifter bar connected with said toggle lever and provided with the shifter frame, the set screw t^{26}, and its bracket, substantially as described. 31st. In a knitting machine, the combination of the cam frame, the slide plate transversely movable therein and provided with the inclined face slots, the slide bar having studs which engage with said slots, the needle actuating cams mounted upon the slide plate, and the spring controlled pin adapted to lock the slide bar in positions of longitudinal adjustment, substantially as described. 32nd. In a knitting machine, the combination of the cam frame, the slide plate transversely movable therein and provided with the inclined face slots, the notched or recessed slide bar having studs which engage with said slots, the needle actuating cams mounted on the slide plates, and the spring controlled locking pin disposed in the cam frame and adapted to bear against the notched or recessed edge of said slide bar, substantially as described. 33rd. In a knitting machine, the combination, with the needle bed, the needles therein, the reciprocating cam frame, the needle actuating cams therein supported, the slide bar, and provisions whereby it is operatively connected with said cams, of the laterally movable end stop or block, the rock arm adapted to support said block, the rock shaft, the arm on the extremity of the latter, the measuring device, such as the described chain, with which said latter arm engages and by which it is actuated, and means, such as the cam and pawl and ratchet mechanism adapted to operate said measuring device, together with the opposite end stop, as a^9, substantially as described. 34th. In a knitting machine, the combination, with the needle bed, its needles, the reciprocating cam frame, the needle actuating cams therein supported, the slide bar and provisions whereby it is operatively connected with said cams, of the fixed end stop, the movable end stop or block provided with the offset therein, the rock shaft adapted to support said block, the rock shaft, the arm on the extremity of the latter, the measuring device, such as the described chain, with which said latter arm engages and by which it is actuated, and means, such as the cam and pawl and ratchet mechanism, adapted to operate said measuring device, substantially as described. 35th. In a knitting machine, the combination, with the needle bed provided with the open needle grooves, the needles therein, and the reciprocating needle actuating cams, of the shaft O, the right and left hand screws thereon, the nuts on said screws, the fingers pivoted on said nuts and adapted to engage and actuate the needles, the longitudinally movable and rotatable studs on said shaft adapted to actuate said fingers, substantially as described, means, such as the springs o^{24}, adapted to return said fingers to their normal position, clutch mechanism such as the described gear devices, the interposed sliding sleeve, the rock shaft o^{10}, con-

nected with said sleeve, the end arm on said rock shaft, and the pattern chain for starting, reversing, or stopping said shaft O, substantially as described. 36th. In a knitting machine, the combination, with the needle bed, the needles therein, and the reciprocating needle actuating cams, of the shaft O, the right and left hand screws thereon, the nuts on said screws, the fingers pivoted on said nuts and adapted to engage and actuate the needles, the longitudinally movable and rotatable studs on said shaft, adapted to actuate said fingers, substantially as described, means, such as the springs o^{24}, adapted to return said fingers to their normal position, clutch mechanism, such as the described gear devices, the interposed sliding sleeve, the rock shaft o^{10}, connected with said sleeve, the end arm on said rock shaft, and the pattern chain for starting, reversing, or stopping said shaft O, substantially as described. 37th. In a knitting machine, the combination, with the needle beds, the needles therein, the reciprocating needle actuating cams, and the connecting yoke of the longitudinal guide bar provided with the parallel ribs p^{19}, the yarn carriers mounted on said bar and provided with the oppositely notched fingers, the rocking lever pivotally connected with said yoke and provided with the projecting studs p^{16}, p^{17}, the arm p^{18}, pivoted on said bar and provided with the V-shaped end and with the cam slot p^{25}, the pattern chain provided with the plain and studded links, and the lever engaging with said links and cam slot, substantially as described. 38th. The combination, in a knitting machine, with the needle bed, the latch needles therein, and the needle actuating cams, of the thin elastic or self-adjusting latch opening plate disposed in the path of the needles, and the frame e^3, upon which said plate is supported throughout its length, substantially as described. 39th. In a knitting machine, the combination, with the cam frame, the slide plate therein, the longitudinal slide bar, provisions whereby said plate and bar are operatively connected. the needle actuating cams and the needle controlling cam supported on said plate, of the sliding safety cam mounted upon the cam frame below said slide plate and provided with beveled up projecting ends, substantially as described. 40th. The combination, in a knitting machine, with the needle bed, the latch needles therein, and the needle actuating cams, of the latch opening plate disposed in the path of the needles and having its working edge lower than the under side of the plate, together with the frame e^3, provided with the guide ways ex, upon which the needle hooks are supported, as and for the purpose specified, substantially as described. 41st. In a knitting machine, the combination, with the needle bed, the needles, and the needle actuating cams, of the shaft, as O, the right and left hand screws thereon, the nuts or followers on said screws, the fingers connected with said nuts or followers, and provisions whereby said fingers are operated to throw the needles into or out of action, substantially as described. 42nd. In a knitting machine, the combination, with the needle bed provided with open needle grooves, the needles having downward bends or extensions which project through said grooves, and the needle actuating cams, of the shaft, as O, the right and left hand screws thereon, the nuts or followers on said screws, the fingers connected with said nuts or followers, and provisions whereby said fingers are operated to throw the needles into or out of action, substantially as described. 43rd. In a knitting machine, the combination, with the needle bed, the needles, and the needle operating cams, of the main shaft, screw mechanism thereon, fingers operatively connected with said mechanism and actuated through the medium of the same to act upon the needles, together with appropriate pattern mechanism adapted to control or time the operation of the main shaft and its adjuncts, substantially as described. 44th. In a knitting machine, the combination, with the needle bed provided with open needle grooves, the needles having downward bends or extensions which project through said grooves, and the needle operating cams, of the main shaft, screw mechanism thereon, fingers operatively connected with said mechanism and actuated through the medium of the same to act upon the needles, together with appropriate pattern mechanism adapted to control or time the operation of the main shaft and its adjuncts, substantially as described.

No. 37,320. Flask for Molding.

(Châssis pour moulage.)

William G. Richards, Boston, Massachusetts, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. In a molder's flask, the combination, with the lower part or frame for the nowel, having at one side thereof an open extension provided with projecting flanges, and stops, substantially as described, of the pouring head having corresponding flanges and stops and constructed to set on said open extension in engagement with said frame stops, and means clamping said head to said extension by said flanges, substantially as described. 2nd. In a molder's flask, the combination, with the nowel and the bottom board provided with a pouring head at one side thereof, said bottom board having an opening extending from the pouring head along under the runner of the bottom plate under said bottom board opening, and means, substantially as described, removably holding in place said bottom plate, substantially as described. 3rd. In a molder's flask, the combination, with the bottom board having the opening 62, and the depending ribs 63 and 64, at the side of said opening, of the bottom plate 65, and clamps removably fixed to the bottom board and engaging the said bottom plate, substantially as described. 4th. In a molder's flask, the combination, with the bottom board having an opening with depending ribs on either side thereof, of the bottom plate having the short side flanges 66, 67, and clamps removably fixed to the bottom board and engaging said flanges, and a stop limiting the longitudinal movement of said bottom plate under said clamps, substantially as described. 5th. In a molder's flask, the combination, with the bottom board having the flange 87, and the lugs 88, 89, said lugs being constructed to engage pouring head locking devices of the pouring head E, having flange 86, constructed to bear against flange 87, and to rest on said lugs, whereby the weight of said head is sustained by said lugs, and wedges engaging between the lugs and pouring head flange, whereby the pouring head is locked in place, substantially as described. 6th. In a molder's flask, the combination, with the bottom board having a vertical seat for the pouring head, and having the horizontal oppositely disposed lugs on either side of said pouring head seat of the pouring head constructed to rest against said seat between said lugs, and locking devices, substantially as described, engaging said lugs and bearing against the pouring head, whereby said pouring head is held in place against its said seat, and whereby on removal of said locking means the pouring head is free to be removed, substantially as described. 7th. In a molder's flask, the combination, with the bottom board having the flange 87, and the lugs 88 and 89, said lugs being constructed to engage the pouring head, locking devices of the pouring head E, having the flange 86, constructed to bear against flange 87, and to rest on said lugs, whereby the weight of said head is sustained by said lugs, and wedges engaging between the lugs and pouring head flanges whereby the pouring head is locked in place, substantially bottom as described. 8th. In a molder's flask, the combination, with the board having the flange 87 and the lugs 88 and 89, provided with hooks 93, 94, of the pouring head E, having the flange 86, fitting between said lugs, and bearing thereon, and the wedges engaging between said hooks and the flange 86, to hold the pouring head against flange 87, whereby said head is removably fixed in place, substantially as described. 9th. In a molder's flask, the combination, with the bottom board constructed, substantially as described, to receive the pouring head of the pouring head, constructed, substantially as described, to rest against said bottom board, and connected wedges, one on either side of said pouring head at the lower end thereof, said wedges engaging the bottom board and pouring head to lock the same together, and being united by a bar, whereby said wedges may be driven in place and removed, substantially as described. 10th. In a molder's flask, the combination, with the bottom board having the flange 87, and having lugs 88, 89, each hook provided of the pouring head E, formed in two parts 81 and 82, and constructed to engage between said lugs and bear on said flange 87, means uniting the upper ends of said pouring head parts and locking devices, substantially as described, engaging the hooks of said lugs for clamping said head in place, the lower ends of the pouring head parts being held together by engaging between said lugs, substantially as described. 11th. In a molder's flask, the combination, with the nowel and the cope frame and the core set on the nowel of anchor rod holders, substantially as described, fixed to the cope frame over perforations therein, anchor rods extending through said holders and perforations, and wedges cross-wise to the anchor rods in said holders, whereby said rods are fixed in place to resist the rising of the core during the filling of the mold, substantially as described. 12th. In a molder's flask, the combination, with the cope frame, outer ring of the inner ring, divided into segments and a pair of ribs joining each segment with the outer ring, said ribs joining the segment near the ends thereof, and ribs extending inward from the outer ring and located between the segment supporting ribs, said intermediate ribs not joining said segment, substantially as described.

No. 37,321. Process of and Mold for Making Castings. *(Procédé de et moule pour faire les ouvrages en fonte.)*

William G. Richards, Boston, Massachusetts, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. The process herein described of making plate and flange steel castings, which consists in filling the mold, and through-flowing the plate and flange juncture during the contraction of the plate, substantially as described. 2nd. In a mold, the combination, with the nowel having the main runner of the vented cope, the nowel and cope having formed therein, the mold space consisting of the plate space and flange space, said main runner communicating with the mold space adjacent to one side of the plate and flange juncture, whereby said juncture may be through-flowed during the contraction of the plate of the casting, substantially as described. 3rd. In a mold, the combination, with the nowel having the main runner of the vented cope, the nowel and cope having formed therein the mold space, consisting of the plate space and flange space, said main runner communicating with the plate space adjacent to the plate and flange juncture, whereby said juncture may be through-flowed from the plate space into the flange space during the contraction of the plate of the casting, substantially as described. 4th. In a mold, the combination, with the nowel having the main runner of the vented cope, the nowel and cope having formed therein, the mold space consisting of the plate space and a flange space, substantially as described, extending along one edge of the plate space, said main runner extending alongside of the plate and flange juncture and communicating with the plate space through a series of passages opening thereinto, substantially as described. 5th. In a mold, the combination, with the nowel having the main runner therein, of the vented cope, the nowel and cope having formed therein the wheel-mold space, consisting of the plate space and the peripheral flange space, said main runner communicating with the plate space at intervals throughout the circuit thereof at points adjacent to and within the plate and flange juncture, whereby said juncture may be outwardly through-flowed throughout the periphery of the plate during the contraction of the plate, substantially as described. 6th. In a mold, the combination, with the nowel having the main runner of the vented cope, the nowel and cope having formed therein, the wheel-mold space consisting of the plate space and the peripheral flange space, said runner communicating with the plate space at intervals throughout the periphery thereof at points adjacent to the plate and flange juncture, said nowel having a pouring-head runner entering the circuit of the main runner tangentially thereto, substantially as described.

No. 37,322. Process of and Mold for Casting Steel Wheels. *(Procédé de et moule pour le coulage des roues en acier.)*

William G. Richards, Boston, Massachusetts, U.S.A., 4th September, 1891; 5 years.

Claim.—1st. The process herein described for making plate and rim steel wheels, which consists in filling the mold from below the rim space, being filled through the plate space and overflowing the

rim during the solidifying of the tread surface, substantially as described. 2nd. The process herein described for making double plate steel wheels, which consists in filling the mold from below the rim, being filled through the plate space and overflowing the rim during the solidifying of the tread surface, and simultaneously with the congelation of the upper plate, substantially as described. 3rd. The process herein described for making double plate steel wheels, which consists in filling the mold from below and simultaneously overflowing the rim and hub during the solidifying of the tread surface and the congelation of the upper plate, substantially as described. 4th. The process herein described for making double plate steel wheels having a single plate intermediate to the rim, and the double plates which consists in filling the mold from below, and continuing the pouring to simultaneously through-flow, the plates juncture and the plate and rim juncture during the congelation and contraction of the upper plate, substantially as described. 5th. In a mold for casting steel car wheels, the combination, with a part forming the outer wall of the mold space, and with the cope having overflow passages over the rim space, and over the hub space, of the nowel having the enclosed main runner extending from one side of the mold along under the mold space to a point beyond the hub space thereof, mold-filling passages branching vertically from the main runner to the under side of the hub space, and the pouring-head connecting with the outer end of the main runner, the whole being organized, substantially as shown, whereby the mold may be filled to overflowing and the casting fed by a continuous and unbroken stream of metal, substantially as described. 6th. In a mold for casting steel car wheels, the combination, with a part forming the outer wall of the mold space, and with the cope having overflow passages over the rim space and over the hub space of the nowel, having the enclosed main runner extending from one side of the mold along under the mold space to a point beyond the hub space thereof, mold-filling passages branching vertically from the main runner to the under side of the hub space from points beyond the terminus of the main runner, said main runner also extending beyond the mold-filling passages to form the catch-chamber, and the pouring-head connecting with the outer end of the main runner, the whole being organized, substantially as shown, whereby the mold may be filled to overflowing and the casting fed by a continuous and unbroken stream of metal entering the mold under pressure of a reaction after the first inflowing metal has been pocketed in said chamber, substantially as described. 7th. That improvement in the art of making steel castings, which consists in running the molten metal in a full stream through a runner located below and adjacent to the mold space, and against a reactionary abutment, and flowing the metal upward into the mold from a point before the abutment under pressure of the reaction, and through a relatively small mold-filling passage, the mold-filling current being taken from the main current at a point back of the first inflowing metal, and the first inflowing metal being detained from entering the mold, substantially as described. 8th. That improvement in the art of making steel castings, which consists in running the metal through a main runner adjacent to the mold space, and against an air-cushioned abutment, flowing the metal from the main runner into the mold from a point before said cushion under pressure of the reaction thereof, and exhausting the air-cushion during the filling of the mold, substantially as described. 9th. The improved mold herein described for making steel castings, consisting in, the combination, with parts forming the top and sides of the mold space, of the nowel having a horizontal main runner extending beyond the mold-filling passage connecting said main runner with the mold space, said main runner extension being slightly vented or pervious, and adapted to retain air for cushioning the first influx of the metal and to exhaust the air during the pouring of the mold, substantially as described. 10th. That improvement in the art of casting steel car wheels, which consists in forming the mold with top-vents arranged in two sets, one set being over the hub, and the other over the rim, pouring the mold to overflowing, and checking the hub-vents after the overflow, whereby an additional impetus is given to the flow of metal toward the rim, substantially as described. 11th. That improvement in the art of casting steel car wheels, which consists in forming the mold with top-vents arranged in two sets, one set being over the hub, and the other over the rim, pouring the mold to overflowing, checking the hub-vents after the overflow, and continuing the rim overflow after the checking of the hub overflow, substantially as described.

No. 37,323. Manufacture of Annealed Steel Wheels. (*Fabrication des roues d'acier malléable.*)

William G. Richards, Boston, Massachusetts, U.S.A., 4th September, 1891 ; 5 years.

Claim.—The improved method herein described of making annealed centre all-steel car wheels, which consists in casting the wheel around a core and allowing the casting to remain in the mold until solidified on the interior surface thereof, removing the wheel and core together from the mold, cutting the core from the heated interior surface of the wheel by force applied simultaneously throughout the periphery of the opening and longitudinally thereof prior to the internal solidification of the casting, and annealing the wheel.

No. 37,324. Electric Apparatus for Treating Deafness. (*Appareil électrique pour traiter la surdité.*)

George F. Webb, Jefferson, Ohio, U.S.A., 4th September, 1891 ; 5 years.

Claim.—1st. An apparatus of the character described, comprising a battery, a belt, an electrode supported on the belt and contacting with a person, an electrode shaped to fit the ear, and connections between the electrodes and the battery, substantially as described. 2nd. In an apparatus of the character described, the electrode 13, shaped to rest upon an ear and having an opening in one side to receive the ear, substantially as described.

No. 37,325. Apparatus for Preserving Piles.

(*Appareil pour preserver les pilotis.*)

Frank Batter, Marshfield, and George William Loggie and Alexander James McMillan, both of Empire, all in Oregon, U.S.A., 4th September, 1891 ; 5 years.

Claim.—1st. A device for treating piles after they have been driven, consisting of the sectional casing adapted to be fitted around the pile, a means for locking the sections together and producing tight joints, a steam boiler and pipes leading therefrom, pipes whereby steam may be admitted into the upper part of the casing, other pipes through which the water is forced out from the interior of the casing, tanks containing a preservative solution, and pipes through which a solution or protective coating may afterward be applied to the surface of the pile below the water line, substantially as herein described. 2nd. A device for treating piles or other timbers after they have been placed in position, consisting of a casing adapted to tightly fit the said piles or other timbers, the said casing being adapted to hold in contact with the said piles or other timbers, steam, hot water or other hot liquid, substantially as herein described. 3rd. The casing, consisting of two sections having longitudinal flanges hinged together with staples and locking-wedges, a conical top flange at the upper end of the casing adapted to surround a pile, a packing fitted to said flange, and the links and wedge-shaped bars, whereby said packing is forced into place to make a tight joint, substantially as herein described. 4th. The combination of a hinged sectional casing for surrounding the pile, and having the locking and packing devices, whereby tight joints are made pipes, whereby steam or preservative liquid is introduced within the casing around the pile, vertical guides fixed within the casing, a sectional frame having slides moving in said guides, nozzles fixed to said frame, with their discharge ends directed toward the pile, and pipes whereby said nozzles are supplied with steam while being moved up and down so as to expose the surface of the pile to steam jets, substantially as herein described. 5th. The combination of a casing for surrounding the pile, the vertical guides with slides and frame, carrying the steam-jet nozzles, pulleys fixed at top and bottom within the casing, and chains passing around said pulleys and connected with the slides so that they and the nozzles may be moved up and down within the casing, substantially as herein described.

No. 37,326. Ball Bearings. (*Coussinet à boule.*)

George Frederick Simonds, Fitchburg, Massachusetts, U. S. A., 5th September, 1891 ; 15 years.

Claim.—1st. A ball bearing, comprising two rings or annular pieces adapted to be removably attached respectively to a rotating body, and a part in or upon which the said body rotates, said rings having surfaces concentric with each other, and plane surfaces parallel to each other and at right angles to the concentric surfaces, and spherical rollers or balls located in an annular space or channel between said concentric and plane surfaces, and bearing at diametrically opposite points against and rolling upon one pair of such surfaces, and retained in place by the other pair thereof, substantially as described. 2nd. In a ball bearing, the combination of a rotating body, a ring or annular piece detachably secured thereto, and having a surface concentric therewith, a plane surface at right angles to the said concentric surface, a non-rotating body, a ring or annular piece detachably secured thereto, and having a surface concentric with the rotating body, and a plane surface parallel to the plane surface of the other ring, and spherical rollers, or balls located between said rings to bear at diametrically opposite points against and roll upon one pair of the said surfaces, and which are retained in place by the other pair of surfaces, substantially as described. 3rd. In a ball bearing, a pair of removable rings or annular pieces having between them an annular space or channel which is square in transverse section, and which is formed by a pair of concentric surfaces, and a pair of plane surfaces at right angles to the said concentric surfaces, the outer ring being adjustable upon the inner ring, and balls which are situated in the said channel and which bear at diametrically opposite points against and roll upon one of the said pairs of surfaces, and are retained in place by the other pair thereof, substantially as described. 4th. In a ball bearing, the combination, with the rotating and non-rotating parts, of pairs of rings arranged side by side, the rings of each pair being detachably secured one to the rotating and the other to the non-rotating part, and each ring being L-shaped in cross section, and having a surface concentric with the rotating part, and a plane surface at a right angle to such concentric surface, and balls located between the rings of each pair in an annular space or channel formed by the said concentric and plane surfaces thereof, substantially as described. 5th. A ball bearing, composed of a circular series of balls inclosed by two L-shaped rings, so constructed and arranged that it may be used to receive either radial or longitudinal pressure, substantially as described. 6th. A bearing comprising an inner ring or annular piece provided with an external flange, and fixed on a shaft at one side of the collar thereon, a similar ring or annular piece fixed on the said shaft at the other side on the said collar, outer rings or annular pieces, each provided with an internal flange, and spherical rollers or balls arranged between the said inner and outer rings, substantially as described. 7th. A bearing, comprising an inner ring or annular piece provided with an external flange and fixed on a shaft at one side, of a collar thereon, a similar ring or annular piece fixed on the said shaft at the other side of the said collar, outer rings or annular pieces each provided with an internal flange and adjustable longitudinally upon the corresponding inner ring, and means for adjusting the outer rings on both sides of the said collar, substantially as above specified. 8th. In a ball bearing, the combination of the separate removable rings or annular pieces adapted to be respectively attached to a rotating part, and a non-rotating part, and each provided with concentric surfaces and plane surfaces at right angles to the said concentric surfaces, and the annular or circular series or group of balls located in the annular channel between said rings, and bearing at diametrically opposite

points against one pair of said surfaces, and retained in place by the other pair of surfaces, substantially as described. 9th. A ball bearing, consisting of a ring or annular piece adapted to be secured to a stationary or rotating part, and having an annular projecting rib or collar at surfaces at each end located at right angles to each other, end rings or collars each having surfaces arranged at right angles to each other, and spherical rollers or balls between each end ring and the annular rib or collar, substantially as described.

No. 37,327. Ball Bearings. (*Coussinet à boule.*)

George Frederick Simonds, Fitchburg, Massachusetts, U. S. A., 5th September, 1891; 15 years.

Claim.—1st. A ball bearing, comprising a tubular piece or sleeve, or similar bearing surface rings or annular pieces, concentric surfaces and plane surfaces at right angles to each other, an annular set of spherical rollers or balls serving to resist endwise thrust or pressure, and another annular set of spherical rollers or balls operating to sustain radial pressure or weight, substantially as described. 2nd. A ball bearing, consisting of a tubular piece or sleeve or other bearing surface, having a circumferential projection rib or collar rings or annular pieces concentric with said bearing surface, and having circumferential projections, ribs or collars, and annular sets of spherical rollers or balls arranged between the circumferential projections, ribs or collars, and operating, substantially as described, to resist end thrust or pressure and support or sustain radial pressure or weight, substantially as described. 3rd. A ball bearing, consisting of a bearing surface having a circumferential projection, rib or collar rings or annular pieces concentric with said bearing surface, and having circumferential projections, ribs or collars and spherical rollers or balls arranged between the circumferential projections, the spherical rollers or balls for resisting end thrust or pressure being located in longitudinal planes between those for supporting radial pressure or weight, substantially as described. 4th. A ball bearing, comprising a tubular piece or sleeve having a circumferential projection rib or collar provided with surfaces which are in parallel planes, rings or annular pieces arranged one on each side of the said rib or collar, and each having a surface concentric with the said tubular piece or sleeve, and a plane surface parallel to those of the said rib or collar, and balls which are located between the said rings and the tubular piece or sleeve, and which bear at diametrically opposite points against and roll upon one pair of the said surfaces, and are retained in place by the other pair thereof, substantially as and for the purpose set forth. 5th. In a ball bearing, the combination, with the rotating and non-rotating parts, of a tubular piece or sleeve provided with a circumferential projection rib or collar and detachably secured to one of the said parts, rings or annular pieces detachably secured to the other of the said parts, one on each side of the said rib or collar, the said tubular piece or sleeve having a surface concentric with the rotating part and the rib or collar, having parallel plane surfaces perpendicular to the axis thereof, and each of the said rings having a surface concentric with the said rotating part, and a plane surface parallel to those of the said rib or collar, and balls which are located between the rings and the said tubular piece or sleeve, and which bear at diametrically opposite points against and roll upon one pair of the corresponding surfaces, and are retained in place by the other pair thereof, substantially as and for the purpose set forth. 6th. In a ball bearing, the combination, with the rotating and non-rotating parts, of a tubular piece or sleeve detachably secured to one of the said parts and having a surface concentric therewith, and a circumferential projection rib or collar provided with bearing surfaces in parallel planes at right angles to the said concentric surface, rings or annular pieces arranged one on each side of the said rib or collar, and detachably secured to the other of the said parts, each of the said rings having a surface concentric with the rotating body, and a bearing surface in a plane parallel to those of the said rib or collar, and balls which are located between said rings and the tubular piece or sleeve, and which bear at diametrically opposite points against and roll upon the said parallel plane surfaces, and are retained in place by the said concentric surfaces, substantially as described. 7th. In a ball bearing, the combination, with the rotating and non-rotating parts, of a tubular piece or sleeve detachably secured to one of the said parts and having a surface concentric therewith, and a circumferential projection rib or collar provided with bearing surfaces in parallel planes at right angles to the said concentric surface, rings or annular pieces arranged one on each side of the said rib or collar, and detachably secured to the other of the said parts, each of the said rings having a surface concentric with the rotating body, and a bearing surface in a plane parallel to those of the said rib or collar, and balls which are located between the said rings and the tubular piece or sleeve, and which bear at diametrically opposite points against and roll upon the said parallel plane surfaces, and are retained in place by the said concentric surfaces, the said rings being adjustable relatively to the said rib or collar, substantially as and for the purposes set forth. 8th. In a ball bearing, the combination, with the rotating and non-rotating parts, of a tubular piece or sleeve detachably secured to one of the said parts and having a surface concentric therewith, and a circumferential projection rib or collar provided with bearing surfaces in parallel planes at right angles to the said concentric surface, rings or annular pieces arranged one on each side of the said rib or collar, and detachably secured to the other of the said parts, each of the said rings having a surface concentric with the rotating body, and a bearing surface in a plane parallel to those of the said rib or collar balls which are located between the said rings, and the tubular piece or sleeve, and which bear against and roll upon said concentric surfaces and are retained in place by the said plane surfaces, and screws for adjusting the said rings relatively to the said rib or collar, substantially as and for the purposes set forth. 9th. A ball bearing wherein some of the balls are arranged to resist thrust or end pressure, and the remainder of the balls are arranged to resist radial pressure, the series or groups of balls for resisting thrust or end pressure being located between those for supporting radial pressure, for the purpose above specified. 10th. A ball bearing wherein the balls are arranged in circular series or groups between rings or sleeves, and a box or casing surrounding the same, the balls of some of the groups being arranged to bear against and roll upon concentric surfaces on the said rings or sleeves, and box or casing, and the balls of the remaining groups being arranged to bear against and roll upon plane surfaces on the said rings or sleeves, and box or casing, and being located between the groups of balls which bear against and roll upon the concentric surfaces, substantially as and for the purposes set forth. 11th. In a ball bearing, the combination of a box or casing, rings, or sleeves, within the said box or casing, and circular series or groups of balls arranged between the said rings or sleeves and box or casing for supporting or resisting radial pressure, and thrust or end pressure, the groups of balls for resisting thrust or end pressure being located between those for supporting radial pressure, for the purpose above specified. 12th. In a ball bearing, the combination of a tubular piece or sleeve a, provided with a circumferential rib or collar a^1, having plane surfaces at right angles to the concentric surface rings or annular pieces b, on both sides of the said rib or collar, having plane surfaces parallel to those on the corresponding rib or collar, balls c, arranged in circular series or groups between the said rings and tubular piece or sleeve, and the whole enclosed in a case or box, substantially as described. 13th. In a ball bearing, the combination of a tubular piece or sleeve provided with a circumferential projection rib or collar, rings or annular pieces arranged one on each side of the said rib or collar, balls arranged in circular series or groups between the said rings and the rib or collar, and adjusting screws passed through one or more of the said rings and screwed into another of the same, substantially as and for the purposes above specified. 14th. In a ball bearing, the combination of a tubular piece or sleeve provided with a circumferential projection rib or collar having plane bearing surfaces, rings or annular pieces with corresponding plane bearing surfaces arranged one on each side of the said rib or collar, a ring or annular piece having a bearing surface concentric with the said tubular piece or sleeve, and balls arranged in circular series of groups between the said rings and the tubular piece or sleeve, substantially as and for the purposes above specified. 15th. In a ball bearing, the combination of a tubular piece or sleeve provided with a circumferential projection rib or collar having plane bearing surfaces, rings or annular pieces with corresponding plane bearing surfaces arranged one on each side of the said rib or collar, other rings or annular pieces having bearing surfaces concentric with the said tubular piece or sleeve balls arranged in circular series or groups between the said rings, and the tubular piece or sleeve and screws for adjusting the said rings relatively to the said rib or collar, substantially as and for the purposes above specified. 16th. In a ball bearing, the combination of a tubular piece or sleeve provided with a circumferential projection rib or collar, rings or annular pieces arranged on each side of the said rib or collar, and balls arrangad in circular series or groups between the said rib or collar, and the rings or annular pieces and screws holding the parts on the bearing together so that they form a complete device ready for application to a shaft axle of the like, or for insertion into the nave or hub of the wheel pulley or the like, substantially as and for the purposes set forth. 17th. In a ball bearing, the combination of a tubular piece or sleeve provided with a circumferential rib or collar, rings or annular pieces b, on both sides of the said rib or collar, balls arranged in circular series or groups between the said rings, and the tubular piece or sleeve and adjusting screws passed through one or more of the said rings and screwed into another of the same, substantially as and for the purposes set forth. 18th. In a ball bearing, the combination of a tubular piece or sleeve having a circumferential rib or collar and fixed upon a shaft or axle, rings or annular pieces secured in the nave or hub of a wheel or pulley, or in a box or casing, balls arranged in circular series or groups between the said rings and the tubular piece or sleeve, and adjusting screws passed through one or more of the said rings and screwed into another of the same, substantially as and for the purposes set forth. 19th. In a ball bearing, the combination, with the rings or annular pieces arranged one on each side of the rib or collar on the tubular piece or sleeve, of a shaft or axle having a transverse slot or groove, a bar or key fitted in the said groove and engaging in notches or recesses in the said rings, and means, substantially as above described, for keeping the said rings in engagement with the said key, substantially as and for the purposes set forth.

No. 37,328. Elevator Brake. (*Frein d'élevateur.*)

William N. Anderson, San Rafael, California, U.S.A., 5th September, 1891; 15 years.

Claim.—1st. In an elevator brake, the combination, with brake shoes adapted to engage shaft posts, and arranged on the elevator carriage, of eccentrics adapted to engage the said brake shoes, a shaft carrying the said eccentrics, and provided with a gear wheel, and a weighted lever fulcrumed on the elevator carriage and provided with a segmental gear wheel in mesh with the said gear wheel, substantially as shown and described. 2nd. In an elevator brake, the combination, with brake shoes adapted to engage shaft posts, and arranged on the elevator carriage, of eccentrics adapted to engage the said brake shoes, a shaft carrying the said eccentrics, and provided with a gear wheel, a weighted lever fulcrumed on the elevator carriage and provided with a segmental gear wheel in mesh with the said gear wheel, a catch adapted to support the free end of the said lever, and a governor connected with the said catch and actuated by the movement of the elevator carriage, so that when the latter exceeds a normal rate of speed, the said governor withdraws the said catch from underneath the said lever, substantially as shown and described. 3rd. In an elevator brake, the combination, with brake shoes adapted to engage shaft posts, and arranged on the elevator carriage, of eccentrics adapted to engage the said brake shoes, a shaft carrying the said eccentrics, and provided with a gear wheel, a weighted lever fulcrumed on the elevator carriage and provided with a segmental gear wheel in mesh with the said gear wheel, a catch adapted to support the free end of the said lever, a governor connected with the said catch and actuated by the movement of the elevator carriage so that when the latter exceeds a normal rate of speed, the said governor withdraws the said catch from underneath

the said lever, intermediate mechanism for connecting the said catch with the said governor, and a stationary belt secured at top and bottom of the elevator shaft and passing over the governor pulley, substantially as shown and described. 4th. In an elevator brake, the combination, with brake shoes, arranged on the elevator carriage and adapted to engage the guide posts, of eccentrics adapted to move the said brake shoes in frictional contact with the guide posts, a shaft carrying the said eccentrics, and provided with a gear wheel, a weighted lever fulcrumed on the elevator carriage, and provided with a segmental gear wheel in mesh with the said gear wheel, and a rope connected with the said weighted lever and extending into the elevator carriage to be under the control of the operator, substantially as shown and described. 5th. In an elevator brake, the combination, with a weighted lever, eccentrics actuated by the said weighted lever, and brake shoes adapted to be actuated by the said eccentrics, of a catch adapted to support the free end of the said lever, a bell crank lever pivotally-connected with the said catch, and a rod or rope connected with the said bell crank lever, and extending into the elevator carriage to be under the control of the operator, substantially as shown and described. 6th. In an elevator brake, the combination, with a governor adapted to actuate the brake shoes of a stationary belt secured at its ends on the top and bottom of the elevator shaft, and pulleys journaled on the elevator carriage and over and under which passes the said belt to pass around the governor pulley, substantially as shown and described.

No. 37,329. Combination Tool.

(Outil à combinaison.)

Edmund B. Nagle, Almonte, Ontario, Canada, 5th September, 1891; 5 years.

Claim.—1st. The herein described combination tool, the same consisting of a head having a claw termination at its forward end, with a lateral projection to give weight to the head, and a wedge-shaped tongue, the head prolonged to present a slotted hole or mortise into which the lever B, may be pivotally articulated and further prolonged into a handle (the claw hammer-face and wedge being integral and the lever pivoted to the bearing lugs), all substantially as set forth. 2nd. In combination, with the body A, having a slotted way or mortise and bearing-lugs for the pivot *c*, moving upon which and within the mortise plays, the lever B, prolonged into a handle *d*, upon whose forward end is mounted the pin or jaw *f*, arranged to engage with the pin or jaw *e*, of the lever B, substantially as described. 3rd. In a combination-tool made up of two integral pieces A, B, the hammer face formed of the lower face, of the wedge-shaped tongue *h*, and its complementary protuberance *g*, the claw *b*, axially in line with the hammer face, the attachable pins or jaws *e*, *f*, arranged by means of the pivot c, to operate functionally as set forth.

No. 37,330. Grate for Open Fire Places.

(Grille pour foyers ouverts.)

Nicholas Wilson, London, Ontario, Canada, 5th September, 1891; 5 years.

Claim.—1st. A movable grate-bottom for an open fire-place, constructed with a central axis E, the rear end of which is received in socket F, at back, and the front end of which lies in guide, or long socket G, on front bottom bar, motion to the grate-bottom being imparted by the handle H, attached to front end of axis E, said motion being controlled by broad flat end *a*, of axis in guide G, as described, so that the bottom is made to move sideways as a shaker or circularly as a dumper, substantially as shown and described. 2nd. In combination with a shield L, attached to front of fire-place and having a suitable opening M, to allow of the insertion of shaker and dumper handle H, the above described movable grate-bottom, substantially as shown and described.

No. 37,331. Pipe Coupling for Railway Cars.

(Joint de tuyau pour les chars de chemins de fer.)

Edward Ethel Gold, New York, State of New York, U.S.A., 5th September, 1891; 5 years.

Claim.—1st. In a hose-coupling of the described class, the combination, with the coupling-head and arm, of a rocking lever carried by the arm, and adapted to bear on opposite sides of its fulcrum against the wedging inclines on the other head, whereby by its rocking movement it may adjust itself to said inclines and equalize the pressure against each. 2nd. In a hose-coupling of the described class, the combination, with the coupling head and arm, of a rocking lever carried by the arm, and adapted to bear on opposite sides of its fulcrum against the wedging inclines on the other head, and an adjusting screw for setting said lever toward or from the other head whereby it may be adjusted and its wear taken up. 3rd. In a hose-coupling of the described class, the combination, with the coupling head and arm, of a rocking-lever carried by the arm and adapted to bear on opposite sides of its fulcrum against the wedging inclines on the other head, an adjusting-screw against which said lever rocks at its fulcrum, and a pin passing loosely through a hole in the lever to retain it in place and admit of its adjustment. 4th. In a hose-coupling of the described class, the combination, with the coupling head and arm, the latter formed with an elongated cavity in its inner side, of a lever pivoted in said cavity and projecting therefrom on opposite sides of its fulcrum to form bearing-faces for engaging the wedging inclines on the other head. 5th. In a hose-coupling of the described class, the combination, with the coupling-head and arm, of a rocking lever carried by the arm formed with bearing-faces on opposite sides of its fulcrum adapted to bear against the wedging inclines on the other head, and formed between said bearing faces with a pintle projection adapted to enter the central socket in the other head.

No. 37,332. Mechanism for Striking Strings by Means of Reeds Moved by Air. *(Appareil pour frapper des cordes musicales au moyen de tuyaux mû par l'air.)*

Julius Heinrich Zimmerman, Leipzig, Saxony, (assignee of Carl Gumbel, Krofdorf, Prussia), both in the German Empire, 5th September, 1891; 5 years.

Claim.—1st. The device for sounding strings consisting of a tube open at one end and closed at the other, and provided with a longitudinal slot closed by an elastic tongue held at one end of said slot and adapted to vibrate therein, substantially as set forth. 2nd. The combination of a tube R, having one end open and the other closed, and having a longitudinal slot *a*, an elastic tongue Z, secured to said tube at one end of said slot, and so as to be capable of vibrating in said slot, substantially as set forth. 3rd. The combination of a tube R, having one end open and the other closed and having a longitudinal slot *a*, an elastic tongue Z, secured to said tube at one end of said slot, and adapted to vibrate therein and the string S, placed transversely to said tube opposite the free end of said tongue, and at such a distance from it as to be struck by the latter when vibrating, substantially as set forth. 4th. The combination of a tube R, having one end open and the other closed, and having a longitudinal slot *a*, an elastic tongue Z, secured to said tube at one end of said slot and adapted to vibrate therein, a string S, placed transversely to said tube opposite the free end of said tongue, and at such a distance from it as to be struck by the latter when vibrating, and an airblast entering said tube by the slot *a*, and passing out at the open end, substantially as set forth. 5th. The combination of a tube R, having one end open and the other closed and having a longitudinal slot *a*, an elastic tongue Z, secured to said tube at one end of said slot, and adapted to vibrate therein and an air box W, surrounding said tube R, and having the open end of the latter secured in a suitable opening, and having an air inlet c, and openings for the string S, passing transversely through the same, substantially as set forth.

No. 37,333. Brazing Clamp for Band Saws.

(Mordache pour braser les scies à ruban.)

Milo Covel, Chicago, Illinois, U.S.A., 7th September, 1891; 5 years.

Claim.—1st. In a device of the character described, the combination with the bed-frame, of the adjustable brazing-clamp pivoted to said frame, and the adjustable holding-clamps secured to the bed frame in a like manner and located on each side of the brazing-clamp, substantially as and for the purpose set forth. 2nd. In a brazing or soldering-device, the combination with the bed-frame of the lower clamping-block inserted therein, the screw-bolts, for adjusting said block, the upper companion clamping-block, the transverse bar, to which said upper block is adjustably secured, the clamping-screws, inserted through said bar, and the locking-hooks, pivoted to the front end of said bar, substantially as set forth. 3rd. In a brazing-clamp, the combination with the adjustable companion clamping-blocks, provided in their adjacent faces with recesses having sloping sides, of the brazing or soldering-irons, seating in said recesses, substantially as and for the purpose set forth. 4th. In a brazing-clamp, the brazing or soldering-irons of a hexagonal form in cross-section, in combination with the companion clamping-bolts, having correspondingly shaped recesses, substantially as set forth. 5th. In a brazing-device, the combination with the upper and lower clamping-blocks, formed in sections, of the spring plates, loosely holding said blocks in position, with reference to each other, substantially as set forth. 6th. In a brazing-device, a holding-clamp, consisting of the parallel side-bars, the lug, bolted to the bed-frame and to which the rear ends of said bars bars are pivoted, the hook pivoted to the front end of said bars, the adjustable clamping-block inserted between the parallel bars, and the cam-lever, pivoted to said bars and having contact with said block, whereby an object may be held in place while being operated upon by the brazing-clamp, substantially as and for the purpose set forth. 7th. In a brazing-device, the combination with the bed-frame, of the gage-plates *k*, adjustably secured thereto, substantially as set forth.

No. 37,334. Gate. *(Barrière.)*

Robert Sidney Taylor, Zellwood, Florida, U.S.A., 7th September, 1891; 5 years.

Claim.—1st. In a gate-operating device, the lower hinge having its eye engaging a pintle formed on a crank-piece or angle iron pivotally secured to the bed piece or sill, the washer placed beneath said crank-piece or angle-iron and the gravity-catch engaging or impinging against said washer, substantially as described. 2nd. In a gate operating device, the combination, with a trip or lever, of the crank-piece or angle iron provided with a pintle which engages the eye of the lower gate hinge, the bracket or washer and the gravity catch engaging or impinging against the said bracket or washer, substantially as described.

No. 37,335. Foot Rest. *(Appui-pied.)*

Kenneth McLean, Port Hastings, Nova Scotia, Canada, 7th September, 1891; 5 years.

Claim.—As an article of furniture, a foot rest composed of the posts A, A, provided with foot bearings G, and connected by an open circular panel B, having a finial H, provided with a foot bearing I, a horizontal bar C, crossing the panel feet D, projecting from said panel or bar, and brace E, from post to post and braces F, from the feet to bar C, as set forth.

No. 37,336. Combined Feed Water Heater, Filter and Condenser and Lime and Grease Extractor. (*Réchauffeur d'eau d'alimentation, filtre et condenseur et extracteur de chaux et de graisse combinés.*)

William J. Austin, Fond du Lac, Wisconsin, U.S.A., 7th September, 1891; 5 years.

Claim.—1st. A feed water heater consisting of a tubular shell having one or more filtering beds F, intervened by an escape steam chamber W, a central steam pipe G, passing through said beds and having openings I, discharging into said chambers W, a pipe L, provided with a perforated section M, and hood N, distributing the feed water to the upper filtering bed, a chamber E, closed at the top and having a filtering bed F^1, at the bottom whereby the water percolates upward into said chamber a water chamber J, below said filtering bed F^1, a chamber A^1, provided with a deflector O, and perforated hood P, below said deflector for separating oil and grease from the exhaust steam, said chamber A^1, opening into pipe G, and having an inlet pipe A, for the waste steam to enter the heater and a tap overflow pipe D, and feed water pipe C, from said chamber E, as and for the purpose set forth. 2nd. The combination with a feed water heater containing a number of filtering beds F, and a central steam pipe G, passing through said beds and having openings I, above and below said beds of the annular purified water chamber E, surrounding said pipe G, and set above the bottom of the heater, said chamber having a closed top K, and a filtering bed F^1, at the bottom to filter upwardly, and the chamber A^1, connecting with said pipe G, and having internally above the inlet pipe A, a deflector O, and perforated hood P, to separate the oil and grease from the exhaust steam before reaching the filtering beds, as set forth. 3rd. The combination, with a water heater having a series of filtering beds and a central pipe G, having openings to spaces above and below said beds, of the annular chamber E, surrounding said pipe G, said chamber provided with a filtering bed F^1, percolating upwardly, and the chamber A^1, opening into said pipe G, and provided with a deflector O, and perforated hood P, as and for the purpose set forth.

No. 37,337. Vehicle Wheel and Axle.

(*Roue de voiture et essieu*)

James P. Wright, Reynolds, Indiana, U.S.A., 7th September, 1891; 5 years.

Claim.—1st. An axle having a surrounding portion extending within the hub band, and formed with a peripheral channel terminating at an inclined lug which extends across said channel, substantially as specified. 2nd. An axle provided with a surrounding portion adapted to extend within the hub band, and formed upon its upper side with two separated projections, and upon its under side with an inclined lug extending across the space between said projections, substantially as and for the purpose specified. 3rd. An axle provided with a surrounding portion adapted to extend within the hub band, and formed at the end which is to extend within the band, with two sharp pointed projections, one of which extends nearly around the said portion, and the other upon their inner faces, and an inclined spiral sharpened lug upon the under side extending across the space between the two projections, substantially as and for the purpose specified. 4th. The combination, with the hub its sleeve and the hub band, of the axle and the surrounding portion on the axle, with one end extended within the hub band and formed with a surrounding sharp projection at its outer end bearing against the inner end of the hub, and a sharp projection upon its upper face and a sharpened inclined lug upon its under side extending across the space between the two projections and extending outside the hub band, substantially as specified.

No. 37,338. Steam Engine Connections.

(*Raccordement pour machines à vapeur.*)

George Wolfe Carey, Salem, Massachusetts, U.S.A., 8th September, 1891; 5 years.

Claim.—1st. The combination, with the cylinder and piston rod and the pivoted lever c, operated thereby, of an auxiliary pivoted lever jointed to said lever c, and to the pitman, to operate, substantially as described. 2nd. The combination, with the cylinder and piston rod and the pivoted lever c, operated thereby, of a bell crank lever c^5, one arm of which is jointed to said lever and the other arm to the pitman, substantially as described. 3rd. The combination, with the lever c, pivoted at c^1, and having a forked arm provided with slots c^3, of the bell crank lever c^5, pivoted on the shaft c^6, passing through said slots, substantially as described. 4th. The combination, with the lever c, pivoted at c^1, and having a forked arm provided with slots c^3, of the bell crank lever c^5, pivoted on the shaft c^6, passing through said slots, and having a slot c^4, for the box c^7, journaled in said forked arm, substantially as described.

No. 37,339. Attachment for Plows.

(*Disposition aux charrues.*)

Arthur John Petch, township of Whitechurch, Ontario, Canada, 8th September, 1891; 5 years.

Claim.—The two rollers A, A, attached to a plow, substantially as and for the purpose hereinbefore set forth.

No. 37,340. Door for Grain Cars.

(*Porte de char à grain.*)

Clifton D. Pettis, Clarksville, Tennessee, U.S.A., 8th September, 1891; 5 years.

Claim.—In a grain car door, the combination, with a body, of a car provided with the toes 16, on the floor of the door 10, provided with the forgings 11, and the socketed wear plate 21, 22, secured to the upper inner face of the door, the rods 12, pivoted at their upper ends to the inside of the car body and having the open hooks 13, on their lower ends, and the gravity hooks 20, substantially as herein shown and described.

No. 37,341. Apparatus for Producing Sheets of Metal by Electro-Deposition.

(*Appareil à produire les feuilles de métal par l'électro-déposition.*)

Moses Gerrish Farmer, Eliot, Maine, U.S.A., 8th September, 1891; 5 years.

Claim.—1st. In an apparatus for forming sheet metal, the combination, with an electrolytic vat or tank, the forms or blocks partially filling the same, and curved anode plates supported thereon, of a cylindrical cathode mounted in the tank and capable of rotation therein, as set forth. 2nd. The combination, with an electrolytic tank, the forms or blocks partially filling the same, and curved anode plates supported thereon, of an insulating roller mounted over the tank, a hollow cylindrical cathode hung thereon and brushes or collectors bearing upon the ends of the cylinder, as herein set forth. 3rd. The combination, in an electrolytic apparatus, with curved anode plates supported in the solution, of a cylindrical cathode mounted to rotate in the solution, and having a broken line of insulating patches or spaces across its outer surface, as and for the purpose set forth. 4th. The combination, with a vat or tank adapted to contain an electrolytic solution of a cylindrical cathode, the curved forms or blocks B, and anode plates C, disposed on opposite sides of the cylinder and forming a recess between them in which impurities from the solution may settle. 5th. In an electrolytic apparatus, the combination, with an anode or anode plates, of a hollow cylindrical cathode having internal flanges or ribs at its ends and middle, and a rotating roller upon which the cathode hangs the roller bearing on the ribs or flanges, as set forth.

No. 37,342. Cigar Bunching Machine.

(*Machine à lier les cigares.*)

Francis Anthony Schleiff, Francis Anthony Schleiff, Jr., and Paul Elmike, all of New York, State of New York, U.S.A., 8th September, 1891; 5 years.

Claim.—1st. In a cigar bunching machine, the combination, with the frame thereof and a horizontally reciprocating rolling table having an unbroken face, of an apron secured at the outer end of the table, extending across the top thereof, and having its opposite end attached to the frame, and a reciprocating bunching roller located beneath the apron and above the table and reciprocating beyond the ends of the latter, substantially as described. 2nd. In a cigar bunching machine, the combination, with the frame thereof, a horizontally reciprocating table having an unbroken surface, and an apron secured at one end to the table and at its other end to the frame, and having a pocket formed therein between the table and the frame, of a reciprocating bunching roller located beneath the apron and above the table and having a movement beyond the ends of the latter, and means, substantially as described, for reciprocating the table and bunching roller and returning the bunching roller after forming the bunch and before the completed outward movement of the table, substantially as shown and described. 3rd. In a cigar bunching machine, the combination, with a horizontally reciprocating rolling the table, a flexible apron secured to the outer end of said table and to machine frame, having an open pocket formed near the inner end of the table, and a horizontally reciprocating bunching roller located beneath the apron, of a vertically reciprocating forming head held above the pocket and provided with a cutter, and a forming plate secured to the head and extending below the same, and gates hinged to the machine frame and adapted to close the bottom of the head, all combined for operation, substantially as and for the purpose specified. 4th. In a cigar bunching machine, the combination, with a horizontally reciprocating rolling table, a flexible apron secured to the said table and the machine frame, having a transverse open pocket produced normally therein between the frame and the table, and a bunching roller capable of horizontal reciprocation beneath the apron and over the table, of a vertically reciprocating forming head above the pocket and provided with a cutter and a forming plate secured to and extending below the outer face of the head, spring pressed gates hinged to the machine frame and covering the bottom of the forming head, and means, substantially as shown and described, for imparting a stop movement to the bunching roller and table upon their outward movement, as and for the purpose specified. 5th. In a cigar bunching machine, the combination of a reciprocating rolling table, a flexible rolling apron secured to the said table and to the frame of the machine, slackened to form a pocket between the machine frame and the table, a reciprocating bunching roller contacting with the said apron, a vertically reciprocating forming head for delivering the tobacco to the apron pocket in the shape of a bunch, and endless belts arranged at a right angle to the cutter head and capable of feeding material thereto, substantially as described. 6th. In a cigar bunching machine, the combination, with a horizontally reciprocating rolling table, a flexible rolling apron secured to the said table and the frame of the machine, slackened to form a pocket between the machine frame and the table, and a horizontally reciprocating bunching roller located between the apron and the opposed face of the table, of a forming head adapted to vertically reciprocate over the apron pocket and provided with a cutter and a forming plate, spring actuated connected gates, one of which is adapted to cover the bottom of the head and the other for contact with the forming plate, and endless belts arranged at a right angle to the cutter head and capable of feeding material thereto, as set forth. 7th. In a cigar bunching machine, the combination, with a horizontally reciprocating rolling table, a flexible rolling apron secured to the said table and the frame of the machine, slackened to form a pocket beyond one end of the table, and a horizontally reciprocating bunching roller located beneath the apron in contact

therewith, of a forming head held to vertically reciprocate over the apron pocket and provided with a cutter and a forming plate, spring actuated gates, one of which is adapted to cover the bottom of the head and the other for contact with the outer face of the forming plate, a lower carrying belt provided with adjustable guides arranged at a right angle to the forming head, an upper carrying belt immediately above and arranged at a right angle to the lower belt, and means, substantially as described, for manipulating the said belts, as and for the purposes specified. 8th. In a cigar bunching machine, the combination, with a supporting frame, of a sliding rolling table, an apron secured to the table and frame, a sliding frame, a bunching roller mounted in the sliding frame under the apron, and means for reciprocating the table and frame, substantially as described. 9th. In a cigar bunching machine, the combination, with a supporting frame, of a sliding rolling table, an apron secured to the frame and table, a sliding frame, a bunching roller mounted in the sliding frame under the apron, means for moving the table first inward and then outward, and means for moving the sliding frame outward simultaneously with the table to the limit of its movement and then beyond the same, substantially as and for the purpose set forth. 10th. In a cigar bunching machine, the combination of a vertically reciprocating forming head provided with a cutter, a forming plate and gates at its lower end, endless belts for feeding the tobacco to the said head, a reciprocating rolling table, an apron secured to the table and to the supporting frame, and a reciprocating bunching roller, substantially as herein shown and described.

No. 37,343. Pad Clasp. (*Agrafe pour bourrelets.*)

Francis H. Dobbin, Peterborough, Ontario, Canada, 8th September, 1891; 5 years.

Claim.—The combination of bars A and B, with the toothed or corrugated surfaces, and notches on inner surface of bar A, whereby the bar B is held securely in place, substantially as set forth.

No. 37,344. Machine for Gumming and Sharpening Saws. (*Machine à affuter et évider les scies.*)

Francis J. Drake, Belleville, Ontario, Canada, 8th September, 1891; 5 years.

Claim.—1st. The cross bar Q, substantially as and for the purpose hereinbefore set forth. 2nd. The geared cams R and R^o, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the cams R and R^o, with the adjusting screws Y and Y^o, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the cam R, and the links T, T, with the bar S, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the cam R^o, with the bar U and the pawl V, substantially as and for the purpose hereinbefore set forth.

No. 37,345. Device for Hammering and Straightening Saws. (*Appareil pour marteler et dresser les scies.*)

Milo Covel, Chicago, Illinois, U.S.A., 8th September, 1891; 5 years.

Claim.—1st. In a device of the character described, an anvil block pivotally mounted, whereby the position of the same may be reversed for the purpose of presenting the operating surface on opposite sides of an object lying parallel to the face thereof, substantially as and for the purpose set forth. 2nd. The combination, with the supporting frame, of an anvil block, pivotally and eccentrically mounted therebetween, whereby the position of the same may be reversed and an operating surface or face presented to either side of the saw, substantially as and for the purpose set forth. 3rd. The combination, with a supporting frame, of an anvil block, pivotally mounted therein and adapted to be turned end for end, and a bolt or catch for locking said anvil in either position, substantially as set forth. 4th. In a device of the character described, the combination of the supporting frame, the reversible anvil block, the locking bolt or catch, the lever, connected to said bolt, and the spring, bearing against the handle end of said lever, whereby said bolt or catch is held, normally, in a locking position, substantially as and for the purpose set forth.

No. 37,346. Display Rack or Case.

(*Râtelier montre.*)

Sylvester Benjamin Calkins, Charlevoix, Michigan, U.S.A., 8th September, 1891; 5 years.

Claim.—1st. The combination, with a display rack or case having the sides converging upwardly, of detachable suspending bars supported by said sides, and disposed on different vertical planes, and one above the other, substantially as and for the purpose set forth. 2nd. The combination, with a display rack or case having the vertical parallel sides converging towards their upper ends, the strips secured to the inner faces thereof and opposing each other, said strips being provided with coincident grooves open at their outer ends, of detachable suspending bars adapted to be seated in said grooves and disposed parallel to each other and in different vertical planes, substantially as and for the purpose set forth. 3rd. The combination, with the casing closed at the lower end and having its sides projecting upwardly therefrom and parallel with each other, said extended sides being provided with opposing strips projecting from their inner faces and provided with coincident inwardly and downwardly extending grooves open at their outer ends, of detachable suspending bars adapted to be seated in said grooves and occupy a position parallel to each other, but on different vertical planes, substantially as and for the purpose set forth. 4th. The combination in a display rack or case with a base provided with a vertically and centrally disposed bearing-rod, the casing provided with bearing eyes or perforations engaging said rod, and with upwardly extended parallel sides narrowed towards their upper ends, opposing strips projecting from the inner faces of the sides, and provided with inwardly and downwardly extending grooves open at their outer sides, of detachable suspending bars adapted to be seated in said grooves, substantially as and for the purpose set forth. 5th. The combination in a display rack or case with a revoluble casing provided with upwardly extended parallel sides narrowed towards their upper ends, said casing forming one or more display fronts of opposing strips projecting from the inner faces of the sides and adjacent to the display front or fronts, and provided with inwardly and downwardly extending grooves opening at their outer ends a detachable suspending bar adapted to be seated in each pair of grooves, and a door or doors for enclosing said front or fronts, substantially as and for the purpose set forth.

No. 37,347. Car Coupler. (*Attelage de chars.*)

William James Shortill, Esquesing, Ontario, Canada, 8th September, 1891; 5 years.

Claim.—1st. A car coupling consisting of a draw-head A having a cavity adapted to receive and retain the mechanism box B held in the cavity of the draw-head, and supporting the coupling link, also the coupling pin and parts operating the same, the coupling link C pivoted in said box pin, lever D pivoted to said box and carrying the coupling pin, the coupling pin E pivotally secured to said lever and the cam lever F pivoted to said pin lever, substantially as set forth. 2nd. In a car coupling, the combination of a box B having lugs b^1, with facings b^{11}, eye b^{111}, and projecting bottom b^{1111}, coupling pin C pivoted in said box and having rounded beveled end c and slot c^1, pin lever D having facings d and extension d^{11} pivoted in the lugs b^1 and supporting the coupling pin, the coupling pin E held pivotally by the lever D and passing through the top of the Box B, the cam lever F having cam f, lugs f^1, neck f^{11}, and slots f^{1111}, and pivoted through said slot to the lever D, substantially as set forth.

No. 37,348. Combined Carriage Jack and Tire Tightener. (*Chèvre de voiture et lien de jante combinés.*)

John Jay Phare, Independence, Missouri, and Augustus E. Miner, Bristolville, Ohio, both in U.S.A., 9th September, 1891; 5 years.

Claim.—1st. The combination of a standard, a movable fulcrum thereon, a lever pivoted to said fulcrum, and an adjustable bolt arranged in the short arm of said lever, substantially as described. 2nd. In a carriage-jack, a standard, a movable fulcrum thereon, a pivot and an arm D carrying, a catch G, said fulcrum pivot arm and catch, all being formed integral in combination with a lever working on said pivot, substantially as described. 3rd. The combination of a standard, a movable fulcrum, a pivot and catch formed integral therewith, a lever, an adjustable bolt carried by the short arm thereof having a square head, and a swivelled cap e having a concave upper sides, substantially as described. 4th. The combination of a standard, a movable fulcrum, a pivot and catch formed integral therewith, an offset on said pivot, a lever provided with an aperture, a slot connected with said aperture and an adjustable bolt carried by the short arm of said lever, substantially as described. 5th. The combination of a standard, a movable fulcrum, a pivot and catch formed thereon, a lever mounted on said pivot, a threaded nut countersunk in the short arm of the lever, the said lever being provided with an aperture g registering with the bore of the nut, a screw-threaded bolt adapted to operate in said nut, and a swiveled cap thereon, substantially as described.

No. 37,349. Car Seat. (*Banquette de char.*)

E. L. Bushnell Spring Company, assignees of Edwin L. Bushnell, all of Poughkeepsie, New York, U.S.A., 9th September, 1891; 5 years.

Claim.—1st. In combination with a car seat frame, a reversible back striker-arms supporting the back and pivoted to the frame, a latching connection between one of the striker-arms and the frame adjacent to the said arm, said latching frame adjacent to the said arm, said latching connection being automatically released by the movement of the striker-arms in reversing the back, and a lock between the other striker-arm and the frame adjacent thereto for securing the back in position, substantially as described. 2nd. In a car seat, a supporting-frame, inner and outer striker-arms pivotally connected thereto, a back carried by the striker-arms, a latching connection between the outer striker-arm and the frame adjacent to said arm, said latching connection being automatically released by the movement of the striker-arm in shifting the back, a slotted bearing in the frame to receive the pivot of the outer striker-arm, and a lock between the inner striker-arm and the frame adjacent thereto for securing said back in position, substantially as described. 3rd. In a car seat, a supporting frame, striker-arms pivoted thereto and carrying a back bearings in the frame for the pivots of the arms, one of said bearings being in the form of an elongated slot, a stud on one of the striker-arms, notches in the frame with which the said stud engages and from which it is automatically released by the sliding movement of the striker-arm in the bearing, and a lock on the other striker-arm engaging the frame adjacent thereto to secure the back in position, substantially as described.

No. 37,350. Bake Pan. (*Casserole.*)

Willis L. Veley and Grove Lawrence Brownell, both of Rocelle, Illinois, U.S.A., 9th September, 1891; 5 years.

Claim.—In a bake-pan, the combination, with the pan-cover, of its cover, the one provided with an inwardly-projecting edge to fit within the other, and with a flange riveted to said edge and having one of its edges bent in hook form to serve as a support for said cover.

No. 37,351. Street Sweeper.

(*Appareil pour balayer les rues.*)

John Newlove and William C. Looker, both of Union Mills, Indiana, U.S.A., 9th September, 1891; 5 years.

Claim.—1st. The combination with the main body of the brush cylinder, the elevator belt, the partition O, and the dumping portion of the dirt receptacle comprising the rear end and bottom pivoted at the rear lower corner to the main body and supported by a lateral portion of said partition, as set forth. 2nd. The combination with the main body of the brush cylinder, the elevator belt, the partition O, and the rear end and bottom of the dirt receptacle connected together and pivoted at the rear lower corner to the main body and provided at the rear edge with a scraper substantially as shown and described. 3rd. The combination with the main body and the elevator belt of the drums therefor, the arms carrying the ends of the pintles of the drums, said pintles working in slots in the sides of the main body, and the arms slotted, the pins on the sides of the main body working in the slots of the arms, the lugs through which the ends of the arms pass, and the nuts on the ends of the arms, substantially as and for the purpose specified. 4th. In a street sweeper, the combination with the main body of the main wheels, the cylinder shaft and its steel brushes revolved by said wheels, the elevator to the rear of the cylinder and revolved by connection with one of the wheels, and the dirt receptacle to the rear of the elevator and having a portion pivoted to the main body and provided with an automatic spring lock and a scraper, substantially as shown and described.

No. 37,352. Corn Cutter.

(*Machine à couper le blé d'inde.*)

William Scott Morden and Ralph Hoffman, both of Montague, and Henry Pellman, of Muskegon, all in Michigan, U. S. A., 9th September, 1891; 5 years.

Claim.—1st. The combination of the main frame A, the main driving-wheel B on shaft C^1, which is journaled in the movable slide boxes D, D, carried in the slots d^1, d^1, firmly fastened to frame A, the bolts d, d, pivoted to the upper portions of the boxes D, and passing through the curved standards fastened on the upper side of the frame A, said bolts being furnished with nuts above and below the base of the standards to hold them in any desired position of adjustment, the shaft f, carrying pinion F, engaging the gear wheel C, secured to one side of the drive-wheel B, said shaft f carrying also a bevel gear g, the shaft carrying bevel pinion e^2 engaging pinion g and carrying also crank wheel F^1, the connecting rod g^2 pivoted to said crank wheel, the reciprocating knives K, K, and the series of guards I, I, all arranged substantially as described. 2nd. The combination of the main frame A, the drive-wheels B having secured to one side thereof the gear wheel C, both being fixed upon the shaft C^1 journaled in the slide boxes D, D, carried in the slides d^1, d^1, which are firmly fastened to the frame A, said boxes having pivoted thereto the adjustable bolts d, d, passing through the curved standard on the upper side of the frame wheel R, having its carrying pin fastened to the sliding block a carried in the casting r^1, the shaft f carrying pinion F, engaging gear C, and carrying also bevel gear g, the cutting knives K, K, the shaft carrying pinion e^2 engaging pinion g and carrying also crank wheel F^1, the connecting rod g^2 pivoted to said crank wheel, the series of guards I, I, the slide L^2 to which the cutting knives are riveted, together with the bar H^2 for keeping them in place, and the projection m^2 in which the connecting rod is journaled, all substantially as described.

No. 37,353. Printing Press. (*Presse d'imprimerie.*)

Charles Maine, Rio de Janeiro, Brazil, South America, 11th September, 1891; 5 years.

Résumé.—Dans un machine à imprimer dite autocopiste, la combinaison de la cuvette A, le feutre B, la planche B^1, les supports C, C, la table D, les cadres E et G, les ressorts à boudin F, F, ainsi que les lames H, H, avec la feuille gélatine I, au chlorure de calcium, le tout tel que ci-dessus décrit et pour les fins ci-dessus mentionnés,

No. 37,354. Automatic Spring Hinge.

(*Charnière à ressort.*)

William G. Deale and Edward A. Hudson, both of Chicago, Illinois, U. S. A., 11th September, 1891; 5 years.

Claim.—1st. A door hinge having means for automatically closing the door, and equalizing the momentum thereof, substantially as set forth. 2nd. A door hinge having a spring within a casing and so arranged and operating that it will automatically close and equalize the momentum of the door which by its action or movement contracts or relaxes the tension of the spring, substantially as set forth. 3rd. In a door hinge the combination of the plates A, A^1, having the chambers or tubes B, B^1, B^2, with the pintle C, having the upper portion formed other than cylindrical, a collar secured in the bottom of the chamber B, the spring F, secured at one end thereto and at the other to the collar G, the plates H, and H^1, having the teeth c, c^1, respectively, the spring K, and an ornamental cap having means for adjusting the tension of the power, spring all constructed arranged and operating, substantially as set forth. 4th. In a hinge for doors the combination of the plates A, A^1, having the chambers or tubes B, B^1, B^2, the tube B, having the recesses a^1, and the tube B^2, the recesses b, and b^1, with the pintle C, and collar E, having the lugs a^2, the spring F, the collar G, the plates H, H^1, having the ratchet teeth c c^1, the plate I, connected to the plate H, by means of the rods d^2, the spring K, the cap D^4, having the ports g, g^1, and rod e^2, bent as at g^2, for regulating the tension of the power spring, all constructed arranged and operating substantially as set forth. 5th. In a door hinge the combination of the securing plates A, and A^1, having the chambers B, B^1, B^2, with the pintle C, having its upper part formed other than cylindrical, a collar rigidly secured in the bottom of the chamber B, the spring F, secured at one end thereto and at the other to the collar G, adapted to move up and down on the pintle and revolve with it and be governed by the tension of the spring F, whereby a desired tension may be given, substantially as set forth. 6th. In a door-hinge the combination of the securing plates A, A^1, the plate A, having the tube or chamber B, having its upper end formed as at m, and its lower end provided with one or more depressions a, the plate A^1, having the tubes or chambers B^1, B^2, the chamber B^2, having the recesses b, b^1, with the pintle C, having its upper portion of a form other than cylindrical the collar E, having the lug or lugs a^2, and spring F, secured at one end thereto and at the other to the collar G, which is adapted to move up and down on and revolve with the pintle and be governed by the tension of the spring F, whereby a desired tension may be had, substantially as set forth. 7th. In a door hinge the combination of the securing plates A, A^1, having the tubes B, B^1, B^2, the chamber B, having its upper end formed as at m, and its lower end provided with one or more depressions a^1, the chamber B^2, having the recesses b, b^1, with the pintle C, having its upper portion of a form other than cylindrical and its lower part cylindrical the collar E, having the lug or lugs a^2, the spring F, secured at one end thereto and at the other to the collar G, which is adapted to move up and down on and revolve with the pintle, the ornamental cap having the hollow c^2, ports g^1, g^1, the rod c, having the bent upper portion g^2, and secured to its lower end the plate I, having the rods d^2, connecting it to the plate H, having the teeth c, the plate H^1, having the teeth c^1, all constructed, arranged and operating substantially as shown and described and for the purpose set forth. 8th. In a door hinge the combination of the plates A, A^1, having the chambers B, B^1, the chamber B, having the recesses a^1, and the chamber B^2, the recesses b, and b^1, with the catch P, movably secured to the plate A, and having the bevels s, s^1, the slots r, and mortise o, having the recess o^1, the spring Q, adapted to operate in the mortise, the pintle C, the collar E, having the lugs a^2, the spring F, the collar G, the plates H, H^1, having the ratchet teeth c, c^1, the plate I, connected to the plate H, by means of the rods d^2, the rods d^2, the springs K, the cap D^4, having the ports g, g^1, and rod c^2, for regulating the tension of the power spring, all constructed arranged and operating substantially as set forth. 9th. In a door hinge the combination of the plates A, A^1, having the chambers B, B^1, B^2, the chamber B, having the recesses a^1, and the chamber B^2, the recesses b, b^1, with the catch P, movably secured to the plate A, and having the inclined edges s, s^1, the slots r, and mortise o, having the recess o^1, the spring Q, adapted to operate in the mortise, the pintle C, the collar H, having the lugs e^2, the spring F, the collar G, the plates H, H^1, having the ratchet teeth c, c^1, respectively, the spring K, and an ornamental cap having means for adjusting the tension of the power spring, substantially as set forth.

No. 37,355. Sulky Plow. (*Charrue à siège.*)

John Kippan and Robert McPherson, both of London, Ontario, Canada, 11th September, 1891; 5 years.

Claim.—1st. In a sulky plow, the rising and lowering apparatus consisting of casting E, E, pivoted at a, to plow beam one arm of said casting being connected to the front end H, of plow beam A, and the other to rod or bar F, which is itself connected at the other end to main rod or bar D, operated by ratchet and lever B, C, substantially as and for the purpose set forth. 2nd. In a sulky-plow the apparatus for setting the furrow wheel to the required position consisting of the rotated bar L, the lower end M, of which forms a tapered loop which surrounds and controls the shaft J, surrounded by coil spring K, and in combination therewith, substantially as shown and specified and for the purpose set forth.

No. 37,356. Burner for Oil. (*Bruleur d'huile.*)

Charles H. Boeck and Hugh L. Smith, both of Jackson, Michigan, U. S. A., 11th September, 1891; 5 years.

Claim.—In an oil burner having circular wick tubes, one within the other, the combination with the wick tubes provided with longitudinal grooves arranged in a diametrical plane and shifting rod tubes inserted liquid tight in the grooves in the wick tubes of wick supporting slides each provided with an annular groove and located movably in the wick tubes and shifting rods inserted movably in the rod tubes, the rods terminating at their upper ends in laterally projecting studs which enter the grooves in the slides, the rods being all secured at their other extremities rigidly to a cross-head and means for shifting the rods endwise, substantially as described.

No. 37,357. Horse Shoe. (*Fer à cheval.*)

George Custer and Martin B. Thomas, both of Bremond, Texas, U.S.A., 11th September, 1891; 5 years.

Claim.—A horse shoe consisting of two parts pivoted together at the toe, each part provided with a short upwardly extending flange at the heel, and a downwardly projecting flange on the underside, extending from heel to toe, bent inwardly at the heel and provided with a recess, and a spring resting against said downwardly projecting flange with its ends projecting through said recess, substantially as described.

No. 37,358. Wash Board. (*Planche à savonner.*)

William Hackly Church and Robert Marshall, both of Fenelon Falls, Ontario, Canada, 11th September, 1891; 5 years.

Claim.—1st. A washboard having a tablet K, consisting of a piece of wire cable returned to and fro alternately from opposite directions and laid closely side-by-side and the edges of the tablet formed by the returns of the cable inserted in a groove G, in the side bars A, A, as set forth. 2nd. A washboard composed of the side bars A, A, having a groove G, the bars D, E, at the ends of said grooves and connecting the side bars, the bars F, F, connecting the bars D, E,

the back and top pieces B, C, secured to the side bars, and the tablet K, consisting of wire cable returned to and fro from opposite directions alternately, and laid closely side-by-side and the edges of said tablet formed by the returns of the cable inserted in said grooves as set forth.

No. 37,359. Process for the Separation of Copper, Nickel, and Silver from Matte or Alloys Containing These Ores, and Treatment of the Residues. *(Procédé pour la séparation du cuivre, nickel, et argent de la matte ou alliage contenant ces minerais, et le traitement des résidus.)*

Jules Strap, Paris, France, 11th September, 1891; 15 years.

Claim.—1st. In an electrolytic process for the separation of copper, nickel, solder, and silver, from matte or other alloys, in combination, or otherwise, with several other metals or metalloids, consisting in passing an electric current in an acidulated bath of sulphate of copper, varying in richness from 125 to 250 grammes to the litre of water, according to the quantity of matter to be treated, these previously cast into plates, forming the anode, while the cathode is formed of a thin plate of copper, substantially as described. 2nd. In a combination with the above described electrolytic process for separation, the separation of the nickel from the matte or alloy containing it in a state of sulphate of nickel by the action of sulphuric acid liberated by the current, this acid attacking the metallic nickel contained in the matte or alloy, thus forming sulphate of nickel, which is afterwards concentrated, crystalized or decomposed electrolytically, with, or without previous neutralization by ammoniac, substantially as hereinafter described. 3rd. In combination with the herein-above described electrolytic process for the separation of copper, nickel, and silver, from matte, or other alloys by the addition to the primitive bath of an excess of acid, to increase the proportion of sulphate of nickel formed, and prevent the decomposition by the current, this acid attacking the nickel of the annode, substantially as described. 4th. In combination with the herein above described electrolytic process for the separation of copper, nickel, and silver, from matte, or other alloys, the extraction of the sulphur contained in the sludge, after the electrolysis, in a slate of condensed sulphuric acid, substantially as described. 5th. In combination with the herein-above described electrolytic process of separation, in the case of an alloy containing copper, lead, and solder, a bath of sulphate of copper containing about 125 grammes of sulphate of copper, per litre plus 5 per cent. of sulphuric acid, in which the matte to be decomposed forms the anode, the cathode consizting of a plate of copper, on which the copper, and solder are deposited, which is afterwards separated electrolytically, in a bath of azolate of copper, the lead separates in a slate of sulphate of lead with the other foreign mineral matters, substantially as described.

No. 37,360. Bicycle. *(Bicycle.)*

Goolde Bicycle Company, (assignees of Henry Phillips), all of Brantford, Ontario, Canada, 11th September, 1891; 5 years.

Claim.—The combination in a bicycle main frame A, and the triangle frame B, the manner, and form in which the main frame A, coupling the wheels C, C, together, the frame B, is attached at the rear end to the frame A, or to the clip or axle G, carrying the frame B, at that end, which carries the seat L, shaft I, journaled in a bearing in the frame B, and treadles D, D, attached to shaft I, chain wheel F, chain E, springs K, and J, secured to the main frame A, carrying the hinged frame B, having the propelling gear secured to the frame B, substantially as shown and for the purpose specified.

No. 37,361. Sulky Plow. *(Charrue à siège.)*

Moses Trotman, and Orrin R. Baldwin, both of Detroit, Michigan, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the plow point and a fastening device to hold the point in a desired position, substantially as set forth. 2nd. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the heel of the plow, and a fastening device to hold the heel in desired position, substantially as set forth. 3rd. In a wheel plow, the combination of a frame, a plow, a lever to independently elevate and lower the plow point, a lever to independently elevate and lower the heel of the plow, and fastening devices to hold the point, and the heel in a given position, substantially as set forth. 4th. In a wheel plow, the combination of a frame, a plow, a plow beam, constructed with elongated slots b, b^1, levers C, D, fulcrumed on said frame, and engaged in said slots respectively, and fastening devices to hold said levers in desired position, substantially as set forth. 5th. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the heel of the plow, a bracket F, engaged upon the frame, with which the plow has a movable engagement, and a fastening device to hold the plow in a given position, substantially as set forth. 6th. In a wheel plow, provided with a rear wheel, having a swiveled engagement in a frame, the combination therewith of a plow, a lever to elevate and lower the plow point, aad a movable fastening device connected with said lever to hold the swivel of said wheel from turning in the frame, said fastening released simultaneously with the lifting of the plow point, substantially as set forth.

No. 37,362. Attachment for Printing Machines. *(Attache pour machines à imprimer.)*

Francis F. W. Oldfield, No 31 Elm Grove, Peckham, and William W. Head, and Henry Robert Mark, both of London, all in England, 11th September, 1891; 5 years.

Claim.—1st. In a printing machine, the combination of the impression cylinder, the reciprocating table or platform 1, provided with one or more adjustable inking surfaces 33a, and carrying the form 2, inking rollers, arranged to receive colour from such inking surfaces, one or more colour troughs 10, 11, partitioned into separate compartments for various colours, ductor rollers 12, 13, and vibratory rollers 14, 15, for conducting the colour from said troughs to said inking surfaces, and distributing rollers 17, for distributing the colour thereon, as shown and described. 2nd. In a printing machine, an ink trough, divided by adjustable partitions into separate compartments, in combination with inking surfaces, provided or not with notched or serrated edges, and capable of being readily adjusted in position, or of being removed from the machine, and replaced by others to suit different widths or positions, of the lines of type or characters to be inked with different coloured inks, by the means hereinbefore described. 3rd. Printing rollers, consisting of separate sections of metal tubing carrying composition, and threaded upon a spindle, or shaft of polygonal, or other suitable cross section, that will prevent the sections turning thereon, the sections of metal tubing which carry composition being separated by sections of metal tubing, forming distance pieces unprovided with composition, substantially as hereinbefore described. 4th. Discs of metal, with plain or serrated edges, threaded upon a spindle, or shaft of polygonal, or other suitable cross section alternately, with sections of metallic tubing carrying composition, substantially as hereinbefore described.

No. 37,363. Art of Forming Matrices. *(Mode de former les matrices.)*

The Chicago Matrix Machine Company (assignees of Casper Lavater Redfield), all of Chicago, Illinois, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. The process of forming matrices for stereotype plates, which consists in impressing dies in sequence into a matrix body, and compressing material at the sides of the path of the type faces, and forming offsets in the walls of the impressions, substantially as set forth. 2nd. The process of forming matrices for stereotype plates, which consists in forming the impressions, successively, by dies, and compressing the matrix material unequally at both sides, varying offsets in the walls, substantially as set forth. 3rd. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls of greater width and depth, at the front, than in rear of the character face, substantially as set forth. 4th. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies, and compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls, of greater depth at the front, than in rear of the character face, substantially as set forth. 5th. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies, and compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls, of greater depth at the front, than in rear of the character face, substantially as set forth. 6th. The process of forming matrices for stereotype plates, which consists in forming the impressions in succession by dies, and compressing the matrix material at both sides of the path of the type face, to form shoulders in the walls adjacent to the hair lines of the character faces, substantially as set forth. 7th. The process of forming matrices for stereotype plates, which consists in forming impressions by successively impressed dies, and compressing the matrix material, both laterally and parallel to the path of the type face to form sloping walls and forming offsets therein, substantially as set forth. 8th. The process of forming matrices for stereotype plates, which consists in forming the impressions therein, successively by dies, and making the stems of the character faces slightly convex in transverse section, substantially as set forth. 9th. A matrix for stereotype plates, having its impressions wider than the character faces, and their walls provided with offsets, substantially as set forth. 10th. A matrix for stereotype plates, having the walls of its impressions sloping outward, from the character faces, and provided with offsets, substantially as set forth. 11th. The method of forming matrices for stereotype plates, which consists in compacting in downward direction matrix material, adjacent to the character impressions.

No. 37,364. Machine for Making Dentures. *(Machine pour faire les dentures.)*

Robert E. Zellers and Edward Caspersoun, both of Philadelphia, Pennsylvania, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. In an apparatus for making dentures, the combination, with suitable burners, connected with a source of heat supply of a two-part flask, within one of said burners, having air canals, or passages, formed therein, air tubes communicating with said canals for exhausting the air therefrom, a crucible with the other burner, and a passage therefrom to the interior of the mold, substantially as herein described. 2nd. In an apparatus for making dentures, the combination, with suitable burners, connected with a source of heat supply of a two-part flask, within one of said burners, having openings b, c, in its upper wall, an air canal, or passage, formed in the flask, having canals, or passages, leading to the mold within the flask, a crucible, in the other burner having an outlet, leading to said mold air tubes let into the openings b, c, and connected with means for exhausting the air, and creating a vacuum in the mold, substantially as herein described. 3rd. In an apparatus for making dentures, the combination, with burners, and means for supplying heat thereto of a two-part flask within one of said burners, a crucible within the other burner, formed integral with one of said parts, means for locking the sections of the flask together, the air tubes communicating with the interior of the flask for exhausting the air therefrom, and a passage leading from the crucible to the mold, substantially as herein described. 4th. In an apparatus for mak-

ing dentures, the combination of a flask for containing the mold, a crucible integral with the flask, and communicating with its interior, the lower burner within which the flask is suspended, the upper burner for receiving the crucible pipes leading from said burners to a source of heat supply, and valves or cocks in said pipes, directing and regulating the flow of heat, substantially as herein described. 5th. In an apparatus for making dentures, the combination of the flask, a crucible integral therewith, a cover for said crucible, to prevent the escape of heat therefrom, the upper and lower hollow burners having open centres for receiving the crucible, and flask respectively, a forked pipe connected with a source of gas supply, having a branch pipe leading to each burner, and valves or cocks in said pipe, for directing and regulating the flow of gas, substantially as herein described. 6th In an apparatus for making dentures, the combination of a flask, having a crucible formed integral therewith, the hollow lower burner having an open centre to receive the flask, the hollow upper burner having an open centre to receive the crucible, and having a surrounding flange provided with openings, for the escape of heat from the lower burner, a cylinder surrounding the upper burner, flask, and crucible, pipes, leading from the burners, to a source of heat supply, and having valves or cocks, by which the heat is directed and controlled, substantially as herein described.

No. 37,365. Machine for Blacking and Polishing Boots and Shoes.

(*Machine pour noircir, et polir les chaussures.*)

Willard Herbert Gilman, and Emery Osgood Bicknell, both of Boston, Massachusetts, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. A boot blacking and polishing machine, comprising in its construction rotary brushes for polishing the sides, heel, and toe of a boot, a reciprocating carriage supporting said brushes, a suitable motor, and flexible shafts connecting the brushes with the motor, as set forth. 2nd. A boot blacking and polishing machine, comprising in its construction rotary brushes for acting upon the sides, heel, and toe of a boot, a reciprocating carriage supporting the said brushes, a suitable motor, flexible shafts connecting the brushes with motor, pivoted arms provided with receptacles for blacking, springs for pressing the blacking receptacles into contact with certain of the said brushes, and tripping and latching devices for tripping and latching the said arms out of contact with the brushes, as set forth. 3rd. A boot blacking and polishing machine, comprising in its construction rotary brushes for acting upon the sides, heel, and toe of a boot, a reciprocating carriage for supporting the said brushes, a rotary shaft provided with a double worm groove, a swiveled traveler connected with the said carriage and operating in the said worm groove, a motor for operating the parts, and flexible shafts connecting the brushes with the motor, as set forth. 4th. A machine for blacking and polishing boots and shoes, comprising in its construction two rotary brushes for acting upon the sides and heel of a boot, a toe brush for acting upon the toe and top of the foot portion of the boot, a spring supported guard for covering and protecting the instep portion, a reciprocating carriage, a motor, and flexible shafts connecting the brushes with the motor, as set forth.

No. 37,366. Fingering Device for Guitars.

(*Doigtier pour guitare.*)

William Edgar Page, Kansas City, Missouri, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. An attachment for stringed instruments for fretting chords, carrying keys or dampers, having laterally projecting arms provided with two or more presser fingers to simultaneously engage and depress the strings, substantially as specified. 2nd. An attachment for stringed instruments, having a frame provided with set screws for clamping the same to the neck of an instrument, and carrying keys or dampers, and having laterally projecting arms provided with a series of presser fingers to engage the strings, substantially as specified. 3rd. The combination, with a guitar, banjo, or other stringed instrument having frets, of pivoted keys or dampers, having their levers provided with depending forked presser fingers to engage and depress the strings, substantially as specified. 4th. In an attachment for stringed instruments, the combination, with a suitable frame adapted to be clamped on the instrument, of the keys or dampers having levers which are pivoted to the frame, and are provided with depending guide pins operating in sockets in the frame, and embraced by coiled springs which normally hold the said keys or dampers elevated, substantially as specified. 5th. In an attachment for stringed instruments, the combination, with a frame carrying clamping screws, of the keys or dampers pivoted to the frame, and provided with operating springs to normally hold their free ends elevated, said keys or dampers being provided near their free ends with offsets b^1, substantially as and for the purpose specified. 6th. In an attachment for stringed instruments, the combination, with a frame provided with clamping devices, of the standards secured to one side of the frame, the keys or dampers pivoted to the upper ends of said standards, the depending guide pins pivoted to the keys or dampers, and operating in sockets in the opposite side of the frame, and the springs coiled on the said guide pins to normally hold the free ends of the keys or dampers elevated, substantially as specified. 7th. In an attachment for stringed instruments, the combination, with a frame provided with clamping devices and carrying keys or dampers, to engage the strings of the instrument, of the thumb-hold H, secured to the said frame, and provided at its free end with a ring or loop, to receive the thumb of the performer, substantially as specified. 8th. An attachment for stringed instruments, having a frame carrying keys or dampers, the free ends of which are arranged close together in series at one side of the neck of the instrument, and are provided with depending offsets b^1, to bring said free ends below the plane of the strings, and the arms carried by said keys or dampers, and provided with presser fingers to engage the strings, substantially as specified.

No. 37,367. Sod Slicing Machine.

(*Machine pour trancher le gazon.*)

Truman Bentley, Toronto Junction, Ontario, Canada, 11th September, 1891; 5 years.

Claim.—1st. A sod slicing machine, which will cut the sods into strips of uniform width, and thickness, and sever them from the mother earth, substantially as described. 2nd. A sod slicing machine, which will cut the sods into strips of uniform width, and thickness, consisting of a suitable frame work, a knife blade secured to said frame work, for the purpose of severing the sod from the mother earth, a colter or cutting knife, located on each side of said knife blade, in advance of its cutting edge, substantially as described. 3rd. A sod slicing machine, which will cut the sods into strips of uniform width, and thickness, consisting of a horizontal knife blade secured to the frame work of the machine, said knife blade being provided with a horn in advance of the cutting edge, a colter, located on each side of said knife blade, and in advance of its cutting edge, substantially as described. 4th. A sod slicing machine to cut sods into strips of uniform width, and thickness, consisting of a horizontal knife blade secured to the frame work of the machine, the edge of the said knife blade pointing towards the front of the machine, provided with a horn projecting a short distance in front of the edge, a colter, located on each side of said knife blade in advance of its cutting edge, and mechanism for raising and lowering said knife blade, and colters, substantially as described. 5th. A sod slicing machine to cut sods into strips of uniform width, and thickness, consisting of a horizontal knife blade, secured to the frame work of the machine, the edge of said knife blade pointing towards the front of said machine, and provided with a horn, extending forward a short distance in advance of the cutting edge, a colter located on each side of said knife blade, and in advance of its cutting edge, suitable means for raising and lowering said knife blade, and colters, and a land roller, supporting and carrying the front of said machine, substantially as described. 6th. A sod slicing machine to cut sods into strips of uniform width, and thickness, consisting of a horizontal knife blade, the cutting edge of which points towards the front of said machine, a colter located on each side of said knife blade, and in advance of the cutting edge, means for raising and lowering said knife blade, and colters, consisting of a toothed segment secured to some convenient part of the frame work of the machine, an arm pivoted to said segment, and carrying on its lower end a travelling wheel, and at its upper end a lever dog, to engage with the teeth, on said segment, substantially as described. 7th. A sod slicing machine for cutting sods into strips of uniform width, and thickness, a frame work, consisting of three sides of a rectangle, having bearings formed at or near its front or closed end, a land roller, journaled in said bearings, said land roller supporting and carrying the front end of the machine, the side bars of said frame work at their rear end rigidly fastened to two uprights carrying the horizontal knife blade, a colter, secured to the frame work on each side of said knife blade in advance of its cutting edge, and suitable means for raising and lowering said knife blade, and colters, substantially as described. 8th. A sod slicing maahine to cut sods into strips of uniform width and thickness, a frame work, consisting of three sides of a rectangle, having bearings formed at or near its front, or closed end, a land roller journaled in said bearings, supporting and carrying front end of said machine, side bars of said frame work at the rear, or open end curved upward, and rigidly fastened to uprights, carrying the horizontal knife blade, a colter, rigidly fastened to the frame work on each side of said knife blade, and in advance of its cutting edge, and mechanism for raising and lowering said colters, and knife blade, substantially as described. 9th. A sod slicing machine to cut sods into strips of uniform width and thickness, a frame work consisting of three sides of a rectangle having bearings formed at its front, or closed end, a land roller journaled in said bearings, supported, and carrying the front end of the machine, the rear or open end of the side bars of the frame work curved upward, and rigidly fastened to the uprights carrying the knife blade, the uprights fastened at their upper end to the handle of the machine, and carrying at their lower ends a horizontal knife blade, the said horizontal knife blade provided with a horn extending in advance of its cutter edge, colters adjustably secured to the frame work in advance of the cutting edge of said knife blade, and suitable mechanism for raising and lowering said knife blade, and colters, substantially as described. 10th. A sod slicing machine to cut sods in strips of uniform width and thickness, a frame work, consisting of three sides of a rectangle, having bearings formed, at, or near its front or closed end, a land roller journaled in said bearings, supporting and carrying the front of said machine, the side bars of the frame work at the rear, or open end curved upward, and rigidly secured to the uprights carrying the horizontal knife blade, the uprights fastened at their top, or upper end, to the handles of the machine, and carrying at their lower end a horizontal knife blade, said horizontal knife blade provided with a horn extending in advance of its cutting edge, a colter secured to some convenient portion of the frame work located on each side of said knife blade, and in advance of its cutting edge, a toothed segment secured to the frame work of the machine, an arm pivoted to said segment, and carrying on its lower end a land wheel, and at its upper end a lever dog, to engage with the teeth on said segment, substantially as described.

No. 37,368. Adjustable Gauge. (*Jauge mobile.*)

Charles W. Morrill, Butte City, Montana, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. A gage, constructed of metal, and provided with a table having a border flange, a yoke clamp secured on the table, and a set screw in one of the limbs of the clamps, substantially as described. 2nd. An adjustable gage, constructed of a single piece of sheet metal, and having a flat table, on one edge of which a border-flange is turned at a right angle to the face of the table, a depending transverse guide flange at one end of the table, at a right angle

to the border flange, and a U-shaped clamp secured on the table of the gage, having a limb projecting over the face of the table, and adapted to receive a set screw to clamp the gage on a rule or other measure of length, substantially as set forth.

No. 37,369. Thimble. (*Dé.*)

William A. Wood, Montreal, Quebec, Canada, 11th September, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a thimble constructed of a top plate, an intermediate ring, and a bottom ring, and on one side a separate side piece secured to and connecting such parts, the other side being open. 2nd. In a thimble, the combination of the top A, with rim *a*, and the rings B, and B^1, connected by side piece C, having rim *a*, and auxiliary stay, or stays E connecting top, and rings, all as herein set forth. 3rd. As a new article of manufacture, a thimble having an attachable and detachable sewing piece, partially enveloping same.

No. 37,370. Curry Comb. (*Etrille.*)

Egbert C. Goodrich, Ecorse, Michigan, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. A curry comb, consisting of a series of blades, spaced by thimbles, and bound by a rod passing through the thimbles, and attached to the handle, the last blade projecting beyond the others on the back of said comb, and provided with a fluted edge, substantially as described. 2nd. A curry comb, consisting of a series of serrated blades, the outermost blade projecting on the back beyond the rest, and provided with a fluted edge, and having its central portion depressed, substantially as and for the purpose described. 3rd. A curry comb, consisting of the handle A, a series of toothed blades, a binding wire bent to form parallel curves extending through the blades, a cross head extending across, and constituting a bearing for the outermost blade, said arms being bent together to bear upon, and retain in place the innermost blade, and form a cover, upon which the handle is secured, and the spacing blocks G, arranged upon the binding wire, between the toothed blades, substantially as described.

No. 37,371. Manufacture of Aromatic Glycochol Derivatives. (*Fabrication de dérivatifs d'arôme glycocolle.*)

Wilhelm Majert, Berlin, German Empire, 11th September, 1891; 5 years.

Claim.—1st. The process of obtaining aromatic glycochol derivates by the action of an excess of an aqueous of alcoholic solution of an ammoniacal amine, upon a chlorine or bromine acetyle combination of a hydrocarbon compound such as set forth. 2nd. The process of obtaining glycochol derivates by the action of a glycochol ether, or a hydrochloride, or an amide thereof, upon a primary amine, as described. 3rd. As a new article of manufacture, the herein described series of glycochol, derivates, having the therapeutic properties set forth, being more, or less, soluble in water, benzoic ether, and ligroin.

No. 37,372. Automatic Curb Bit.

(*Gourmet de mors automatique.*)

Oliver M. Sloat, Brooklyn, New York, U.S.A., 11th September, 1891; 5 years.

Claim.—1st. As an improved article of manufacture, an automatic curb-bit, having a fixed mouth-bar, and slotted cheek-pieces, and the spring actuated rein-eyes secured to slide in said slotted cheek-pieces, substantially as shown and described. 2nd. As an improved article of manufacture, an automatic curb-bit, having a fixed mouth-bar, and longitudinally-slotted cheek-pieces, the rein-eyes sliding in said slot, and provided with flanges to overlap the sides of the same and hold said eyes in place, and springs connected with the rein-eyes, and one end of each of the slotted cheek-pieces, substantially as shown and described. 3rd. In an automatic curb-bit, the combination, with the longitudinally-slotted cheek-pieces B, having a suitable mouth-piece, and curb-chain attached thereto, of the sliding eyes E, having flanges E^1, and curved ends E^2, and means, as spring F, for holding said eyes in position, substantially as described.

No. 37,373. Hair and Wig. (*Cheveux et perruque.*)

James Yocum Borden, Philadelphia, Pennsylvania, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. The improvement in the art of making hair ornaments, herein described, consisting in folding a strip of hair weaving in layers, then securing the woven edges of the folded strip together, forming a backing, then binding the backing into shape, and then securing the ends of the backing together, substantially as specified. 2nd. As an improved article of manufacture, the hair ornament, herein described, consisting of a strip of hair weaving having its woven edges laid in folds back and forth upon each other, and secured together to form a backing, and the said folded edges bent into a loop, with the opposite ends joined together, substantially as and for the purpose specified.

No. 37,374. Mop Wringer. (*Essoreuse de torchon.*)

Solomon H. Schmuck, Cleveland, Ohio, U.S.A., 12th September, 1891: 5 years.

Claim.—1st. In a mop-wringer, the combination, with rollers mounted on links, the latter being arranged in pairs and operatively connected with a depressible treadle of yokes, embracing respectively each pair of links for collapsing the links with the depression of the latter, substantially as set forth. 2nd. The combination, with a base, a treadle pivoted thereto, and a receptacle mounted thereon, of yokes secured to the sides of the receptacle links, arranged in pairs, and passing through the yokes, and rollers mounted in the upper ends of the links, substantially as set forth.

No. 37,375. Apparatus for Delivering Orders to Railway Trains. (*Appareil pour la livraison des ordres aux chars de chemin de fer.*)

Stephen McLauchlin, Acadia Mines, Nova Scotia, Canada, 12th September, 1891; 5 years.

Claim.—The wire ring A, with clasp B, attached as a railway clearance order deliverer.

No. 37,376. Feed Rack. (*Râtelier d'étable.*)

Dennis G. Hagenbaugh, Crystal, Michigan, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. The herein described improved feed rack, comprising the frame, the two parallel troughs, the hinged lids, or covers therefor, and the cord or strap connected at its ends to said lids or covers, as set forth. 2nd. The herein described improved feed rack, comprising the frame, having a central passage way, the trough, located at each side of said frame, the lids, or covers for said troughs, the cord or strap connected to said lids or covers, and the wheels or pulleys secured to said frame, between which said cord or strap is passed, as set forth. 3rd. The herein described feed rack, comprising the frame, having the feed troughs, the vertically moving slides, or cut-offs, the levers, and the cords or straps connected to said cut-offs, and levers, as set forth. 4th. The herein described feed rack, comprising the frame having the feed troughs, the vertically moving slides or cut-offs, having central arms, the guide bars having rollers between which said arms are passed, and cords or straps connected to said slides or cut-offs, and the operating levers, substantially as set forth. 5th. The combination with a frame having a feed trough and vertical spaced apart bars, the guide bars secured to the ends of said frame, the slide, or cut-off, consisting of a single board having its ends working between said guide bars and the side of the frame, the vertical arm projecting from said board, the guide bar, the pulleys, one of which is grooved, the cord or strap secured to said board and passed over said grooved pulley, and the lever to which said cord or strap is connected, substantially as set forth. 6th. The herein described improved feed rack, consisting of the frame having a central passage way, the parallel troughs, the hinged lids or covers therefor, the cord or strap connected to said lids or covers, the wheels or pulleys between which said cord or strap is passed, the vertically moving slides or cut-offs, having central vertical arms, the guide bars having rollers therein, the cords or straps connected to said slides or cut-offs, and the operating levers, substantially as set forth.

No. 37,377. Sash Balance.

(*Contre-poids de croisée.*)

George C. Gardner, Hinsdale, Illinois, U.S.A., 12th September, 1891; 5 years.

Claim.—The combination of the flat metallic strap S, with the clip B, having the side bars *b*, *b*, and the three parallel bars b^1, b^2, b^3, arranged substantially in the same plane, the strap being passed between the bars, substantially as described.

No. 37,378. Sash Balance.

(*Contre-poids de croisée.*)

George C. Gardner, Hinsdale, Illinois, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. The combination of a metallic ribbon, a metal clip secured thereto, having oppositely arranged lugs projecting from the exterior thereof, and wire bail, adapted for attachment to the weight, and to said lugs, substantially as described. 2nd. In a sash balance, the combination with the ribbon A, of the metal clip C, secured to said ribbon, and having at its ends the ears C^1, and the bail F, adapted for attachment to the weight, and depending from said ears, substantially as described. 3rd. The combination of the metal ribbon A, the clip C, attached thereto, by means of a central slot in said clip, and having the ears c^1, offset from the plane of the ribbon, and the bail F, adapted for attachment to the weight, and to the ears c^1, substantially as described.

No. 37,379. Wrench for Pipes and Nuts.

(*Clé à tuyau et noix.*)

James L. Taylor, Memphis, Tennessee, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. The combination in a wrench of the character described, of a handle, having an enlarged head, and toothed jaw on one end, and a curved jaw, constructed, substantially as described, having its shank pivoted between ears, connected to the handle, and a coiled spring lying in rear of said ears, connected at its free front end, by a flexible connection to the shank of the pivoted jaw, so that it always tends to draw said jaw upward, towards the head of the handle, all said parts being constructed and arranged to operate substantially as herein shown and described. 2nd. The combination, in a wrench of the straight handle stock, having an enlarged head, and stationary jaw fixed thereto, at one end, and toothed on one edge, a tubular casting adjustably connected to said bar by loops, and a dog pivoted on one loop, and engaging the teeth of the bar, and adapted to be operated by the thumb of the operator, with

the curved jaw having a shouldered shank pivoted between ears on the front end of the casting, and the spring concealed in said casting and connected at rear thereto and at front by links to the shank of the curved jaw, and normally holding said jaw in upright position, all substantially as herein specified.

No. 37,380. Stocking, etc. *(Bas, etc.)*

Jane Bourne, Silver Cliff, Colorado, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. A tubular knitted article of wearing-apparel, having the shape of the limb-joint formed therein by a series of short discontinuous courses or rows of the same length, each lying between two adjacent continuous rows or courses, extending round the garment, and a series of long discontinuous courses or rows of the same length alternating with said short courses, and each lying between two continuous courses, substantially as described. 2nd. A tubular knitted article of wearing-apparel, having the shape of the limb-joint formed therein by a series of short discontinuous rows or courses over the joint, each of which is of the same length lying between continuous rows or courses, extending round the garment, a series of long discontinuous rows or courses, each of which is of the same length, and lying between two adjacent continuous rows or courses, and a series of long discontinuous rows or courses of the same length, formed above and also below the joint, and each of which rows or courses lies between two adjacent continuous rows or courses, substantially as described.

No. 37,381. Machine for Bunching Cigars.

(Machine à lier les cigares.)

Frederick C. Miller, Newport, Kentucky, U.S.A., 12th September, 1891; 5 years.

Claim.—1st. In a cigar-bunch machine, a hopper having an oscillating plate, provided with an opening, and a receiver below the latter, said oscillating plate being adapted to shake the tobacco through its opening into the receiver in combination with bunch-rolling mechanism, and means for transferring the tobacco from the receiver to the latter. 2nd. In a cigar-bunch machine, in combination with a hopper, the oscillating plate provided with an orifice 2, a slide beneath said plate, and having a delivery-orifice registering with orifice 2, and means for oscillating said plate, substantially as specified. 3rd. In a cigar-bunch machine, the filler-feeding mechanism, consisting of the oscillating plate, provided with an orifice 2, the intermittently-reciprocating slide beneath said plate, and provided with orifice 1, and appropriate mechanism for operating the plate and the slide, substantially as set forth. 4th. In a cigar-bunch machine, the combination of a slide, having the orifice 1, with a movable side, means for moving said side automatically, whereby the orifice is expanded, means for moving said slide to and fro, means for supplying tobacco to the orifice in the slide, a plunger passing through said orifice, to push out the tobacco, and means for catching the tobacco, substantially as set forth. 5th. In a cigar-bunch machine, the combination of a hopper, a slide working in the hopper, and having an orifice with one side movable, automatically, to receive the charge of tobacco, an adjustable device for the movable side, and means against which it acts, for regulating the extent of such automatic movement, means for contracting the orifice as it passes out from the hopper, and a plunger for ejecting the tobacco from said orifice in the slide, and means for catching the tobacco, substantially as set forth. 6th. In a cigar-bunch machine, the combination of a plate having an opening, an oscillating shaft projecting from said plate, with a zigzag cam mounted on the main shaft of the machine, and link connection to said oscillatory shaft, provided with a stud engaging said zigzag cam, substantially as specified. 7th. In a cigar-bunch machine, the combination of the slide having a feed-orifice, with a movable or expanding side, a stop for imparting the expanding movement to the side springs for contracting the same when removed from the stop, and a plunger for ejecting the tobacco from the orifice, substantially as set forth. 8th. In a cigar-bunch machine, the combination of a reciprocating slide, having a feed-orifice formed between a fixed side 15, and a yielding side 14, an adjustable screw, a fixed stop against which it works to expand the orifice to any necessary extent, the guide rods 18, and springs 19, substantially as and for the purpose set forth. 9th. The combination of the slide I, having an orifice, a yielding side 14, a fixed side 15, between which sides the orfice is formed, and a side extension to said side 14, with an adjustable screw passing through said side extension, a stop against which the screw impinges guide rods, and retractile springs fitted on the rods for automatically contracting the orifice 1, between said sides as the slide I, is moved forward, substantially as specified. 10th. In a cigar-bunch machine, having an apron, the combination of the table having a recess, a follower 21, located in said recess under the filler receiving end of said apron, means for moving the top of said follower above the table, before the filler is delivered on the apron, the follower being depressible into said recess, to allow a pocket to be formed in the apron within the recess, and means for depositing the filler on said apron, and above the follower, substantially as specified. 11th. In a cigar-bunch machine, having tobacco feeding mechanism, the combination of the bunch rolling mechanism, and a plunger to deliver the tobacco onto the apron from the feeding mechanism, a bunch-carrier, and a separate plunger to push the bunch into the molds from the bunch-carrier, substantially as specified. 12th. In a cigar-bunch machine, tobacco feeding mechanism, and a cigar-bunch rolling mechanism, in combination with a plunger to push the tobacco onto the apron, and a follower under the apron working in conjunction with said plunger, substantially as specified. 13th. The combination, with the table 47, having a vertical opening, a yielding follower 21, working therein, the piston rod 22, a housing containing the latter, the spring 23, and catch 24, of an automatic trip, substantially as specified. 14th. In a cigar-bunch machine, the tobacco feeding mechanism, and the filler delivering mechanism, consisting of the plunger 29, to push tobacco out of the feeding mechanism, and a spring actuated follower 21, in combination with means for holding said follower in retracted position and an automatic trip for releasing the follower, substantially as set forth. 15th. In a cigar-bunch machine, having an apron and a mold, the combination of the bunch roller, the oscillating bunch receiving clamp pivoted to the machine to one side of the apron, mechanism for moving the same from the apron to the mold, situated at one side of the apron, and means for depositing the bunch in the mold, substantially as specified. 16th. In a cigar-bunch machine, the combination of a bunch rolling mechanism, the travelling bunch receiving clamp independent of and located at the delivery end of the bunch rolling mechanism, and the plunger to push the cigar bunch through said clasp, substantially as specified. 17th. In a cigar-bunch machine, the combination of a tobacco feeding mechanism, a plunger, a bunch rolling mechanism consisting of a roller and an apron, reciprocating arms independent of the bunch roller, to which the rear end of the apron is secured, and means for moving the arms forward during the downward movement of the plunger, whereby the drawing of the apron under the plunger is prevented, substantially as and for the purpose set forth. 18th. In a cigar-bunch machine, the combination of a tobacco feeding mechanism, a plunger, a buuch rolling mechanism having an apron, a follower working beneath the apron and operating in conjunction with the plunger to deliver the tobacco onto the apron, and reciprocating arms to which the rear end of the apron is secured, and means for moving the arms forward during the downward movement of the plunger and follower, whereby the drawing of the apron under the plunger is prevented. 19th. In a cigar-bunch machine, a bunch rolling mechanism and mold in combination with the two plungers 29, and 35, a tobacco feeding slide having an orifice to receive plunger 29, whereby a filler is delivered on the apron, and a clamp pivoted at one end, and adapted to move from the apron to the mold, to receive plunger 35, to deliver the bunch to the mold, substantially as specified. 20th. In a cigar-bunch machine, having a bunch rolling table, a bunch rolling mechanism in combination with the travelling clamp at the delivery end of the rolling mechanism, independent of the table to deliver the bunch over the mold, means for ejecting the bunch from said clamp, and the moving mold situated at one side of the machine, substantially as specified. 21st. In a cigar-bunch machine, the bunch rolling mechanism, and means for conveying the bunch from the latter to the mold, in combination with the mold, a slide on which it is placed to receive the bunch, a dowel pin for holding the mold in place at one end, a spring catch at the other end, and means for swinging said mold out after the last bunch has been placed thereon, substantially as specified. 22nd. In a cigar-bunch machine, the combination of the tobacco feeding mechanism, plunger 29, and bunch rolling mechanism, with the cigar mold, a bunch carrier at the delivery end of the bunch rolling mechanism for conveying the bunch to the mold delivery plunger 35, and mechanism for operating the bunch delivery plunger automatically and intermittently, whereby the plunger is caused to force the bunch from said carrier, substantially as specified. 23rd. In a cigar-bunch machine, the combination of the bunch carrier, with means for operating it, consisting of the driving shaft, the cam 56, the rocking shaft 51, of the bunch carrier, a gear wheel on shaft 51, and mechanism having a segment gear engaging said gear wheel, for communicating motion from said cam to the rocking shaft, substantially as specified. 24th. In a cigar-bunch machine, in combination with the rocking shaft 51, and means for rocking said shaft, the oscillating bunch carrier operated by said shaft consisting of the fixed jaw 50, and the rocking jaw 49, and mechanism for rocking the said jaw 49, for opening the orifice to receive the bunch at the table, and automatically closing the same as the carrier moves from the table to the mold, substantially as specified. 25th. The combination of the rocking shaft 51, the bunch carrier thereon, consisting of the stationary jaw 50, having a bearing, rocking jaw 49, journaled in said bearing, the spring 58, coiled around the journal of jaw 49, the cam 61, and stud 62, for opening and closing the clamp, and means for oscillating the carrier, substantially as specified. 26th. In combination with the slide 78, and pivoted mold thereon, the mold holding device consisting of a yielding catch, the automatic trip for the catch, and a spring for swinging said mold on the slide automatically, when the catch is released, substantially as specified. 27th. In combination with the carrier slide 78, mold thereon, the detent 82, button 80, pivot 81, for button and detent, the spring 83, tripping catch 86, the trip engaging said catch, and the spring 85, to automatically release the mold, substantially as specified. 28th. In a cigar-bunch machine, the apron 28, reciprocating arms to which the apron is attached at its rear end, said arms moving to and fro to control the rolling of the bunch, and a cam mounted on the main driving shaft of the machine and so conformed as to reciprocate the arms at the proper time. 29th. In combination with the pivoted frame 91, having rod 93, and the apron 28, attached at the front end to the rod, said rod being removably held by one or more spring arms 94, substantially as specified. 30th. In a cigar-bunch machine, the combination of an apron, and oscillating frame to which it is secured at its front end, vibrating arms, by which it is held at its rear end, the bunch roller reciprocating over the table beneath, and between the two ends of the apron, and suitable operating means, substantially as specified. 31st. In a cigar-bunch machine, the combination of the filler feeding, and bunch rolling mechanism, a travelling bunch receiving device for receiving the bunch from the bunch rolling mechanism, and the two plungers 29, and 35, being respectively of a size to correspond with the filling orifice of the filler feeding mechanism and the bunch delivering orifice of the bunch receiving device, substantially as specified. 32nd. In a cigar-bunch machine, the bunch rolling mechanism, means for conveying the bunch from the latter to the mold, a movable rack, means for engaging and actuating said rack, and a mold held in place on the movable rack by a dowel pin to enable the mold to swing in and out of place, in combination with stationary angle lugs, to prevent the rise of the mold when in place, substantially as specified. 33rd. In a cigar-bunch machine, the combination, with the filler feeding and bunch rolling mechanism, a bunch carrier, and plunger for discharging the bunch from said carrier of mechanism, for consecutively and periodically operating said devices, consisting of the driving shaft, a series of cams on said shaft, and cranks connected with said

devices, and adapted to be operated by said cams, substantially as set forth. 34th. In a cigar-bunch machine, having the bunch feeding and rolling mechanism the combination of the plunger to deliver the tobacco on the apron a bunch carrier, and a separate plunger to deliver the bunch from the carrier into the mold, each operated automatically and intermittently by the connecting and driving mechanism, substantially as specified. 35th. In a cigar-bunch machine, a main hopper to feed the tobacco, and an auxiliary receptacle fed from the main hopper, substantially as set forth. 36th. In a cigar-bunch machine, a main hopper to feed the tobacco, and an auxiliary receptacle fed from the side of the lower end of the hopper, substantially as set forth. 37th. In a cigar-bunch machine, a main hopper to feed the tobacco, constructed with an auxiliary receptacle fed from the hopper, and the filler feeding and measuring devices over which said auxiliary receptacle is situated, and from which tobacco is fed into the measuring device, substantially as set forth. 38th. In a cigar-bunch machine, a hopper and an oscillatory plate below it having an opening, ann inclined upwardly from its opening to assist the feeding of the tobacco towards the opening, substantially as set forth. 39th. In a cigar-bunch machine, a main hopper constructed with an auxiliary receptacle fed from the hopper, and an oscillatory plate below the hopper extending into the auxiliary receptacle, where it is provided with an opening, such plate being inclined upwardly from its opening to assist the feeding of the tobacco towards the opening, substantially as set forth. 40th. In a cigar-bunch machine, the combination of the filler feeding mechanism, an apron, a bunch roller, a plunger to push the tobacco from said feeding mechanism on to the apron, a follower on to which the plunger presses the apron in the act of delivering the tobacco on the apron, and a spring under the apron passing outside of the plunger to raise the apron, substantially as and for the purpose set forth. 41st. In a cigar-bunch machine, the combination of the filler feeding mechanism, an apron, a bunch roller, a plunger to push the tobacco from said feeding mechanism on to the apron, a follower onto which the plunger presses the apron in the act of delivering the tobacco on the apron, and a spring at the top of the follower having spreading ends, said spring when the plunger descends passing outside thereof to raise the apron, substantially as and for the purpose set forth. 42nd. In a cigar-bunch machine, the combination of a filler feeding mechanism, an apron, a bunch roller, a plunger to push the tobacco from said feeding mechanism on to the apron, a follower on to which the plunger presses the apron in the act of delivering the tobacco on the apron, and a V-shaped spring at the top of the follower inclined upwardly from its ends to its apex, said spring when the plunger descends passing outside thereof to raise the apron, substantially as and for the purpose set forth. 43rd. In a cigar-bunch machine, a table, a bunch roller, an apron, a rear apron holder, means for moving it forward to give the apron slack to form the pocket and then stop, and means for imparting a second movement forward in unison with a bunch roller, until the pocket is practically closed on the edge of the rolling table, substantially as and for the purpose set forth. 44th. In a cigar-bunch machine, a bunch roller, a bunch rolling apron, a rolling table, an inwardly movable apron carrier or holder at its front end, and means for moving it inwardly whereby it is adapted to take up the slack of the apron and draw the end of the apron ahead of the moving bunch roller over the edge of the table while the bunch is being rolled, substantially as and for the purpose set forth. 45th. In a cigar-bunch machine, the bunch roller, the oscillating arms carrying the same provided with a cam or projection, the bunch rolling apron, a rolling table, and an apron carrier or holder at its front end having an extension engaged by the cam or projection when the bunch roller moves forward, whereby the apron carrier is moved to take up the slack of the apron and draw the end of the apron ahead of the moving bunch roller over the edge of the table while the bunch is being rolled, substantially as and for the purpose set forth. 46th. A cigar rolling apron corrugated transversely, substantially as and for the purpose explained. 47th. An elastic cigar rolling apron corrugated transversely, substantially as and for the purpose explained. 48th. A cigar rolling apron corrugated transversely along its middle, substantially as and for the purpose explained. 49th. An elastic cigar rolling apron transversely corrugated between its edges for a portion of its width, substantially as and for the purpose set forth. 50th. A cigar rolling apron having a transverse matrix formed therein in which the filler of a cigar is deposited before being rolled, substantially as and for the purpose set forth. 51st. An elastic cigar rolling apron having a transverse matrix formed therein in which the filler of a cigar is deposited before being rolled, substantially as and for the purpose set forth. 52nd. A cigar rolling apron having a transverse matrix formed therein of or approximately of the shape of the cigar-bunch to be rolled, substantially as and for the purpose set forth.

No. 37,382. Tool Holder and Cutting Tool for Pulleys, Wheels, etc.

(*Porte-outil et outil pour découper les poulies, les roues, etc.*)

Joseph Carter and Thomas Carter, both of Rochdale, England, 12th September, 1891 ; 5 years.

Claim.—In combination with a tool holder having a transverse recess or socket formed in its lower end, a tool pivoted within said socket and provided with a protruding cutter extending down below said tool holder, and a retracting spring connecting said tool to said tool holder, the connection of said spring being diametrically opposite to the pivot of the tool, and the said recess or socket being sufficiently greater than said tool to allow the tilting thereof, substantially as set forth.

No. 37,383. Automatic Friction Sash Balance and Sash Fastener.

(*Contre-poids de croisée et arrête-croisée à friction automatique.*)

William G. Deale, Chicago, Illinois, U.S.A., 14th September, 1891 ; 5 years.

Claim.—1st. In an automatic friction sash balance and sash fastener, the combination of the sheath F, having bearings for the axles or journals of the power, and storage wheel E, and pulleys C and D, with the wheel E, the axle H, the spring I, and ribbon A, secured at one end to the sash and at the other end to the wheel E, the pulleys C and D, all constructed, arranged, and operating, substantially as shown and described and for the purpose set forth. 2nd. In an automatic friction sash balance and sash fastener, the combination of the sheath F, having the opening b^1, and the bearings for the axles of the power and storage wheel, and pulleys with the wheel F, the axle H, the spring I, ribbon A, secured at one end to the wedge shaped fastener K, having the slot i, and pin i^1, and at the other end to the wheel E, pulleys C and D, all constructed, arranged, and operating, substantially as set forth. 3rd. In an automatic friction sash balance and sash fastener, the combination of the sheath F, having the opening b^1, the grooves B^2, and bearings for the axles of the power and storage wheel and pulleys with the wheel E, the axle H, the spring I, ribbon A, secured at one end to the sash and at the other to the wheel E, the pulleys C and D, all constructed, arranged, and operating, substantially as set forth. 4th. In an automatic friction sash balance and sash fastener, the combination of the sheath F, having the opening b^1, and the grooves B^2, and bearings for the axles of the power and storage wheels and pulleys with the wheel E, the axle H, the spring I, the ribbon A, secured at one end to the fastener K, having the slots i, and pins i^1, and at the other end to the wheel E, the pulleys C and D, all constructed, arranged, and operating, substantially and as for the purpose set forth. 5th. In an automatic friction sash balance and sash fastener, the combination of the sheath F, having the opening d^1, and grooves B^2, and bearings for the axles of the power and storage wheel and pulleys with the wheel E, having the pieces e^1, the axle H, having the slot g, and means for securing the spring I thereto, the spring I, the ribbon A, secured at one end to the fastener K, and at the other end to one of the pieces e^1, the fastener K, having the slot i, and pin i^1, the pulleys C and D, all constructed, arranged, and operating, substantially and for the purpose as set forth. 6th. In an automatic friction sash balance and sash fastener, the combination of the wedge shaped piece K, having the slot i, and pin i^1, with the ribbon A, and the operating mechanism, substantially as set forth.

No. 37,384. Foot Warmer. (*Chaufferette.*)

William M. Carr, Edward B. Hahn, and Joseph B. Jackson, all of Tyrone, Kentucky, U.S.A., 14th September, 1891 ; 5 years.

Claim.—1st. A foot warmer, consisting of a metallic box formed with the inclined top 2 forming a foot rest and the heel bar 3 at the lower end thereof, and a suitable heating device arranged within the said box, substantially as set forth. 2nd. In a foot warmer, the combination of a metal box, a heating cylinder arranged horizontally therein, its open ends extending through the walls of the box, and a lamp having a chimney communicating at its upper end with the heating cylinder, substantially as set forth. 3rd. The combination of a metal box, the heating cylinder 7 formed with the perforated ends 7*a*, which extend through the walls of the box, a lamp having a chimney communicating at its upper end with the heating cylinder, and the removable end caps 9 formed with the inner flanges 9*a*, and the wide outer flanges 10, substantially as set forth. 4th. The combination of the metal box 1 formed with the inclined top 2 constituting a foot rest, and the inclined bottom 11, and having the end perforations 12, the lamp reservoir 4, the burner 5, a heating cylinder arranged horizontally in the upper part of the box 1, and having its open ends extending through the walls of the said box and the chimney connecting the burner with the heating cylinder, substantially as set forth. 5th. The combination of the metal box 1 formed with the inclined top 2 constituting a foot rest, the inclined bottom 11, and having the end perforations 12, the fluid reservoir 4, the burner 5, the heating cylinder 7 formed with the perforated ends 7*a*, which project through the walls of the box 1, the removable end caps 9 formed with the inner flanges 9*a* and the wide outer flanges 10, the chimney connecting the burner with the heating cylinder and the return tubes 15, arranged as specified, substantially as set forth.

No. 37,385. Drip Preventer for Wax Candles. (*Appareil pour empêcher les chandelles de dégoutter.*)

William Bamford, Rochdale, Lancaster, England, 14th September, 1891 ; 5 years.

Claim.—A preventer for use in connection with candles, consisting of a ferrule or cup which fits about the candle, said cup being provided with a reservoir which catches the drip, substantially as set forth.

No. 37,386. Shingle Jointer. (*Machine à dresser le bardeau.*)

Stephen Miller, Ogdensburg, New York, U. S. A., 15th September, 1891 ; 5 years.

Claim.—1st. The knife gate B, having downwardly converging rods K, K, secured to the gate near both ends of the knife C, and connected by a horizontal bar L, to which the pitman H is attached by a pin M, as set forth, 2nd. The knife C, having a converging cutting edge variably beveled, the broader bevel N, parallel to a narrower bevel P, at the cutting edge, as set forth.

No. 37,387. Evaporator for Liquids.

(*Appareil évaporatoire des liquides.*)

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

Claim.—1st. The combination, in an evaporator for liquids, with a shallow vessel, of a furnace having a tapering combustion chamber, the sides of the fire box being formed by vessels thereto attached,

and communicating with the said shallow vessel which form the top of the said furnace, substantially as set forth. 2nd. The combination, in an evaporator for liquids, with the furnace A, and shallow vessel B, of the vessels C and D, tubes 24 and 28, the outlet 30, in the vessel D, and the tubes 27 and 31, the flanges 25, and latches 26, substantially as set forth. 3rd. The combination, in an evaporator for liquids, with the vessels B, C, and D, of the furnace A, consisting of the fire box 10, grate 11, flange 14, smoke stacks 15, fuel door 16, and draft regulators 17, substantially as set forth. 4th. The combination, in an evaporator for liquids, with the furnace A, and vessels C and D, of the shallow vessel B, having deep channels 19 and 20, longitudinal divisions 21, sliding gates 22 and 29, openings 23, and inlet and outlet tubes 24 and 28, communicating with the said vessels C and D, substantially as set forth.

No. 37,388. Water Tap. (*Robinet d'eau.*)

William Baxter Malcolm, Toronto, Ontario, Canada, 15th September, 1891 ; 5 years.

Claim.—A valve D, located on the pressure side of the partition C, in combination with the spindle E, nut F, and screwed spindle H, substantially as and for the purpose specified.

No. 37,389. Electric Elevator.

(*Elévateur électrique.*)

Rudolf Eickemeyer, Yonkers, New York, U. S. A., 15th September, 1891 ; 15 years.

Claim.—1st. In elevator machinery, the combination, with the traveling car or platform, of an electric motor adapted to both hoist and lower the car, a movable switching device adapted according to its position to open and close the motor circuit, and admit current in respectively opposite directions through the armature circuit, and means on the car or platform for controlling the position of said movable switching device. 2nd. In elevator machinery, the combination, with the traveling car or platform, of an electric motor adapted to both hoist and lower the car, a movable switching device adapted according to its position to open and close the motor circuit and to admit current in respectively opposite directions through the armature circuit, and means for mechanically varying the current in the armature circuit. 3rd. In elevator machinery, the combination, with the traveling car or platform, of an electric motor, a movable switching device adapted according to its position to open and close the motor circuit and to admit current in respectively opposite directions through the armature circuit, and means for automatically controlling the current in the armature circuit dependent for operation on the strength of current flowing therein. 4th. In elevator machinery, the combination, with the traveling car or platform, of an electric motor, a movable switching device adapted according to its position to open and close the motor circuit and to admit current in respectively opposite directions through the armature circuit, means for mechanically varying the current in the armature circuit during the first movement of said switching device, and mechanism adapted to be placed in operative position by the continued movement of said switching device for automatically controlling the current in the armature circuit dependent for operation on the strength of current flowing therein. 5th. In elevator machinery, the combination with the traveling car or platform, of a shunt-wound electric motor adapted to drive the same, a movable switching device adapted to close the field magnet circuit, a resistance in the armature circuit, and means for in part automatically controlling it, these operating (while the field magnet circuit is kept closed) to first interpose resistance in the armature circuit, then to remove a part thereof, and, finally, to automatically cut out the remainder of the resistance, and means on the car or platform for controlling the position of the switching device. 6th. In elevator machinery, the combination, with the traveling car or platform, of an electric motor adapted to drive the same, a movable switching device adapted according to its position to open and close the motor circuit and to admit current in respectively opposite directions through the armature circuit, means for mechanically varying the current in the armature circuit, and means on the car or platform for controlling the position of said movable switching device. 7th. In elevator machinery, the combination, with the traveling car or platform, of a shunt-wound electric motor, a movable switching device, adapted according to its position to open and close the armature circuit thereof, and spring controlled mechanism dependent for operation upon the action of said switching device and arranged to suddenly and widely open the field magnet circuit when required. 8th. In elevator machinery, the combination, with the traveling car or platform, of an electric motor adapted to drive the same, a movable switching device adapted according to its position to open and close the motor circuit and admit current in respectively opposite directions through the armature circuit, and a rope or cable along the path of the car or platform operatively connected to said switching device. 9th. In elevator machinery, the combination, with the traveling car or platform, of a shunt-wound electric motor adapted to drive the same, and a movable switching device, and a resistance in the armature circuit, said switching device adapted first to close the field magnet circuit, then to close the armature circuit through a resistance, and finally to gradually cut said resistance out of the armature circuit. 10th. In elevator machinery, the combination, with the traveling car or platform, of a shunt-wound electric motor adapted to drive the same, a movable switching device, two independent resistances adapted to be included in the armature circuit, and interposed mechanism, including a helix or solenoid, and its core, whereby in starting the motor the switching device first causes a closure of the field magnet circuit, second, a closure of the armature circuit through both of said resistances, and then gradually cuts out one of them, and, finally, leaves the other resistance subject to control by the helix which is variably operated according to strength of current in the armature circuit. 11th. In elevator machinery, the combination, with the traveling car or platform, of a shunt-wound electric motor adapted to drive the same, a resistance in the armature circuit, a movable switching device adapted first to close the field magnet circuit, then to close the armature circuit through the resistance, and finally to gradually cut said resistance out of the armature circuit, and means on the car or platform for controlling the position of said switching device. 12th. In elevator machinery, the combination, with the traveling car or platform, of an electric motor adapted to hoist and lower the same, a movable switching device for closing and opening the motor circuit, a mechanically operated friction brake in operative relation to the motor shaft, a single controlling device operatively connected to both the switching and brake devices, and a line or rope on the car or platform for operating such single controlling device. 13th. In elevator machinery wherein the movement of the car is effected by an electric motor in which the energizing current is controlled by a mechonically operated switch board and rheostat, the combination therewith of a helix in the armature circuit, a movable core therefor, a variable safety resistance adapted to be interposed in the same circuit, and a shifting contact for said resistance operatively connected to the movable core. 14th. In elevator machinery wherein the movement of the car is effected by an electric motor in which the energizing current is controlled by a mechanically operated switch board and rheostat, the combination therewith of a helix or solenoid in the armature circuit, a core adapted to movement into and out of said helix, and mechanically connected to the contact arm of said switch board, an additional variable resistance adapted to be interposed in the circuit of the armature, a shifting contact for said resistance attached to the movable core, and means connected with and operated by the switch mechanism for first forcibly retaining such additional resistance in the armature circuit during a predetermined movement of the switch arm, and then releasing it from the mechanical restraint and controlling it by the attraction of the said helix. 15th. In a reversing switch for electric motor circuits, the combination of a movable arm, contact blocks in the path of movement of said arm on both sides of its neutral or open circuit position, other blocks which provide for reversals of current, and a series of resistances interposed between the first named blocks on one side, and circuit connections coupling corresponding blocks together, whereby a single set of resistances serves for currents in opposite directions, according to the position of the arm. 16th. In a reversing switch for electric motor circuits, two circular ranges of contact blocks, each composed of four blocks, and the blocks of both ranges symmetrically arranged as to position, in combination with two brushes insulated apart and adapted to move together one over one range of blocks and the other over the other range, and circuit connections to the said blocks so arranged as to effect a reversal of current in said circuit when the brushes move from block to block. 17th. The combination substantially as hereinbefore described, of elevating mechanism including a traveliug car, an electric motor for operating said mechanism, current controlling devices or switching mechanism, by means of which the electric current may be varied, and also reversed in the armature circuit, means for cutting off said current, which are automatically operated through or by the movement of the car, and means in the car for mechanically operating the switching mechanism in either direction.

No. 37,390. Insulated Conductor and Process of Manufacturing the same.

(*Conducteur isolé et procédé pour sa fabrication.*)

Charles Cuttriss, New York, State of New York, U.S.A., 15th September, 1891 ; 5 years.

Claim.—1st. The improvement in the art of insulating electric conductors, which consists in applying to or winding on a conductor the loose fibers of a material such as cotton, and compacting the same to form a felted or matted sheathing, as set forth. 2nd. The improvement in the art of insulating electric conductors, which consists in applying to a conductor an unwoven fibrous material, then compacting the same to felt or mat the fibers, and then saturating or coating the said material with a fusible insulating compound. 3rd. The method of insulating electric conductors, which consists in forming a sheathing around a conductor by compacting or felting loose fibers of a material such as cotton applied to the conductor, and immersing the same while the sheathing is moist in a hot fusible insulating material, as set forth. 4th. The method or process of insulating electric conductors, which consists in winding a sliver of cotton around the conductor, and then compressing and compacting the same to felt or mat the fibers, as described. 5th. The method or process of insulating electric conductors, which consists in winding a sliver of cotton spirally around the conductor, compacting and compressing the same to mat or felt the fibers and saturating the sheathing thus formed with a fusible insulating material, as described. 6th. The method or process of insulating electric conductors which consists in boiling a sliver of cotton, winding the same spirally on the conductor compacting the cotton to felt or mat its fibers, and immersing it while moist in a bath of fusible insulating material, as set forth. 7th. An electrically insulated conductor consisting of a metallic wire, in combination with an unwoven sheathing of felted or matted fibres, saturated or coated with a fusible insulating compound, as set forth. 8th. An electrical conducting wire, in combination with a compacted or felted sheathing of cotton fibers, saturated or coated with a fusible insulating compound, as described.

No. 37,391. Holder and Cutter for Paper Rolls. (*Appareil à tenir et à couper les rouleaux de papier.*)

Edwin B. Weston, Dayton, Ohio, U.S.A., 15th September, 1891 ; 5 years.

Claim.—1st. In a paper-roll holder and cutter, the combination of the frame with roller journaled in the ends, weighted lever F pivoted beneath said journals, connection rod E and arms D with flanged knife C attached, said knife having its flange so held as to

bear against the roll, and the cutting-edge of the same held a distance therefrom, substantially as and for the purpose set forth. 2nd. The combination of the curved arms D pivoted to the frame, and with the flanged knife C attached, and pins G on said arms beneath the flange or rim of said knife to elevate the edges of a roll of paper, substantially as set forth.

No. 37,392. Spring Bed Bottom.

(Sommier élastique.)

Daniel Edgar, Adrian, Michigan, U.S.A., 15th September, 1891; 10 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars connecting them, the upright supporting springs mounted on the slats, small coiled springs horizontally arranged and connecting the upright springs at their upper ends, and the inclined springs J, J¹, connected to the head and foot cross bars and to the transverse rows of springs inside the bars and next to the head and foot rows of springs. 2nd. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars connecting them, the upright supporting springs mounted on the slits, horizontally diagonal springs connecting the supporting springs in groups of four, the central rings to which these diagonal springs are connected, and the longitudinal springs O connecting the rings and arranged between the rows of supporting springs, and each dividing the space between two supporting springs in adjacent longitudinal rows. 3rd. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars connecting them, the upright supporting springs mounted on the slats, horizontal diagonal springs connecting the supporting springs in groups of four, the central rings to which these springs are connected, the longitudinal springs O connecting the rings between the longitudinal rows of supporting springs, and the inclined springs J, J¹, connected to the head and foot cross bars, and to the transverse rows of springs inside the bars and next to the head and foot rows of springs. 4th. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars connecting them, the head piece D, the coiled springs supporting it and normally holding it above the upper plane, or surface, of the springs in the bed bottom, the transverse bow-springs F, and the horizontal bow-springs G, both interposed between the head cross bars and head piece, to enable the latter to be raised and lowered without, a hinge and devices for holding the head piece against the force of the springs in any desired position. 5th. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars connecting them, the head piece D adapted to be raised and lowered without a hinge, the coiled springs supporting and normally holding the head piece above the surface of the springs in the bed bottom, and devices for holding the head piece at any desired elevation against the force of the springs. 6th. The combination, substantially as hereinbefore set forth, of the longitudtnal slats, the head and foot cross bars connecting them, supporting springs arranged on the slats, horizontally arranged springs connecting the supporting springs at their upper ends, the head piece adapted to be raised and lowered without a hinge, springs mounted on the head cross bar and supporting the head piece and normally holding it above the upper plane or surface of the springs in tae bed bottom, and the adjusting chains secured to the head cross bar and the head piece. 7th. The combination, substantially as hereinbefore set forth, of the longitudinal slats, the head and foot cross bars, the supporting springs mounted on the slats, the head piece, its supporting springs, the longitudinally-inclined springs J, J¹, connected to the head and foot cross bars and to the transverse rows of springs next the head and foot rows, longitudinal springs K connecting the supporting springs, diagonal springs connecting the supporting springs in groups of four, the rings to which these diagonal springs are connected, longitudinal rows of springs connecting these rings, a transverse row of springs P connecting the rings between the two transverse rows of springs at the foot of the bed, and the springs I, I¹, I², connecting the springs in the side and foot rows with the slats to which they are connected.

No. 37,393. Metallic Vessels.

(Vaisseaux métalliques.)

Herbert Merwin Griffiths, New York, State of New York, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A vessel constructed of plates or strips of metal, one edge of which is provided with an integral rib or bulb, and provided with a recess, and the opposite edge being thin and adapted to enter the recess of the adjacent plate or strip, substantially as set forth. 2nd. A vessel composed of plates of metal having one thin edge and one recessed or rabetted edge with a bulb or rib thereon, the recesses adapted to receive the thin edges of the adjacent plates, and the ribs adapted to form braces in the interior of the vessel, substantially as set forth. 3rd. In a vessel, the combination, with metal strips or plates provided with a rib or bulb on one edge, and a recess inside of the latter to receive one edge of an adjacent plate or strip of a deck constructed of beams secured to the inner walls of the vessel and crossing one another, substantially as set forth. 4th. The combination, with metal strips or plates, provided on one edge with a rib or bulb, and a recess back of said rib or bulb adapted to receive one edge of an adjacent plate or strip of diagonal plates located on the bottom of the vessel and crossing each other, said diagonal plates connected at their ends and along their lower edges with the body of the vessel, substantially as set forth. 5th. A metallic vessel composed of plates secured together, and diagonal plates on the bottom of the vessel, connected at their ends with the body of the vessel and crossing one another on the longitudinal center of the vessel, thereby dividing the bottom into compartments, substantially as set forth.

No. 37,394. Strainer for Fluid Pipes.

(Filtre pour tuyaux à liquides.)

George Perry Gates, Watertown, Wisconsin, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. In a strainer for fluid pipes, the combination, with said pipes, of an interposed separable cylindrical strainer case of greater diameter than that of said pipes, with a removable strainer, comprising a cylinder of a diameter just sufficient to fit tightly within the cylinder of said case, but of less length, and having a suitable handle or pull, and a sieve of fine mesh covering one end of said inner cylinder, substantially as set forth. 2nd. A strainer for fluid pipes, comprising a strainer case of greater diameter than the conduit pipes, having a central screw-threaded opening at one end to receive one of said pipes, a removable cap screwed upon the opposite end of the case and having a central screw-threaded opening to receive the other pipe, and a tubular strainer frame arranged to fit closely within said strainer case and of less length than the latter, said frame carrying a perforated partition or strainer at one end, substantially as and for the purpose described.

No. 37,395. Wall Protector. (*Protecteur pour les murs.*)

Mary Thorndyke Prescott, Summerville, Massachusetts, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A wall protector or guard composed of two plates hinged together and provided one with straight, and the other with curved edges, and one of said plates having a handle whereby either plate can be held against the surface to be protected, combined with a brace or hook for holding said plates at an angle to each other, all constructed to operate, substantially as set forth. 2nd. A wall protector or guard composed of a rectangular plate A, provided with a handle *b*, and an auxiliary plate C, hinged to the plate A, and having concave and convex edges *g*, *h*, and said plate C, having an aperture *e*, to permit it to fit over the handle *b*, and lie flat upon the plate A, combined with a pivoted brace or hook *i*, adapted to lock the said plates at an angle to each other when the plate C, is to be used, substantially as set forth. 3rd. The combination of the rectangular plate A, provided with a handle *b*, having apertures for the reception of a pointed spindle G, the plate C, hinged to the plate A, and having concave and convex edges *g*, *h*, and an inclined or beveled end *m*, said plate C, having an aperture *e*, to permit it to fit over the handle *b*, and lie flat upon the plate A, the pivoted brace or hook *i*, adapted to hold the two plates at an angle to each other, and the button *f*, all constructed and arranged to operate, substantially as and for the purpose described.

No. 37,396. Baby Carriage Protector.

(Protecteur pour voitures d'enfant.)

Charles B. Scantlebury, Belleville, Ontario, Canada, 15th September, 1891; 5 years.

Claim.—1st. In combination, with a baby carriage, the waterproof hood D, substantially as and for the purpose hereinbefore set forth. 2nd. In combination, with a baby carriage, the apron attachment E, connected to the hood D, substantially as and for the purpose hereinbefore set forth.

No. 37,397. File for Bills and Letters.

(Serre-papier.)

Samuel H. Fish, Hinsdale, Illinois, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. The combination, with the movable wire of a bill-file, of a standard under the same provided with a die and guide, a cutter in said guide, and toggle joint mechanism between the cutter and the transfer wire, whereby on moving the transfer wire to the front or rear the cutter is reciprocated in the die, substantially as and for the purposes specified. 2nd. The combination, with the rigidly connected movable arched wires, of a perforator under each of said wires, the cutters of said perforators being connected with the said transfer wires by linked levers, whereby the cutters are reciprocated on the movement of the arched wires, substantially as and for the purposes specified. 3rd. The combination, with the support carrying the receiving wires, and provided with a projecting lug of a lever pivoted near said lug, or to rest with its side against the end of the same movable transfer wires, connected rigidly with a sliding bar, said bar being provided with a slot for the insertion of the end of said lever, and perforating devices, substantially as and for the purposes specified. 4th. The combination, with the receiving wires *c*, *c*¹, of the rigidly connected arched transfer wires, the guides *o*, under the transfer wires, and a perforating device with toggle joint mechanism for operating the same to pierce the paper when inserted in the guides, substantially as and for the purposes specified. 5th. The combination, with a fixed receiving wire of an arched transfer wire, a lever in engagement with a sliding bar *k*, for moving said arched wire away from said fixed wire, and a catch near the end of the said lever under which the lever is adapted to be longitudinally inserted, whereby the file may be opened or the two wires locked in position to form a smooth joint between them, substantially as and for the purposes specified. 6th. A duplex file, consisting in the combination, with the receiving wires, of movable arched wires being rigidly joined to a sliding bar, a guide for said sliding bar, and a catch under which the lever is adapted to be longitudinally inserted, whereby on moving the lever in one direction the file is opened, while on moving the lever in the opposite direction and raising the same the file is closed, and held closed, substantially as and for the purposes specified. 7th. The support for the fixed receiving wires provided with the projecting lug, and a guide for the reciprocating bar, the transfer wires rigidly secured to said bar, and the lever mounted upon a pivotal post, the connection

between the lever and post being a pin passing through an angular slot in the lever, in combination with a catch under which the lever is adapted to be inserted, substantially as and for the purposes specified. 8th. A mechanical device, consisting of the lever h, mounted upon the pivotal post g, an angular slot h^1, provided in said lever, a pin h^2, passing through the upper portion of said post and through said slot, a fixed lug d, and a catch f, combined, substantially as shown and described.

No. 37,398. Bouquet Holder. (*Porte-bouquet.*)

George B. Wilcox, Bay City, Michigan, U.S.A., 15th September, 1891; 5 years.

Claim.—In a bouquet holder, the combination of the back a, the pin b, and the securing wire c, all arranged, substantially as set forth.

No. 37,399. Apparatus for Automatically Supplying Disinfectants to Water Closets, etc. (*Appareil automatique pour désinfecter les cabinets d'aisances.*)

George Taylor, Liverpool, Lancaster, England, 15th September, 1891; 5 years.

Claim.—1st. In apparatus for automatically supplying disinfectant liquids to water closets, urinals, and the like, a containing vessel placed in a cistern through which the whole or a part of the flushing water passes, the said vessel containing disinfectant liquid and imprisoned air, and being closed with the exception of a small-bore tube at its lower end communicating with the water in the cistern, through which tube the disinfectant liquid is expelled from the vessel by reason of variations in the volume and pressure of the said air consequent upon variation in the level of the said water, substantially as described. 2nd. In disinfectant supply apparatus, such as is herein set forth, a containing vessel closed with the exception of a small-bore tube at its lower end, the said vessel containing disinfectant liquid and imprisoned air, substantially as described. 3rd. In disinfectant supply apparatus, such as is herein set forth, the combination of the tube 2, and the vessel 1, containing disinfectant liquid and imprisoned air, substantially as described and illustrated.

No. 37,400. Sill for Windows and Doors.

(*Seuil de porte et de croisée.*)

Edward Francis Hutchins, 259 Fitzroy Street, Fitzroy, near Melbourne, Victoria, Australia, 15th September, 1891; 5 years.

Claim.—1st. A window or door sill having a sink, chamber, or pocket, such as A, formed in it underneath the window sash or door frame in order to collect any water forcing its way between the wall and said sash or frame, and having a drain channel or passage, such as B, for conducting such water to the outside of the building, substantially as and for the purposes herein described and explained, and as illustrated in the drawings. 2nd. In a window or door sill, the combination, with a sink, chamber, or pocket, such as A, adapted to receive any water which forces its way between the window sash or door frame and the wall of the building, of a groove or channel, such as E, formed in the sill behind the ordinary strip or tongue D, in order to conduct any water passing the latter into said sink or chamber, the whole being constructed and arranged, substantially as and for the purposes herein described and explained, and as illustrated in the drawings. 3rd. The combination, with a window or door sill having a sink, chamber, or pocket, such as A, formed in each end underneath the window sash or door frame, of a strip, such as C, of metal or other material secured to the front of the outer casing of such frame, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawings.

No. 37,401. Coupler for Incandescent Electric Light Shades. (*Joint pour réflecteurs de lampe électrique incandescente.*)

Philip Levison, Chicago, Illinois, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A coupling of the kind specified, consisting of a continuous expansible and contractible ring having disconnected end portions, and adapted to surround and engage an electric light socket, and having devices for attaching the same to a shade having an aperture, the apertured portion of said shade serving to surround said ring and hold the same in engagement with said socket. 2nd. A coupling of the kind specified, consisting of an interiorly grooved continuous expansible and contractible ring having disconnected end portions, and adapted to surround and engage an electric light socket, and having devices for attaching the same to a shade having an aperture, the apertured portion of said shade serving to surround said ring and hold the same in engagement with said socket. 3rd. A coupling of the kind specified, consisting of a continuous expansible and contractible ring having disconnected end portions, and adapted to surround and engage an electric light socket, and having flexible fingers at one end for attaching said coupling to an apertured shade, the apertured portion of said shade serving to surround said ring and hold the same in engagement with said socket. 4th. A coupling of the kind specified, consisting of a continuous expansible and contractible ring having disconnected and overlapping end portions, and adapted to surround and engage an electric light socket, and having devices for attaching the same to an apertured shade, the apertured portion of said shade serving to surround said ring and hold the same in engagement with said socket.

No. 37,402. Fastening for Securing a Pulley to a Shaft. (*Attache pour assujétir les poulies aux axes.*)

William Charles Irvin, Pontypool, Ontario, Canada, 15th September, 1891; 5 years.

Claim.—1st. The eccentrically bored hub B, in combination with a reversely eccentrically turned bushing C, bored to fit the shaft A, substantially as and for the purpose specified. 2nd. The eccentrically bored hub B, in which the reversely eccentrically turned bushing C, is fitted and bored to fit the shaft A, in combination with the eccentric adjustable plates D, held securely to the hub B, and set in the reverse direction to the bushing C, substantially as and for the purpose specified.

No. 37,403. Tile for Pavements, etc.

(*Tuile pour pavés, etc.*)

James S. Peirce, Portsmouth, New Hampshire, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A tile for paving and vault light purposes formed of a composition of cement, silicious sand, gravel or broken stone, and silicate of soda or potash with or without stone, calcined lime and alum, prepared in substantially the proportions and manner specified and a glass imbedded therein for the transmission of light through the tile, for the purposes set forth. 2nd. A pavement and vault light cover, composed of a series of beams in combination with a series of tiles containing glass lights, said tiles being arranged so that a portion of each tile will rest upon said beams, whereby the space on opposite sides of the beams is closed by a portion of the tiles resting upon the beams, and light is shed into the space below through the glass in said tiles, the outer ends of the beams resting in recesses formed in an outer wall as described, substantially as and for the purposes set forth.

No. 37,404. Fire Alarm. (*Avertisseur d'incendie.*)

Alfred Fréchette, St. Jean Baptiste, Manitoba, Canada, 15th September, 1891; 5 years.

Claim.—1st. The combination of a weight D, a bell G, and arms H, H^1, worked by wires and cords, substantially as and for the purpose hereinbefore set forth. 2nd. The clockwork combination shown in Figure 4, connected both with the telephone and the first part of the machine, substantially as and for the purpose hereinbefore set forth.

No. 37,405. Glove. (*Gant.*)

Ferdinand Bertheau and Anders G. Hoegren, both of Aurora, Nebraska, U.S.A., 15th September, 1891; 5 years.

Claim.—A glove for the purpose set forth, having its palm, fingers and thumb or grasping portion provided with metallic staples, the ends thereof being passed through the leather forming the glove and upset so as to provide a smooth inner surface, said staples being arranged in rows, the ends alternating with each other, substantially as set forth.

No. 37,406. Type Writing Machine.

(*Clavigraphe.*)

Levi J. Odell, Chicago, Illinois, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. In a type writing machine, the combination, with a vertically oscillating frame hinged at one side to a fixed support but having no lateral motion thereon, of an independent type bar frame supported and sliding horizontally in ways in the vertically oscillating frame parallel with and at a distance from the axis of oscillation, and a type bar having two sets of type in longitudinal parallel lines, which bar is pivoted in the type bar frame, being thereby tiltable transversely of its long axis independently of the type bar frame, substantially as described. 2nd. In a type writing machine having an elongated type bar frame or carriage constructed to travel endwise on ways therefor in the machine, a type bar having thereon two sets of fixed type arranged in parallel lines at an angle to each other, which type bar is journaled in the type bar frame so as to be tiltable limitedly laterally therein, a spring secured to the type bar frame and to an arm on the type bar, and so arranged as to swing past the axis of the bar when the bar tilts the spring, being adapted to act as a yielding lock to the type bar, and means for tilting the type bar, substantially as described. 3rd. In a type writing machine having a movable type bar frame, a type bar having two parallel lines of fixed type arranged at an angle to each other, which type bar is journaled in the type bar frame so as to be tiltable laterally therein, a tilting finger plate pivoted on the type bar frame and connected movably to the type bar, and means for locking the type bar in position yieldingly, substantially as described. 4th. In a type writing machine having a fixed letter plate, and a comb therewith, a detachable letter plate having numerals, characters or letters thereon, a comb rigid or integral therewith, the recesses of which comb are arranged to register with a portion only of the recesses of the fixed comb, and means, substantially as described, for securing the removable letter plate and comb temporarily to the fixed comb. 5th. In a type writing machine having a fixed letter plate and comb, and a parallel oscillating type bar supporting frame, a removable letter plate having a comb arranged to register with alternate parts of the fixed comb, and to prevent the use of the type bar with other parts of the fixed comb, in combination with a type bar supported and movable endwise in the vertically oscillating frame, which type bar has serrated or pointed type, substantially as described. 6th. In a type writing machine, the combination of a bell 39, secured to a stationary part of the machine

a swinging lever clapper 40, a spring 46, bearing against and actuating the clapper, a rod 42, so hinged on the free arm of the lever clapper as to swing freely in one direction, and to be rigid to the clapper against swinging thereon in the other direction, and an arm 44, adjustable on the guide rod I, on the paper carrying carriage, substantially as described.

No. 37,407. Sectional Water Heater.

(Calorifère à eau.)

David E. Howatt, Hyde Park, New York, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A sectional water heater in which each section consists of a continuous water space surrounding fire box and smoke flue openings, and somewhat depressed in the centre over the fire box to form when placed adjacent to another section a heat flue conducting the products of combustion from fire box to smoke flue by direct draft and requiring no outer casing, as and for the purpose described. 2nd. A water heater composed of sections, containing continuous water spaces depressed in the centre to form heat flues, conducting the products of combustion by direct draft to the smoke flue, the said heat flues alternating with the water cells, as described, the several sections having no water joints except at the inlet and outlet openings and being united only by outside manifold pipe connections, as set forth. 3rd. A water heater composed of two outer and one or more inner sections, constructed with continuous jointless water spaces contracted over the fire box to form heat flues between the sections leading by direct draft from fire box to smoke flue, for the purpose of distributing the heat evenly along the water cell surfaces, all the sections being united by outside manifold pipe connections, and placed above an ordinary ash pit and grate, substantially as described. 4th. In a sectional water heater, the combination of the sections 121, constructed with inside continuous water spaces surrounding fire box and smoke flue, as described, and having between the sections heat flues R, connecting the fire box Q, by direct draft with smoke flue K, the base 3, and grate 4, and the outside inlet and outlet pipes C, C, D, for uniting the water spaces of all the sections at the openings G, and J, as and for the purpose described.

No. 37,408. Method of and Apparatus for Molding Plastic or Molten Metal. *(Mode et appareil pour mouler le béton ou métal fondu.)*

Alexander Crawford Chenoweth and Walter D. Edmonds, both of New York, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. The art or method herein described, of forming shaping or molding the interiors or concave surfaces of conduits, pipes or castings, consisting in the preparation of a centering of the required shape and size by spirally winding a properly shaped core with the material out of which said centering is constructed withdrawing the core, then sustaining the centering in position without its core, surrounding the centering with the material out of which the conduit is to be constructed while said material is in a plastic condition, and after the latter has hardened or set finally withdrawing said centering, substantially as described. 2nd. The method herein described of forming, shaping or casting the interiors or concave surfaces of conduits, pipes or castings, consisting in the preparation of a centering of the required shape and size by spirally winding, a properly shaped core with the material out of which said centering is constructed, sustaining the core and centering in position surrounding them, with the material out of which the conduit is to be constructed, while said material is in a plastic condition, and thereafter and before said material has had time to set, withdrawing the core, and finally after said material has set withdrawing said centering, substantially as described. 3rd. The method herein described of forming, shaping or casting the interiors or concave surfaces of articles, consisting in sustaining in the required position, a centering of spirally arranged material surrounding said centering with the other material out of which the conduit is to be constructed, while said latter material is in a plastic condition, sustaining said plastic material in the required position, while hardening or setting, by leaving said centering within the same, and finally and after said plastic materials have hardened withdrawing said centering, substantially as described. 4th. The art or method herein described of forming, shaping or casting, the interiors or concave surfaces of conduits, pipes or other castings, consisting in the preparation of a centering of the required shape and size by spirally winding, a properly shaped core with the material out of which said centering is constructed, winding in a reverse spiral about said core and centering a strip of retaining material supporting centering, so wound in the desired position surrounding same, with the material designed for the conduit in a plastic condition, and after the latter has hardened or set withdrawing the centering, substantially as described. 5th. The art or method described of forming, shaping or casting the interiors or concave surfaces of conduits, pipes or other castings, consisting in the preparation of a centering of the required shape and size by spirally winding, a properly shaped core with the material out of which said centering is constructed, then covering said centering with a casing of non-conducting impervious or other material, then withdrawing the core, then supporting said centering without core and so covered in the desired position, surrounding the same with the materials designed to constitute the body of the conduit while the latter are in a plastic condition, and after said materials have set or become hard, withdrawing said centering without said non-conducting covering then leaving the latter in place as an inner lining, all substantially as described. 6th. The art or method described of forming, shaping or casting, the interiors or concave surfaces of conduits, pipes or other castings, consisting in the preparation of a centering of the required shape and size by spirally winding, a properly shaped core with the material out of which said centering is constructed, then covering said centering with a casing of non-conducting impervious or other material, then supporting said centering and core so covered in the desired position and surrounding the same with the materials designed to constitute the body of the conduit while the latter are in a plastic condition, and thereafter and before said plastic materials have had sufficient length of time to set, withdrawing said core, and after said plastic materials have set or become hard, finally withdrawing said centering without said non-conducting covering, thus leaving the latter behind in place as an interior lining, all substantially as described. 7th. A centering for use in forming, shaping or casting, the interiors or concave surfaces of conduits, pipes or other castings, consisting of a spirally wound strip or ribbon having one or more connections reaching through the conduit pipe or casting so as to admit of said centerings becoming elongated and diminished in diameter when pulled out through such conduit pipe or casting by means of such connection or connections, substantially as described. 8th. The art or method described of constructing conduits, pipes or castings, and at the same time providing them with non-conducting or other linings, consisting in surrounding a properly prepared spiral centering with such lining, supporting the same in the required position, then surrounding the same with plastic material forming body of conduit and after latter has hardened, withdrawing the spiral centering, leaving the non-conducting or other lining in place, substantially as described. 9th. The art or method herein described of forming, casting or shaping the interiors or concave surfaces of conduits, pipes or castings consisting in sustaining in the required position, a coreless spiral or spirally devisible centering surrounding said centering with material out of which said conduits, pipes or castings are to be constructed, while said material is in a plastic condition and after latter has hardened or set finally withdrawing said centering, substantially as described. 10th. The art or method herein described of forming or shaping or casting the interiors or concave surfaces of conduits, pipes or castings, consisting in the preparation of a spirally devisible centering of the required shape and size, wrapping said centering with retaining or protecting material, or both supporting the said centering so wrapped in the desired position, surrounding the same with the plastic material designed to constitute the body of the said conduit pipe or casting, and after such plastic material has set or been permanently shaped by centering withdrawing the latter, substantially as described. 11th. A centering, composed of a spirally wound or otherwise arranged ribbon or strip of material of varying width, whereby the shape of the centering thereby constituted when same is spirally wound, as hereinbefore described may be curved or otherwise varied, substantially as described. 12th. A curved centering or interior support for molding the inner surfaces of plastic materials, which said curved centering is composed of spirally arranged material of varying width, substantially as described. 13th. A centering, composed of spirally devisible material, in combination, with an outer protecting and retaining wrapper A, spirally wound at a different angle, substantially as described. 14th. A centering, composed of spirally devisible material, in combination, with a retaining and protecting covering, such as A, substantially as described. 15th. For use in molding or shaping the interior surfaces of pipes, conduits, vessels, etc., an inner mold or centering of the required shape, consisting of spirally arranged and spirally devisible material such as metal ribbon, for instance, having one or two connections with the exterior and spirally separable and devisible under traction, whereby the said inner mold or centering can be collapsed and readily withdrawn, substantially as and for the purpose described. 16th. A centering or inner mold for shaping the interior surfaces of both straight sections and curves in pipes, or conduits, consisting of a spirally wound ribbon or strip of material bent into the required curve and held in place, and protected by retaining covering adhering to the said strip of material, whereby said retaining covering is spirally divided on said spiral centering being withdrawn from the pipe or conduit after the plastic materials constituting the same have hardened or set, substantially as described. 17th. As an inner mold or centering for vessels or any chamber or cavity of curved or irregular form, a core of the required shape constructed out of materials which are spirally devisible into a ribbon whose width is no greater than the diameter of the orifice leading into said vessel or chamber, whereby after the interior of such chamber or vessel has been molded, the said centering or inner mold may be readily separated and withdrawn, substantially as described. 18th. The combination of outer mold N, with correspondingly formed inner spirally devisible mold B, substantially as described. 19th. For shaping and retaining curved or otherwise irregularly shaped spiral centerings during construction thereof, the concave half mold N, containing a concave depression M, of the shape which it is intended such centerings shall take, substantially as described. 20th. For the purpose of uniting or joining lengths of piping or tubing and for the purpose of mending breaks in pipes or tubing already laid, the combination of lengths of spirally devisible centering A, with a connection or connections C, leading to the nearest place of access to the interior of the conduit, substantially as described. 21st. The combination, with the spirally wound ribbon B, B, of the longitudinal core centerings D, D, and wedges L, substantially as described. 22nd. The within described method of making joints, mending breaks, or uniting the opposite ends of pipes, sewers, or other conduits, which consists in preparing a centering of spirally devisible material of the required shape and diameter, connecting both or either one of the ends of said centering with a rope or other connection extending through the pipe, sewer, or conduit, to the nearest adjacent opening or man hole, next inserting both ends of said length of centering into the, pipe sewer or conduit to be united or mended, so that the centering will extend across the open space to be mended or jointed next, surrounding said length of centering with plastic materials so as to completely cover the same on all sides, and so that said plastic materials will unite the continuation of the pipe, sewer, or conduit, extending on each side of the break or joint, and after said plastic materials have set or hardened, finally withdrawing the said length of centering by traction on the said connections or either of them, substantially as described.

No. 37,409. Cylindrical Boiler.

(Chaudière cylindrique.)

Thomas McDonald, assignee of Walter Scott Shipe, both of Toronto, Ontario, Canada, 15th September, 1891; 5 years.

Claim.—1st. A joint for sheet metal vessels, or other purposes, con-

sisting of the edges of the sheet metal which are to be united, and of a uniting strip of solid metal being bent inward and the strip having grooves to receive them, and being provided with a rib riveted or forced into the space between the said edges and composed of sufficient metal to substantially fill the said space, as set forth. 2nd. A sheet metal plate bent in the form of a cylinder, having its longitudinal edges bent inwardly on a compound angle, in combination with a metal strip having a solid rib with grooves on each side, to receive the inwardly set edges of the plate, said rib being flattened out and filling the space between the angles of the sheet metal plate, leaving the outside of the cylinder substantially smooth, substantially as and for the purpose specified. 3rd. The cylinder A, having a bead D, rolled in it, in combination with a head E, having a corresponding bead rolled in it to fit onto the bead D, substantially as and for the purpose specified. 4th. The cylinder A, having a bead D, rolled in it, and its edge bent slightly inward, in combination with the head E, having a corresponding bead rolled in it to fit on to the bead D, and its edge bent outwardly, substantially as and for the purpose specified. 5th. A cylinder head or body having a hole punched in it so that the stock from the hole shall form an annular flange, substantially as and for the purpose specified. 6th. A cylindrical boiler having annular strengthening rings inserted in it, one at each end, substantially as and for the purpose specified.

No. 37,410. Baking Powder. (*Poudre à pâte.*)

Rumford Chemical Works, assignees of Charles Albert Catlin, all of Providence, Rhode Island, U. S. A., 15th September, 1891; 5 years.

Claim.—1st. A baking powder or preparation containing a salt or combination of a fat acid with an inorganic base, substantially as described. 2nd. A baking powder or preparation containing as active constituents an acid and a carbonate or their equivalents, combined with a salt or combination of a fat acid with an inorganic base, substantially as described. 3rd. A baking powder or preparation containing as a diluent the stearate of an alkaline earth, such as stearate of calcium, substantially as described.

No. 37,411. Method of Cooling and Purifying Liquids. (*Méthode de refroidir et purifier les liquides.*)

Edward J. Costello and Stewart F. Woodson, both of Atlanta, assignees of David C. Camp, Gainsville, all in Georgia, U. S. A., 15th September, 1891; 5 years.

Claim.—The casing A, provided with the integral hopper I, removable pan H, and scraper K, having a frictional clamp handle M, in combination with a rotation drum C, provided with internal ribs G, G^1, substantially as shown and described.

No. 37,412. Composition for Paint and Varnish. (*Composition pour peintures et vernis.*)

Jacob R. Rosendale and Frederick C. Bishop, both of Buffalo, New York, U. S. A., and Helen Meagher, Hamilton, Ontario, Canada, assignees of James D. Meagher, of Hamilton aforesaid, 15th September, 1891; 5 years.

Claim.—A compound composed of water, an alkali, and vegetable and mineral oil boiled together and then mixed with alum, and more water and oil, substantially in the proportions and for the purposes set forth.

No. 37,413. Cotton Planter. (*Semoir à cotton.*)

Joel H. Branan and Robert A. Stembridge, Asylum, Georgia, U.S.A. 15th September, 1891; 5 years.

Claim.—1st. In a cotton planter of the type herein described, the combination of the frustum shaped pans, the L-shaped brackets secured to one of said pans, and carrying an annular flange, the angular arms secured to said flange and connected adjustably with the opposite frustum shaped pan, and the ring or band encircling and connected adjustably with the latter, and having notches at its inner edge, substantially as and for the purpose set forth. 2nd. The combination of the revoluble drum or cylinder composed of pans or sections, an intermediate flange secured to one of said pans and provided with arms or brackets to which the other pan is adjustably connected, the notched or slotted ring or band mounted adjustably upon said drum, and the arm extending radially from the shaft or axle of the drum or cylinder, and having an adjustable clamp carrying a flexible finger extending upwardly into the slot or opening between the adjustably connected pans or sections, substantially as and for the purpose set forth.

No. 37,414. Corset. (*Corset.*)

John Henry Odenbrett and Henry Stolz, both of Chicago, Illinois, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. A corset composed of inelastic sections *b* at the front elastic sections *d*, extending from the bottom of the corset upward above the waist line, stiff sections *f* extending from the sections *d* to the top of the corset, inelastic sections *e* extending from the bottom of the corset over the hip to the top of the corset, and sections completing the back of the corset, said elastic sections *d* being located midway between the hip sections *e* and the inelastic front sections *b*, substantially as specified. 2nd. A corset composed of inelastic sections *h* at the back elastic sections *g*, extending from the top of the corset downwardly below the waist-line over the shoulder blade, inelastic sections *i* extending from sections *g* to the lower edge of the corset hip, sections *e* extending from the bottom to the top of the corset, and sections completing the front of the corset, said elastic sections *g* being midway between the back of the corset and the hip sections of the corset, substantially as specified. 3rd. A corset composed of the inelastic sections *b* at the front and elastic sections *d* adjoining the sections *b*, and extending from the bottom of the corset upward above the waist-line, a stiff section *f* above the sections *d*, extending to the top of the corset, inelastic sections *e* adjoining the sections *d* and *f*, and extending from the bottom of the corset to the top, and elastic section *g* adjoining the section *e*, and extending from the top of the corset downward below the waist-line, a stiff section *i* extending from the elastic section *g* to the bottom of the corset, and sections *h* and *j* at the back, substantially as and for the purposes specified.

No. 37,415. Roofing Paper.

(*Papier pour toitures.*)

Henry Cunningham, Batchtown, and Stephen McDonald, Hardin, both in Illinois, U.S.A., 15th September, 1891; 5 years.

Claim.—As a new article of manufacture, a roofing paper having a coating of linseed oil and charcoal, for the purpose described.

No. 37,416. Machine for Sifting Coal.

(*Tamis à charbon.*)

Albert W. Flack, Cornwall, Ontario, and James H. Elliott, Montreal, Quebec, both in Canada, 15th September, 1891; 5 years.

Claim.—1st. In a coal sifter, the box A having an air tight cover B, in combination with a roller sifter provided with a hinged self-delivering cover F, fastened with buttons I, as shown and described for the purpose set forth. 2nd. In a coal sifter, the drawer C provided with bevelled edges, as shown and described for the purpose set forth. 3rd. In a coal sifter, the drawer D having the grooves L and the sliding cover K, as shown and described for the purpose set forth.

No. 37,417. Elevator Operating Mechanism.

(*Mécanisme pour élévateurs.*)

Whittier Machine Company, assignees of Charles Whittier, all of Boston, Massachusetts, U.S.A., 15th September, 1891; 5 years.

Claim.—1st. An elevator operating mechanism containing the following instrumentalities, viz.: a worm gear, an independent worm shaft provided with a worm in mesh with said gear, an electric motor, and its armature shaft, connected directly to the independent worm shaft, substantially as described. 2nd. In an elevator operating mechanism, the following instrumentalities, a worm gear, an independent worm shaft provided with a worm in mesh with said gear, an electric motor, its armature shaft, and an intermediate detachable coupling connecting said armature shaft directly to the independent worm shaft, substantially as described. 3rd. In elevator operating mechanism, the following instrumentalities, viz.: two worm gears in mesh with each other, a worm shaft provided with a right and left worm in engagement with the said gears, an electric motor, its armature shaft, and an intermediate detachable coupling connecting the said armature shaft directly to the worm shaft, substantially as described. 4th. In an elevator operating mechanism, the case A, worm gears in mesh with one another, located therein and mounted on shafts having bearings in said case, a worm shaft supported by the said case and having a right and left worm in engagement with said gears, combined with an electric motor, its armature shaft in line with the worm shaft, and an intermediate coupling, consisting of the flanged hubs b^8, b^{10}, connecting the said armature shaft directly to the worm shaft, substantially as described. 5th. An elevator operating mechanism containing the following instrumentalities, viz.: a worm gear, an independent worm shaft provided with a worm in mesh with said gear, an electric motor, and its armature shaft connected directly with and insulated from said independent worm shaft, substantially as described.

No. 37,418. Insulator for Electric Wires.

(*Isolateur pour fils électriques.*)

Daniel A. Bertolette, Norristown, Pennsylvania, U.S.A., 16th September, 1891; 5 years.

Claim.—1st. An electric wire insulator consisting of the body, the grooves at either end of said body and the outwardly, downwardly and inwardly inclined lips adapted to protect a section of the body between said grooves from becoming wet, substantially as set forth. 2nd. An insulator having the body A, the grooves B, at either end, and the outwardly and downwardly inclined lips between said grooves adapted to provide a dry section around the body, substantially as set forth. 3rd. The combination of an electric wire, the body having the grooves upon either end, the central longitudinal bore and the outwardly downwardly and inwardly inclined flange or lip C, of a greater diameter than the body, substantially as set forth.

No. 37,419. Waggon Brake. (*Frein de wagon.*)

John Lockwood Patton and Arthur Louis Patton, both of Panola, Illinois, U.S.A., 16th September, 1891; 5 years.

Claim.—1st. The combination of sliding and turning rub-block levers, a lever K, pivoted between its ends to the body connections between the ends of said lever and the rub-block lever, an operating hand lever and connections between the operating lever and the lever K, substantially as shown. 2nd. The combination of a lever K, pivoted between its ends, the rub-block levers adapted to turn and slide connections between the ends of the lever K and the rub-block levers, a lever F, a connection between the lever F and the lever K,

an endwise moving lever which engages the inner ends of the rub-block levers, and an incline upon the inner end of one of the levers which engages the endwise moving lever, for the purpose described. 3rd. In a waggon brake, the combination, with sliding and turning rub-block levers of an endwise moving bar which engages the inner ends of the rub-block levers, an arm pivoted at its center to the said bar links connected with the rub-block levers and the ends of the arm, a pivoted lever and a connection between the arm and the pivoted lever, substantially as set forth. 4th. In a waggon brake, the combination, with endwise moving and turning rub-block levers of an endwise moving bar which engages the inner ends of the levers, a bar pivoted at its center upon the endwise moving bar links connecting the rub-block levers and the ends of the arm, a pivoted lever, a connection between the pivoted lever and the pivoted arm, and a spring catch which engages the endwise moving bar and is operated by the pivoted lever, as described.

No. 37,420. Milking Apparatus.

(Appareil pour traire les vaches.)

Nils Nilsson, Copenhagen, Denmark, 16th September, 1891; 5 years.

Claim.—A milking apparatus in which the nipples are pressed by rotary helices *b*, against a plate *d*, provided with a soft cover in such a manner that the intervals between the helices cannot come in contact with the nipples and that in the movement of these helices the pressure upon the nipples will descend and finally cease so as to preclude the return of the milk into the udder and afford the nipples time to be filled again with milk.

No. 37,421. Manufacture of Steel and Iron and Apparatus to be Employed in such Manufacture.

(Fabrication de l'acier et du fer et appareil employé à cet effet.)

John Heaton and George Henry Holden, both of Manchester, England, 17th September, 1891; 5 years.

Claim.—1st. The use in the manufacture of steel and iron by means of the process hereinbefore referred to of the hereinbefore described apparatus, which consists in the combination of a furnace such as *a*, a converter such as *d*, provided with a lower portion such as *e*, and a re-heating furnace such as *j*, all arranged in conjunction with each other and with suitable hydraulic or other devices for enabling the lower portion *e*, of the converter to be moved as required, in the manner and for the purposes hereinbefore described. 2nd. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to the employment of a fixed measuring receiver or vessel such as *b*, employed and arranged substantially as hereinbefore described in reference to and indicated in and by the accompanying drawings and for the purpose of having "run" into it from the furnace in which such iron has been melted a charge or certain quantity of molten iron and of allowing such charge or certain quantity of molten iron to flow into the "converter." 3rd. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to the employment of the lower portion *e*, of the "converter" mounted upon a truck which by means of wheels and rails can be conducted and placed beneath the upper part of the "converter" and upon the table of an hydraulic ram or other suitable means so that such lower portion of the "converter" which at the commencement of the operation of "conversion" contains the charge of nitrate of soda, nitrate of potash, chlorate of soda or chlorate of potash to be employed in the operation of "conversion" may be readily placed and secured in position beneath the upper part of the "converter." 4th. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to, the employment of the hereinbefore described arrangements for securing the perforated plate placed above the nitrate of soda, nitrate of potash, chlorate of soda or chlorate of potash in position in the lower part of the "converter" before such lower part of the converter is placed in position below the "converter" which arrangements consist in ears or lugs formed on the said perforated plate and ears or lugs formed on the upper flange of the casing of the lower part of the "converter" and arranged and employed in conjunction with each other substantially in the manner hereinbefore described in reference to and indicated in and by the accompanying drawings. 5th. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to the employment of the hereinbefore described arrangements for transferring the charge of metal contained in the lower portion of the "converter" to a re-heating furnace in order that such metal may be made sufficiently fluid to be run into ingots, which arrangements consist in the provision of suitable rails or other suitable means and suitable hydraulic or other appliances by means of which the lower portion of the "converter" may be removed from beneath the "converter" and tilted so that the charge of metal contained in it will be caused to run or pass down a suitable spout, pipe or channel into an "open hearth" or re-heating furnace, substantially as hereinbefore described. 6th. The use in the manufacture of steel and iron by means of the process hereinbefore referred to of secured blocks or segments formed of nitrate of soda, nitrate of potash, chlorate of soda, or chlorate of potash and arranged to be secured to the lower portion of the "converter" substantially as hereinbefore described. 7th. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to, the employment of the hereinbefore described arrangements which consist in carrying the lower portion of the "converter" on a truck running on the table of an hydraulic ram located so that such lower portion of the "converter" is placed near and caused to form a joint with a suitable reverberatory furnace in order that the charge of metal contained in such lower portion of the "converter" may be reheated. 8th. In apparatus for use in the manufacture of steel and iron by means of the process hereinbefore referred to, the employment of the hereinbefore described arrangements of apparatus by means of which the useful "by products" which would otherwise escape from the upper portion of the "converter" during the time the 'conversion" is taking place may be recovered which arrangements consist in pipes or flues communicating at one end with the interior of the upper portion of the "converter" and at the other end with a suitable condensing chamber, vessel, tank or apparatus to receive and collect the products passing into it from the upper part of the "converter."

No. 37,422. Disk Harrow. *(Herse à disque.)*

Andrew George Hill, Grimsby, Ontario, Canada, 17th September, 1891; 5 years.

Claim.—1st. In a disk harrow, the combination with the disk gangs of means substantially as described, whereby the disk gangs of a harrow are rendered rigid or flexible at will of driver while they are working at a fixed angle over the field. 2nd. In a disk harrow the combination with the scraper beam mechanism and scrapers connected to such beam of means, substantially as described, whereby the scrapers may be thrown into action with the disks and continuously kept in contact with such disks without the aid of hand levers. 3rd. In a disk harrow, the combination, with the scraper beam down hangers of disk gang journals upon which said down hangers are supported and have movement, substantially as described. 4th. In a disk harrow, the combination, of a scraper beam and its down hangers with the disk gang journals the down hangers having their lower ends of hook or semi-circular shape, substantially as described, so as to support the scraper beam by hooking on to the slots in said journals so as to permit of easy removal of the scraper beam mechanism.

No. 37,423. Railway Signal Apparatus.

(Appareil de signal de chemin de fer.)

Lorenzo Dow Williams, Camden East, Ontario, Canada, 17th September, 1891; 5 years.

Claim.—1st. The combination with the rails A, A, rocking shaft C, having an arm *c*, post or lever D, and guide block S, of the pedal plate B, having legs *a*, *a*, *b*, the springs G, and boxes H, the legs *a*, *a*, bearing on the top of the springs and the leg *b*, pivoted to the arm *c*, to sway the post or lever D, to ring the bell by pulling the bell wire V, as set forth. 2nd. The brackets L^1, pintled in bearings secured to a post K^1, and provided with a roller M^1, to carry the bell wire V, at an angle, as set forth. 3rd. The take up springs N, consisting of the spiral coils 6, 7, the disks 2, 3, loops 4, and rod 5, passing through said disks, said loops connected to the bell wire V, in combination with the post or lever D, rock shaft C, and pedal plate B, as set forth. 4th. The rod F, the spring G^1, coiled thereon, in combination with the resistance post J, for retracting the bell wire V, as set forth.

No. 37,424. Wheel Cultivator.

(Cultivateur à roues.)

Robert C. Buckley, Peoria, Illinois, U.S.A., 17th September, 1891; 5 years.

Claim.—1st. In a wheel cultivator a tooth frame having teeth thereto attached and of such construction that the weight of the frame and attachment shall bear on the axle of the wheel, substantially as and for the purpose described. 2nd. In a wheel cultivator a hoe blade and shank fastened to tooth frame close to and immediately behind the wheel, substantially as and for the purpose described. 3rd. In a wheel cultivator an opening point fastened to tooth frame close to and immediately behind the wheel, substantially as and for the purpose described. 4th. In a wheel cultivator a tooth made from round material flattened at top for bolt, and flattened and sharpened for point, substantially as and for the purpose described. 5th. In a wheel cultivator a frame having attached thereto on each side a shield or fender, substantially as and for the purpose described.

No. 37,425. Automatic Indicator for Stations and Streets. *(Indicateur automatique de station et de rue.)*

James Aaron Wright and John Bunyan Wright, both of Rockingham, and Marcellus Chandler and David Chandler Stanback, both of Sanford, all of North Carolina, U.S.A., 17th September, 1891; 5 years.

Claim.—1st. In a station indicator, the combination of the horizontal card compartment open at its outer end and containing a spring follower, the card receiving compartment having an opening thereinto from and beneath the open end of said card compartment, the reciprocating face plate normally closing the open end of said card compartment, means to throw up said plate to display a card and a spring to draw it down to its normal position and throw a card into the receiving compartment. 2nd. In combination, the card compartment open at the outer end and having means to press the card outwardly, the card receiving compartment having a receiving opening beneath the open end of said card compartment, a vertically reciprocating face plate normally closing the opening of said card compartment, an open frame at its upper portion carrying said plate, and arranged so that when pushed up the card displayed, will be pressed against the frame beneath said plate, and when drawn down it will carry said card down into the lower compartment, a rod provided with means to push up said frame and a spring to draw it down. 3rd. A station indicator, consisting in the combination of a card containing compartment, an outwardly pressing follower therein, means to retain said cards therein and allow the first one to be displayed, a lower card receiving compartment, and the sliding face plate at the open end of said card compartment adapted, when drawn down, to engage and force the displayed card

down into the receiving compartment. 4th. In combination, the two adjacent card compartments having spring followers and open at their outer ends, the curved guide plate at the open end of the lower compartment to guide the cards thereinto, pushed from the open end of the other compartment, vertical ways at said outer ends of the compartments, an open frame carrying a face plate and slidable in said ways to display the outer card in the upper compartment or to draw the face plate and close said compartment and push down the card just displayed, and means to operate said frame, substantially in described. 5th. In a station indicator, the combination with the card containing compartment open at its outer end, a receiving compartment, a sliding face plate normally closing the outer end of said card compartment and against which the cards are pressed, means to throw up said plate to display a card in said compartment, a catch to hold the plate up and means to automatically release said catch when the station is passed and allow the plate to be drawn down, as set forth. 6th. In a station indicator, the combination with the card compartments of the sliding face plate, a frame carrying the same, a spring tending to draw the same down to its normal position, the rod secured to said frame, a trip beneath the car to force up said rod and face plate, a catch to hold the same raised, and means operated by said trip to release the catch. 7th. The card compartments and sliding face plate, provided with a downwardly extending rod, the vertical tube in which the lower end of said rod is loosely confined, a catch to hold said rod and face plate raised, a finger carried by said rod to release the catch, and a trip beneath the car provided with a rod in said tube to engage said rod of the face plate and force the same up, and to operate said finger to release the catch. 8th. The guide tube, the upper vertical reciprocating rod in the same, a spring catch carried by said tube to hold said rod raised, a pivoted finger projecting below the end of said tube and adapted to engage and release the catch, a spring to force said finger toward said catch when the rod is raised, a spring to force the finger in the opposite direction when the rod is lowered, and another sliding rod in said tube to raise the first mentioned rod and operate said finger. 9th. In a station indicator, the guide tube and indicator in the car, in combination with the trip beneath the car, and the vertical reciprocal rod from said trip to operate the indicator, said rod being located in said tube and formed in two sections separated by a spring, substantially as described. 10th. The combination with an indicating device and an operating rod therefor of the trip, consisting of the bent arm pivoted at one end, at the other swinging end connected to the indicator operating rod by a link, and carrying a wheel at its elbow to engage the incline on the track and force up the free end of the arm. 11th. The combination with a station indicator of the cylinder and piston for operating the same, substantially as described. 12th. The combination with the operating rod having the piston on its lower end of the cylinder for said piston, and a pipe into said cylinder below the piston.

No. 37,426. Printers' Quoins.

(*Coin d'imprimerie.*)

Eugene Paul Mowers, Mary Ledbetter Grovenor, Thomas Preston Murray, and Hattie Fay Murray, all of Salt Lake City, Utah, U. S. A., 17th September, 1891; 5 years.

Claim.—1st. In a printers' quoin, the combination of a pair of outer laterally adjustable side pieces, and duplicate wedge pieces sliding longitudinally on the adjacent side pieces and moving past each other within the space between the side pieces, substantially as and for the purposes set forth. 2nd. In a printers' quoin, the combination of the duplicate pieces A, A, having oppositely inclined contiguous faces, and the enclosing frame pieces B and C adjustably connected together and each similarly connected to the back of the adjacent inclosed wedge piece, whereby the frame pieces may be expanded laterally by the longitudinal movement of the wedges past each other, substantially as described. 3rd. In a device of the class described, the combination of a housing or frame made up of the two parts B and C, laterally adjustable to and from each other, the duplicate wedges arranged within said frame having their inclined faces contiguous and provided with gear teeth along one of the edges of the inclined face, and a socket in the other edge of said face adapted to receive a key to engage the teeth of the other wedge. 4th. In a printers' quoin, the combination of a laterally expansible frame, duplicate wedges inclosed therein, and means for sliding the wedges upon each other to expand said frame, substantially as and for the purposes set forth. 5th. In a printers' quoin, the combination of a pair of duplicate wedges, means for sliding them upon each other, and a two-part housing therefor permanently secured together and to said wedges, and laterally expansible by the action of the wedges, substantially as and for the purposes set forth. 6th. In a printers' quoin, the combination of interlocking laterally expansible frame pieces, and duplicate wedges secured within said frame pieces and sliding longitudinally upon each other and the frame pieces, substantially as and for the purposes set forth.

No. 37,427. Process of Obtaining Zinc by Electrolysis. (*Procédé pour obtenir du zinc par l'électrolise.*)

Alexander Stanley Elmore, The Mount, Rothwell, York, England, 18th September, 1891; 5 years.

Claim.—The herein described process for obtaining zinc in a pure and compact condition by electrolytically depositing it on a revolving cathode subject to the action of a burnisher, in a bath of sulphate or other salt of zinc in which the compartment containing the anode or anodes is separated as a porous cell or by a porous screen from that containing the cathode or cathodes.

No. 37,428. Process of Treating Auriferous Sulphurets. (*Procédé pour le traitement des sulfures aurifères.*)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 18th September, 1891; 5 years.

Claim.—The method of treating auriferous sulphurets, by concentrating the sulphurets, acting upon them with nitric acid and nitrate of mercury, removing and collecting the solution by a centrifugal drier or by water displacement, and then amalgamating the gold, substantially as hereinbefore described.

No. 37,429. Art of Making Stereotype Molds. (*Art de fabriquer les moules stéréotypes.*)

Charles Sears, Chicago, Illinois, U.S.A., 18th September, 1891; 5 years.

Claim.—1st. The improvement in the art of preparing stereotype molds consisting in making each separate letter in the line successively and one at a time on the end fibers of a wood matrix-block, substantially as specified. 2nd. The improvement in the art of preparing stereotype molds, consisting in subjecting the matrix consisting of a block of dry wood having a smooth surface for receiving the impressions formed upon the ends of the fibers, and sufficient body to resist the compacting pressure to the successive impact of the type-dies striking in close proximity to each other, substantially as specified.

No. 37,430. Cistern for Water Closets.

(*Réservoir de latrines.*)

Alexander Keith and William Wilson, both of Toronto, Ontario, Canada, 18th September, 1891: 5 years.

Claim.—1st. The combination, in a water closet cistern, of a syphon or other valve worked with a transverse lever, having an eccentric attachment, as heretofore described, 2nd. The combination, in a water closet cistern, of an interchangeable lever attachment with bar, as herebefore described. 3rd. The combination, in a water closet cistern, of lugs through which the bar passes, and which also act as holders for the cover of the cistern.

No. 37,431. Vehicle Spring. (*Ressort de voiture*).

George I. Glover, Chicago, Illinois, U. S. A., 18th September, 1891; 5 years.

Claim.—1st. The combination with the double armed spring bent to provide it with a bend 1, between its arms, and having its said arms respectively clipped to the vehicle body and shackled to one of the side bars of the substantially part circular strengthening spring piece M, arranged within the bend of the spring with its ends terminating short of the middle point of said bend and at points back of its said ends held in connection with the spring by clips E, and E^1, substantially as set forth. 2nd. The combination with the double armed main spring having its upper arm applied to the vehicle body and its lower arm connected with a side bar or like portion of the vehicle of the auxiliary double armed spring having its upper arm applied to the vehicle body and its lower arm left free and arranged to cushion upon the lower arm of the main spring substantially as and for the purpose set forth. 3rd. A vehicle spring formed with a pair of oppositely arranged spring arms which are bowed toward one another, and a bend by which the two arms are united, said arms being normally positioned so that under a sufficiently heavy load the bowed portion of one arm shall cushion upon the bowed portion of the other arm and both of said bowed portions straighten out proportionally to the weight sustained, substantially as and for the purpose set forth. 4th. A vehicle spring bent to form a pair of oppositely arranged spring arms which are bowed toward one another and attached to a vehicle body at a point between the bowed portion of one arm and the bend by which the two arms are united, the outer end of said attached spring arm being free, substantially as and for the purpose set forth. 5th. The double armed vehicle spring A, formed with the bends 1, and 2, in its arms, and a bend a^2, between its said arms and having its upper spring arm attached to a vehicle body at a point between the bends 2 and a^2, the outer end of the lower spring arm being shackled to one of the side bars and the outer end of the upper spring arm being free, substantially as and for the purpose set forth. 6th. The double armed vehicle spring A, formed with bends 1, 2 and a^2, and attached to a vehicle body at a point between its bends 2 and a^2, by a clip having a rounded side bearing against the spring, substantially as and for the purpose set forth. 7th. The combination with the spring A, provided with arms a, and a^1, having bends 1, and 2, of a pad arranged on one of said arms, as and for the purpose set forth.

No. 37,432. Elevator Valve Mechanism.

(*Mécanisme de soupape pour élévateurs.*)

Cofran I. Hall, San Francisco, California, U. S. A., 18th September, 1891; 5 years.

Claim.—1st. In a hydraulic elevator, the cage with the hydraulic cylinder and piston, a pressure chamber containing water, a valve mechanism operated from the cage rope so as to open and close steam supply and exhaust valves, whereby pressure may be admitted upon the surface of the water within the chamber and water valves, connecting the bottom of said chamber with the elevator cylinder with a mechanism whereby said valves may be opened or closed and independent automatically operating check valves connected with said water valves, substantially as herein described. 2nd. In a hydraulic elevator, the water cylinder and piston moving therein and connected with the cage of the elevator, a pressure chamber containing an inelastic liquid, and valves whereby an elastic medium may be admitted to press upon the upper surface of the water within the chamber in combination with water valves through which communication is made between the bottom of the

chamber and the elevator cylinder mechanism whereby one of said valves is closed and the other opened and automatically operating check valves acting in conjunction with the main valves and closing in opposite directions, substantially as herein described. 3rd. The water valves controlling the admission and escape of the water between the pressure chamber and the elevator cylinder, the mechanism consisting of the rotary disk, actuated from the cage rope, the semi-circular projecting lug and the yokes or heads fixed to the valve stems so as to be engaged by said lug when the disk is rotated, said lug acting as a lock to retain the valves in position, substantially as herein described. 4th. In a hydraulic elevator, the water cylinder and piston moving therein and connected with the cage of the elevator, a pressure chamber containing an inelastic liquid, valves whereby an elastic medium is admitted to press upon the upper surface of the liquid, and a system of valves including the supplemental valves d, and d^1, controlling the flow of water between the pressure chamber and the elevator cylinder so as to prevent any flow of water to or from the elevator cylinder in a direction which will move the cage in the opposite direction from that which is intended, substantially as herein described.

No. 37,433. Manufacture and Application of Explosive Compounds. (*Fabrication et application des compositions explosibles.*)

Alfred Nobel, Paris, France, 18th September, 1891; 15 years.

Claim.—1st. In the manufacture of explosive compounds of horny or semi-horny consistency and having nitro-glycerine and nitro-cellulose as principal ingredients, using a non-volatile solution-promoting substance such as acetin, bi-acetin, or tri-acetin, substantially as hereinbefore described. 2nd. In the manufacture of explosive compounds of horny or semi-horny consistency, mixing nitro-glycerine with nitro-cellulose in a wet state and at a low temperature and subsequently subjecting the thoroughly mixed compound to the action of heat by immersion in hot water or otherwise and to the action of heated rollers, substantially as and for the purposes hereinbefore described. 3rd. In the manufacture of explosive compounds of horny or semi-horny consistency, first mixing nitro-cellulose with excess of nitro-glycerine and subsequently expressing the excess of nitro-glycerine beyond what is required, and subjecting the mass thus obtained to the action of heat and to the action of heated rollers to form a compound of the desired consistency, substantially as hereinbefore described. 4th. In the manufacture of explosive compounds, of horny, or semi-horny consistency, mixing an excess of nitro-glycerine with nitro-cellulose, and after gelatinization removing part of the nitro-glycerine by means of a suitable solvent such as diluted methylic alcohol, substantially as herinbefore described. 5th. In adapting explosive compounds for use in blasting, compressing grains thereof to a greater or less extent, or moulding such compounds into cylinders to form cartridges, substantially as hereinbefore described. 6th. In preparing explosive compounds of horny or semi-horny consistency into charges for fire arms, forming them into rolled-up sheets, or plates, or tubes, or hollow caps, corrugated or pierced with holes, substantially as and for the purposes hereinbefore described.

No. 37,434. Signal for Mills.

(*Signal pour moulins.*)

Will Henry Donner, Columbus, Indiana, U.S.A., 19th September, 1891; 5 years.

Claim.—1st. In combination with a spout, a plate pivoted within the same, an arm f extending to the outside connected to or forming a part of said plate, and an electric circuit including an alarm, the movement of the said arm f being adapted to open or close the said circuit and sound the alarm, substantially as described. 2nd. In combination with a spout, a plate pivoted within the same, an arm f extending to the outside, an electric circuit including an alarm, the said circuit being closed by the movement of the said arm, and an extension x outside the spout and in connection with the pivotal plate, whereby the position of said plate is indicated by the position of the said extension, substantially as described. 3rd. In combination with an inclined spout, a plate freely suspended from the upper side of said spout above the normal current of the flowing material, so as not to be moved thereby, the stop or pin D projecting into said spout so that the plate may swing into contact therewith, a bell or indicator, and connections whereby the contact of the plate and stop will operate the bell or indicator, substantially as described.

No. 37,435. Manufacture of Compounds Containing Boron. (*Fabrication de composition contenant du bore.*)

Jesse Ascough, Handsworth, Shefford, England, 19th September, 1891; 5 years.

Claim.—1st. The manufacture of sodium bi-borate or borax in small crystals, crystalline, granular or dry state, substantially as herein set forth. 2nd. The manufacture of sodium borate and other compounds containing boron in small crystals, crystalline, granular or dry state, substantially as herein set forth.

No. 37,436. Web Holder for Knitting Machines. (*Porte-tissu pour machines à tricoter.*)

George Henry Gilbert, Philadelphia, Pennsylvania, U.S.A., 19th September, 1891; 5 years.

Claim.—1st. The within described web holder for knitting machines, the same having a work-retaining hook and a thread-retaining portion above the same, whereby the upward and outward movement of the knitting-thread on the web holder is prevented, substantially as specified. 2nd. The within described web holder for knitting machines, the same having a work-retaining hook, and above the same an outwardly-inclined portion and a retaining portion, substantially vertical, as specified. 3rd. The combination of the needle-carrier and its needles, with web holders having work-retaining hooks, and above the same thread-retaining portions whereby the knitting-thread is prevented from slipping to the front of those needles which are thrown into action during the fashioning, substantially as specified. 4th. The combination of the needle-carrier and its needles, with web holders having work-retaining hooks, and above the same outwardly-inclined portions and substantially vertical portions, the latter serving as thread-retainers, and extending inwardly to the backs of the needles, substantially as specified.

No. 37,437. Cattle Guard. (*Garde-bétail.*)

William Hartill Law, Peterborough, Ontario, Canada, 19th September, 1891; 5 years.

Claim.—1st. A railway surface cattle guard constructed substantially as hereinbefore shown and described, and as and for the purposes set forth. 2nd. A railway surface cattle guard comprising sections between and outside the rails of the track, said sections composed of parallel bars of angle iron or its equivalent, presenting the apex of their angle to the surface proper, and notched on the base of the two sides which form the angle to engage with a cross piece whose edge is also notched to receive the base of the two convergent sides, said notches being severally answerable in length to the exact width of the material received in them, said bars of angle iron locked into place in pairs by means of a triangular plate bolted or rivetted to the cross piece, which, being made with a flange, is secured to the sleeper of the railroad, all substantially as set forth. 3rd. A railway surface cattle guard comprising sections between and outside the rails of the track, said sections being composed of transverse beams or pieces made up of a rib and a web L-shaped in cross section, the upper edge of said cross pieces being notched to receive the parallel longitudinal angular iron or steel bars which are also notched to engage with the cross pieces, said longitudinal bars being separated and secured in pairs by means of a triangular plate bolted or otherwise secured to the cross piece, said separated longitudinal bars strained across said beams or cross pieces by means of spikes driven into the sleepers of the railroad, the heads of which spikes hold the flange or web of the cross piece rigidly fixed in contact with the surface of the sleeper, with a space between the upper surface of the sleepers and said longitudinal bars, substantially as set forth. 4th. A railway surface cattle guard comprising two or more transverse beams secured to the ties, and a series of longitudinal angle iron bars or bars which present two parallel and separated longitudinal edges, provided with notches at regularly spaced intervals on one or both of such edges to engage with the adjacent sides of notches so also regularly laid off in the upper edge or surface of the cross pieces and secured in pairs by means of triangular plates arranged to press the longitudinal bars into the notches in the edge of the cross pieces and hold them there rigidly fixed at the points of contact as shown. 5th. In a railway surface cattle guard, the construction of four like or unlike sections, and in each section the combination of two or more transverse beams with a series of notches relatively adjacent in points of contact, the notches in the terminal beams made answerable in width to the cross sectional measurement of the longitudinal bars, which with the beams form the said sections, the notches in each of the beams and bars forced directly into each other and secured by a suitable plate of a triangular shape, the cross beams spiked to the upper surface of the ties or sleepers of the railroad, substantially as set forth. 6th. A railway surface cattle guard comprising sections between and ontside the rails of the track, said sections being composed of strips of metal flanged to admit of their being thereby secured to the upper surface of the ties of the railway track, across the upper edge of which and parallel with the rails of the track are secured longitudinal angle iron or steel bars turned down at their ends to prevent them from being torn up by dragging irons or brake beams of passing cars, said beams and bars arranged with corresponding notches and plates so bolted or secured as to force one series of notches into its fellow series, and thus hold the longitudinal and transverse pieces rigidly in their relative positions towards each other and the railway track, substantially as set forth. 7th. In a cattle guard for railways, the fastening of the longitudinal and transverse parts by means of notches and a triangular plate secured to the transverse section, substantially as set forth. 8th. In a surface cattle guard for railways, the locking of the herein described bars and cross beams by means of the relatively adjacent notches I, and J, cut or punched into the said bars and cross beams by means of the triangular plate E, substantially as set forth. 9th. The combination of the plate E, with the part or member A to lock the longitudinal bars C, B, or D, into places, substantially as set forth.

No. 37,438. Gate. (*Barrière.*)

Charles D. Brown, Ames, Iowa, U.S.A., 19th September, 1891; 5 years.

Claim.—1st. In a gate, the combination, with the supporting posts, a main bar consisting of two members mounted on a pivot bolt between said posts, uprights rising from said main bar and extending obliquely forward from its pivot, and having staples and a gate having a spring operated catch on its front end bar, of ropes leading from remote points through eyes in the upper ends of the supporting posts and through said staples to the catch, a latch post having a reduced upper end providing shoulders upon which the free ends of said members rest when the gate is closed, and a wedge upon the reduced portion of said latch post with which said catch engages, substantially as described. 2nd. In a gate, the combination, with the supporting posts, a main bar mounted on a pivot bolt between said posts, uprights rising from said main bar and extending obliquely forward and having staples, and a gate having a spring operated catch on its front end bar, of ropes leading from remote points through the upper ends of the supporting posts and through said

staples to the catch, a latch post, and a wedge with which said catch engages, substantially as described. 3rd. In a gate, the combination, with the supporting posts, an inclined block at the base thereof, and a latch post, of a main bar pivoted between said supporting posts and engaging said latch post when the gate is closed, a swinging gate depending from said main bar and resting against the face of said block when the gate is closed, the rear end of said main bar extending beyond its pivot being provided with a counterbalancing weight and engaging the rear side of said block when the gate is opened, forwardly inclined uprights rising from said main bar, a swinging weight pivoted between their upper ends, and means for raising and lowering the gate, all substantially as hereinbefore described. 4th. In a gate, the supporting posts, the gate proper hinged at the inner upper corner to the posts, said gate being composed of pivoted panels or bars, which are adapted to be contracted or extended by contact with a part of the supporting posts in raising or lowering the gate, and a pivoted pendulum weight W, pivoted in advance of the pivot point of the gate, as set forth.

No. 37,439. Wash Board. (*Planche à savonner.*)

Frederick James Wesley, Toronto, Ontario, Canada, 19th September, 1891; 5 years.

Claim.—The combination with the wash board provided with side bars A, having their upper ends formed at right angles to the edge of the side bars and the head bar secured to the rear edges of the side bars of the combined cap and protector B, having the straight inner side or cap secured to the right angled top of the side bars and of the curved lip *c*, forming the protector extending outwardly and downwardly beyond the front edges of the side bars, substantially as and for the purpose specified.

No. 37,440. Machine for Forming Clips on Horse Shoes. (*Machine pour former les pinces des fers à cheval.*)

John Douglas Billings, New York, State of New York, and George Jacob Washington Kirk, Philadelphia, Pennsylvania, both in U.S.A., 19th September, 1891; 5 years.

Claim.—1st. A machine for forming clips on horse and mule shoes, consisting of a shoe holder, as shown in Figs. 1 and 3, for the purposes and substantially as described. 2nd. The shoe holder with the space cored out or shoe rest B, B, the closed or solid portions A, A, A^1, the open toe space *d*, *d*, at the extreme toe end of the shoe, substantially as and for the purposes described. 3rd. The shoe holder, as shown in Fig. 2, with the space cored out or shoe rest B, B, the closed or solid portions A, A, A^1, the open toe space *d*, *d*, at the extreme toe end of the shoe, the lower die F, outside or surface front of convex form *d*, shouldered in and held firmly by set screws b^1 and b^2, substantially as and for the purposes described. 4th. The hammer D, as shown in Figs. 2 and 3, attached at the lower movable end of said shoe holder by pinion C, the space b^3, for receiving the set screw b^1 and b^2, for holding firmly the upper die E, as and for the purposes described. 5th. The hammer D, as shown in Figs. 2 and 3, attached at the lower movable end to the said shoe holder by pinion C, the space b^3, for receiving the set screw b^1 and b^2, for holding firmly the upper die E, the upper die E, its inside working face concave in form, as and for the purposes described. 6th. The shoe holder, as shown in Figs. 1 and 3, with the cored out space or shoe rest B, B, the closed or solid portion A, A, A^1, the open toe space *d*, *d*, at the extreme toe end of the shoe, the lower die F, outside or surface front of convex form *d*, shouldered in and held firmly by set screw b^1 and b^2, in combination with the hammer D, as shown in Figs 2 and 3, attached at the lower movable end to the said shoe holder by pinion C, the space b^3, for receiving and the set screw b^1 and b^2, for holding firmly the upper die E, the upper die E, its inside working surface concaved in form, as and for the purposes described.

No. 37,441. Churn. (*Baratte.*)

William Benjamin Walters, Maryhill Terrace, Mornington, Dunedin, Otago, New Zealand, 19th September, 1891; 5 years.

Claim.—1st. In churning for making butter sucking or drawing air of the requisite temperature through the milk or cream by means of a suction or exhausting device, substantially as hereinbefore described. 2nd. In apparatus for churning for making butter, a closed vessel for containing the milk or cream, and having an air inlet or air inlets at the lower part and a suction or exhausting device at the upper part, substantially as hereinbefore described and illustrated by the accompanying drawing. 3rd. In apparatus for churning for making butter, a closed vessel for containing the milk or cream, and having an air inlet or air inlets at the lower part and a suction or exhausting device at the upper part, and having a sight-hole or sight-holes for observing the contents, substantially as hereinbefore described and illustrated in the accompanying drawing. 4th In apparatus for churning for making butter, a closed vessel A, for containing the milk or cream, having a suction or exhausting device at the upper part, and an inlet or inlets at the lower part, and a vessel for containing liquid or brine, such as H, the said inlet or inlets being in communication with the said vessel H, and also in communication with an air supply passage, each communication being capable of being opened and closed so that either air or liquid or brine, as required can be drawn up through the said vessel or chamber A, by the suction or exhausting device, substantially as hereinbefore described with reference to the accompanying drawing. 5th. The arrangement and combination of parts constituting the apparatus for churning for making butter, substantially as hereinbefore described and shown in the accompanying drawing.

No. 37,442. Soap Dish and Brush Holder for Scrub Buckets. (*Boîte à savon et manche de brosse pour seau à laver.*)

Carles Ayres Inglis, Lancaster, Pennsylvania, U.S.A., 19th September, 1891; 5 years.

Claim.—1st. An attachment for tubs or buckets, consisting of a plate which is concavo-convex in cross-section, a spring clasp at its upper end which passes over the upper edge of the bucket, a bearing at the center of the lower edge of the plate, a soap dish and an eye at the center of the soap dish which passes around the said bearing, substantially as shown and described. 2nd. An attachment for buckets consisting of a plate having beads along its sides, a wire having its ends extending into the beads, and its center portion bent inward and downward forming a portion of a circle as described, and an upward bend d^1, for the purpose described, and a soap dish connected to the said plate, substantially as shown.

No. 37,443. Method of Refining Petroleum.

(*Méthode d'épurer le pétrole.*)

Herman Kohler, Ravenswood, Long Island City, N.Y., U.S.A., 19th September, 1891; 5 years.

Claim.—1st. The herein described method of treating hydrocarbon oil, consisting in vaporizing the oil, subjecting the vapors to the action of quick lime in a heated state, and condensing the vapors thus treated, substantially as and for the purposes described. 2nd. The use of heated quick lime as an agent for breaking up the sulphur compounds existing in Lima oil and similar petroleums, or in the vapor of distillation of such oils. 3rd. The process hereinbefore described of treating hydrocarbon oils which are impregnated with sulphur or sulphur compounds, consisting in the following steps:—(1) Vaporizing the petroleum by subjecting the crude oil to heat in a still: (2) passing the vapor thus produced through heated quick lime: (3) condensing the vapor after its passage through the heated lime, for the purpose of breaking up the sulphur compounds contained in the oil before treatment, substantially as described, for the purpose of preparing the oil for the removal of the sulphur by subsequent treatment. 4th. The treatment, hereinbefore described, of treating hydrocarbon oils for the removal of sulphur, consisting of the following steps:—(1) Vaporizing the crude petroleum of petroleum distillate: (2) passing such vapor through heated lime: (3) condensing the vapor after such lime treatment: (4) treating the resulting distillate with plumbate of soda or other desulphurizing agent.

No. 37,444. Process and Apparatus for Separating Ores. (*Procédé et appareil pour separer le minerai.*)

Clinton M. Ball, Troy, New York, and Sheldon Norton, Hokendanqua, Pennsylvania, both in U.S.A., 22nd September, 1891; 5 years.

Claim.—1st. The process of separating iron or its crushed ore from impurities, consisting in passing the ore and gangue into and carrying the attracted portions through a magnetic field of alternating polarity, permitting the unattracted portions to fall from such field while causing currents of air to move first along the path of the attracted ore in an opposite direction to the same and then to move laterally across the path of the unattracted gangue. 2nd. The process of separating iron or its crushed ore from impurities, consisting in mingling water with the ore and gangue, passing the mass into a magnetic field and while separating the unattracted gangue subjecting the wet ore to the evaporative action of a current of air. 3rd. The process of separating iron or its crushed ore from impurities, consisting in mingling water with the mass, then subjecting the latter to the simultaneous action of magnetic attraction and centrifugal repulsion, while at the same time causing a current of air to impinge upon the separated iron or ore. 4th. An ore separator comprising a magnetic field, a non-magnetic screen below and moving through said field, means for delivering the ore and gangue within the magnetic field, and a chamber below said screen, having respectively near the beginning and end of the magnetic field and means for causing a current of air to move through said openings and across the chamber in an opposite direction to the movement of the screen. 5th. An ore separator comprising a magnetic field, a non-magnetic screen below and moving through said field, means for delivering the ore and gangue within the magnetic field, openings respectively near the beginning and end of the magnetic field, means for causing a current of air to move through said openings and across the chamber in an opposite direction to the movement of the screen, a discharge opening at the bottom of said chamber and a valve or gate across said opening. 6th. The process of separating iron or its crushed ore from impurities and concentrating it, consisting in passing the ore and gangue through consecutive magnetic fields and at the same time impressing upon it differing degrees of tangential inertia in the consecutive magnetic fields. 7th. The process of separating iron or its crushed ore from impurities and concentrating it, consisting in passing the ore and gangue through consecutive magnetic fields and at the same time impressing upon it tangential inertia increasing in force in the successive fields. 8th. The process of separating iron or its crushed ore from impurities and concentrating it, consisting in passing the ore and gangue through consecutive magnetic fields each composed of a number of alternate poles, and at the same time impressing upon it tangential inertia of differing degrees in the consecutive magnetic fields. 9th. The process of separating iron or its crushed ore from impurities and assorting the separated products, consisting in passing the granulated mass of ore and gangue through consecutive magnetic field, impressing upon it tangential inertia differing in degree in the

successive fields, and separately collecting the portions which fail to pass through the respective fields. 10th. An ore separator comprising two or more magnetic fields, two or more non-magnetic screens moving in said fields, means for imparting different rates of speed to the screens, and guideways for feeding the ore to the screens successively, whereby different degrees of trajectorial momentum are imparted to the ore, for the purpose set forth.

No. 37,445. Saw Gummer, Setter and Cutter. (*Evideur, appareil pour donner la voie et découpoir pour scies.*)

Gilbert S. Strom, White Rock, Minnesota, U.S.A., 22nd September, 1891; 5 years.

Claim.—1st. A saw cutter and setter consisting of a center standard, having a series of radiating die-supports and a series of radiating tubular guides or sockets located above and coincident with the die-supports, the cutting and setting dies carried by the die-supports, and the reciprocating spring raised bars moving in the guides and carrying the cutting and setting tools or punches, substantially as described. 2nd. A saw setter and cutter consisting of a center standard having a series of radiating die-supports and tubular guides or sockets, and projecting below the die-supports to form a shank adapted to a vise or other support, and cutting and setting dies of the die-supports and the reciprocating spring raised bars moving in the guides and carrying the cutting and setting tools or punches, substantially as described. 3rd. A saw cutter and setter consisting of a vertical standard, having a series of radiating die-supports and a series of radiating tubular guides or sockets, the cutting and setting dies carried by the die-supports, the reciprocating spring raised bars moving in the guides and carrying the cutting and setting tools, and the adjustable and reversible gage-bar having a support common to two of the dies, whereby the gage bar can be moved and supported for conjoint operation with either of said dies, substantially as described. 4th. A saw cutter and setter consisting of a vertical standard, having a series of radiating die-supports and tubular guides, the cutting and setting dies carried by the die-supports, the reciprocating bars moving in the guides and carrying the cutting and setting tools or punches, and the detachable and reversible gage bar arranged on one die-support in rear of a die, and adapted to be removed, reversed and applied in rear of another die, substantially as described. 5th. The combination, with a die-support, having lateral studs, a setting die carried by the die-support, and a setting punch or tool of a saw supporting arm having an adjustable screw rest and provided with a yoke embracing the die-support, and in hooked engagement with the lateral studs, substantially as described.

No. 37,446. Manufacture of Draw Bars.

(*Fabrication des barres d'attelage.*)

John Green, William L. Holman, and John McCord, all of Renovo, Pennsylvania, U.S.A., 22nd September, 1891; 10 years.

Claim.—1st. The method of manufacturing draw bars, which consists in forming a billet severing the billet longitudinally intermediate its ends, separating the severed portions and forging the sides of the bars, then upsetting one end of the billet and forming a head thereon, and finally shaping the head in suitable dies. 2nd. The method of manufacturing draw bars, which consists in forming a billet thickened at one end, severing the billet longitudinally intermediate its ends, separating the billet and forging the side bars, then upsetting said end of the billet and forming a head thereon, shaping the head and blocking out lugs on both sides thereof, bending the lugs toward the face of the head and giving an initial bend to the head, and then shaping the head and its lugs into form, substantially as described.

No. 37,447. Thill Coupler. (*Armon de limonière.*)

Christopher Columbus Bradley, assignee of William Henry Hannan, both of Syracuse, New York, U. S. A., 22nd September, 1891; 5 years.

Claim.—1st. The combination, with the draft eye, composed of a fixed section and a movable section of a spring arm secured at one end and free at the other, a cam lever pivoted to the free end of said spring arm, and a tie attached to the cam lever outside of its fulcrum and connecting the cam lever with the movable section of the draft eye, whereby the spring arm exerts a constant pressure upon the movable section and also holds the cam lever yieldingly in a locked position, substantially as set forth. 2nd. The combination, with the axle of a draft eye, composed of a forwardly projecting fixed section and a movable section hinged to the front end of the fixed section, a spring arm secured to the axle and projecting forwardly therefrom, a cam lever hinged free front end of the spring arm, and a tie attached to the cam lever outside of its fulcrum and connecting the cam lever with the hinged section of the draft eye, substantially as set forth. 3rd. In combination with the axle clip coupling pin, fixed lower draft eye section b, and the upper eye section b^1, hinged to the front of the fixed section, the spring arm c, secured at one end to the clip tie, and extending from the rear thereof forward underneath the same, the cam lever d, hinged to the free end of said spring arm, and the bail e, connected to the cam lever and adapted to engage the rear end of the hinged eye section, substantially as set forth. 4th. The combination, with the front axle and thill iron of the clip tie C^1, elongated in the direction lengthwise of the axle and formed at the center of its length with the draft eye section b, axle clips C, C, secured to the two ends of said clip tie, the draft eye section b^1, hinged to the eye section b, the spring arm clamped between the central portion of the clip tie and extending from the rear of the clip tie underneath the same and forward therefrom, the cam lever d, hinged to the free end of said spring arm, and the bail e, connected to said cam lever and adapted to bear on top of the rear end of the hinged draft eye section, substantially as described and shown.

No. 37,448. Closing Device for Boxes.

(*Appareil de Fermeture de boîtes.*)

Albert Wacker, Nuremburg, Bavaria, German Empire, 22nd September, 1891; 5 years.

Claim.—1st. A casing for the reception of articles for transmission, consisting of two concentric cylinders a, b, of which the inner cylinder a, is introduced into cylinder b, by one open end, marked by this that out of both cylinders segments are taken of equal or different sizes, for the purpose of filling whilst the closing is effected by the turning round of one cylinder, substantially as described. 2nd. At that under 1, described casing, the application of a fixed or movable partition in cylinder a, for the purpose of using the casing as a measuring apparatus for goods in powder or grain and the connection of the measuring apparatus with the material vessel, substantially as described. 3rd. The application of casing described under 1 and 2, the inner cylinder of which is filled with fuel, the mantel segment covered with a wire grate, as burner, the flame of which may be regulated by adjusting both cylinders, substantially as described.

No. 37,449. Machine for Smithing Saws.

(*Machine pour forger les scies.*)

Noah Webster Mortorff, Erie, Pennsylvania, U. S. A., 22nd September, 1891; 5 years.

Claim.—1st. In a saw-smithing machine, the combination of the frame, the rollers, the upper one having bearings in an arm above held down by suitable means against a spring resistance, and a movable axis over which the center hole of the saw is placed, substantially as set forth. 2nd. In a saw-smithing machine, the combination of the frame, the rollers, and means to operate them, the movable carriage having the axis to hold the saw and screw shaft upon which the carriage is mounted, said carriage being provided with a two-part clamping nut adapted to engage the screw shaft, substantially as set forth. 3rd. In a saw-smithing machine, a frame, the rollers, the movable carriage for supporting the saw, and an axis having a headed end detachable in an open slot of said carriage, substantially as set forth. 4th. In a saw-smithing machine, the combination of the frame provided with an over-curving arm, a vertically sliding block in the end of said arm, a pivoted lever for adjusting said block, an idle roller having bearings in the base of said block, a roller to which power is applied beneath the other roller, and movable carriage upon which the saw is revolubly mounted, substantially as set forth. 5th. The combination of a frame having the upper and lower roller, one being vertically adjustable and the other adapted to have power applied thereto, and a detachable extension to the frame bearing a movable carriage upon which the saw is to be revolubly mounted, substantially as set forth. 6th. In a saw-smithing machine, the combination of the frame having an inclined surface, an anvil having an inclined base mounted thereon, and a handled screw for moving the anvil up and down the incline to adjust the height of the anvil, substantially as set forth. 7th. The combination of the frame, consisting of two separate bases having upwardly extending and over-curving integral arms, said parts being bolted together, two rollers between which the saw rotates having bearings in said frame, and the upper one having bearings in a block which has vertically adjustable bearings in the free end of the arm, substantially as set forth. 8th. The combination of a frame, the rollers and means to support and adjust them, an attachable extension to said frame, a screw-threaded shaft having bearings in said adjustable frame, a carriage carried by said screw shaft, a power shaft having bearings in the main frame, end to end with the screw shaft, and a coupling detachably attaching said shafts together, substantially as set forth.

No. 37,450. Manufacture of Composition Fabrics. (*Fabrication de tissumixte.*)

The Pantasote Leather Company, Passaic, New Jersey, assignee of Parker Richardson, Boston, Massachusetts, both in U.S.A., 22nd September, 1891; 5 years.

Claim.—1st. As a new article of manufacture, the embossed composition fabric herein described, the same consisting of the bottom sheet a, of fabric, of the layer b, of gum composition placed upon said fabric, said layer being sufficiently heavy to take up the embossed design of the fabric d, that is placed upon said composition layer b, before the same was embossed, and of the uppermost coating e, of gum composition, all arranged to have the embossing mainly on one side of the fabric, substantially as herein shown and described. 2nd. As a new article of manufacture, the embossed composition fabric herein described, the same consisting of the bottom sheet a, of fabric, of the layer b, of gum composition placed upon said fabric of the fabric d, placed upon said composition layer b, and of the uppermost layer e, of gum composition, all as herein shown and described. 3rd. The improved embossed fabric herein described, the same consisting of the embossed upper layers b, d, e, and of the unembossed bottom fabric a, the layer d, being of fabric, and the layers b and e, of gum composition, substantially as herein shown and described.

No. 37,451. Thrashing Machine.

(*Machine à battre.*)

Russell and Company, assignee of Thomas H. Russell, all of Massillon, Ohio, U.S.A., 22nd September, 1891; 5 years.

Claim.—1st. In a thrashing machine, the combination, with the thrashing cylinder, means for conveying the thrashed grain away from the cylinder, and a separating table, of a rotary distributing beater having diverging spiral wings, whereby the thrashed grain mingled with straw is distributed laterally over the separating table, substantially as set forth. 2nd. The combination, with a thrashing cylinder and a shaking table, of a rotary distributing beater having

diverging spiral wings, and located over the shaking table at the rear of the thrashing cylinder, whereby the thrashed grain and straw is simultaneously beaten and distributed laterally over the shaking table, substantially as set forth. 3rd. The combination, with a thrashing cylinder, and means for conveying the grain rearwardly from the cylinder, of a rotary distributing beater provided with sets of diverging spiral wings, the sets or pairs of diverging wings meeting centrally in wedge form, substantially as set forth.

No. 37,452. Machine for Cutting Screws.

(Coussinet à fileter.)

Henry Edward Coy, Toledo, Ohio, U. S. A., 22nd September, 1891 ; 5 years.

Claim.—1st. A screw cutting machine having the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to feed in the direction of the length of the bolt to be cut at a variable rate of speed, substantially as shown and described for the purpose specified. 2nd. In a screw cutting machine, the rotary toothed cutter and its supporting mechanism, substantially as described, in combination with the frame or cam having a face or faces adapted to give forward motion to such cutter at a variable rate of speed, substantially as shown and described for the purpose specified. 3rd. In a screw cutting machine, the cam or frame s, having face s^1, adapted to bring the cutter rapidly forward to the end of the bolt face s^2, adapted to cause the cutter to move slowly forward while the point on the screw is forming, and face s^3, adapted to cause the cutter to advance more rapidly during the remainder of the cut, substantially as shown and described for the purpose specified. 4th. In a screw cutting machine, the rotary toothed cutter and its carriage, in combination with cam or frame s, having rack t, and the train of gearing intermediate, the driving pulley of said machine and said rack, substantially as shown and described for the purpose specified. 5th. In a screw cutting machine, the rotary toothed cutter c, and its train of gearing intermediate said cutter and the driving pulley, in combination with the cam or frame s, and its train of gearing intermediate said cam or frame and the driving pulley of said machine, substantially as shown and described for the purpose specified. 6th. In a screw cutting machine the rotary cutter and its carriage, the cam or frame adapted to give forward motion to such cutter and a clutch in the train of gearing intermediate said cam or frame and the driving pulley of said machine, in combination with suitable tripping mechanism adapted to disengage said clutch when said cutter has completed its cut, whereby said carriage and cam or frame are permitted to return to their starting point, substantially as shown and described for the purpose specified. 7th. In a screw cutting machine, the rotary cutter and its carriage, the cam or frame adapted to give forward motion to said cutter and a clutch in the train of gearing actuating said cam or frame, in combination with a hand lever adapted to simultaneously start said cam or frame forward and to throw into gear said clutch, substantially as shown and described for the purpose specified. 8th. In a screw cutting machine, the rotary cutter c, and cam or frame s, in combination with bell crank lever v^4, adapted through adjustable connections, intermediate said lever and said cam or frame to throw into or out of gear a clutch in the train of gearing actuating said cam or frame, substantially as shown and described for the purpose specified. 9th. In a screw cutting machine, the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to advance toward and recede from bolt b, laterally the former n, and the mechanism intermediate said former and cutter, in combination with the cam or frame s, adapted by means of the mechanism, substantially as described, to impart forward motion to said cutter at a variable rate of speed, substantially as shown and described for the purpose specified. 10th. In a screw cutting machine, the rotary toothed cutter having in its driving gear a worm wheel, said cutter being adapted by means of the mechanism, substantially as described, to cut a thread of such lead that said cutter and said worm wheel may roll together, each upon its own screw as a pinion upon a fixed rack, substantially as shown and described for the purpose specified. 11th. In a screw cutting machine, the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to slip upon its bearings, substantially as shown and described for the purpose specified. 12th. In a screw cutting machine, the combination of the rotary toothed cutter c, with seat c^1, friction block c^2, adjusting nut c^3, and spring c^4, substantially as shown and described for the purpose specified. 13th. In a screw cutting machine, the rotary toothed cutter adapted by means of the mechanism, substantially as described, to slip upon its bearings and to cut a thread of substantially the same lead as the worm gear in its driving mechanism, substantially as shown and described for the purpose specified. 14th. In a screw cutting machine, the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to slip on its bearings and to cut a thread of the same lead as the lead of the worm gear in its driving mechanism, in combination with the cam or frame s, adapted by means of the mechanism, substantially as described, to give variable forward feed to said cutter, substantially as shown and described for the purpose specified. 15th. In a screw cutting machine, the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to slip on its bearings and to cut a thread uniform in its lead with the lead of the worm gear in its driving mechanism, in combination with the cam or frame s, adapted by means of the mechanism, substantially as described, to give a variable forward feed to said cutter and the former n, adapted by means of its conformation to give lateral motion to said cutter and suitable taper to the finished screw, substantially as shown and described for the purpose specified. 16th. In a screw cutting machine, the rotary toothed cutter c, in combination with worm gearing e, f, the worm f, having the same lead as the screw thread designed to be cut by said cutter, and said worm extending along its shaft as far as the screw is designed to be cut, substantially as shown and described for the purpose specified. 17th. In a screw cutting machine, the rotary toothed cutter c, and its carriage, in combination with the cam or frame s, adapted by means of the mechanism, substantially as described, to give a variable forward feed to said cutter and cord and weight p^1, adapted by means at the mechanism, substantially as described, to draw said carriage back to its starting point upon its release from the pull of said cam or frame, substantially as shown and described for the purpose specified. 18th. In a screw cutting machine, the rotary toothed cutter c, adapted by means of the mechanism, substantially as described, to slip on its bearins and to cut a thread of the same lead as the lead of its driving worm gear, in combination with pulley A, and the train of gearing intermediate, said pulley and said cutter spindle a, brace and guide block b^1, cam or frame s, having faces s^1, s^2 and s^3, and the train of gearing actuating said cam or frame, the tripping mechanism adapted by means of the mechanism, substantially as described, to release said frame from its said train of gearing lever x, adapted by means of the mechanism, substantially as described, to engage said frame with its train of gearing and cord and weight p^1, substantially as shown and described for the purpose specified.

No. 37,453. Type Writing Machine.

(Clavigraphe.)

The Trans-atlantic Machine Company, (assignee of Emery Manville Hamilton), all of New York, State of New York, U.S.A., 22nd September, 1891 ; 5 years.

Claim.—1st. In a type writing machine having a circular series of radially arranged vibratory type bars and a series of key levers fulcrumed at one side of the type bar circle, the combination therewith of an auxiliary lever fulcrumed outside the type bar circle, and intersecting and at such intersection pivotally connected to certain of the series of key levers, and a link or rod connecting said auxiliary lever to certain of the series of type bars in the segment of the circular series thereof adjacent to the key lever fulcrums, substantially as and for the purpose set forth. 2nd. In a type writing machine having a circular series of radially arranged vibratory type bars and a series of key levers fulcrumed in the machine at the rear side of the type bar circle, the combination therewith of an auxiliary lever fulcrumed outside the type bar circle and intersecting and at such intersection pivotally connected to certain of the series of key levers, and a link or rod connecting said auxiliary lever to certain of the series of type bars in the rear segment of the circular series thereof in the machine, substantially as and for the purpose set forth. 3rd. In a type writing machine having a circular series of radially arranged type bars, and a series of key levers fulcrumed at one side of said type bar circle, the combination therewith of an auxiliary lever fulcrumed outside said type bar circle and intersecting and at such intersection pivotally connected to certain of the series of key levers, and a link or rod rectangular to said auxiliary lever and connecting said lever to certain of the series of type bars in the segment of the circular series thereof adjacent to the type bar fulcrums, substantially as and for the purpose set forth. 4th. In a type writing machine having a circular series of radially arranged type bars and a series of key levers fulcrumed at one side of said type bar circle, the combination therewith of a link or rod connecting certain of the series of key levers to certain of the circular series of type bars in the segment of said series opposite to the type bar fulcrums, and an auxiliary lever fulcrumed outside the type bar circle and intersecting and at such intersection pivotally connected to certain of the series of key levers together with a link or rod connecting said auxiliary lever to certain of the series of type bars in the segment of the circular series thereof adjacent to the type bar fulcrums, substantially as and for the purpose set forth. 5th. In a type writing machine having a circular series of radially arranged vibratory type bars and a series of key levers fulcrumed at one side of the type bar circle, the combination therewith of a series of auxiliary levers fulcrumed outside the type bar circle and intersecting and at such intersection severally pivotally connected to key levers of the series thereof, and links or rods severally connecting the auxiliary levers respectively to type bars in the segment of the circular series thereof adjacent to the key lever fulcrums, substantially as and for the purpose set forth. 6th. In a type writing machine having a circular series of radially arranged vibratory type bars fulcrumed in a plane or planes horizontal in or parallel to the base of the machine, and a series of key levers fulcrumed at one side of said type bar circle and extending below the same in a plane, substantially parallel to the plane or planes of the type bar fulcrums, the combination therewith of a series of auxiliary levers fulcrumed outside the type bar circle and extending between and in a plane, substantially parallel to the planes of the type bar circle and key levers, and intersecting and at such intersection pivotally connected severally to certain of the key levers, and links or rods severally connecting said auxiliary to certain of the type bars in the segment of the circular series thereof adjacent to the key lever fulcrums, substantially as and for the purpose set forth. 7th. In a type writing machine having a circular series of radially arranged vibratory type bars, and a series of key levers fulcrumed at one side of the type bar circle, the combination therewith of a series of auxiliary levers fulcrumed outside said type bar circle and extending in parallel lines across, and at their intersection therewith pivotally connected respectively to key levers of the series thereof, and links or rods severally connecting said auxiliary levers to type bars in the segment of the circular series thereof adjacent to said key lever fulcrums, substantially as and for the purpose set forth. 8th. In a type writing machine having a circular series of radially arranged vibratory type bars, and a series of key levers fulcrumed at one side of the type bar circle, the combination therewith of links or rods connecting certain key levers of the series thereof to certain type bars of the said series thereof, and auxiliary levers fulcrumed outside said type bar circle and intersecting and at such intersection severally pivotally connected to certain other key levers of the series thereof, together with links or rods severally connecting said auxiliary levers to certain other of the type bars of the circular series thereof, substantially as and for the purpose set forth. 9th. In a type writing machine having a circular series of radially arranged type bars, and a series of key levers fulcrumed on a common bar at one side of said type bar circle, the combination therewith of a series of auxiliary levers fulcrumed on a common bar outside the type bar circle and extending across, and at their intersection there-

with pivotally connected respectively to key levers of the series thereof, and links or rods severally connecting said auxiliary levers to type bars in the segment of the circular series thereof adjacent to the common fulcrum bar of the key levers, substantially as and for the purpose set forth. 10th. In a type writing machine having a circular series of radially arranged type bars and a series of key levers fulcrumed in the machine on a common bar at the rear of said type bar circle and extending divergently forward in the machine below said type bar circle, the combination therewith of a series of auxiliary levers fulcrumed on a common bar outside said type bar circle and extending across key levers, of the series thereof intermediate said key lever series, and said type bar circle and links or rods severally connecting said auxiliary levers to type bars in the segment of the circular series thereof adjacent to the common fulcrum bar of the key levers together with a universal lever located adjacent to the said fulcrum bar of the key levers and having an arm adapted to engage all said key levers at a point near their fulcrums, substantially as and for the purpose set forth. 11th. In a type writing machine having a circular series of radially arranged type bars and a series of key levers fulcrumed at one side of said type bar circle, the combination therewith of a series of auxiliary levers fulcrumed outside said type bar circle and severally intersecting and at such intersection pivotally connected to certain of the key levers of the series thereof, together with links or rods severally connecting said auxiliary levers to type bars in the segment of the circular series thereof adjacent to said key lever fulcrums, said certain key levers and the auxiliary levers pivotally connected thereto being proportioned, fulcrumed and connected severally and respectively so that the sums of the lengths of each of said certain key levers from their respective fulcrums to their joints with their respective auxiliary levers and of the several auxiliary levers from their respective fulcrums to their joints with their respective links or rods connecting them severally to their type bars are substantially equal throughout the series of said levers, substantially as and for the purpose set forth. 12th. In a type writing machine, having a circular series of radially arranged type bars and a series of key levers fulcrumed at one side of said type bar circle, the combination therewith of links or rods severally connecting certain of said key levers directly to certain of said type bars, and a series of auxiliary levers fulcrumed outside said type bar circle and intersecting, and at such intersection severally pivotally connected to certain other of said key levers, together with links or rods severally connecting said auxiliary levers to certain other of the type bars, said certain key levers connected directly to certain of the type bars, and said certain other key levers and the auxiliary levers to which they are severally pivotally connected, and which auxiliary levers are severally connected to certain other of the type bars being proportioned, fulcrumed and severally connected, as described, so that the sums of the respective vibrations of the auxiliary levers and those of the key levers connected thereto will be equal relatively to the type bars to the respective vibrations of those of the key levers connected directly to type bars, substantially as and for the purpose set forth. 13th. In a type writing machine, the combination, with a series of vibratory type bars, of a series of key levers for actuating said type bars, each of said key levers having a shoulder b, on the under side of its fulcrum end, a bar B^2, common to all the key levers and to which they are fulcrumed by their said shoulders, and a series of springs b^1, having each an angularly bent heel and an angularly bent bifurcated opposite end by which they are severally seated in said bar and severally engage said key levers, substantially as and for the purpose set forth. 14th. In a type writing machine, the combination, with a top plate B^3, of brackets B^4, pendant from said plate a bar B^2, carried by said brackets and a series of key levers B, fulcrumed on said bar, substantially as and for the purposes set forth. 15th. In a type writing machine, the combination, with a top plate B^4, of brackets B^3, pendant from said plate a bar B^2, carried by said brackets, and brackets B^5, pendant from said plate, together with a series of key levers B, fulcrumed on said bar B^2, and a series of auxiliary levers C, fulcrumed on said brackets B^5, said auxiliary levers being severally pivotally connected to key levers of the series thereof, substantially as and for the purpose set forth. 16th. In a type writing machine, the combination, with the ink ribbon spools S, S^1, their respective shafts s, s^1, and ratchet wheels s^2, s^3, on said shafts respectively of bell crank levers T, T^1, an arm f^2, of each of which is pivotally jointed to a reciprocating rod B^4, and an arm f^4, of each of which is located at right angles to the plane of and engagesrespectively the spool ratchets and a bar W, having longitudinal movement and provided with projections w, adapted to severally alternately engage an arm f^4, of said bell crank levers, substantially as and for the purpose set forth. 17th. In a type writing machine, the combination, with a type bar support or bracket provided with an aligning face, and a type bar having a face which is opposed to and guided by said aligning face on said support of a conical or tapered pivotal bearing fixed rigidly to said support, by which said type bar is mounted to vibrate on said support or bracket, substantially as and for the purpose set forth. 18th. In a type writing machine, a vibratory type bar having a conical or tapered bearing, in combination with a conical or tapered pivot fixed rigidly to a support, and an aligning face on said support around said pivot parallel and opposed to a corresponding face on the type bar, substantially as and for the purpose set forth. 19th. In a type writing machine, the combination, with a series of radially arranged type bars, of a corresponding series of radial supports or brackets, each said support or bracket being provided with a conical or tapered bearing fixed rigidly therein by which the type bars are severally pivotally mounted on said supports or brackets, and said supports or brackets being adapted to be adjustable radially individually in the said series, substantially as and for the purpose set forth. 20th. In a type writing machine, the combination of a circular series of radially arranged type bar brackets, a corresponding series of radially arranged type bars severally pivoted to the respective brackets on the sides thereof, a rigid annulus upon which said brackets are seated at one edge, a flexible annular plate fitting to the opposite edge of said brackets throughout the series thereof, and screws passing through and adapted to bear upon said flexible plate and extending between the opposed faces of the adjacent brackets throughout the series thereof and seated in said rigid annulus, the sides of each two of said screws being in contact peripherally with the opposite faces of the brackets between which they are located and supporting them perpendicularly on their seat, substantially as and for the purpose set forth. 21st. In a type writing machine, the combination of a circular series of radially arranged type bars severally pivoted to the respective brackets on the sides thereof, a rigid annulus upon which said brackets are seated at one edge, a flexible annular plate fitting to the opposite edge of the brackets throughout the series thereof, screws passing through and adapted to bear upon said flexible plate and extending between the opposed faces of the adjacent brackets throughout the series thereof, and seated in said rigid annulus and sleeves on each said screws, the sides of each two of which sleeves being in contact peripherally with the opposite faces of the brackets between which they are located and thereby supporting said brackets perpendicularly on their seat, substantially as and for the purpose set forth. 22nd. In a type writing machine, the combination, with a type bar and a type bar support or bracket on which the type bar has pivotal bearing of a projection on the face of the support or bracket on which the type bar is hung and located in the path of the movement of said type bar, when it vibrates reversely on its bearing after vibrating in the direction to effect printing, substantially as set forth. 23rd. In a type writing machine, the combination of a rack f^{11}, the paper carriage spring, controlled dogs F^1, F^2, to engage and operate said rack, and the universal lever F^3, to actuate said dogs with a reciprocatory bar F^4, composed of two parts united endwise by a screw joint f^{10}, one of which parts is journaled at f^{20}, in the arm f^{12}, of said universal lever and the other of which parts engages said dogs, substantially as and for the purpose set forth. 24th. In a paper carriage for type writing machines, the combination of the rotary cylindrical platen G, with a pressure plate K, extending longitudinally and continuously on the platen, and having the plane portion k, and curved portion k^1, said plate being provided with the angular perforated end lug k^2, bent from said plate and pivotally engaging the hinge bar f, of the platen and with its spring arms k^3, projecting from the front edge of said plate at the ends thereof, and reaching forwardly to the carriage frame to and seated upon the front rod f^2, thereof, substantially as and for the purpose set forth. 25th. In a paper carriage for type writing machines, the combination, with the cylindrical platen G, journaled in the carriage frame hinged to the rod f, of a correspondingly curved pointer L reaching to the printing line on the platen and carried by a sleeve l mounted loosely on the hinge rod f, and provided with a peripheral slot l^2, together with a fixed pin l^1, adapted to engage said peripheral slot and prevent the movement of said sleeve longitudinally of said hinge rod, substantially as and for the purpose set forth. 26th. In a paper carriage for type writing machines, the combination with the cylindrical platen G journalled in the hinged yokes f^5, f^6, and a correspondingly curved pressure plate K hinged at its ends by lugs k^2 to the hinge rod of the platen, and extending longitudinally and continuously on the platen, and provided at its ends with the spring arms k^3, adapted to reach forwardly of the carriage frame to and be seated on the front rod thereof of a curved pointer L, carried by a peripherally slotted sleeve l mounted loosely od the hinge rod of the platen and on the rear or under side of said pressure plate, and a fixed pin l^1 to engage said slot, said pointer being adapted to reach below and around said pressure plate to the front edge thereof on the platen, substantially as and for the purpose set forth. 27th. In a paper carriage for type writing machines, the combination with the journalled platen provided at one end with a ratchet m, of the spring controlled lever M fulcrumed on the rod f of the carriage frame and extending to the front of the carriage, and provided with lugs m^1, having the guide slot m^2 to engage the axis of the platen together with the pawl m^3, pivoted on said lever, and adapted to engage the ratchet on the platen when the lever is vibrated downward, and the weighted heel m^5 on said pawl whereby the pawl is swung to position above the ratchet when the lever is vibrated upward, substantially as and for the purpose set forth. 28th. In a type writing machine, a spacing key pivotally jointed at each end thereof to its supporting spacing levers, substantially as and for the purpose set forth. 29th. In a type writing machine, the combination with the spacing key and its supporting levers of vertical extensions on said supporting levers respectively, and pivotal joints uniting said spacing key at each end thereof to said vertical extensions, substantially as and for the purpose set forth. 30th. In a type writing machine, the combination with the spacing key and its supporting levers, of vertical extensions on said supporting levers respectively and pivotally connected thereto, and pivotal joints uniting said spacing key at each end thereof to said vertical extensions, substantially as and for the purpose set forth. 31st. In a type writing machine, the combination with the spacing key and its supporting levers of plates secured to the spacing key at each end thereof, vertical extensions on said supporting levers, and socket pieces fitted on the said vertical extensions, said socket pieces being pivotally jointed to said plates respectively, substantially as and for the purpose set forth. 32nd. In a type writing machine, the combination of the spacing key and its supporting levers of slotted plates secured to the under face of the spacing key, vertical extensions on said supporting levers, and socket pieces detachably fitted on said vertical extensions, with their heads located in the slots in said plates on the key, together with pivot pins passing through said plates and socket heads respectively, substantially as and for the purpose set forth. 33rd. In a type writing machine, the combination with a finger key composed of an index letter bearing disk and a stem thereon, of a stem on the key lever, said stems being united endwise by a cylindrical end, on one stem seated in a cylindrical longitudinal socket in the other stem, said socket wall being longitudinally slotted, and said stem having a radial projection from the cylindrical part thereof fitting in said slot in the socket wall, substantially as and for the purpose set forth. 34th. In a type writing machine, the combination of a finger key composed of an index bearing disk provided with a stem having the longitudinal tubular socket, and a slot b^7 in said socket wall, with a cylindrical key lever stem b^6 adapted to fit to said socket, and having a radial projection b^8 extending from the cylindrical part thereof adapted to be seated in said slot, substantially as and for the pur-

pose set forth. 35th. In a type writing machine, the combination of a vibratory type bar having two or more printing types, with a platen adapted to be struck by said types successively on the same printing line in positions corresponding in number to the number of said types, which positions of the said platen are in a line with each other at a right angle to the plane of the printing face of a type when in the act of striking the platen, substantially as set forth. 36th. In a type writing machine, a platen adapted to vibrate to positions which are in a line with each other at a right angle to the plane of the printing face of a type in the machine when the type is in the act of striking the platen, substantially as set forth. 37th. In a type writing machine, the combination of a series of vibratory type bars, each having two or more printing types and adapted to print at a common printing point, with a platen adapted to vibrate in the direction substantially at a right angle to the plane or planes in which the type bars are fulcrumed, substantially as set forth. 38th. In a type writing machine, a vibratory type bar having two or more printing types, the planes of the printing faces of which are at an angle to each other, substantially as set forth. 39th. In a type writing machine, the combination of a platen with a vibratory type bar having two or more printing types, the planes of the printing faces of which are at an angle to one another, said type bar being adapted when vibrated to strike said platen with its longitudinal axis at other than a right angle to the longitudinal axis of the platen, and said types being located on said type bar with the centres of their printing faces in line radially on the type bar parallel to the plane which the type bar vibrates, substantially as set forth. 40th. In a type writing machine, the combination of a series of vibratory type bars, each having two or more printing types, the planes of the printing faces of which on their respective type bars are at an angle to each other, and the centre of the printing faces of which are in line radially on their respective type bars parallel to the planes through which the type bars vibrate respectively throughout the series, with a platen adapted to vibrate in the direction substantially at right angles to the plane or planes in which the type bars are fulcrumed, substantially as set forth.

No. 37,454. Method of Treating and Preparing Hops and Compounds Thereof. (*Méthode de traiter et préparer le houblon et ses composés.*)

Henry Ambrose Snelling, London, England, 22nd September, 1891; 5 years.

Claim.—1st. As a new article of manufacture, a compound of tea and hops, the latter prepared as hereinbefore described and added, in the proportion of from 3 to 10 parts to 100 parts of tea. 2nd. As a new article of manufacture, a compound of coffee and hops, the latter prepared as hereinbefore described and added, in the proportion of from 3 to 12 parts, to 100 parts of coffee. 3rd. Treating and preparing hops for the purpose of being blended with tea, coffee, cocoa, and the like, by withering, rolling and drying with or without fermentation, substantially as described and set forth in the foregoing specification. 4th. As a new article of manufacture, a compound of cocoa and hops, the latter prepared as hereinbefore described and added in the proportion of from 2 to 8 parts to 100 parts of cocoa.

No. 37,455. Process of Treating Fibres.

(*Procédé pour le traitement des tissus.*)

Walter R. Wade, Brooklyn, New York, U.S.A., 22nd September, 1891; 5 years.

Claim.—1st. The herein described process of degumming and preparing fibres consisting in boiling them in alkaline solution containing saponin. 2nd. The herein described process of degumming and preparing raw fibres consisting in boiling the raw fibre in an alkaline solution of potash or soda and saponin and subjecting the fibre thus boiled to the action of a bath of acidulated water. 3rd. The herein described process of degumming and preparing raw fibres consisting in dissolving the gum by the action of an alkaline solution of potash or soda containing saponin washing out the solution, and the dissolved gum subjecting the washed fibre to a bath of acidulated water and boiling the fibre in a slightly alkaline bath containing soft soap or other saponaceous material.

No. 37,456. Method of Coding and Transmitting Telegrams, etc. (*Méthode de codifier et transmettre les dépêches télégraphiques.*)

Samuel Joseph Mackie, 27 Chancery Lane, Middlesex, England, 22nd September, 1891; 5 years.

Claim.—1st. The construction and use of a system of code signs such as hereinbefore described, wherein selected letters are combined as prefixes or as what I term "centrefixes" or as affixes so as to indicate by the arbitrary use of a minimum number of letters formed in groups of small size any number of words or sentences that may be required for forming and transmitting messages. 2nd. The application of my four letter cypher forming messages corresponding to the registration of monograms and telegraphic addresses. 3rd. The use of the hereinbefore specified letter code or cypher system in connection with the electric telegraph or other electrical means or with semaphore or other mechanical means employed for the formation and transmission of messages and signals. 4th. The use of numerals, or numerals and letters combined in the manner and for the purposes hereinbefore specified.

No. 37,457. Medicine for Rheumatism.

(*Médecine pour le rhumatisme.*)

Elzear Laliberté, St. Jean d'Iberville, Quebec, Canada, 24th September, 1891; 5 years.

Résumé.—Une composition de matiére formée d'ecorses de bois de plomb de racines d'anis sauvage et de racines de salspareille dans les proportions et pour les fins indiquées.

No. 37,458. Hay Press. (*Presse à foin.*)

David Lostuller and Ira L. North, both of North's Landing, Indiana, U.S.A., 24th September, 1891; 5 years.

Claim.—1st. The combination, of the horizontally arranged wheel provided on its under side with curved cams extending from the rim or tire in the direction of the center, the laterally movable slides adapted to be engaged by said cams, the levers pivoted at one end to the frame, and their bodies engaged by said slides, the plunger connected to said levers, and the retracting spring, substantially as and for the purpose set forth. 2nd. The combination, with the wheel having the curved cams extending from the rim or tire in the direction of the center, of the laterally movable slides having anti-friction rollers to engage said cams, the levers pivoted at one end to the frame and their bodies engaged by said rollers, the plunger connected to said levers, and the retracting spring, substantially as set forth. 3rd. The combination, with the wheel having the curved cams extending from the rim or tire in the direction of the center, of the laterally movable slides engaged by said cams and having anti-friction rollers, the levers adapted to be engaged by the rollers on said slides, a spring interposed between said levers, the reciprocating plunger rod and the connecting rods or links, substantially as and for the purpose set forth. 4th. The combination, of the wheel having the curved cams extending from the rim in the direction of the center, the laterally movable slides mounted between suitable guides and having upwardly extending pins carrying anti-friction rollers engaging said cams, other anti-friction rollers in the inner ends of said slides, the levers mounted pivotally between said slides and engaged by the latter rollers, the spring interposed between said levers, the reciprocating plunger rod, and the connecting rods or links connecting the latter with the free ends of the levers, substantially as and for the purpose set forth.

No. 37,459. Transposing Piano Action and Key Board. (*Transpositeur de piano.*)

Alexander Marcy, Clinton, Ontario, Canada, 24th September, 1891; 5 years.

Claim.—1st. In transposing piano actions and key boards for over-strung piano scales, the combination of the connecting lifters or bearers in piano actions deflecting to the right and left so as to give them about equal spacing where they connect with the keys, as shown and described for the purposes set forth. 2nd. The combination in transposing piano actions and key boards for over-strung piano scales, of the connecting lifters or bearers deflecting to the right and left, the half octave, or less or surplus keys C, the octave or less of surplus keys C, the straight keys C, with the back end about equally spaced, the movable key guard G, the movable key frame A, the movable keys C, and the movable lifts F, as shown and described for the purposes set forth.

No. 37,460. Stratified Brick. (*Brique stratifiée.*)

Louis Adolph Steiger, San Jose, California, U.S.A., 24th September 1891; 5 years.

Claim.—A stratified brick composed of a stratum of bituminous rock and a stratum of concrete, the two materials being compressed together so as to form a solid body, substantially as shown and described.

No. 37,461. Driving Mechanism for Elevators. (*Mécanisme propulseur pour élévateurs.*)

Henry Johnston Reedy, Cincinnati, Ohio, U.S.A., 24th September, 1891; 5 years.

Claim.—1st. The combination, in an elevator, of the car or cab, the hoisting cable connecting with the car and with a counterbalance weight, the winding sheave or drum with which the hoisting cable engages at the bottom of the elevator shaft, a crank at each side of the hoisting sheave or drum on the shaft thereof, and an engine arranged at the lower end of the elevator shaft and directly connected with the cranks for rotating the hoisting sheave or drum, and thereby operating the hoisting cable of the elevator car, substantially as described. 2nd. The combination, with an elevator car, a hoisting cable connected with the car and with a counterbalance weight, a winding sheave engaging the cable at the bottom of the elevator shaft, and a shaft for the sheave, having a crank at each side thereof, of an oscillating duplex engine located at the bottom of the elevator shaft and having its piston rods connected, respectively, with the cranks for rotating the sheave and operating the hoisting cable, substantially as described.

No. 37,462. Car Coupler. (*Attelage de chars.*)

John Chesnut and Charles H. Wolfs, both of Martinsburg, West Virginia, U.S.A., 24th September, 1891; 5 years.

Claim.—1st. The combination in a car coupling, with a bell mouthed draw-head and a vertical plane coupling hook fitted therein to project therefrom, of a detachable vertical pivot-pin confining the coupling hook within the draw-head and locked to the hook to

turn with it, a spring actuating the hook to carry it to its normal position, a stop adapted to arrest it when under the stress of the spring it has reached said position, and a lever attached to the pin to turn it upon its axis, substantially in the manner and for the purpose herein set forth. 2nd. The combination in a car coupling, with the bell mouthed draw-head A and hollow draft-bar B, of the coupling hook C fitted within the draw-head to project out therefrom, the coupling pin E passing vertically through the upper and lower faces of the draw-head and interposed coupling hook, the lateral feather f on the coupling pin engaging a counterpart recess in the wall of the pin-hole in the hook, and a spring actuating the hook to carry it to its normal position, all substantially in the manner and for the purpose herein set forth.

No. 37,463. Corn Popper.

(*Appareil pour torréfier le blé-d'inde.*)

Andrew B. Olson, Kansas City, Missouri, U. S. A., 25th September, 1891; 5 years.

Claim.—1st. In a corn-popper, the circular heads B and B^1, an outer screen b, and coarser screen b^{III} joined at x, and coiled into a spiral between said heads, said heads mounted on axle F, cups C and D having openings c and d, and a valve d^1, which covers a perforation in cup D, substantially as described. 2nd. A corn-popper mounted on suitable axle F, which is provided with hook F^1, and brace f^1, said popper being composed of wire screens b and b^{III} joined together in a suitable manner at a point x, and bent into the shape of a spiral, so that when the popper revolves all the corn which is poured in is carried around said spiral and ejected through the exit E, allowing the unpopped grains to fall back through the large screen b^{III} onto the fine screen b, substantially as set forth and described. 3rd. A corn-popper having the fine screen b properly secured at a point x to a coarser screen b^{III}, said coarser screen being constructed so as it may be raised out of position, and secured by a suitable catch e when the device is ready for use for roasting larger products such as peanuts, chestnuts, etc., substantially as set forth and described.

No. 37,464. Coupling Bar for Wire Fence Rails. (*Barre d'accouplement pour rails de clôture en fil de fer.*)

Thomas B. Tollefson, Browntown, Wisconsin, U. S. A., 25th September, 1891; 5 years.

Claim.—The bar A, having the arms a, a^1, inside notches a^2, end hook a^3 in the plane of the bar and end hook a^4, at an angle to the bar, in combination with the two sections of a wire rail B, having the end loops b, b^2, as and for the purpose described.

No. 37,465. Feed Water Purifier.

(*Epurateur de l'eau d'alimentation.*)

Edward Sutton Titus and Frederick William Werner, both of Hempstead, New York, U.S.A., 25th September, 1891; 5 years.

Claim.—1st. The combination, with a steam boiler, of a chamber B, placed below the same and communicating therewith by a passage b, the chamber C, placed above said boiler, the pipe D, extending from the bottom of the chamber C, and communicating with the tank B, the pipe E, extending from the interior of the boiler through the chamber C, and thence to the tank B, and a tube which provides a passage e, from the boiler to the chamber C, concentric with the inner portion of the pipe E, the whole arranged substantially as and for the purpose herein set forth. 2nd. The combination, with a steam boiler, of the chamber B, placed below the same and communicating therewith by a passage b, the chamber C, placed above said boiler, the pipe D, extending from the bottom of the chamber C, and communicating with the chamber B, the pipe d, extending downward from the top of the tank into the interior thereof, the pipe E, extending from the interior of the boiler through the chamber C, and thence to the chamber B, and a tube which provides a passage e, from the boiler to the chamber C, concentric with the inner portion of the pipe E, the whole arranged substantially as and for the purpose herein set forth. 3rd. The combination of the pocket V, with the tank or chamber B, a suitable steam boiler chamber C, pipe d and E, and a pipe or tube providing a passage e, the whole arranged substantially as and for the purpose herein set forth.

No. 37,446. Steam Cooker. (*Cuisinière à vapeur.*)

John F. Stiegemeier, Byron, Ontario, Canada, 25th September, 1891; 5 years.

Claim.—1st. A steam cooking utensil, consisting of a steamer formed with a perforated bottom S, and a supplemental bottom D, formed with a central opening d^1, apertures d^2, and the flange d^3, in combination with the reservoir R, and drum C, substantially as shown and described and for the purpose specified. 2nd. A steam cooking utensil, consisting of one or more steamers S^1, S^2, S^3, provided with perforated bottoms S, and one of which has a supplemental bottom D, formed with a central opening d^1, with perforations d^2, and the flange d^3, in combination with a reservoir R, a drum C, formed with a hook c^3, a handle c^1, and knobs c^2, the hooks H, and the base B, formed with the central opening O, the perforations P, the pins a, and the flanges b^1 and b^2, substantially as shown and described and for the purpose specified.

No. 37,467. Still for Ammonia.

(*Alambic pour ammoniaque.*)

George Stroh and George Osius, both of Detroit, Michigan, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. In an apparatus for the distillation of ammonia from ammoniacal liquors, a decomposing chamber provided with a vertical series of inversely inclined metallic shelves, a well in the upper shelf for the reception of a decomposing agent, a steam supply into said chamber, and a column communicating into the top of the decomposing chamber and having a discharge pipe for liquor extending into said well, substantially as described. 2nd. In an apparatus for the distillation of ammonia from ammoniacal liquors, the decomposing chamber A, consisting of the lower section provided with the compartments B^1, B^2, and steam nozzle E, the superimposed series of upper sections each provided with an inclined metallic shelf having dams C^2, the well D, formed in the upper shelf, and the pipe E, for supplying said well with milk of lime, substantially as described. 3rd. In an apparatus for the distillation of ammonia from ammoniacal liquors, the column H, consisting of a vertical series of like sections, provided with the radial fans g, and partition h, forming a zigzag pathway on the bottom of each section, and the discharge pipe i, arranged alternately on opposite sides of the partition h, substantially as described. 4th. In an apparatus for the distillation of ammonia from ammoniacal liquors, the combination, with the main receiver of the supplementary receiver P, above said main receiver, the pipe O, leading from the main receiver into the supplementary receiver and provided with a check valve P^1, and the pipe Q, for emptying the contents of the receiver P, into the main receiver, substantially as described. 5th. In an apparatus for the distillation of ammonia from ammoniacal liquors, the combination of the decomposing chamber, the column communicating into the top of said decomposing chamber, the condenser connected by a pipe with the top of the column and provided with a tail pipe into the receiver, and a steam pipe connected into the tail pipe of the condenser for reversing the flow of steam through the apparatus to remove obstructions, substantially as described.

No. 37,468. Device for Securing Hose Bands. (*Appareil pour joindre les manchons de boyaux.*)

Charles L. Halstead, La Crosse, Wisconsin, U. S. A., 28th September, 1891; 5 years.

Claim.—1st. In a device for applying hose bands or wires, the combination of two levers pivoted to each other, the jaw of one of said levers having in its end two slots, and the jaw of the other of said levers having a flange-shaped end, substantially as described and for the purposes set forth. 2nd. In a device for securing hose bands, the combination of the two bent levers pivoted to each other, the jaw of one of said levers having a flange-shaped end and the spiral spring located between said levers, the jaw of the other said lever having in its end two slots, substantially as described and set forth.

No. 37,469. Drain Pipe and System of Drainage. (*Tuyau et système de drainage.*)

James Love Crittenden, San Francisco, California, U.S.A., 28th September, 1891; 5 years.

Claim.—The combination, with the discharge or other pipe leading from the sink or other vessel in a building, and a drain pipe exterior to the building discharging into a sewer or other proper receiver, of a funnel shaped hopper arranged exterior to the building and interposed between the end of said discharge pipe and mouth of drain pipe so as to leave free spaces for the escape of air or gases between the discharge pipe and hopper and between the hopper and drain pipe, substantially as and for the purpose herein specified.

No. 37,470. Secondary Batteries.

(*Batterie secondaire.*)

William Main, Brooklyn, New York, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. A secondary battery, having as an element a horizontal copper tray perforated or not as desired, containing granulated zinc or other suitable electro-positive material, mercury being present either in solution or as a part of the element. 2nd. In a secondary battery containing mercury, a plate or tray serving as a support made of rolled copper or equivalent material as above set forth. 3rd. In a secondary battery, a series of oxygen and hydrogen elements placed one above the other in a single cell, the hydrogen elements consisting of plates or trays containing amalgamated zinc and the oxygen elements being of any suitable construction. 4th. A secondary battery element, consisting of a plate or tray of material, substantially inert in the electrolyte and having a mass of finely divided zinc or other suitable metal conformed thereto and solidified thereon in the presence of mercury, substantially as described. 5th. As a pair of elements for a secondary battery, a horizontal mass of amalgamated zinc constituting the hydrogen element, and a laminated perforated plate of lead or other suitable material constituting the oxygen element, substantially as described. 6th. A secondary battery, the hydrogen pole piece whereof is composed in whole or in part of zinc, and wherein mercury is present either in solution or as a constituent of the hydrogen pole piece, the plates of which battery are in close proximity and horizontally placed, one or more of the hydrogen plates being immediately below an oxygen element, said horizontal disposition facilitating the even distribution of precipi-

tated metal upon the hydrogen plates and preventing the accretion upon the hydrogen plates of short circuiting formations, substantially as described. 7th. As a pair of elements for a secondary battery amalgamated zinc constituting the hydrogen element and a laminated perforated plate having one or more layers of carbon between the laminae constituting the oxygen element, substantially as described. 8th. As a pair of elements for a secondary battery amalgamated zinc constituting the hydrogen element and a laminated perforated plate having one or more layers of powdered graphite between the laminae constituting the oxygen element, substantially as described. 9th. A battery plate made up of several metallic laminae, one or more of which is coated with finely divided material conductive of electricity and inactive in the battery, substantially as described. 10th. A compound plate for secondary batteries made up of laminae fastened together and provided with perforations and having one or more layers of conductive material inactive in the battery held between the laminae, substantially as described. 11th. In a secondary battery, a compound plate, one or more of the layers of which are coated with graphite, substantially as set forth. 12th. In a laminated secondary battery element, two or more layers of material active in the battery, having between them a layer of carbonized cloth or other fabric, substantially as described. 13th. In a secondary battery cell, a set of negative elements electrically connected to each other, a set of positive elements connected to each other, and a rack removable from the cell for supporting the elements, substantially as described. 14th. In a battery cell, a set of negative elements, a set of positive elements, and a rack formed of vertical plates of insulating material connected by rods for supporting the elements, also of insulating material adapted to receive the set of negative elements on one side and the set of positive elements on the other side thereof, substantially as described. 15th. A secondary battery in which the elements are horizontally arranged, the oxygen elements being of lead and alternating with hydrogen elements of amalgamated zinc, substantially as described. 16th. A secondary battery in which the oxygen elements are of lead, horizontally placed and alternating with copper trays containing amalgamated zinc, substantially as described. 17th. As a pair of elements for a secondary battery, a horizontal lead plate constituting the oxygen element and amalgamated granulated zinc constituting the hydrogen element, substantially as described. 18th. In a secondary battery, a series of oxygen and hydrogen elements placed vertically one above the other in a single cell, the hydrogen elements consisting of copper plates or trays containing amalgamated zinc, substantially as described. 19th. In a secondary battery element, two or more layers of material active in the battery having between them a layer of carbonized fabric the compound plate so formed being perforated, substantially as described. 20th. A secondary battery, having as an element a horizontal copper tray containing granulated electro-positive material, substantially as described. 21st. A secondary battery element, consisting of a copper support, either horizontal or vertical, and amalgamated zinc supported thereby either mechanically attached thereto or electrically deposited thereon. 22nd. As a pair of elements for a secondary battery, a lead plate constituting the oxygen element, and a copper plate supporting amalgamated zinc constituting the hydrogen element, substantially as described. 23rd. As a pair of elements for a secondary battery, a horizontal lead plate constituting the oxygen element, and amalgamated zinc constituting the hydrogen element. 24th. As a pair of elements for a secondary battery, a horizontal lead plate constituting the oxygen element, and a copper tray containing amalgamated granulated zinc as the hydrogen element. 25th. As a pair of secondary battery elements, a horizontal lead plate constituting the oxygen element and a perforated copper tray containing amalgamated granulated zinc constituting the hydrogen element. 26th. In a secondary battery, an element consisting of amalgamated zinc and a horizontal metallic plate or tray serving as a support for the same, substantially as described. 27th. In a secondary battery, a series of oxygen and hydrogen elements placed vertically one above the other in a single cell, the hydrogen elements consisting of perforated copper plates or trays containing amalgamated granulated zinc as the hydrogen element. 28th. As a pair of secondary battery elements, a horizontal lead plate constituting the oxygen element and a perforated copper tray containing amalgamated granulated zinc constituting the hydrogen element. 29th. In a secondary battery, an element consisting of amalgamated zinc and a horizontal metallic plate or tray serving as a support for the same, substantially as described. 30th. In a secondary battery, a series of oxygen and hydrogen elements placed vertically one above the other in a single cell, the hydrogen elements consisting of perforated copper plates or trays containing amalgamated zinc, substantially as described. 31st. A secondary battery whereof the active material of the hydrogen pole-piece consists of mercury electrolytically combined with zinc, the electrolytic formation being more or less built up during charge and broken down during discharge, the plates whereof are in close proximity and horizontally placed, said horizontal disposition facilitating and promoting the even distribution of the electrolytic formation upon the hydrogen plates, and preventing the accretion thereon of short circulating formations, substantially as described. 32nd. As a pair of elements for a secondary battery, amalgamated zinc constituting the hydrogen element and a laminated perforated plate constituting the oxygen element, substantially as described. 33rd. A secondary battery cell having a pair of elements, one consisting of amalgamated granulated zinc and the other of a pole-piece supported above the same and at all points substantially equidistant therefrom, substantially as described. 34th. A compound plate for secondary batteries made up of laminae fastened together and having one or more layers of conductive material inactive in the battery held between the laminae, substantially as described. 35th. In a secondary battery, a perforated plate made up of laminae fastened together and having one or more layers of carbon held between them, substantially as described. 36th. A battery plate made up of alternate layers of oxydized lead and finely divided carbon, substantially as described. 37th. A secondary or storage battery element made up of pieces of material intended to be active in the battery in metallic state, said pieces being coated with finely divided carbon and fastened or suitably associated together to form the element, substantially as described.

No. 37,471. Method of Fastening Corks in Bottles. (*Méthode d'assujétir les bouchons de bouteille.*)

Anthony Philburn, Hall Court, Ashton-under-Lyne, Lancaster, England, 28th September, 1891; 5 years.

Claim.—1st. The general arrangement and combination of parts comprising the improved means for securing corks in bottles, substantially as described and shown. 2nd. As means for securing corks in bottles of the ordinary type, the combination of a cork *d*, with the cap or ring *a* (or staple *f*), bridle *b* and clip *c*, substantially as described and shown. 3rd. In a cork securing appliance of the indicated nature, the pin *e* and the spiral coil *h* employed as strengthening means and applied substantially as described and shown.

No. 37,472. Metallurgical Furnace.

(*Fourneaux métallurgiques.*)

Robert F. Nenninger, Newark, New Jersey, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. The combined smelting and reverberatory furnace constructed and arranged substantially as hereinbefore set forth. 2nd. The condenser for furnace fumes, etc., constructed and arranged, substantially as hereinbefore set forth. 3rd. The combined smelting and reverberatory furnace hereinbefore described, in combination with the condensing apparatus receiving fumes, etc., from said furnace, all substantially as set forth. 4th. The combination in a smelting furnace containing a hearth, a smelting chamber above said hearth, and a shell or shaft above said smelting chamber, said chamber having two air delivery openings disposed one higher than the other, substantially as described. 5th. A metallurgical furnace embodying a smelting stack or shaft, a reverberatory furnace and a hearth common to both. 6th. In combination, with a reverberatory furnace 4, having the hearth 3, the smelting shaft 1, 2, having air inlet openings at different heights, and means for forcing an air current through said openings downward through said shaft and over said hearth, substantially as described. 7th. A metallurgical furnace embodying a smelting stack or shaft, a reverberatory furnace and a hearth common to both, the said reverberatory furnace being provided with a means of introducing air below the charge on the hearth. 8th. A reverberatory furnace having a hearth or crucible and four openings communicating therewith, namely a metal tap, a matte tap, an air inlet and a slag tap, the said openings being disposed in the side of said hearth and one lower than the other in the order named, substantially as described. 9th. In combination, with a smelting furnace, an air supply conduit entering through the wall thereof, and a charging conduit terminating within said air conduit, substantially as described. 10th. In combination, with a smelting shaft 1, the air supply pipe 23, charge supply pipe 29, terminating within said air pipe, funnel 30, in pipe 29, conical valve 35, in said funnel opening, and rod 36, attached to said valve and enclosed in said pipe 29, substantially as described. 11th. The combination of the reverberatory furnace 4, having the hearth 3, the smelting shaft 1, 2, above and opening into said furnace, the air supply trunk 19, tuyeres 25, and communicating with the interior of said shaft at different elevations and with said air trunk 19, and the pipe 61, communicating with the interior of said reverberatory furnace and with said trunk 19, and terminating above the bottom of said hearth, substantially as described. 12th. In combination with a smelting shaft 1, the air supply pipe 22, and the charge supply pipe 29, terminating within said air pipe, substantially as described. 13th. The combination of the shaft A, having lateral openings, the surrounding annular chamber G, having an inlet opening in its outer wall for fumes to be condensed, and pipes communicating with a source of water supply and with the upper portions of said shaft A, and said chamber G, substantially as described.

No. 37,473. Process of and Apparatus for Purifying Water. (*Procédé et appareil pour purifier l'eau.*)

David Hanna, Ogdensburg, New York, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. The process of separating impurities from water which consists in injecting the water directly into the highly heated steam within the boiler, thereby vaporizing the feed water before it reaches the water in the boiler, separating the impurities from the water while being vaporized, collecting the impurities as they are separated from the water and conducting them outside of the boiler substantially as described. 2nd. In a water purifier for steam boilers, the combination of a feed water check valve arranged immediately next to the steam space of the boiler, and a collecting basin or vessel having an open top above high water mark within the boiler with a pipe leading from the vessel outside of the boiler, substantially as and for the purpose shown and set forth. 3rd. In a water purifier for steam boilers, the combination of a feed water check valve arranged immediately next to the steam space of the boiler provided with a spring, the tendency of which is to close such valve against the incoming feed water, and a collecting vessel or basin having an open top above high water mark within the boiler with a pipe leading from the vessel outside of the boiler, substantially as and for the purpose shown and set forth. 4th. In a water purifier for steam boilers, the combination of a feed water spring check valve, arranged immediately next to the steam space of the boiler, a collecting vessel or basin having an open top with inturned edges above the high water mark within the boiler, and a pipe leading from the collecting basin outside of the boiler, substantially as and for the purpose shown and set forth.

No. 37,474. Brush Hook.

(*Coupe-broussailles.*)

Judson G. Cofman, Prairie, Washington, U.S.A., 28th September, 1891; 5 years.

Claim.—The herein described brush hook, the same having a blade A, which ranges diagonally to the eye *a*, and having its cutting edge a^1, extending in a straight direction, substantially as and for the purpose specified.

No. 37,475. Harrow. (*Herse.*)

Peter Joseph Jacoby, Little York, Ontario, Canada, 28th September, 1891; 5 years.

Claim.—1st. In a harrow, the teeth A, provided with bent upper ends a^1, the sockets B, for receiving the teeth, and the U-shaped bolts G, for securing the teeth in the sockets and supporting the sockets in the frame, as specified. 2nd. In a harrow, the teeth A, provided with bent upper ends a^1, and notches b^1, the sockets B, for receiving the teeth, and the U-shaped bolts G, arranged as and for the purpose specified. 3rd. In a harrow, the teeth A, provided with bent upper ends a^1, and notches b^1, the sockets B, for receiving the teeth, and having grooves *b*, to receive the U-shaped bolts G, as and for the purpose specified.

No. 37,476. Bicycle. (*Bicycle.*)

Thomas Jefferson Thompson, Greystones, Wicklow, Ireland, 28th September, 1891; 5 years.

Claim.—1st. In a bicycle, the combination, with the rigid frame which prevents the distance between the seat and the treadle axle from varying, of the spring supported front wheel, and the spring supported rear wheel having its axle constrained to vibrate in a curve concentric with the said treadle axle, substantially as and for the purpose set forth. 2nd. In a bicycle, the combination, with the rigid frame which prevents the distance between the seat and the treadle axle from varying, of the rear wheel, the fork supporting the rear wheel, and constraining it to vibrate in a curve concentric with the treadle axle, and one or more springs supporting the said rear wheel and its fork, substantially as and for the purpose set forth. 3rd. In a bicycle, the combination, with the steering fork, of one or more springs secured to the said fork, the sliding fork D, connected to the said spring or springs, and the front wheel journaled in the said fork D, substantially as and for the purpose set forth. 4th. The combination, with the ends C, of the steering fork, of the ends D^1, of the fork D, sliding through holes in the said ends C, packing rings encircling the ends D^1, and screw threaded nuts for compressing the said rings in chambers in the ends C, and causing them to bear against the ends D^1, substantially as and for the purpose set forth. 5th. The combination, with the frame G, of the spring I, secured thereto, the fork secured to the said spring and provided with ends H^1, the guides pivoted to the said frame for the ends H^1, to slide in, and the rear wheel of the bicycle journaled between the said fork and sliding with it, substantially as and for the purpose set forth.

No. 37,477. Pencil. (*Crayon.*)

American Lead Pencil Company, assignees of Enoch Wood Perry, Jr., all of New York City, New York, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. A pencil or crayon, consisting of an abrading body material and a pyroxyline compound, substantially as described. 2nd. A pencil or crayon, consisting of an abrading body material, a pyroxyline compound and an oil or other substance; substantially as described. 3rd. A pencil or crayon, consisting of an abrading body material, a pyroxyline compound and a coloring matter, substantially as described. 4th. A pencil or crayon, consisting of an abrading body material, a pyroxyline compound, and oil and a coloring matter, substantially as described.

No. 37,478. Bob Sleigh. (*Traineau-jumeau.*)

Cyvetous Nichols, Helena, Montana, U.S.A., 28th September, 1891; 5 years.

Claim.—1st. The combination, with the runners and the knees, each provided on its upper face with a stud *c*, of the beam C, apertured near its ends for the studs, and the standards bolted to the lower face of the beam and provided at their upper ends with recesses to receive the upper parts of the knees, and forked at their lower ends to embrace the runners, substantially as set forth. 2nd. In a bob sleigh, a double standard *e*, comprising the bar e^2, having offsets e^1, e^1, near its ends, and the bars f^1, f^1, each secured at its ends to the bar e^2, at opposite sides of the respective offsets, and bent upward between their ends to form the forks *f*, *f*, substantially as set forth. 3rd. The combination, with the runners A, A, recessed in both sides, as at A^1, A^1, and provided with knees B, each having a stud *c*, on its upper face, of the beam C, having apertures for the said studs, and the standards bolted at their upper ends to the beam and provided with recesses e^1, e^1, at their upper ends, and forked at their lower ends, the lower forked ends entering the recesses A_1, flush with the sides thereof, substantially as set forth.

No. 37,479. Game Board. (*Table de jeu.*)

Clement E. Pepler, Toronto, Ontario, Canada, 28th September, 1891; 5 years.

Claim.—A game board, in combination with the wickets A, A, and bats B, B, and having the depressions *d*, *d*, and divisions of boar H, H, H, H, and K, K, K, K, and *g*, *g*, *g*, *g*, as shown and for the purpose herein set forth.

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

2270. GEORGE HENRY WILKES, 2nd five years of No. 24,874, from the 3rd day of September, 1891. Improvements on Combined Drill and Bit Shanks and Holders, 1st September, 1891.

2271. ZEBULON AYTON LASH, 2nd five years of No. 24,927, from the 10th day of September, 1891. Improvements in Letter Copying Machines, 3rd September, 1891.

2272. GEDEON DESJARDINS, 2nd five years of No. 24,869, from the 3rd day of September, 1891. Improvements in Saw Log Sleighs, 3rd September, 1891.

2273. EUGENE HERMITE, 2nd and 3rd five years of No. 24,910, from the 8th day of September, 1891. Improvements on Bleaching and Apparatus therefor, 3rd September, 1891.

2274. CHARLES LA DOW, 2nd five years of No. 24,920, from the 10th day of September, 1891. Improvements in Spring Tooth Harrows, 3rd September, 1891.

2275. GUSTAVE FRANCOIS DOSMOND and FERDINAND ROZÉS, 2nd and 3rd five years of No. 37,155, from the 13th day of August, 1891. Improvement in the Art of Preserving Meat Fresh, 3rd September, 1891.

2276. J. P. MARTYN, 2nd five years of No. 24,883, from the 4th day of September, 1891. Improvements in Separating Attachments for Fanning Mills and Threshing Machines, 3rd September, 1891.

2277. JOHN MURPHY, 2nd five years of No. 25,876, from the 28th day of January, 1891. Improvements in the Manufacture of Rubber Belting, 3rd September, 1891.

2278. HARRIE POINTZ DAVIES, 2nd five years of No. 25,017, from the 25th day of September, 1891. Improvements in Folding Beds, 3rd September, 1891.

2279. JOSEPH JOHN BYERS, 2nd five years of No. 24,881, from the 4th day of September, 1891. Improvements in Waterproof and other Garments, 4th September, 1891.

2280. JOHN DRAPER, 2nd five years of No. 24,907, from the 7th day of September, 1891. Improvements in Gang Plows, 5th September, 1891.

2281. TAYLOR, SCOTT & CO., (assignees), 2nd five years of No. 25,202, from the 15th day of October, 1891. Improvements in Perforated Wash Boards, 5th September, 1891.

2282. HATTIE A. KELLOGG, 2nd five years of No. 2 ,956, from the 13th day of September, 1891. Improvements in Machines for Manufacturing Seamless Tubes and other Hollow Cylindrical Articles, 9th September, 1891.

2283. CHARLES G. SHEPARD and WALTER J. SHEPARD, 2nd five years of No. 24,997, from the 23rd day of September, 1891. Improvements in Stove Pipe Dampers, 9th September, 1891.

2284. GEORGE BLAIR, 3rd five years of No. 13,494, from the 13th day of September, 1891. Improvements in Stove Pipe Collars, 9th September, 1891.

2285. JAMES THOMAS HALL, 2nd five years of No. 25,046, from the 13th day of September, 1891. Improvements on Cattle Guards, 9th September, 1891.

2286. GEORGE STRONG, 2nd five years of No. 24,974, from the 21st day of September, 1891. Improvements in Adjustable Carriages for Saw Mills, 9th September, 1891.

2287. PERCIVAL EVERITT, 3rd five years of No. 24,515, from the 17th day of July, 1891. Improvements in Weighing Machines, 10th September, 1891.

2288. THE HERBRAND COMPANY, (assignees), 2nd five years of No. 25,007, from the 24th day of September, 1891. Improvements in Running Gears for Vehicles, 10th September, 1891.

2289. AUGUST HEINE, 2nd five years of No. 24,937, from the 11th day of September, 1891. Improvements in Flour Bolts, 10th September, 1891.

2290. J. W. TAYLOR, 2nd five years of No. 24,967, from the 16th day of September, 1891. Improvements in Folding Tables, 12th September, 1891.

2291. MARY E. HALL, 2nd five years of No. 25,300, from the 30th day of October, 1891. Improvements in Hay Carriers, 14th September, 1891.

2292. BENJAMIN DICKINSON, 2nd five years of No. 25,020, from the 25th day of September, 1891. Improvements on Screw Propellers, 15th September, 1891.

2293. LOUIS COTÉ, 2nd and 3rd five years of No. 35,604, from the 11th day of December, 1895. Improvements in Heel Stiffener Machines, 16th September, 1891.

2294. WILLIAM B. DUNNING, 2nd five years of No. 25,005, from the 24th day of September, 1891. Improvements in Base Burning Stoves for Steam Heating Boilers, 16th September, 1891.

2295. JOHN G. SIBBALD, 2nd five years of No. 25,018, from the 25th day of September, 1891. Improvements in the Art of and Machinery for Dressing or Dressing and Hardening the Surface of Car Wheels and other Metallic Bodies, and in Car Wheels having a Dressed, or Dressed and Hardened Surface, 17th September, 1891.

2296. EDWARD LAWSON FENERTY, 2nd five years of No. 25,002, from the 24th day of September, 1891. Improvements in the Manufacture of Shovels, 17th September, 1891.

2297. PHILIP KEARNEY DUMARESQ, 2nd five years of No. 24,975, from the 21st day of September, 1891. Improved Process for Purifying and Preparing Gypsum or Sulphate of Lime, 18th September, 1891.

2298. HENRY CLAY CROCKER, 3rd five years of No. 13,709, from the 17th day of November, 1891. Improvements in Hermetically Sealed Paper Packages, 19th September, 1891.

2299. ROBERT BROSSE and FRANZ WOLTERS, 2nd five years of No. 25,000, from the 24th day of September, 1891. Improvements in Hydraulic and other Cements, 21st September, 1891.

2300. ALEXANDER ROBERTSON, 2nd five years of No. 24,977, from the 21st day of September, 1891. Improvements in Hoisting Machines, 21st September, 1891.

2301. RICHARD MOTT WANZER, 2nd five years of No. 24,994, from the 23rd day of September, 1891. Improvements in Kerosine Lamps Without Chimneys, 22nd September, 1891.

2302. JOHN LEE HILL, 2nd five years of No. 25,059, from the 30th day of September, 1891. Improvements on Threshing Machines, 22nd September, 1891.

2303. EDWARD NASSAU HENEY, 2nd five years of No. 24,999, from the 23rd day of September, 1891. Improvements in Horse Blankets, 23rd September, 1891.

2304. HORACE HENRY CHARLES SINTZENICH, JOHN LAMB and ANDREW THORNTON TODD, 2nd five years of No. 25,419, from the 25th day of November, 1891. Improved Railway Rail Chair, 23rd September, 1891.

2305. GEORGE SAMUEL HANES and ALEXANDER SHAVER, 2nd five years of No. 25,047, from the 30th day of September, 1891. Improvements on Fire Escape Ladders, 25th September, 1891.

2306. THOMAS J. BROWN, 2nd five years of No. 35,085, from the 1st day of October, 1895. Improvements on Subsoilers and Bush Pullers, 26th September, 1891.

2307. F. ALDEN HILL, 2nd five years of No. 25,023, from the 27th day of September, 1895. Improvements in Guns and Projectiles for Throwing Life Saving Lines, 26th September, 1891.

2308. GEORGE SAMUEL HANES, 2nd five years of No. 25,035, from the 29th day of September, 1891. Improved Steam Washer and Bleacher, 29th September, 1891.

SEPTEMBER LIST OF TRADE MARKS.

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4122. THE BRANDON MANUFACTURING COMPANY, LIMITED, of Toronto, Ont. Washboards, 3rd September, 1891.

4123. B. GOLDSTEIN & CO., of Montreal, Que. Cigars, Cigarettes and Tobaccos, 5th September, 1891.

4124. LOUIS OVIDE GROTHÉ, of Montreal, Que. Cigars, 5th September, 1891.

4125. ROBERT WATSON and THOMAS WATSON, of Toronto, Ont. Licorice Confectionery, 7th September, 1891.

4126. TASSÉ, WOOD & CO, of Montreal, Que. Cigars, 7th September, 1891.

4127. E. T. DANIELS & CO., of 17 and 18 St. Dunstan's Hill, London, England. Tea, 8th September, 1891.

4128. GEORGE T. TUCKETT, of Hamilton, Ont. Tobacco in Plugs or Packages, 9th September, 1891.

4129. GEORGE T. TUCKETT, of Hamilton, Ont. Cut Tobacco, 9th September, 1891.

4130. JUNIUS ADRIAN THOMAS CATON, of Victoria, B. C. Tobacco Pipes, Cigar and Cigarette Holders, made of clay, wood, meerschaum, or any other material, 9th September, 1891.

4131. WILLIAM THOMSON SMITH, THOMAS HENDERSON SMITH, and WILLIAM STEWART SMITH, of Galt, Ont. Automatic figures representing nearly all the trades and professions, 10th September, 1891.

4132. M. J. PENNINGTON, of Montreal, Que. Cigars and Cigarettes, 12th September, 1891.

4133. WILLIAM LOWRY DORAN, of Niagara Falls, Ont. Suspenders, 18th September, 1891.

4134. SERAPHIN LACHANCE, de Montréal, Qué. Preparation Medicinale, 23rd September, 1891.

4135. JOHN FORBES, of Halifax, N. S. Cutlery, 25th September, 1891.

4136. 4137. 4138. 4139. 4140. 4141. 4142. 4143. 4144. 4145. 4146. 4147. J. & P. COATS, L'D, of Paisley, Scotland. Sewing and Crotchet Cotton, 25th September, 1891.

4148. MARIE GABRIELLE WILLERMET, de Montréal, Qué. Composé Medicinal, 25th Septembre, 1891.

4149. D. GOFF & SONS, of Pawtucket, Rhode Island, U.S.A. Braid, 28th September, 1891.

4150. FELIX CORNU, of Montreal, Que. Cough Remedy, 28th September, 1891.

4151. 4152. 4153. JOSEPH SIMON, Paris, France. Parfumerie, 28 Septembre, 1891.

4154. NAVIGENS MAILHOT, de Trois Rivières, Qué. Cigares, 28 Septembre, 1891.

4155. 4156. ALFRED NICHOLLS, of New York, N. Y., U.S.A. General Trade Marks, 30th September, 1891.

4157. GEORGE RUDOLF MYLIUS, of Berlin, Waterloo Co., Ont. Toilet Preparation used as a Hair Restorative, 30th September, 1891.

4158. GEORGE RUDOLF MYLIUS, of Berlin, Waterloo Co., Ont. Toilet Preparation for effectually removing superfluous hair, 30th September, 1891.

4159. GEORGE RUDOLF MYLIUS, of Berlin, Waterloo Co., Ont. Toilet Preparation for Beautifying the Complexion, 30th September, 1891.

4160. THE RENDROCK POWDER COMPANY, of New York, N.Y., U.S.A. Blasting and Explosive Material, and the component parts thereof, 30th September, 1891.

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6069. THE CANADIAN ALBUM: MEN OF CANADA, or SUCCESS BY EXAMPLE. Part 3. Vol. I. Edited by Rev. Wm. Cochrane, D.D. Thomas S. Linscott, Brantford, Ont., 1st September, 1891.

6070. CANADIANA. Vol. II. William John White, Montreal, Que., 4th September, 1891.

6071. A NEW GRAMMAR OF THE ENGLISH TONGUE. Part I. With Exercises by J. M. D. Meiklejohn, M.A.

6072. A SHORT GRAMMAR OF THE ENGLISH TONGUE. With Exercises, by J. M. D. Meiklejohn, M.A.

6073. LIVES OF THE AUTHORS, VOCABULARY, NOTES AND COMPOSITION EXERCISES, re "La Perle Noire" by Victorien Sardou, and "Le Voyage autour de mă Chambre," by Xavier de Maistre. Edited by J. Squair, B.A., and J. J. McGillivray, Ph. D.

6074. GRAMMAR FOR COMMON SCHOOLS, by B. F. Tweed, A.M.

W. J. Gage & Co., Toronto, Ont., 5th September, 1891.

6075. PICTURE OF SIR JOHN A. MACDONALD, signed W. BENGOUGH, 1891, as per application. David Morton & Sons, Hamilton, Ont., 7th September, 1891.

6076. THE TABULATED PHONETIC ALPHABET, by Caleb Platt Simpson, Leamington, Ont., 7th September, 1891.

6077. LATIN FORMULÆ AND RULES FOR GENDER. W. S. Jackson, Toronto, Ont., 7th September, 1891.

6078. THE LIFE AND CAREER OF THE RIGHT HONOURABLE SIR JOHN A. MACDONALD, by G. Mercer Adam. The Rose Publishing Co., Toronto, Ont., 7th September, 1891.

6079. CLAIR DE LUNE, (Moonlight.) Romance pour Piano par Francis Thomé.

6080. DO NOT THINK ME OVER BOLD. Song from "The Nautch Girl, or The Rajah of Chutneypore." Words by Frank Desprez. Music by Edward Solomon. Chappell & Co., London, England, 8th September, 1891.

6081. THE DEAR HOME-LAND. Song. Words by Clifton Bingham. Music by Walter Slaughter.

6082. FAIR ITALY VALSE, by "Aigrette."

J. B. Cramer & Co., London, England, 8th September, 1891.

6083. DOLCE SPERANZA. Piano Solo, by F. J. Hatton.

6084. JEANNETTE VALSE. Arranged by Frederic Forest.

6085. MY HEART'S DELIGHT. Polka Elegante. Arranged by Frederic Forest.

6086. O SALUTARIS HOSTIA. Song. Words by A. Horspool. Music by Leonard Kane.

6087. RUSTIC DANCE. Arranged by Frederic Forest.

6088. REVE d'AMOUR VALSE. Arranged by Frederic Forest.

I. Suckling & Sons, Toronto, Ont., 8th September, 1891.

6089. THE WONDERFUL STANLEY IN AFRICA MAZE PUZZLE. Ira Cornwall, St. John, N. B., 9th September, 1891.

6090. DIX ANS AU CANADA: DE 1840 A 1850. Histoire de l'etablissement du Gouvernement Responsable, par A. Gerin-Lajoie. Madame veuve A. Gerin-Lajoie, Montreal, Qué, 9 Septembre, 1891.

6091. ANNOTATED EXAMINATION BOOK-KEEPING BLANKS, specially prepared for use with "McLean's High School Book-keeping." The Copp, Clark Co., L'd., Toronto, Ont., 10th September, 1891.

6092. AND THIS IS THE ROYAL DIADEM. Song from "The Nautch Girl, or The Rajah of Chutneypore." Words by George Dance. Music by Edward Solomon. Chappell & Co., London, England, 11th September, 1891.

6093. LANDMARKS OF HISTORY, by William Johnston, M.A., L.L.B., Athens, Ont., 14th September, 1891.

6094. PETIT MANUEL d'AGRICULTURE, d'HORTICULTURE ET d'ARBORICULTURE, par Hubert La Rue. Alphonsine P. La Rue, Executrice Testamentaire de la Succession de feu F. A. H. La Rue, Québec, Qué., 14 Septembre, 1891.

6095. SHELDRAKE'S FIRST SPELLER. Spatham Sheldrake, Lakefield, Ont., 16th September, 1891.

6096. THE COLORED CADETS PATROL MARCH. (For the Military Schottische). Arranged from American Melodies for the Piano, by Hedley Massey. I. Suckling & Sons, Toronto, Ont., 17th September, 1891.

6097. ITALIA. Song. Words by Clifton Bingham. Music by H. Trotere. J. B. Cramer & Co., London, England, 17th September, 1891.

6098. COMMERCE: COURS ELEMENTAIRE, par F. T. D. M.-S. Frère Marie Sigebert, Roxton Falls, Qué., 17 Septembre, 1891.

6099. LE VERBE EN QUATRE TABLEAUX SYNOPTIQUES. Contenant tous les Verbes Reguliers et Irreguliers, conjugués d'après les Regles de la Formation des Temps, par H. Marion. C. O. Beauchemin & Fils, Montréal, Qué., 18 Septembre, 1891.

6100. THE EGYPTIAN DREAM BOOK. Thomas Milburn & Co., Toronto, Ont., 18th September, 1891.

6101. TARANTELLE, pour Piano, par Paul Sohmer. I. Suckling & Sons, Toronto, Ont., 19th September, 1891.

6102. } 6103. } 6104. } Photographs. HON. WILFRID LAURIER. { Marked A " B " C

6105. Photographic Group of THE LIBERAL MEMBERS OF THE HOUSE OF COMMONS OF CANADA, 1891.
Samuel James Jarvis, Ottawa, Ont., 21st September, 1891.

6106. OLIVE LANCERS, for Piano, by Chas. Bohner.
6107. THE CLASSIC CITY POLKA, for Piano, by Mamie Trow,
Whaley, Royce & Co., Toronto, Ont., 23rd September, 1891.

6108. GOSPEL HYMNS, NO. 6, by Ira D. Sankey, James McGranahan and Geo. C. Stebbins. The Copp, Clark Co., L'd., Toronto, Ont., 23rd September, 1891.

6109. THE BOTANICAL COLLECTOR'S GUIDE, by D. P. Penhallow, B. Sc., F.R.S.C. E. M. Renouf, Montreal, Que.. 23rd September, 1891.

6110. THE CENT STAMP SAVINGS LIFE INCOME INDEMNITY GUARANTEE AND AGENCY SYSTEM OF THE LIFE BANK REDEMPTION FUND. (Pamphlet). Geo. Tomkins, Toronto, Ont., 23rd September, 1891.

6111. POLKA POLONAISE. (New Dance.) Music and Dance by Prof. J. F. Davis, Toronto, Ont., 23rd September, 1891.

6112. SOLDIERS OF LIBERTY. Story which is now being preliminarily published in separate articles in "The Household Companion," Toronto, Ont. (Temporary Copyright). Emily Weaver, Toronto, Ont., 23rd September, 1891.

6113. CATHOLIC SCHOOL HISTORY OF ENGLAND, by A Catholic Teacher. (Dominion Catholic Series).
6114. SADLIER'S DOMINION FOURTH READER. Revised and Enlarged by A Catholic Teacher. (Dominion Catholic Series).
James A. Sadlier, Montreal, Que., 25th September, 1891.

6115. LES LARMES. Paroles imitees de St. Augustin, par P. Juillerot. Musique par Georges Hébert, Québec, Qué., 26th September, 1891.

6116. BUSINESS MEN'S JUBILEE OR CARNIVAL, in Prose, Rhyme and Jingle, by Mrs. V. S. Patterson, London, Ont., 28th September, 1891.

6117. OUTLINE MAP OF THE CITY OF WINNIPEG AND PART OF THE TOWN OF ST. BONIFACE, MANITOBA. George McPhillips, Windsor, Ont. Frank and Robert Charles McPhillips, both of Winnipeg, Man., 29th September, 1891.

6118. TABLES OF THE GERMAN DECLENSIONS AND THE RULES GOVERNING THEM, by Albert Drenge, Ottawa, Ont., 29th September, 1891.

THE

CANADIAN PATENT OFFICE RECORD

ILLUSTRATIONS.

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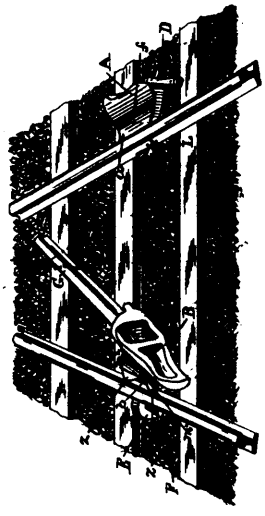
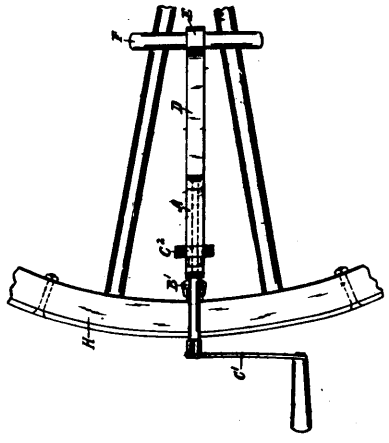
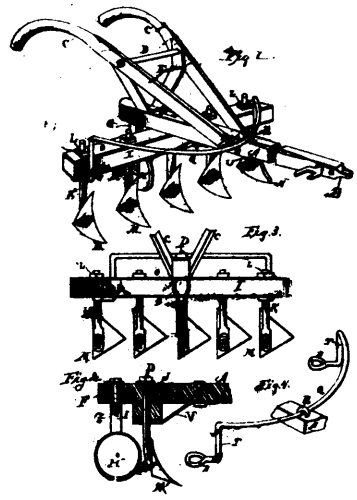


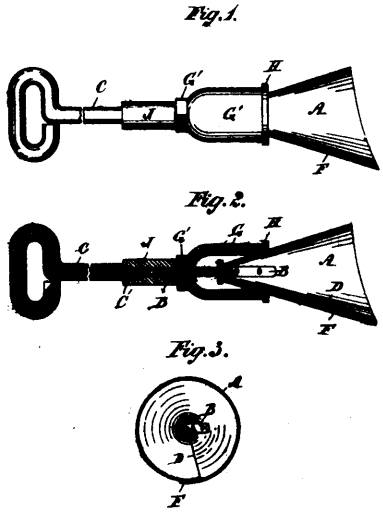
37250 Norwood's Car Replacer.



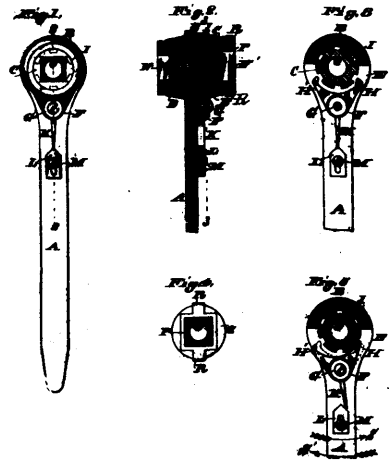
37251 Ross' Wrench for Tire Bolts.



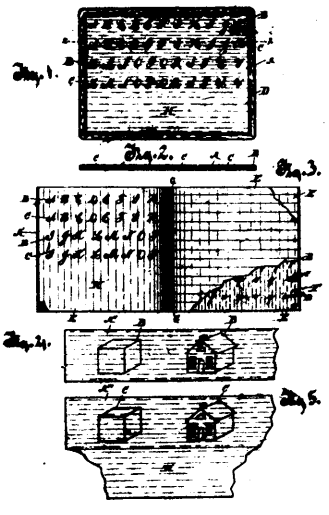
37252 Westmoreland and Eady's Cultivator and Harrow.



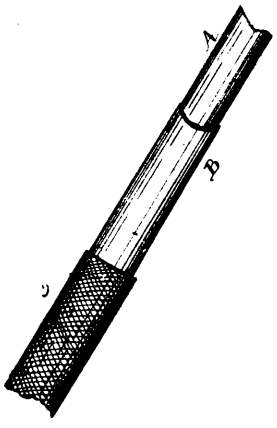
37253 Jeeves' Scraper for Tubes.



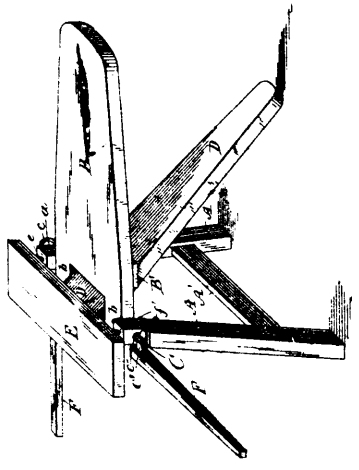
37254 Fosburg and Milligan's Nut Wrench.



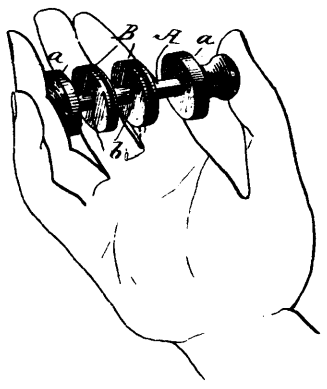
37255 Ewing's Device for Teaching the Arts of Writing and Drawing.



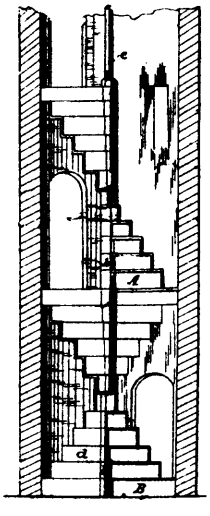
37256 Grant's Whip.



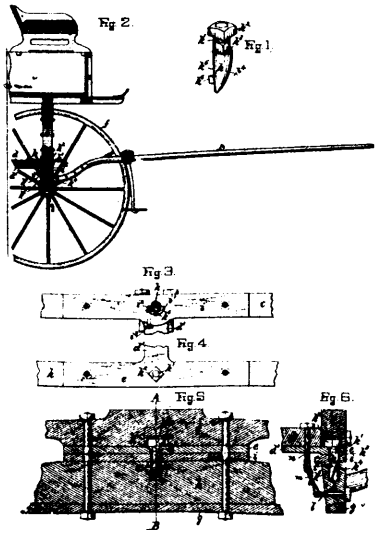
37257 Nagle's Ironing Table.



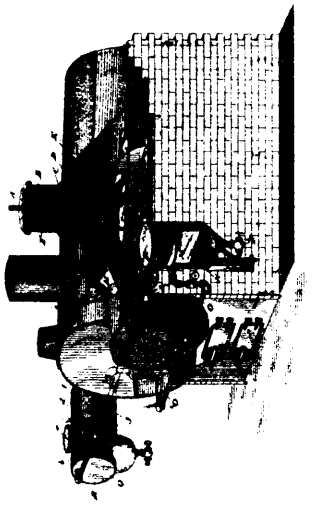
37258 Murphy's Toy.



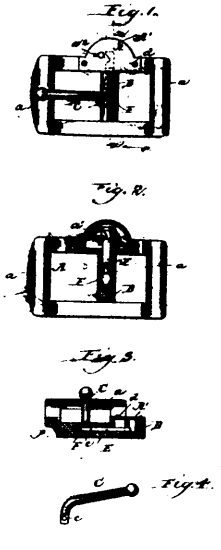
37259 Clarke's Spiral Stairway.



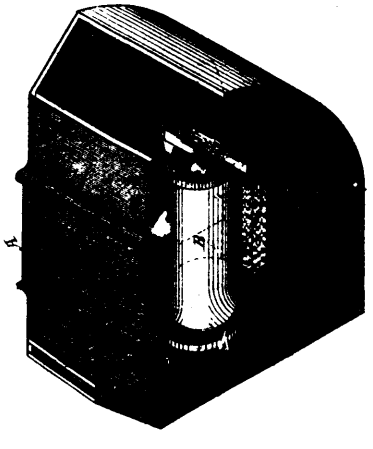
37260 Fisher's King Bolt for Vehicles.



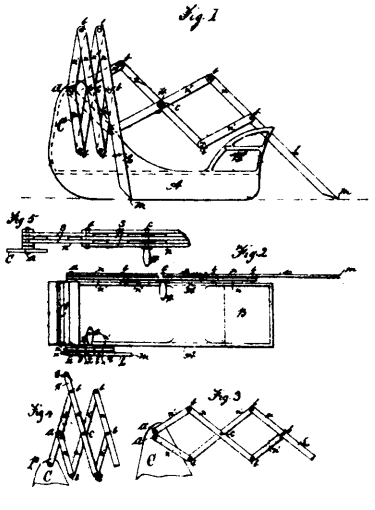
37261 McEachren's Cleaner for Boilers.



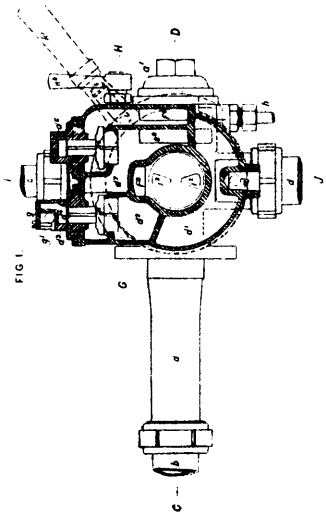
37262 Lasman's Hitching Device



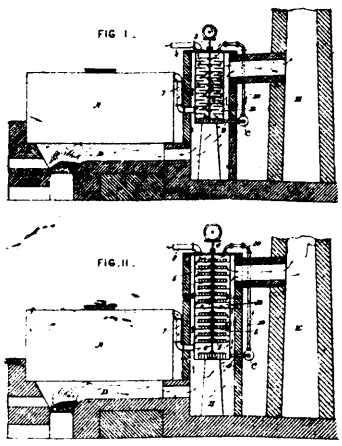
37263 Cushman's Lubricator for Car Axles.



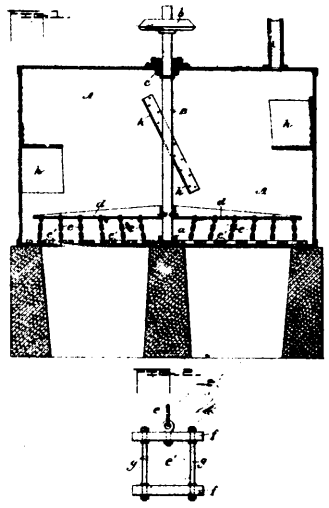
37264 Mather's Apparatus for Propelling Vehicles.



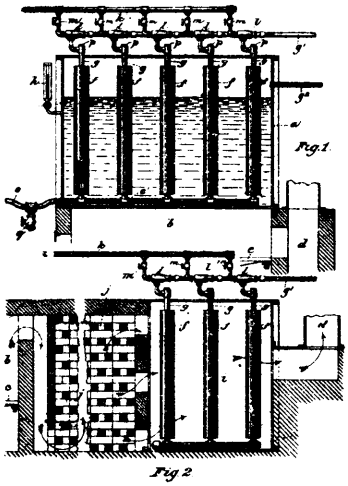
37265 Greham's Brake.



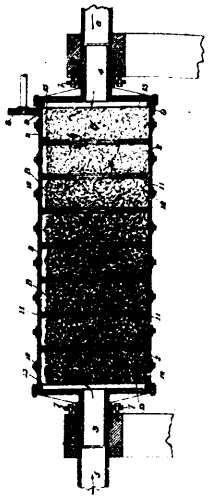
37266 Frasch's Method of Refining Petroleum Oils.



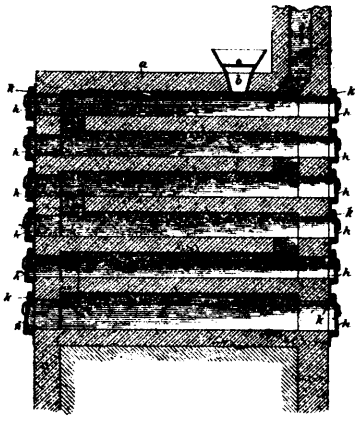
37267 Frasch's Method of Refining Petroleum Oils.



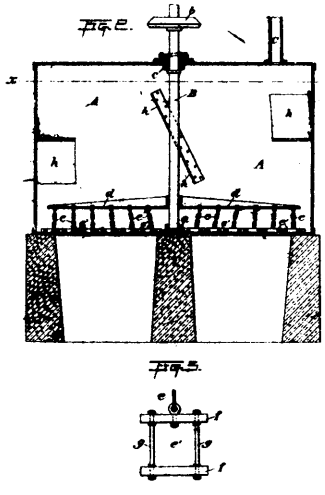
37269 Frasch's Method of Refining Petroleum Oils.



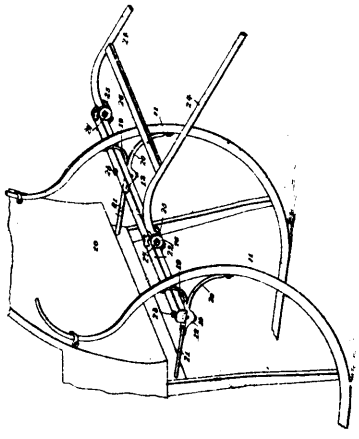
37270 Frasch's Method of Refining Petroleum Oils.



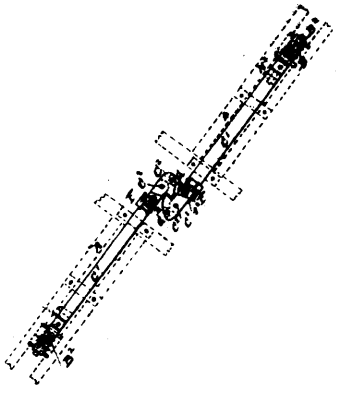
37271 Frasch's Compound for Purifying Petroleum Oils.



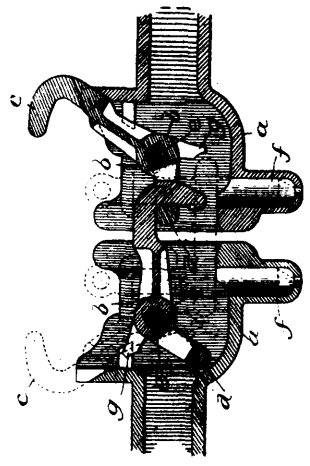
37272 Frasch's Method of Purifying Petroleum Oils.



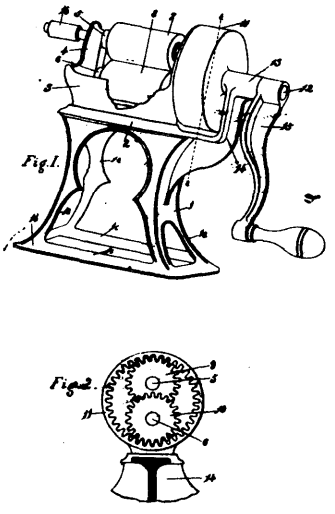
37274 Eccles' Thill Couplings for Sleighs.



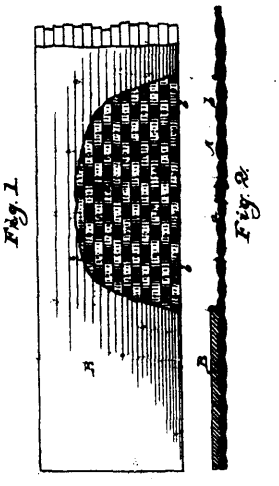
37275 Wylie's Draw Bar for Passenger Cars.



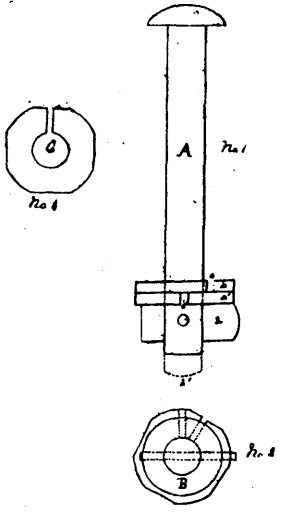
37276 Martin's Car Coupling.



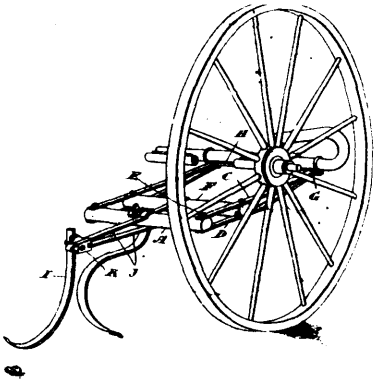
37277 Walker's Knife Cleaning Machine.



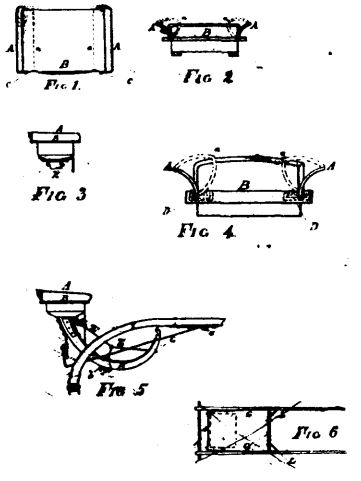
37278 Bigger's Leather Belting.



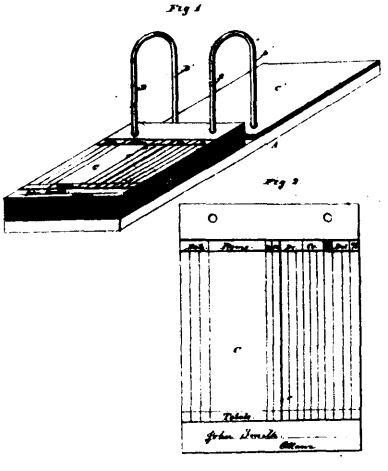
37279 Murison's Key Bolt.



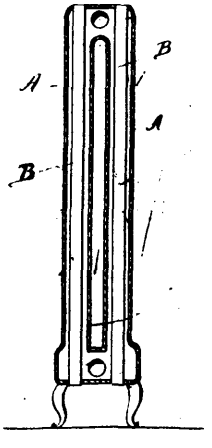
37280 Griener's Cultivator.



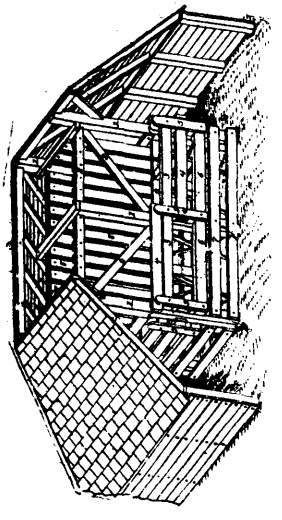
37281 Stringer's Road Cart.



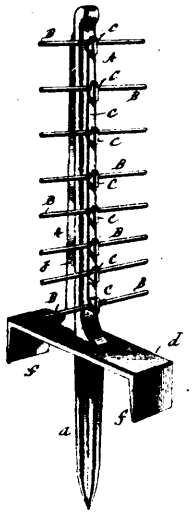
37282 Russell's Ledger.



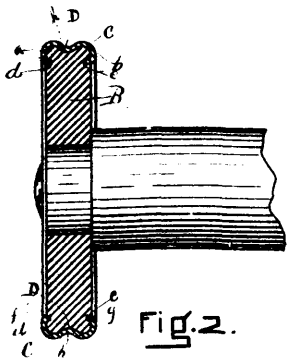
37283 Peard's Radiator.



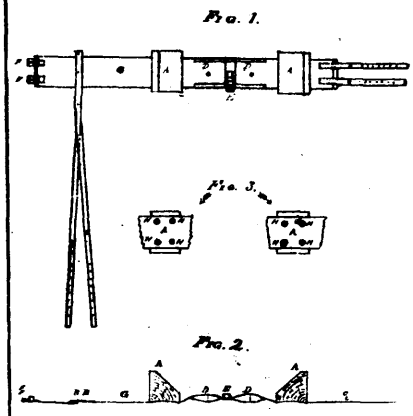
37284 Warren's Feed Rack with Shed Attachment.



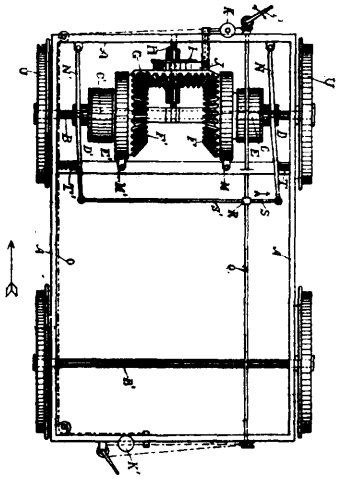
37285 Crane's Metal Fence Post.



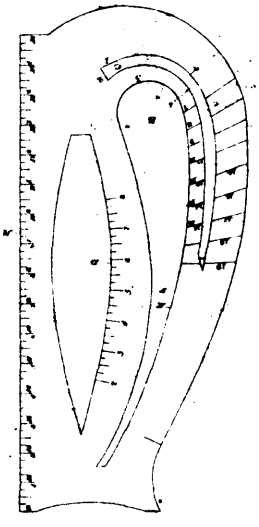
37286 Boynton's Spool or Bobbin.



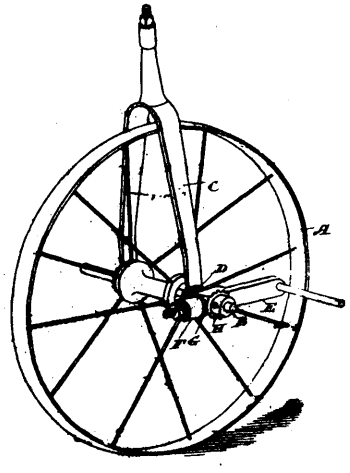
37287 Menard's Belt for Horses.



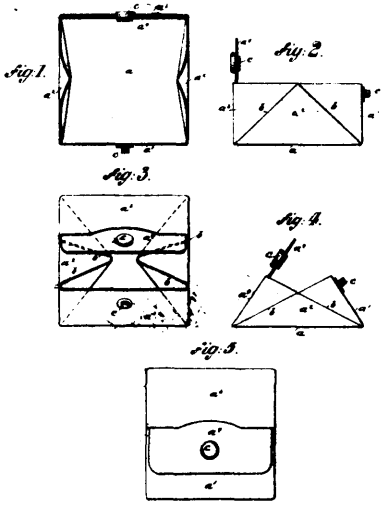
37288 Chaffey's Car Brake and Starter.



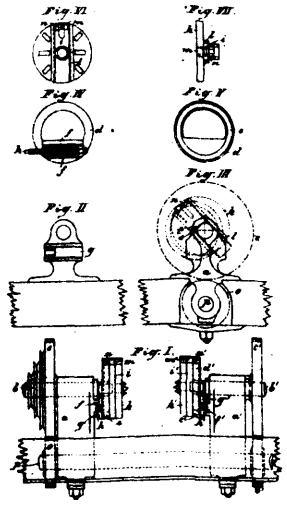
37289 Crow's Chart for Marking out Garments.



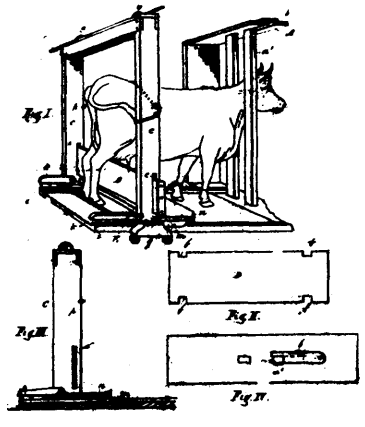
37290 Trebilcock and Kent's Treadle Mechanism for Bicycles.



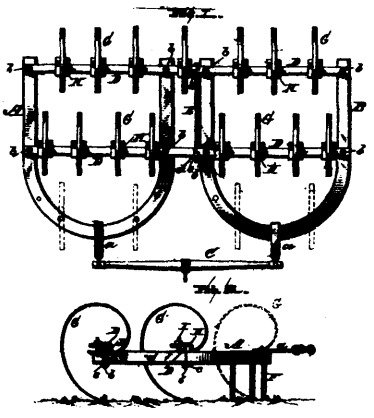
37292 Licker's Pocket Book.



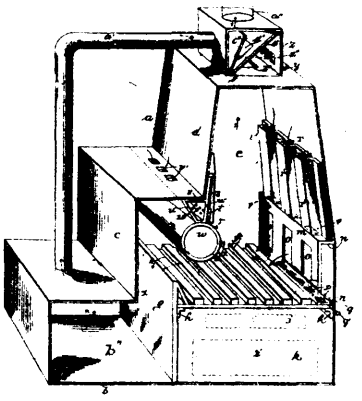
37293 Brodin's Lathe.



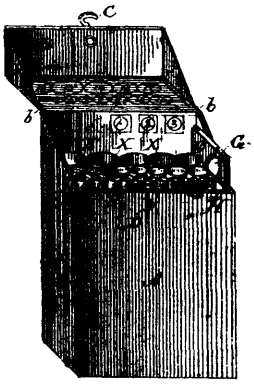
37294 Palmer's Safety Device for use in Milking Cows.



37295 Tower's Harrow.

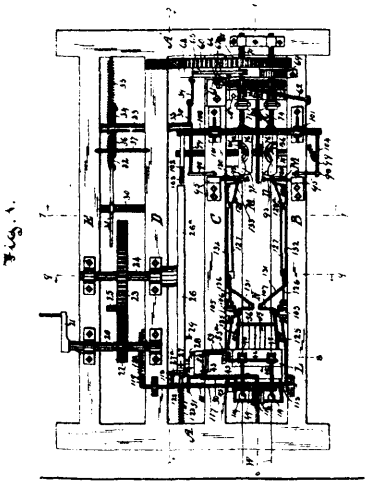


37296 Wells' Hot Air Furnace.

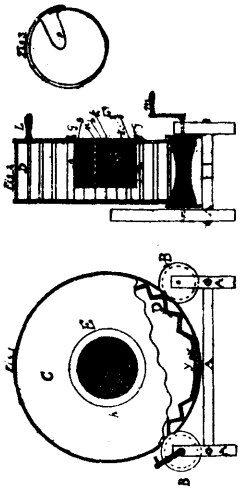


37297 Hescox's Tool Box.

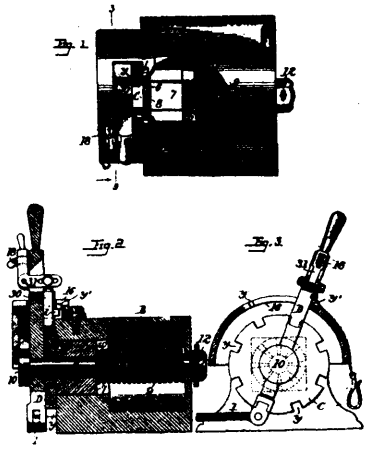
37298 Ostlund's Convertible Chair.



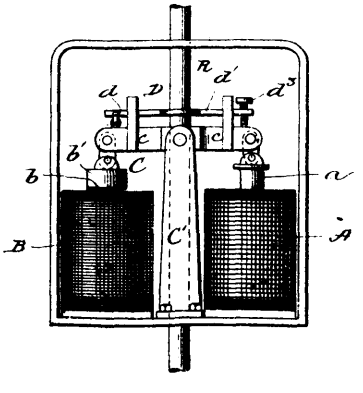
37299 Lamonthe's Machine for Making Wire Ties for Bales, etc.



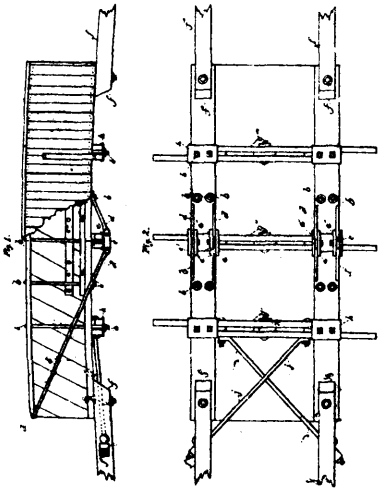
37300 Alpaugh's Churn.



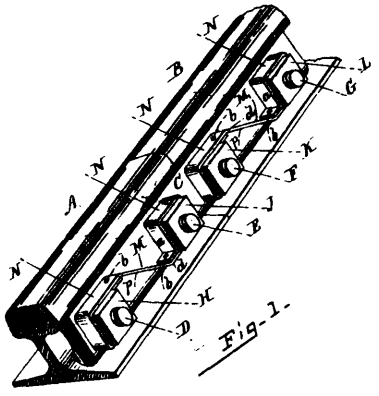
37301 Snow's Switch Stand.



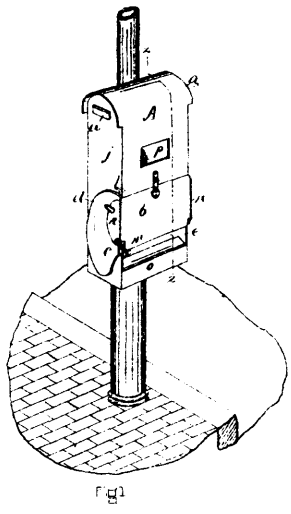
37302 Turbayne's Electric Arc Lamp.



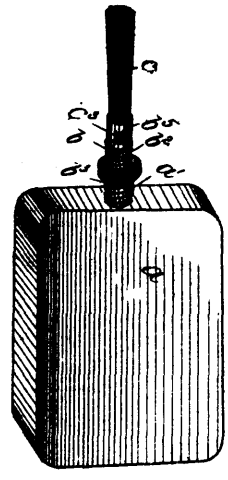
37304 Boyle's Wooden Bridge.



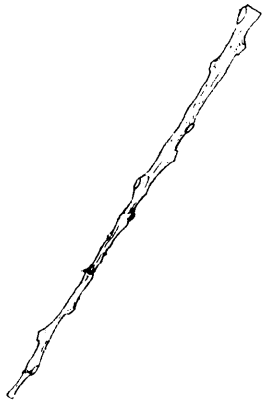
37305 Tisdale's Nut Lock.



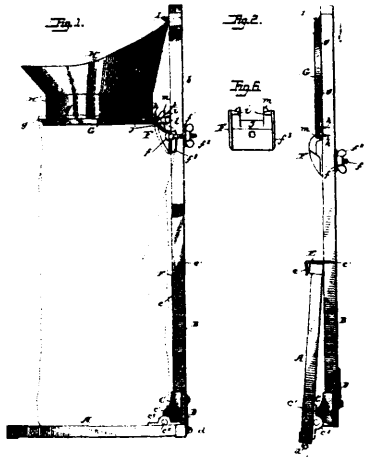
37306 Donahue's Street Letter Box.



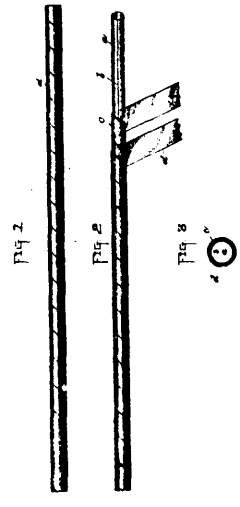
37307 Ingraham's Mucilage Fountain and Envelope Moistener.



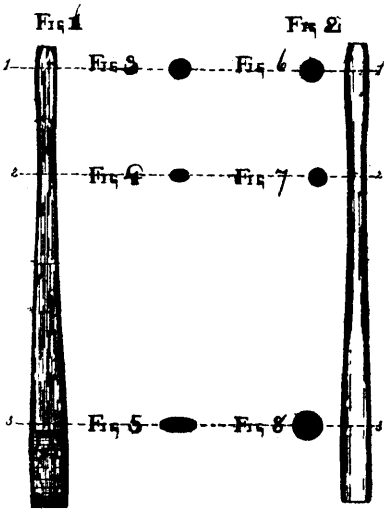
37308 Coleman's Walking Stick.



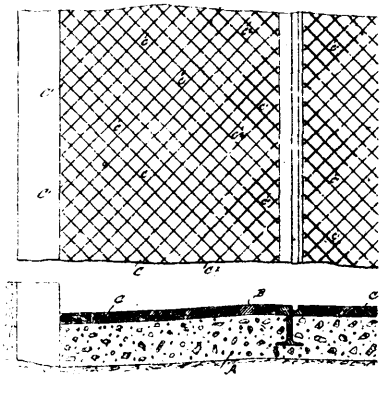
37309 Lamb's Holder for Sacks.



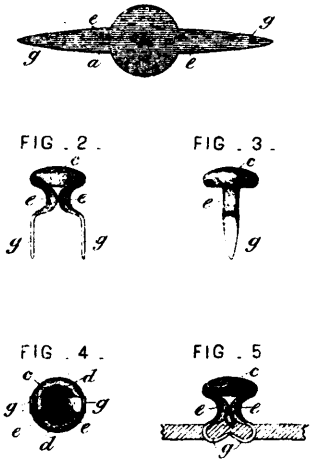
37310 Hurlbut's Paper Tube.



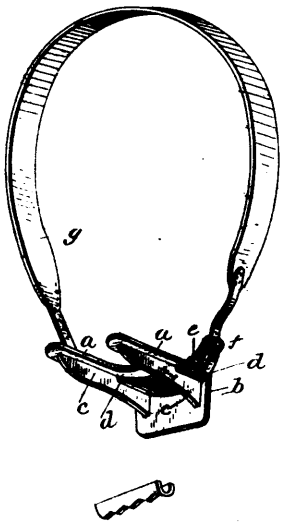
37311 Brinstow's Spoke for Vehicle Wheels.



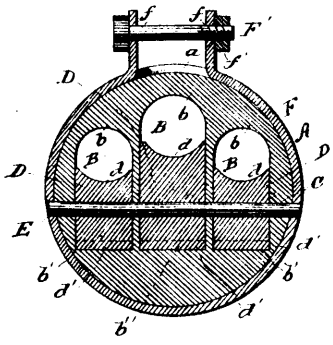
37312 Schlichting's Pavement.



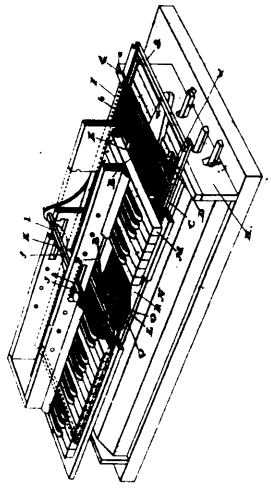
37313 Mathison's Button.



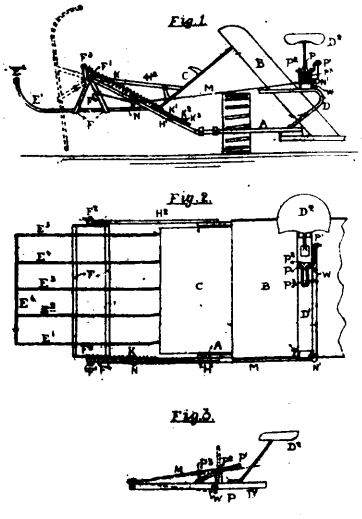
37314 Van Ness' Veterinary Surgical Chair.



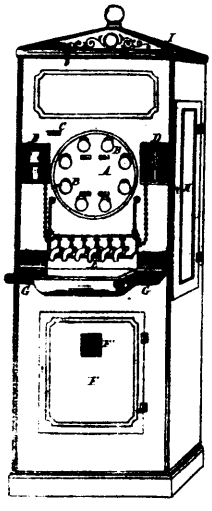
37315 Carr's Dead Eye.



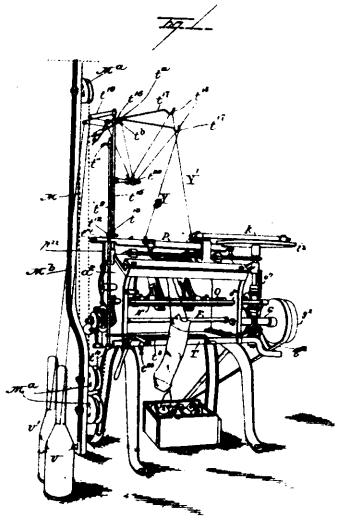
37316 Bell's Keyed Musical Instrument.



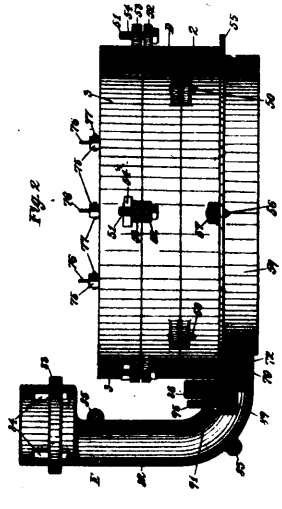
37317 Norton and Mitchell's Sheaf Carrier for Binders, etc.



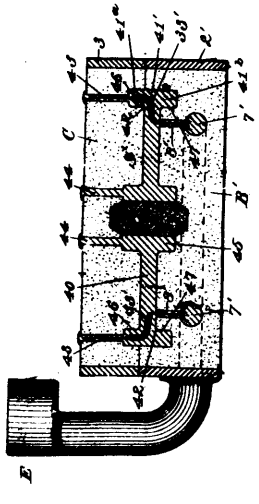
37318 Allin's Vending Machine.



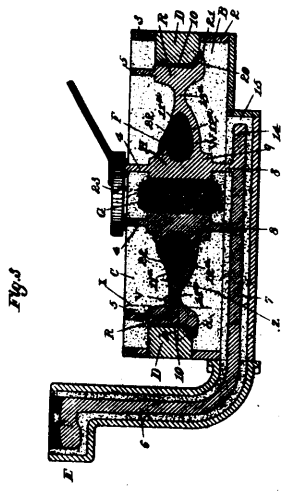
37319 Bennor's Knitting Machine.



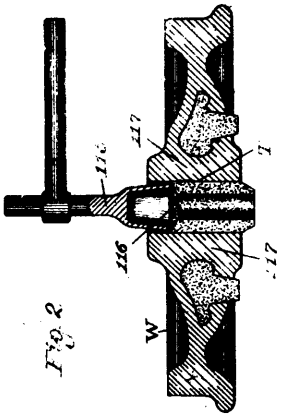
37320 Richards' Flask for Molders.



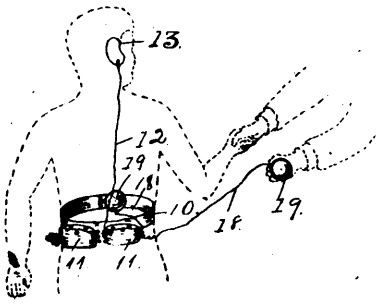
37321 Richards' Process of and Mold for Making Castings.



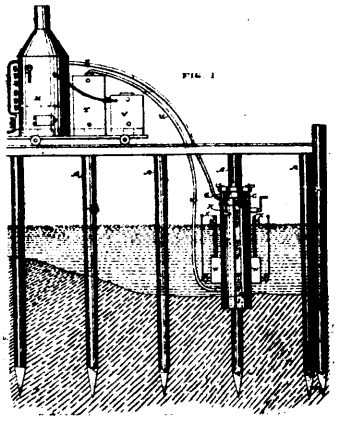
37322 Richards' Process of and Mold for Casting Steel Wheels.



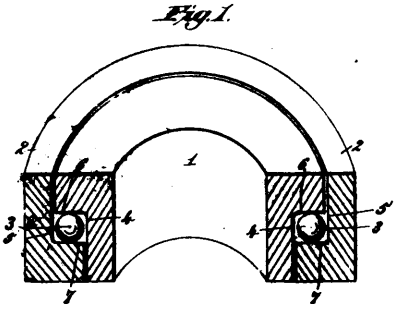
37323 Richards' Method of Manufacturing Annealed Steel Wheels.



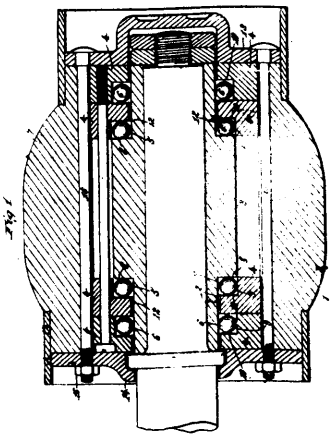
37324 Webb's Electric Apparatus for Treating Deafness.



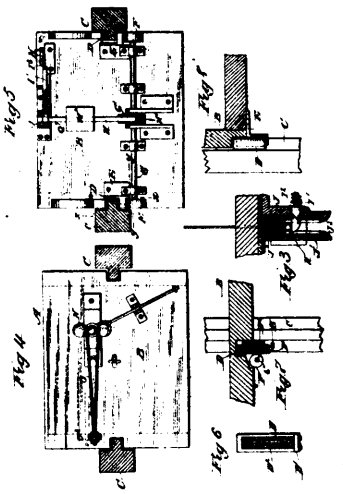
37325 Batter's Apparatus for Preserving Piles.



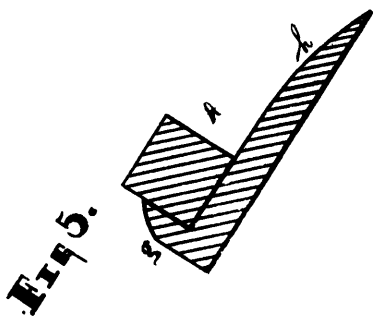
37326 Simonds' Ball Bearing.



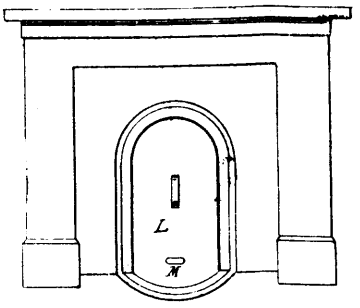
37327 Simonds' Ball Bearing.



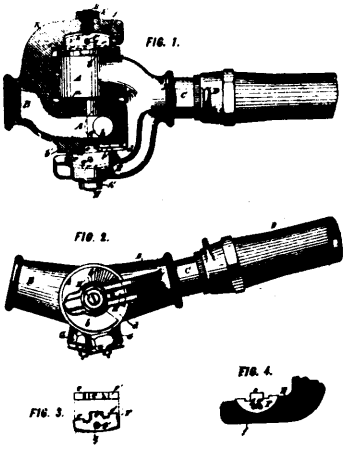
3[illegible] Anderson's Brake for Elevators.



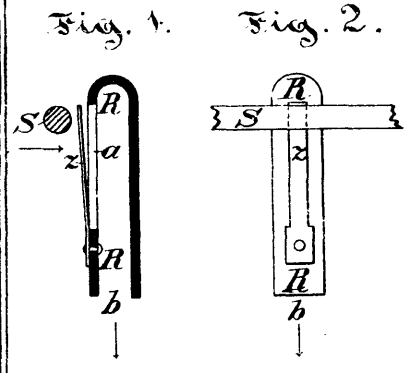
37329 Nagle's Combination Tool.



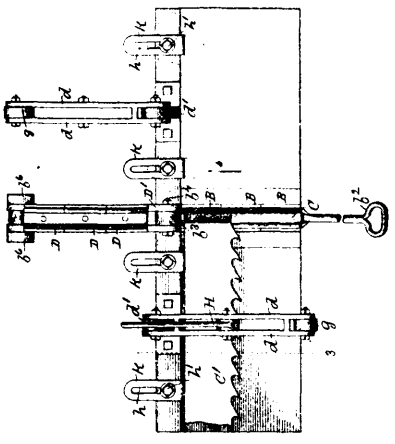
37330 Wilson's Grate for Open Fire Place Grates.



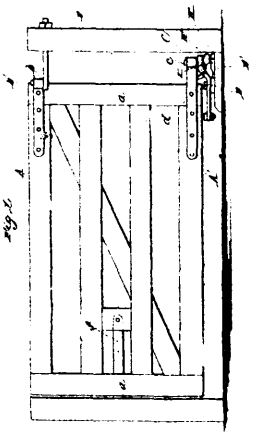
37331 Gold's Pipe Coupling for Railway Cars.



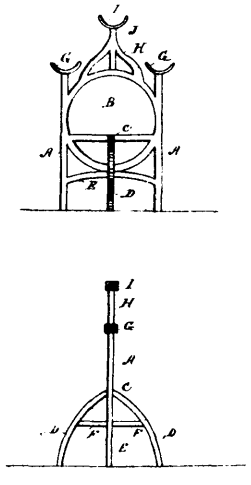
37332 Gumbel's Mechanism for Striking Strings by means of Reeds Moved by Air.



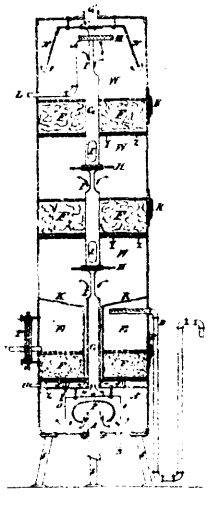
37333 Covel's Brazing Clamp for Band Saw Mills.



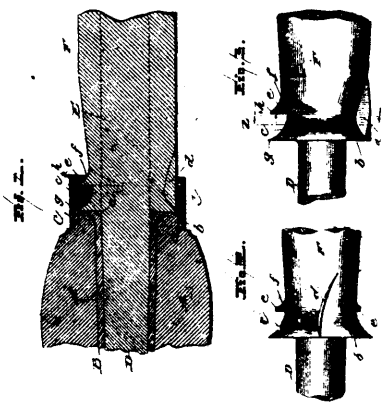
37334 Taylor's Gate.



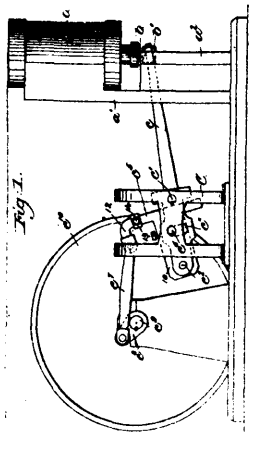
37335 McLean's Foot Rest.



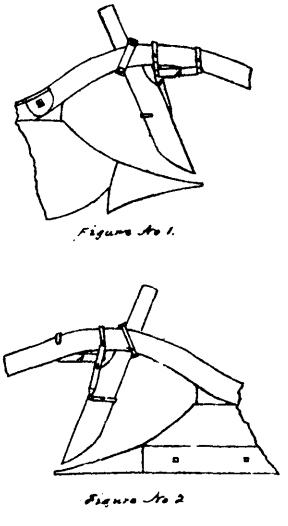
37336 Austin's Combined Feed Water Heater, Filter and Condenser, and Lime and Grease Extractor.



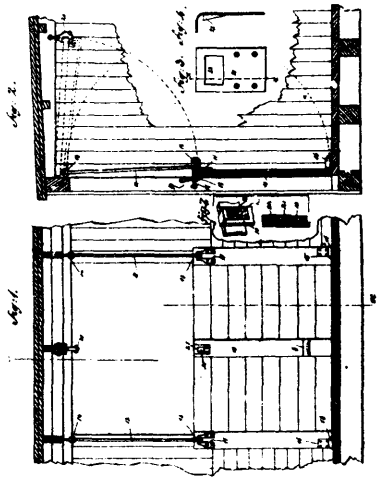
37337 Wright's Wheel and Axle for Vehicles.



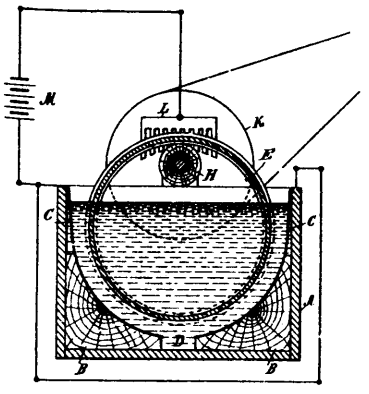
37338 Carey's Connections for Steam Engines.



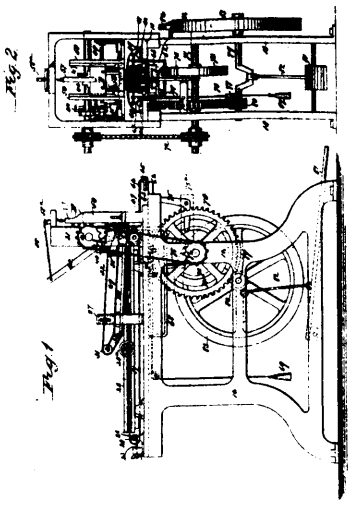
37339 Petch's Plough Attachments.



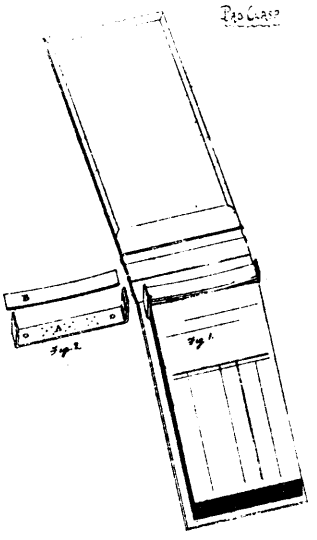
37340 Pettis' Door for Grain Cars.



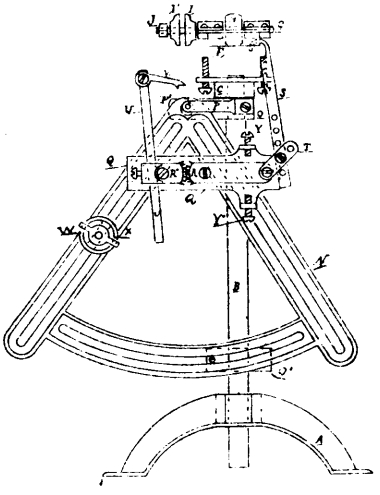
37341 Farmer's Apparatus for Producing Sheets of Metal by Electro-Deposition.



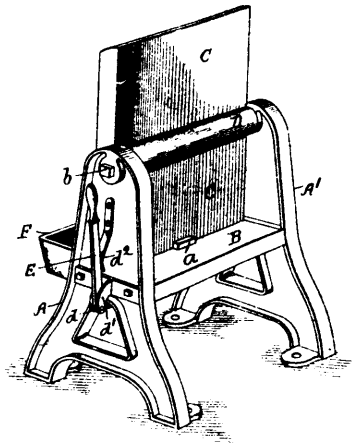
37342 Schleiff and Ehmke's Cigar Bunching Machine.



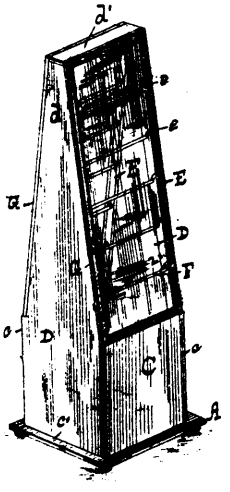
37343 Dobbin's Clasp for Pads.



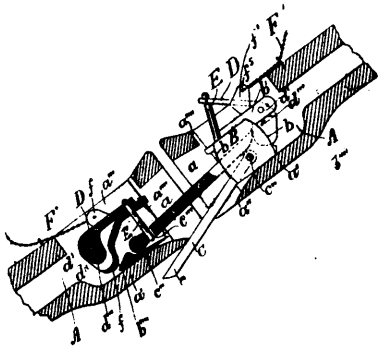
37344 Drake's Machine for Gumming and Sharpening Saws.



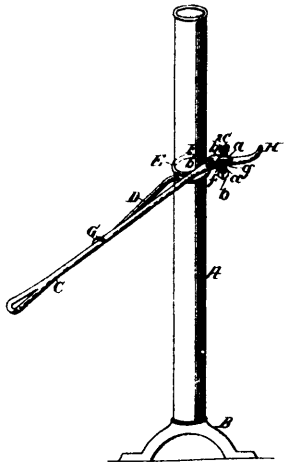
37345 Covel's Device for Hammering and Straightening Saws.



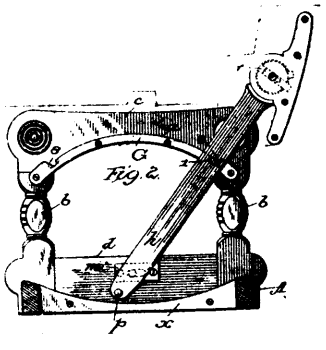
37346 Calkins' Display Rack or Case.



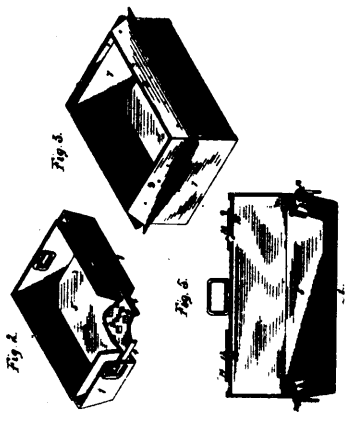
37347 Shortill's Car Coupling.



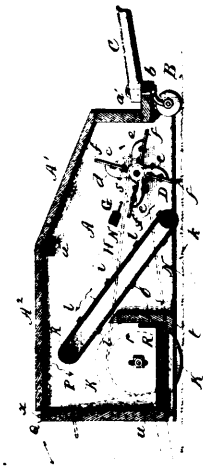
37348 Phare's Combined Carriage Jack and Tire Tightener.



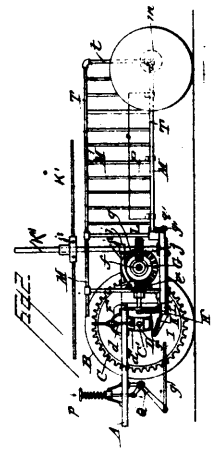
37349 Bushnell's Car Seat.



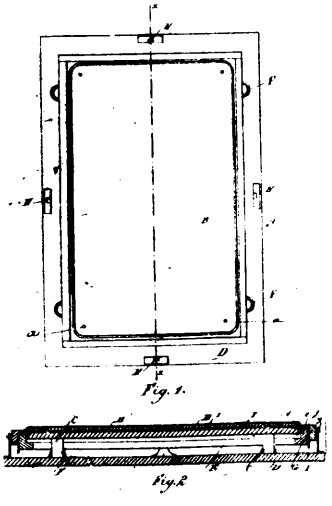
37350 Veley's Bake Pan.



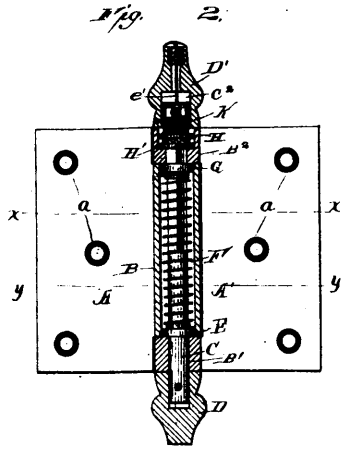
37351 Newlove's Sweeper for Streets.



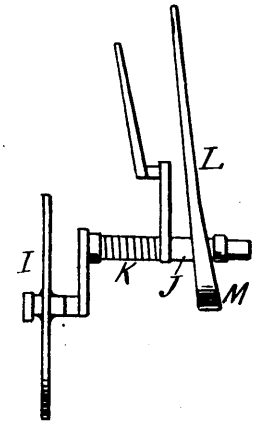
37352 Morden and Montague's Corn Cutter.



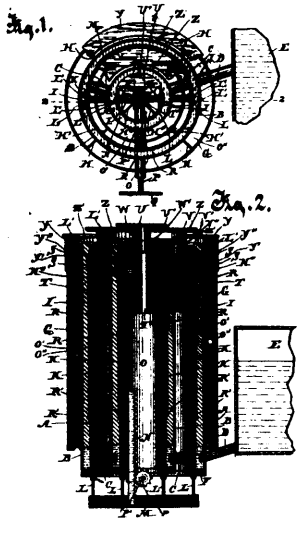
37353 Maine's Printing Press.



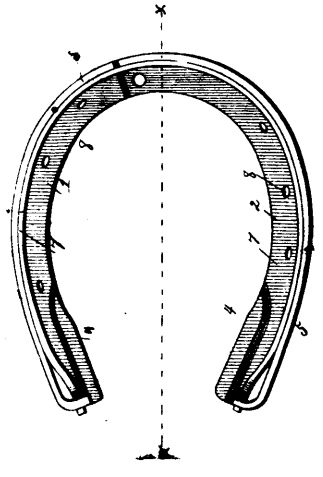
37354 Deale and Hudson's Automatic Spring Hinge.



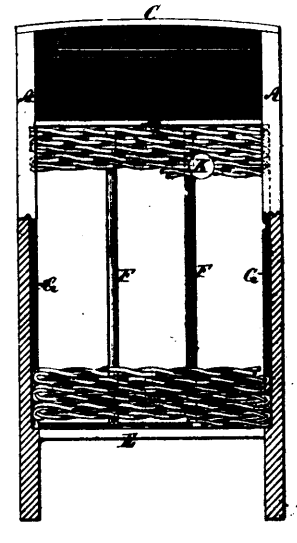
37355 Kippan and McPherson's Sulky Plow.



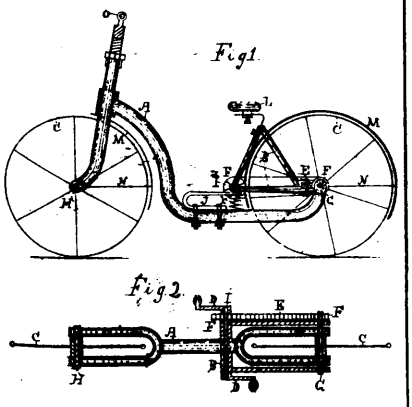
37356 Boeck and Smith's Oil Burner.



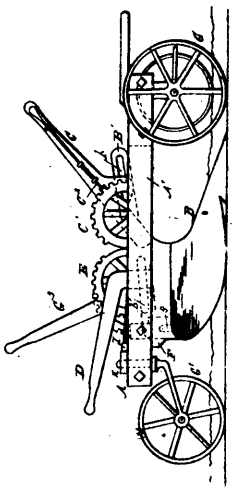
37357 Custer's Horse Shoe.



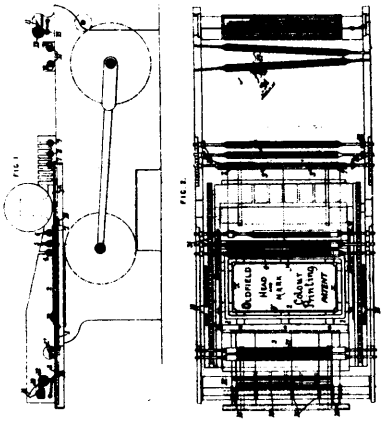
37358 Church's Wash Board.



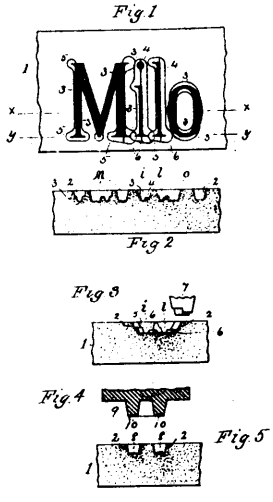
37360 Phillips' Bicycle.



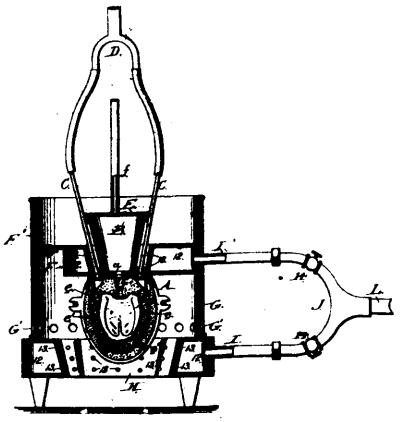
37361 Trotman's Wheel Plow.



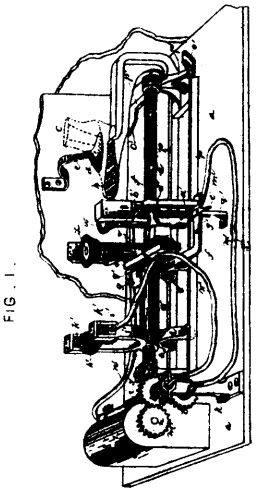
37362 Oldfield's Printing Machine.



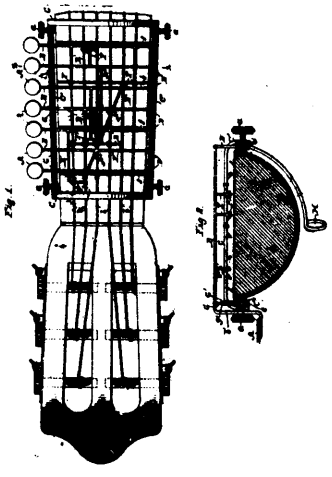
37363 Redfield's Matrix.



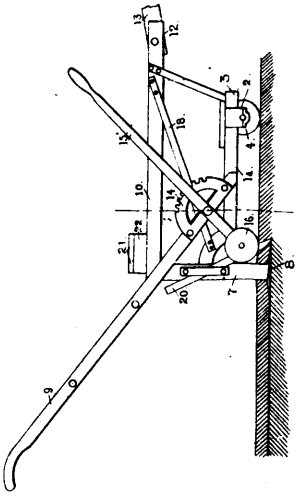
37364 Zellers' Apparatus for Making Dentures.



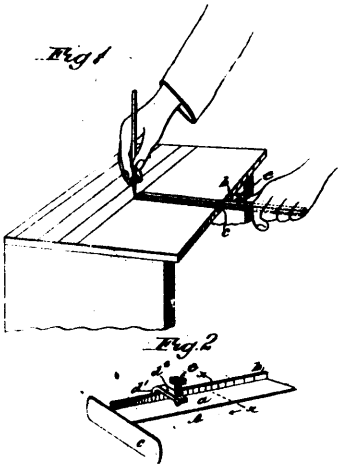
37365 Gilman's Machine for Blacking and Polishing Shoes.



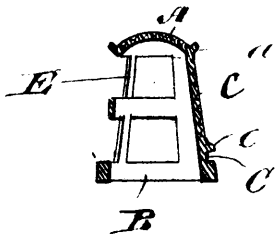
37366 Page's Fingering Device for Guitars.



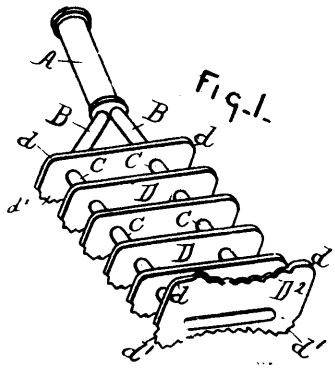
37367 Bentley's Sod Slicing Machine.



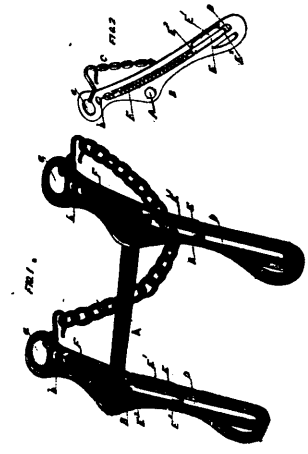
37368 Morrill's Gauge.



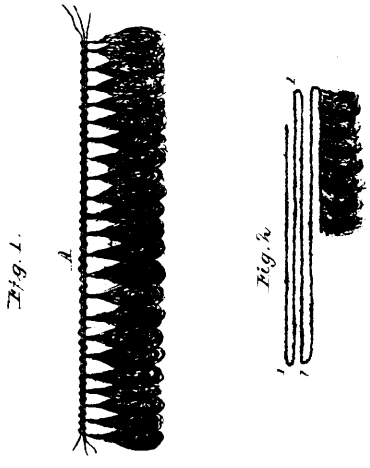
37369 Wood's Thimble.



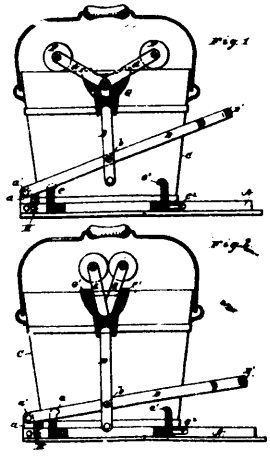
37370 Goodrich's Curry Comb.



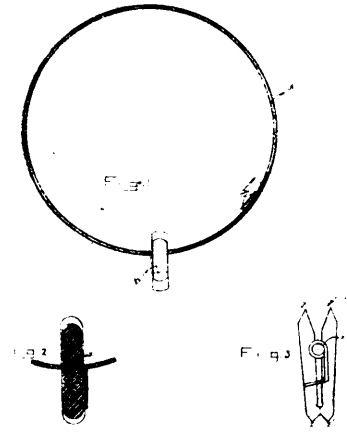
37372 Sloat's Automatic Curb Bit.



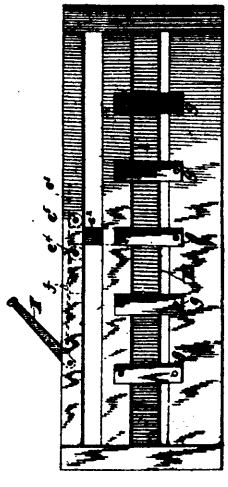
37373 Borden's Hair or Wig.



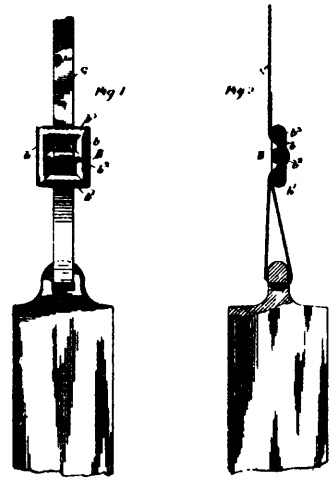
37374 Schmuck's Mop Wringer.



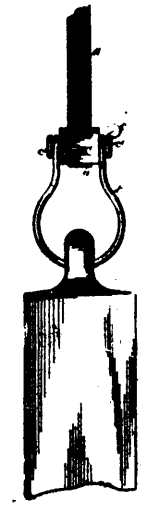
37375 McLauchlin's Apparatus for Delivering Orders to Railway Trains.



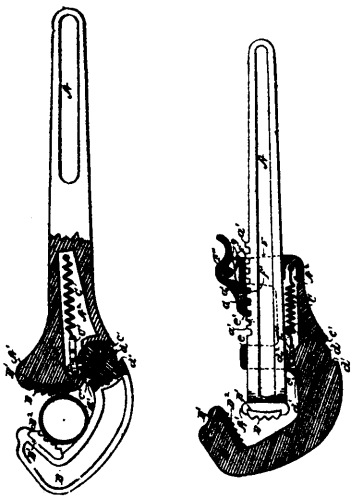
37376 Hagenlaugh's Feed Rack.



37377 Gardner's Sash Balance.



37378 Gardner's Sash Balance.



37379 Taylor's Pipe and Nut Wrench.

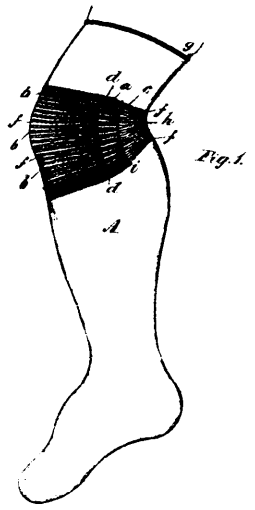
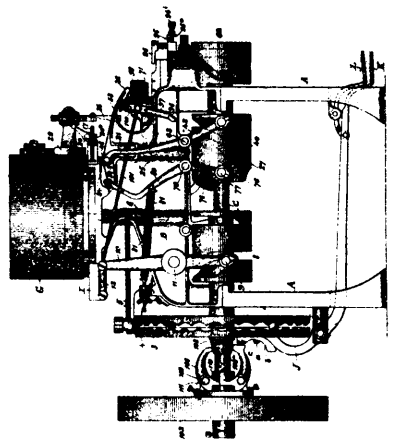
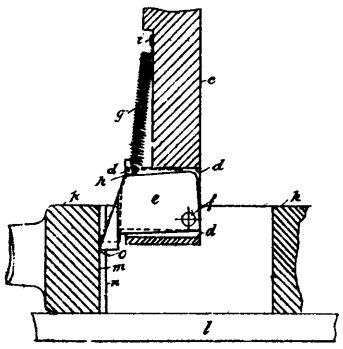


Fig. 1.

37380 Bourne's Stocking.



37381 Miller's Cigar Bunching Machine.



37382 Carter's Tool Holder and Cutting Tools for use in Slotting Key Ways in Pulleys, etc.

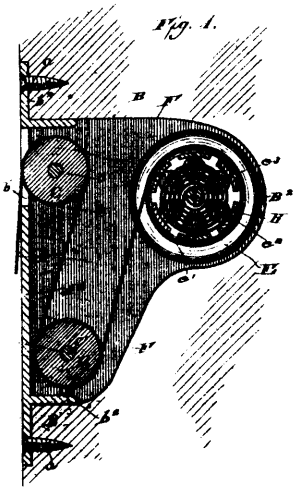


Fig. 1.

37383 Deale's Sash Balance and Sash Fastener.

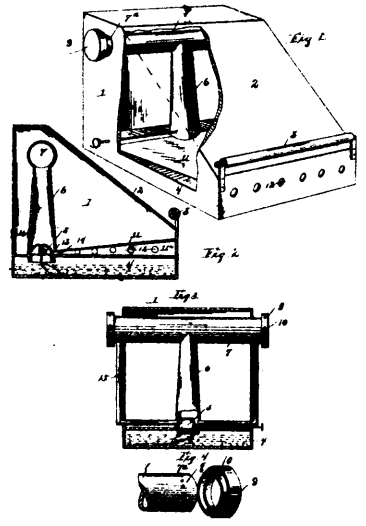


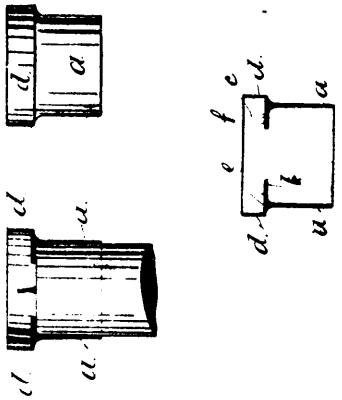
Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

37384 Carr, Hahn and Jackson's Foot Warmer.



37385 Bamford's Drip Preventer for Candles.

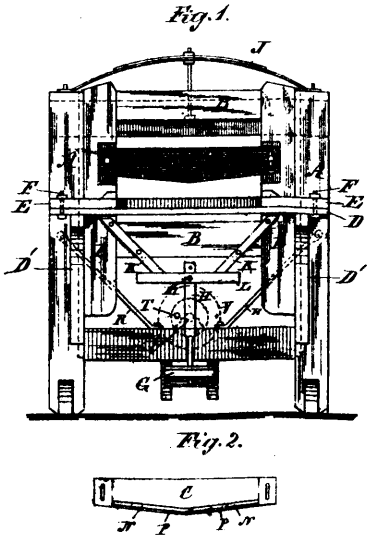
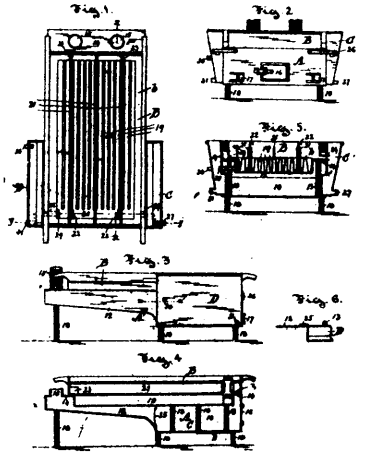


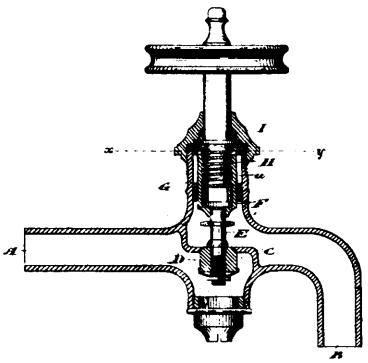
Fig. 1.

Fig. 2.

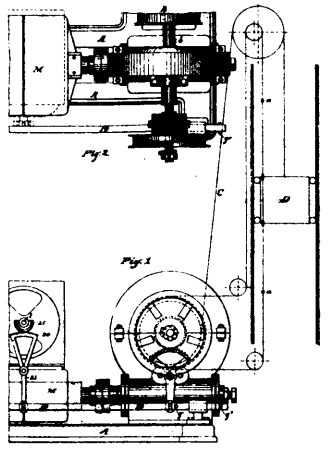
37386 Miller's Shingle Jointer.



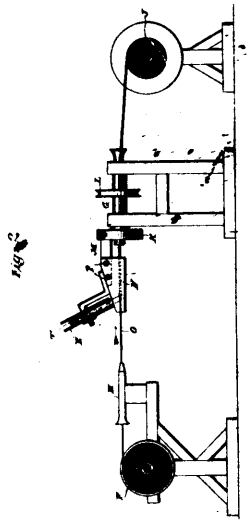
37387 Ball's Evaporator for Liquids.



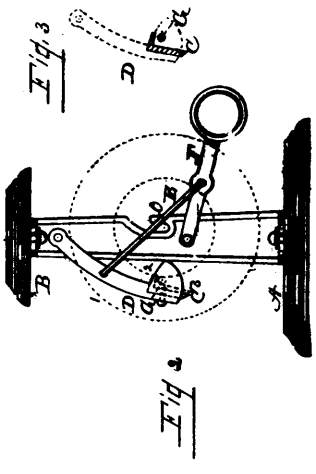
37388 Malcolm's Water Tap.



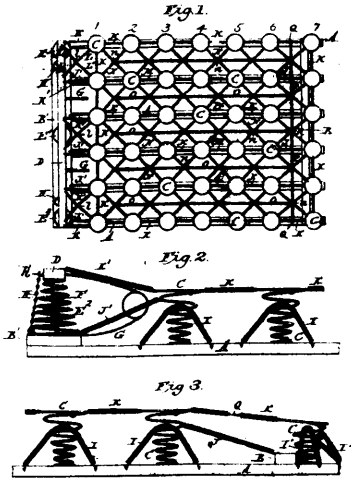
37389 Eichemeyer's Electric Elevator.



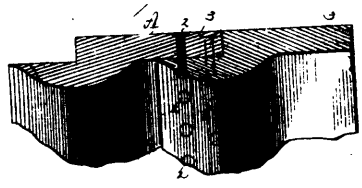
37390 Cuttriss' Insulated Conductor and Process of Manufacturing the Same.



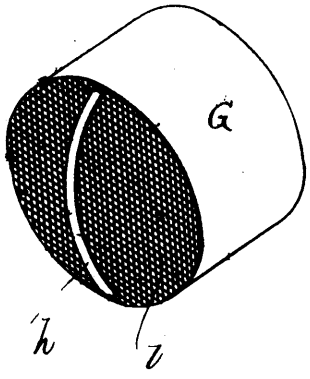
37391 Weston's Paper Roll Holder and Cutter.



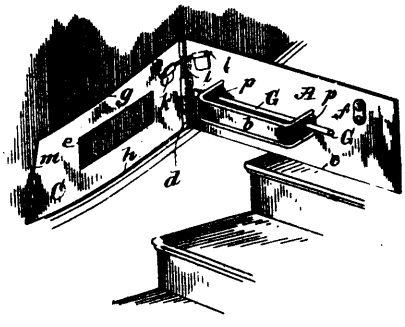
37392 Edgar's Spring Bed Bottom.



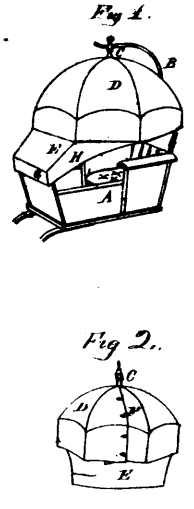
37393 Griffiths' Metallic Vessels.



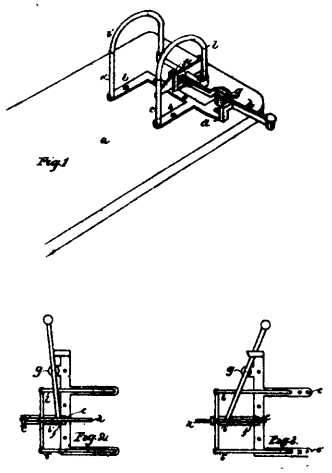
37394 Gates' Strainer for Fluid Pipes.



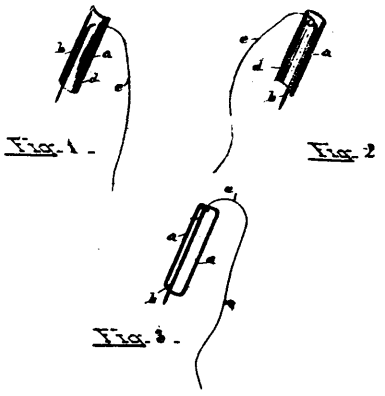
37395 Prescott's Wall Protector.



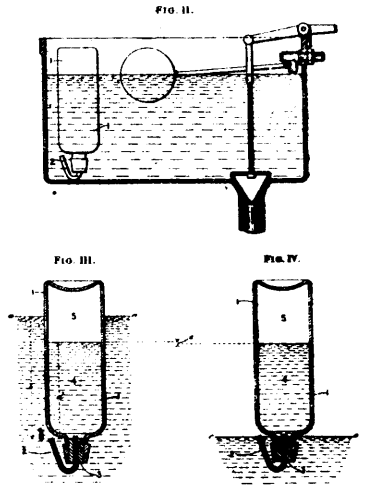
37396 Scantlebury's Baby Carriage Protector.



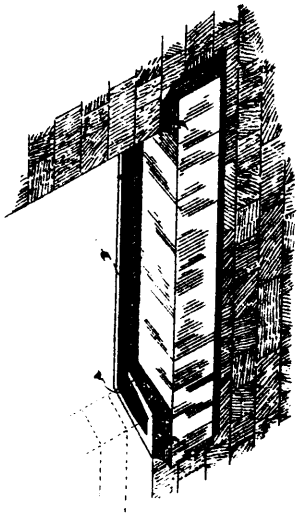
37397 Fish's Bill and Letter File.



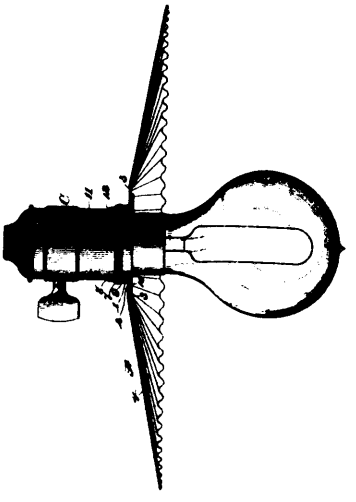
37398 Wilcox's Bouquet Holder.



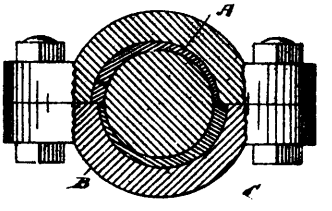
37399 Taylor's Apparatus for Automatically Supplying Disinfectant Liquids to Closets, etc.



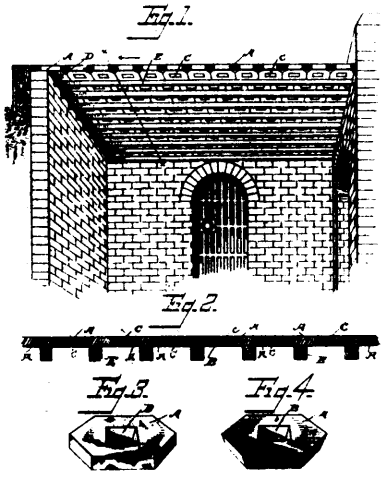
37400 Hutchins' Sill for Windows and Doors.



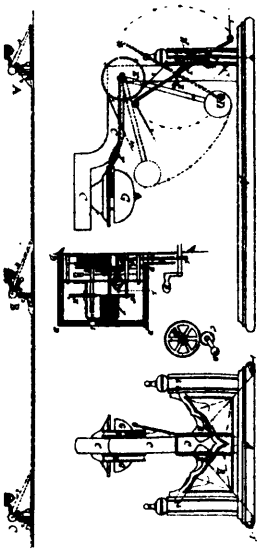
37401 Levison's Coupling for Incandescent Electric Lamp Shades.



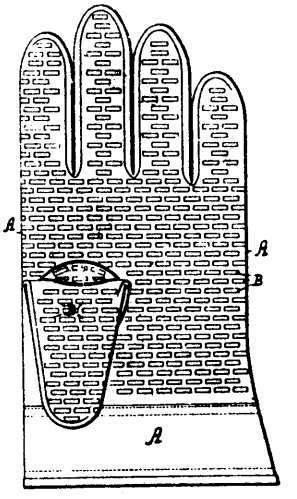
37402 Irvin's Fastening for Securing a Pulley to a Shaft.



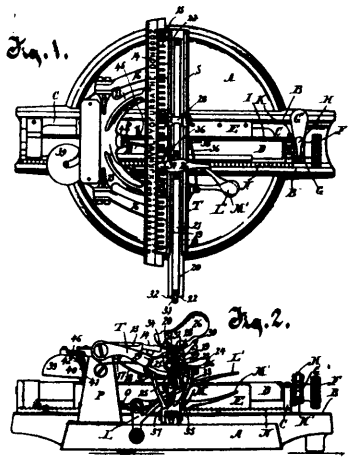
37403 Pierce's Tiles for Pavement and Vault Lights.



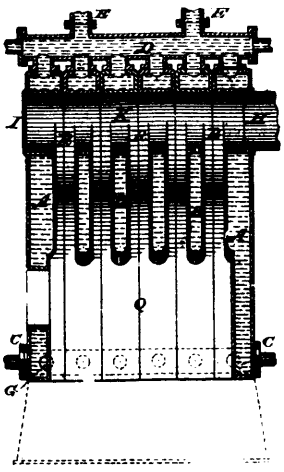
37404 Frechette's Fire Alarm.



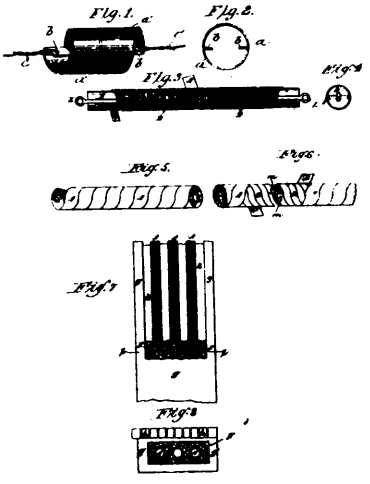
37405 Bertheau and Hoegran's Glove.



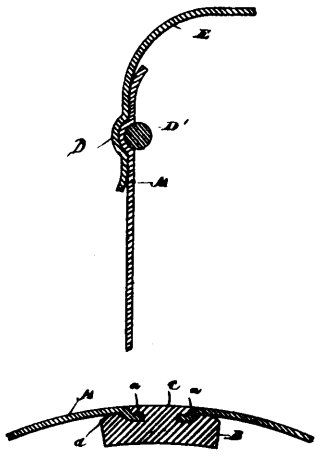
37406 Odell's Type Writing Machine.



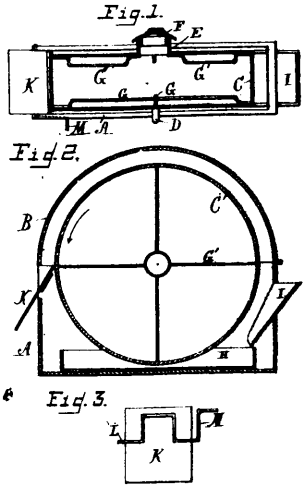
37407 Howatt's Sectional Water Heater.



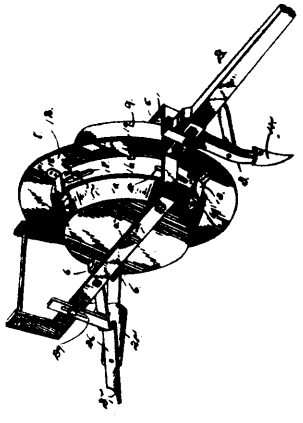
37408 Chenoweth's Method of and Apparatus for Moulding the Inner Surfaces of Vessels, etc.



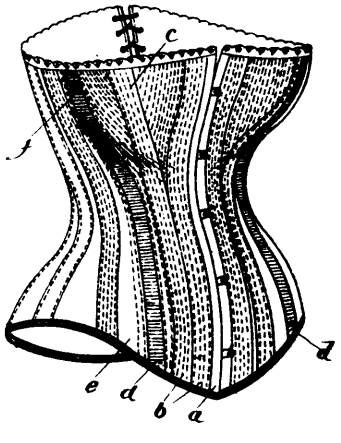
37409 Shipe's Cylindrical Boiler.



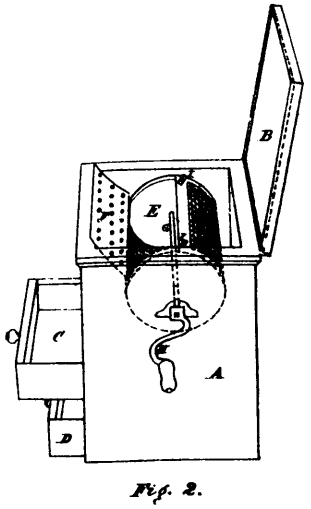
37411 Camp's Machine for Cooling and Purifying Liquids.



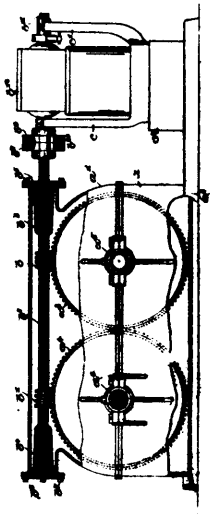
37413 Branan's Cotton Planter.



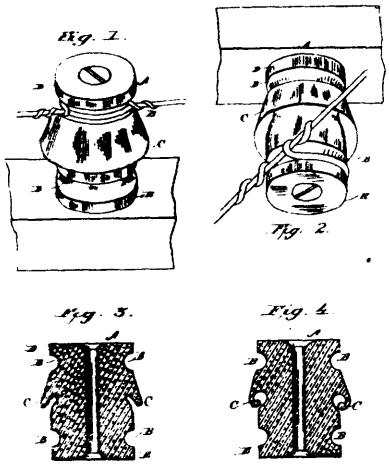
37414 Odenbrett's Corset.



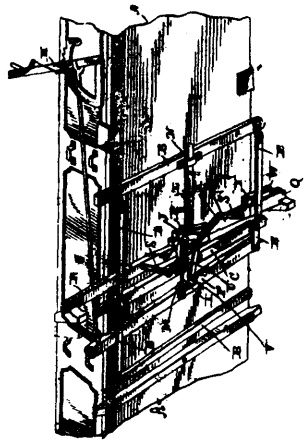
37416 Flack and Elliott's Machine for Sifting Coal.



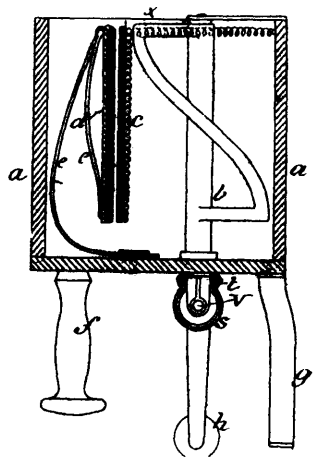
37417 Whittier's Elevator Operating Mechanism.



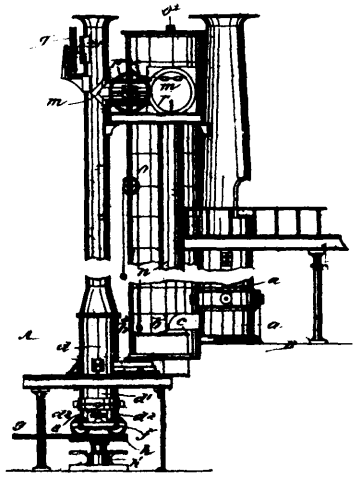
37418 Bertolette's Electric Wire Insulator.



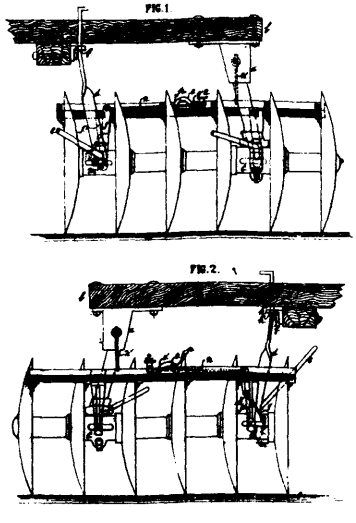
37419 Patton's Waggon Brake.



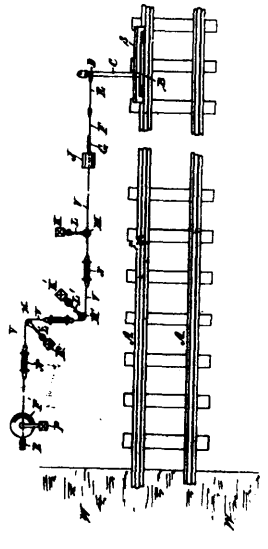
37420 Nilsson's Milking Apparatus.



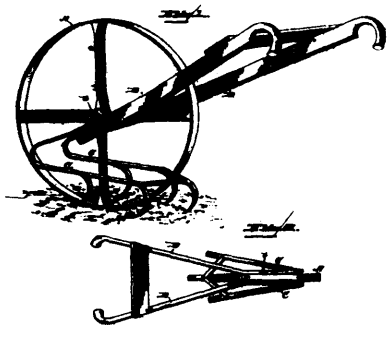
37421 Heaton and Holden's Art and Apparatus for Manufacturing Steel.



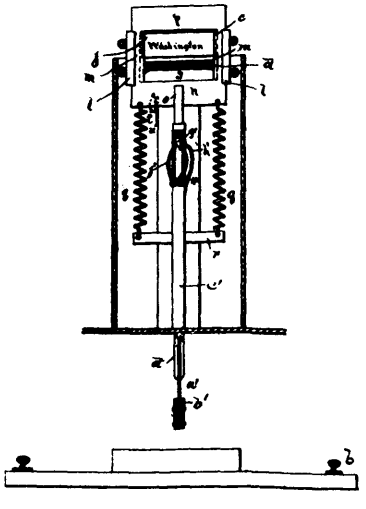
37422 Hill's Disk Harrow.



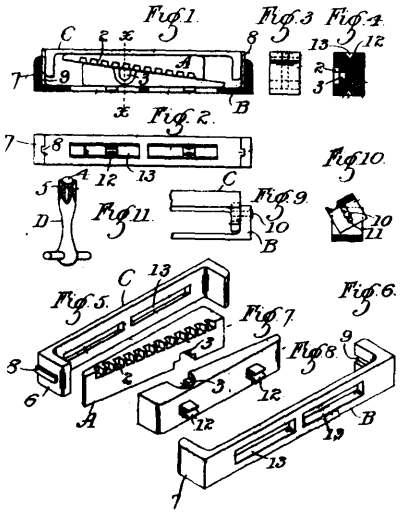
37423 Williams' Railway Signal Apparatus.



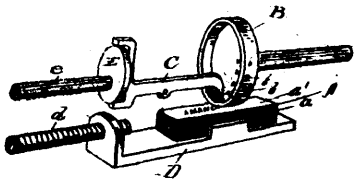
37424 Buckley's Cultivator.



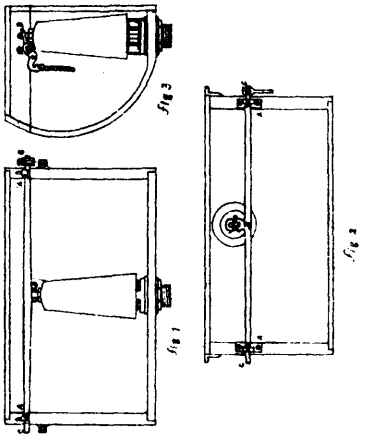
37425 Wright, Chandler and Stanback's Automatic Street and Station Indicator.



37426 Mowers' Printers' Quoins.



37429 Sears' Stereotype Molds.



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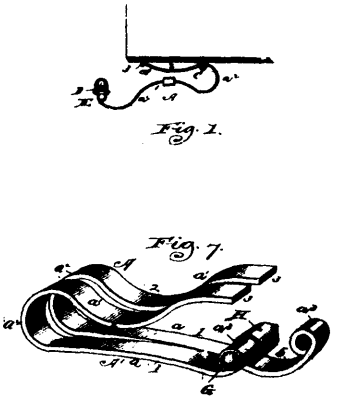

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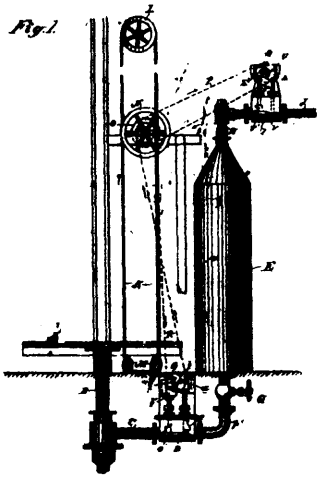

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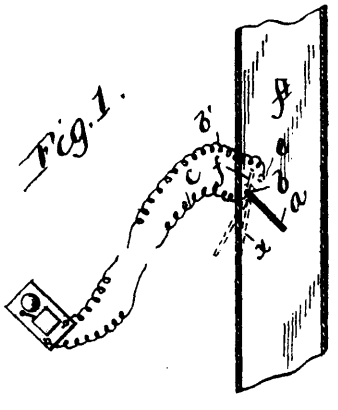

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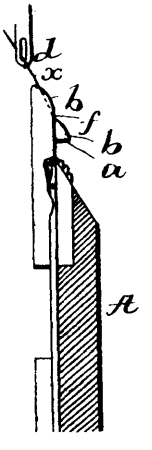

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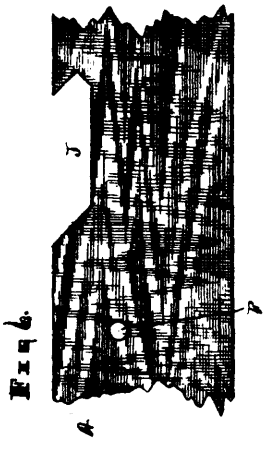

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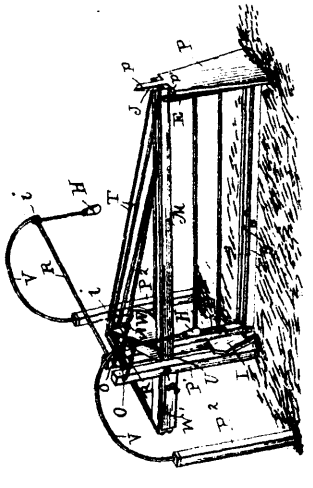

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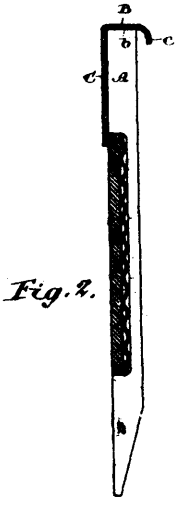

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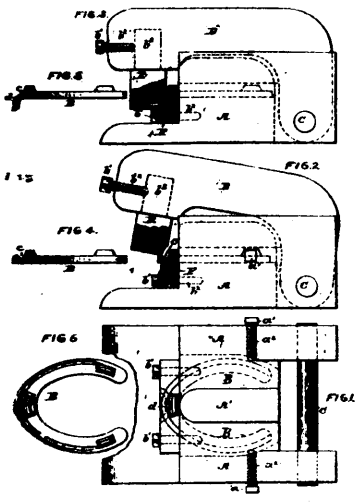

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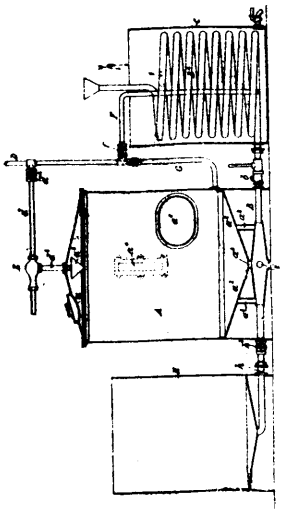

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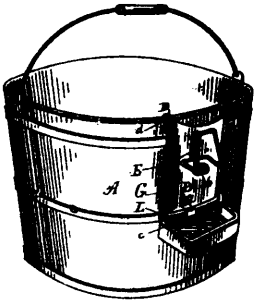

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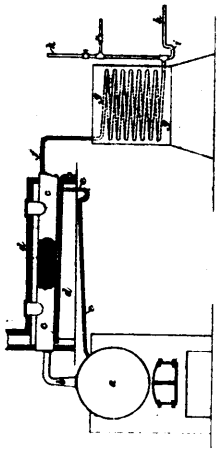

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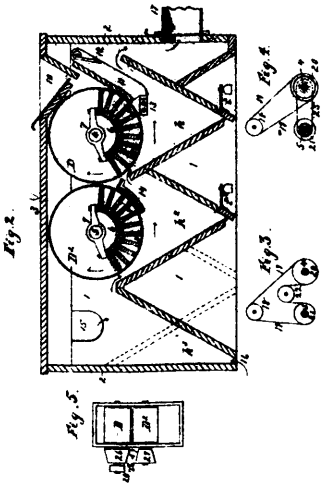

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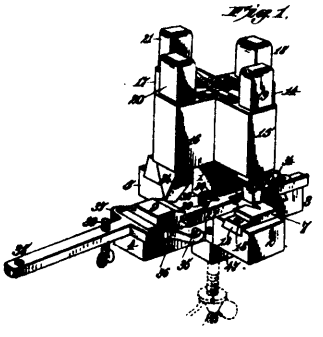

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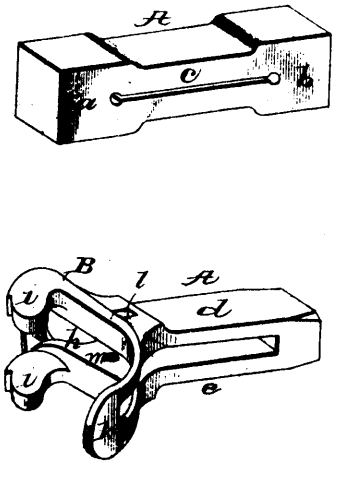

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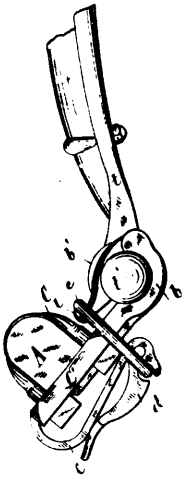

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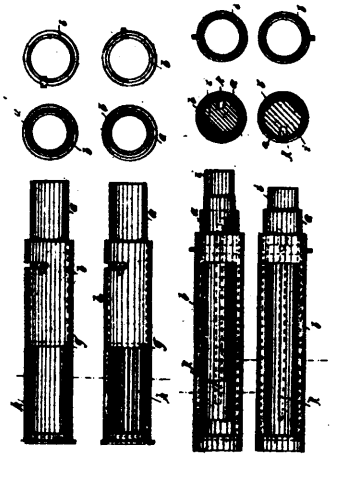

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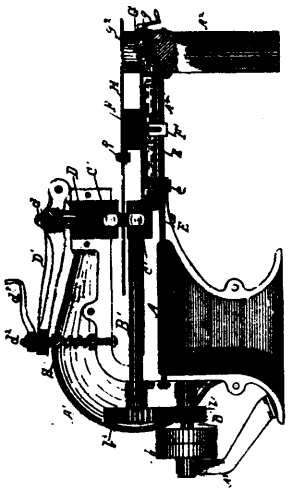

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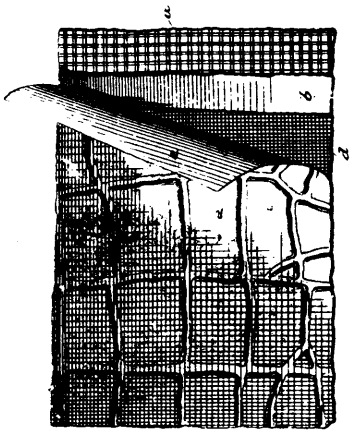

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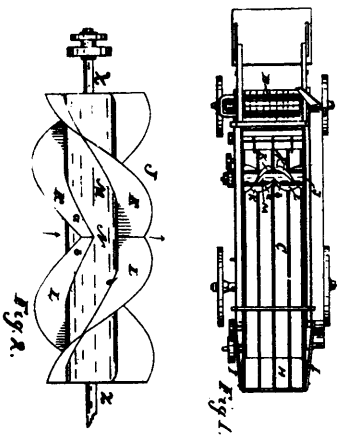

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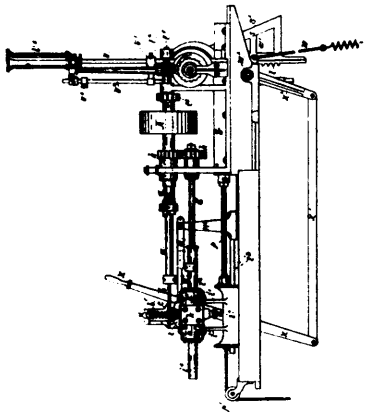

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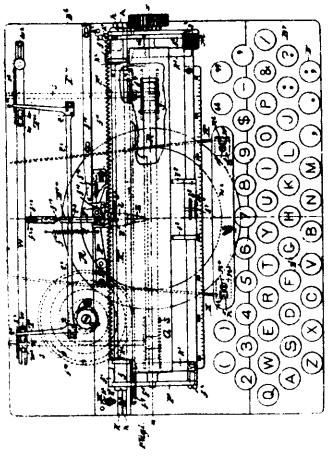

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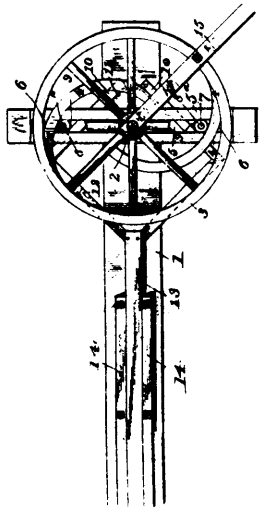

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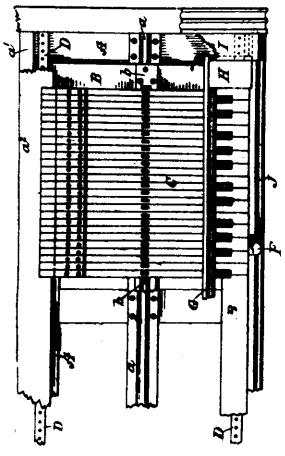

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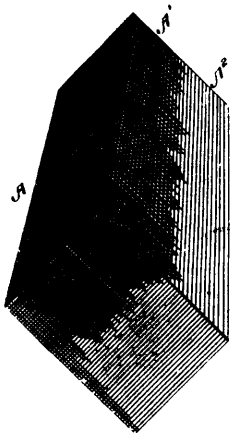

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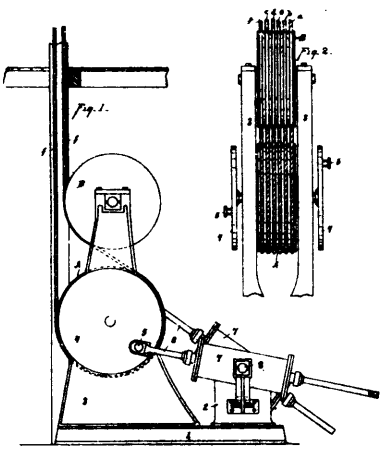

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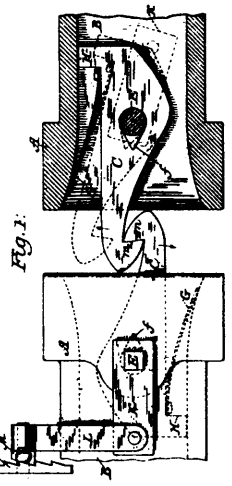

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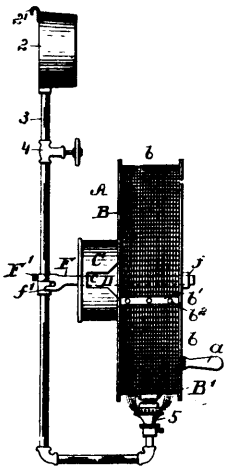

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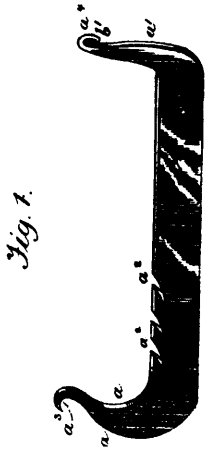

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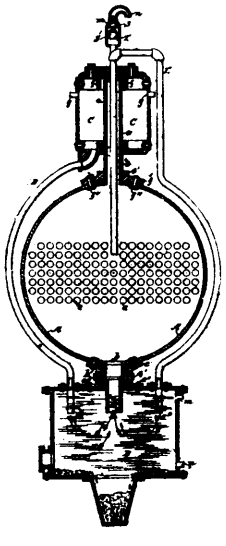

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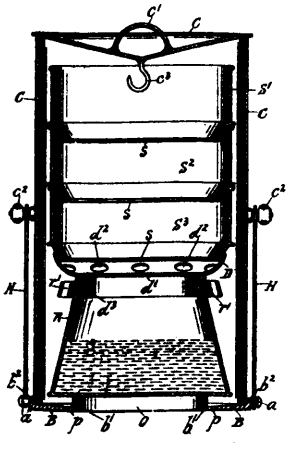

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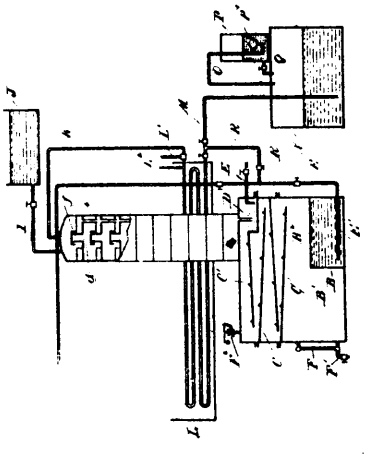

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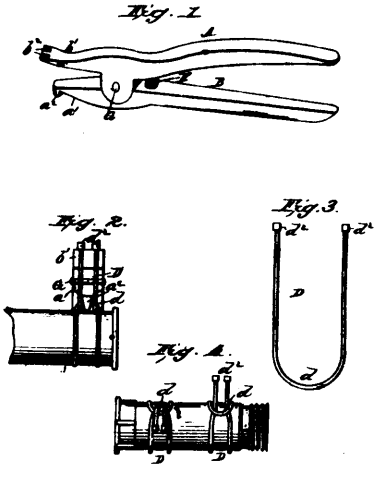

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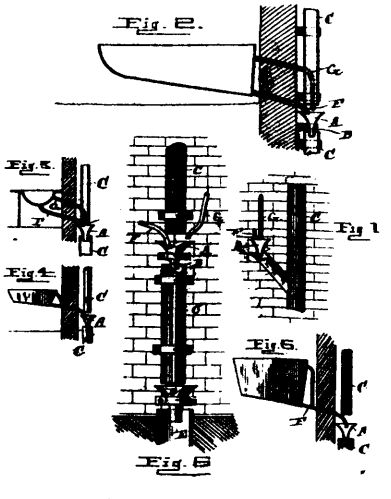

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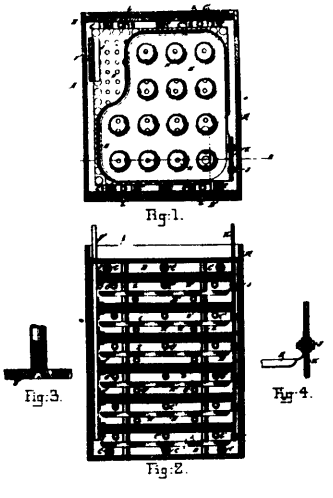

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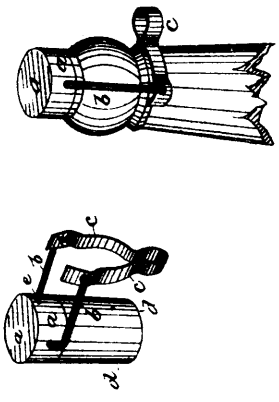

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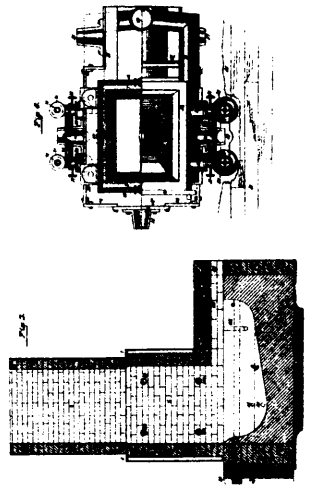

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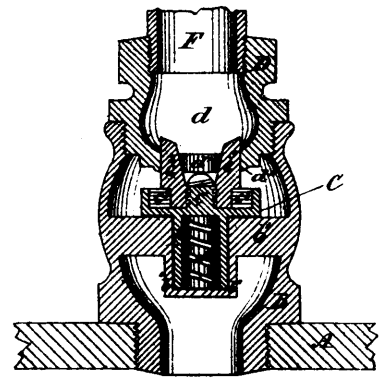

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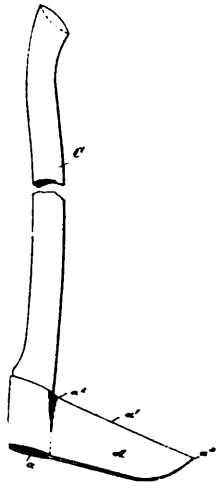

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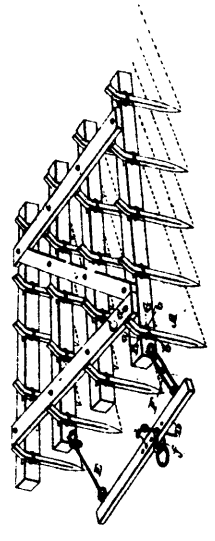

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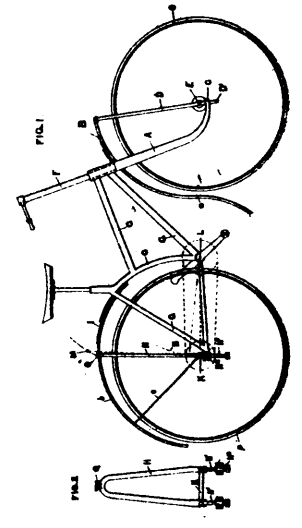

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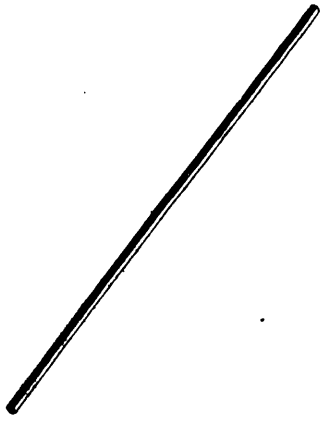

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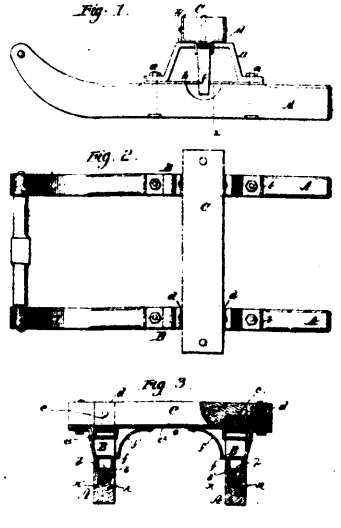

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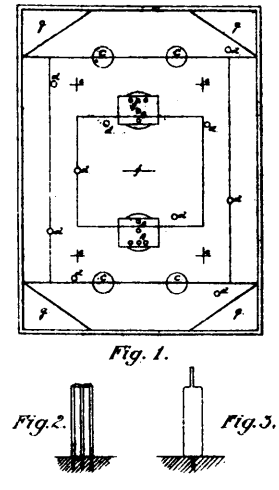

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